APPENDIX G

Imported Soils Characteristics and Volumes

CalPortland - Aggregate Submittal

Date: July 24, 2017

CALPORTLAND

Product Number: 8111

Product Description: Vadose Zone Fill
Specification Number: Attached

Source: Pioneer Aggregates Location: DuPont WA

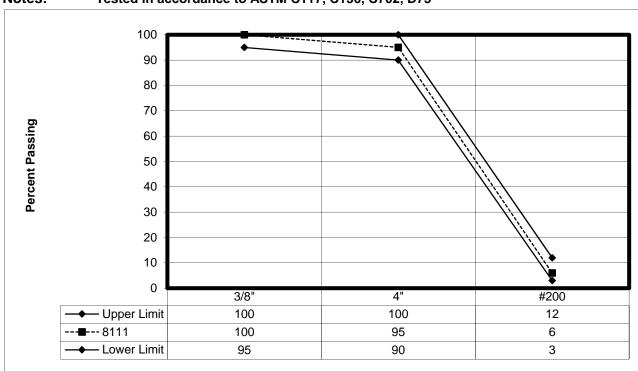
WSDOT Pit Number: B-335

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:1.34Sand Equivalent:-L.A. Abrasion:12.0%Dust Ratio:-Degradation:76

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



Sieve Size

CalPortland - Aggregate Submittal

Date: July 24, 2017

CALPORTLAND

Product Number: 8126

Product Description: Berm Imported Fill
Specification Number: Attached

Source: Pioneer Aggregates Location: DuPont WA

WSDOT Pit Number: B-335

Specification:

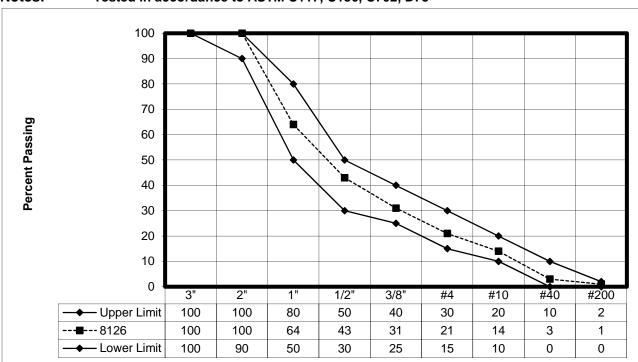
3" square	100% Pass	% Fracture	-
2" square	90-100	Sand Equivalent	-
1" square	50-80	L.A. Wear	-
1/2" square	30-50		
3/8" square	25-40		
U.S. No. 4	15-30		
U.S. No. 10	10-20	Degradation:	-
U.S. No. 40	0-10	Dust Ratio	-
U.S. No. 200	0-2		

Specific Gravity: 2.701 Short Short

% Fracture: Sand Equivalent: Dust Ratio: -

Degradation: 76

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



Sieve Size

CalPortland - Aggregate Submittal

Date: July 24, 2017



Product Number: 8129

Product Description: Saturated Zone Backfill
Specification Number: Attached

Source: Pioneer Aggregates Location: DuPont WA

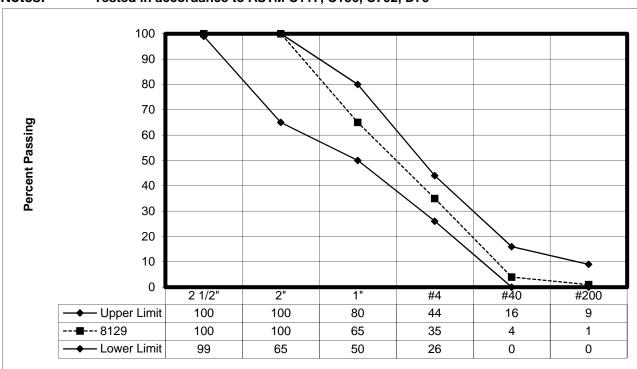
WSDOT Pit Number: B-335

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:1.34Sand Equivalent:-L.A. Abrasion:12.0%Dust Ratio:-Degradation:76

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



Sieve Size



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,

Michael Dee

MGA

Sr. Chemist / Principal



CLIENT: Professional Service Industries, Inc. Work Order Sample Summary

Project: Cal Portland Plant Feed

Lab Order: 1301152

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



Case Narrative

WO#: **1301152**Date: **2/11/2013**

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.



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
Diesel and Heavy Oil by NWT	PH-Dx/Dx Ext.			Batch	n 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 (P	CB) by EPA 8082	<u>!</u>		Batch	n 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 80	<u>81</u>		Batch	n 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

- 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



WO#: **1301152**Date Reported: **2/11/2013**

Date Analyzed

Client: Professional Service Industries, Inc. Collection Date: 1/30/2013 11:30:00 AM

RL

Qual

Units

DF

Project: Cal Portland Plant Feed

Lab ID: 1301152-001 **Matrix:** Soil

Result

Client Sample ID: CP-D

Analyses

naiyses	Result	RL	Quai	Units	DΓ	Date Analyzed
Organochlorine Pesticides by E	EPA Method 80	<u>81</u>		Batch	n 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 Compou	nds by EPA Me	ethod 8270		Batch	n 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
		501		μg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Chloroaniline	ND	301				
·	ND ND	100			1	2/7/2013 9:33:00 PM
4-Chloroaniline				μg/Kg-dry μg/Kg-dry	1 1	2/7/2013 9:33:00 PM 2/7/2013 9:33:00 PM

- 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
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- ND Not detected at the Reporting Limit
 - S Spike recovery outside accepted recovery limits



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

Result RL Qual Units DF **Date Analyzed Analyses** 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 1 2/7/2013 9:33:00 PM µg/Kg-dry 2,4,6-Trichlorophenol ND 201 1 2/7/2013 9:33:00 PM μg/Kg-dry 2,4,5-Trichlorophenol ND 201 µg/Kg-dry 1 2/7/2013 9:33:00 PM 2-Chloronaphthalene ND 100 2/7/2013 9:33:00 PM μg/Kg-dry 1 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 1 2/7/2013 9:33:00 PM μg/Kg-dry 2,6-Dinitrotoluene ND 100 1 2/7/2013 9:33:00 PM μg/Kg-dry 80.2 Acenaphthylene ND 1 2/7/2013 9:33:00 PM μg/Kg-dry 201 2,4-Dinitrophenol ND 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 1 2/7/2013 9:33:00 PM µg/Kg-dry 4-Nitrophenol ND 501 µg/Kg-dry 1 2/7/2013 9:33:00 PM ND 80.2 1 2/7/2013 9:33:00 PM Fluorene μg/Kg-dry 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 1 2/7/2013 9:33:00 PM µg/Kg-dry 4-Bromophenyl phenyl ether ND 100 2/7/2013 9:33:00 PM 1 μg/Kg-dry 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 ND 80.2 1 2/7/2013 9:33:00 PM Anthracene µg/Kg-dry Carbazole ND 501 1 2/7/2013 9:33:00 PM µg/Kg-dry 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 1 2/7/2013 9:33:00 PM µg/Kg-dry bis(2-Ethylhexyl)adipate ND 100 1 2/7/2013 9:33:00 PM µg/Kg-dry ND Benz (a) anthracene 80.2 1 2/7/2013 9:33:00 PM μg/Kg-dry ND 80.2 Chrysene µg/Kg-dry 1 2/7/2013 9:33:00 PM bis (2-Ethylhexyl) phthalate ND 100 1 μg/Kg-dry 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 2/7/2013 9:33:00 PM 80.2 µg/Kg-dry 1 Benzo (k) fluoranthene ND 80.2 μg/Kg-dry 2/7/2013 9:33:00 PM

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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 Analyz	ed
Semi-Volatile Organic Compound	ds by EPA Me	ethod 8270		Batch	n ID: 404	11 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	n ID: R73	373 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 I	EPA Method	<u>8260</u>		Batch	n ID: 403	33 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	
cis-1,2-Dichloroethene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00	
·	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00	
Chloroform	שוו			ر ق. ن			
				ma/Ka-drv	1	2/7/2013 6:31:00	AM
1,1,1-Trichloroethane (TCA) 1,1-Dichloropropene	ND ND	0.00573 0.00573		mg/Kg-dry mg/Kg-dry	1 1	2/7/2013 6:31:00 / 2/7/2013 6:31:00 /	

- B Analyte detected in the associated Method Blank
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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 Volatile Organic Compounds by EPA Method 8260** Batch ID: 4033 Analyst: EM ND 1,2-Dichloroethane (EDC) 0.00860 mg/Kg-dry 1 2/7/2013 6:31:00 AM mg/Kg-dry Benzene ND 0.00573 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 2/7/2013 6:31:00 AM mg/Kg-dry 1 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 ND 1,1,2-Trichloroethane 0.00860 1 2/7/2013 6:31:00 AM mg/Kg-dry 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 ND 0.00573 1 2/7/2013 6:31:00 AM Chlorobenzene mg/Kg-dry 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 1 2/7/2013 6:31:00 AM mg/Kg-dry ND 2/7/2013 6:31:00 AM o-Xylene 0.00573 mg/Kg-dry 1 ND Styrene 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 ND 1 2/7/2013 6:31:00 AM 1,1,2,2-Tetrachloroethane 0.00573 mg/Kg-dry 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 1 2/7/2013 6:31:00 AM 0.00573 mg/Kg-dry 2-Chlorotoluene ND 0.00573 mg/Kg-dry 1 2/7/2013 6:31:00 AM 4-Chlorotoluene ND 0.00573 1 2/7/2013 6:31:00 AM mg/Kg-dry tert-Butylbenzene ND 0.00573 1 2/7/2013 6:31:00 AM mg/Kg-dry ND 2/7/2013 6:31:00 AM 0.00573 1 1,2,3-Trichloropropane mg/Kg-dry 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 ND 2/7/2013 6:31:00 AM 1,3-Dichlorobenzene 0.00573 mg/Kg-dry 1 1,4-Dichlorobenzene ND 0.00573 mg/Kg-dry 2/7/2013 6:31:00 AM

- 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



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
Volatile Organic Compounds by	EPA Method	<u>8260</u>		Batch	n ID: 403	33 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 602	<u>20</u>			Batch	n ID: 402	28 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	n ID: 402	29 Analyst: SG
Mercury	ND	0.0166		mg/Kg-dry	1	2/4/2013 12:02:59 PM
Sample Moisture (Percent Moist	ture)			Batch	n ID: R73	Analyst: AO
Percent Moisture	7.22			wt%	1	2/4/2013 4:29:50 PM

- 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

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Total Metals by EPA Method 6020

Project:	Cal Portland Plant Feed						Total Metals by EPA Method 6020
Sample ID: MB-40	28 SampType: MBL			Units: mg/Kg		Prep Date: 2/1/2013	RunNo: 7332
Client ID: MBLK	Batch ID: 4028				,	Analysis Date: 2/2/2013	SeqNo: 144610
Analyte	Result	RI	SPK value	SPK Ref Val	%RFC	LowLimit HighLimit F	RPD Ref Val %RPD RPDI imit 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 Da	te: 2/1/2013		RunNo: 733	2	•
Client ID: LCSS	Batch ID: 4028					Analysis Da	te: 2/2/2013		SeqNo: 144	611	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit F	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				

Analyte detected in the associated Method Blank Qualifiers:

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

Dilution was required

Analyte detected below quantitation limits

Reporting Limit

Value above quantitation range Е

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Total Metals by EPA Method 6020

Sample ID: 1301127-022BDUP	SampType: DUP			Units: mg/K	(g-dry	Prep Da	te: 2/1/201	3	RunNo: 73 3	32	
Client ID: BATCH	Batch ID: 4028					Analysis Da	te: 2/2/201	3	SeqNo: 144	1614	
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 Da	te: 2/1/201	3	RunNo: 73 3	32	
Client ID: BATCH	Batch ID: 4028					Analysis Da	te: 2/2/201	3	SeqNo: 144	616	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Total Metals by EPA Method 6020

Project: Cal Portland Plant Feed

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 Client ID: BATCH	SampType: MSD Batch ID: 4028			Units: mg/	Kg-dry	Prep Da Analysis Da	te: 2/1/201		RunNo: 733 SegNo: 14 4		
Client ID: BATCH	Balch ID: 4026					Analysis Da	te: 2/2/201	ა	Seq100: 144	4017	
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

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



Work Order: 1301152

CLIENT: Professional Service Industries, Inc.

QC SUMMARY REPORT

Mercury by EPA Method 7471

Project: Cal Portla	and Plant Feed							werc	ury by EP	A Wetho	a /4/1
Sample ID: MB-4029	SampType: MBLK			Units: mg/K	g	Prep Date	e: 2/1/201 3	3	RunNo: 733	37	
Client ID: MBLKS	Batch ID: 4029					Analysis Date	e: 2/4/201 3	3	SeqNo: 144	1720	
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/K	g	Prep Date	e: 2/1/201 3	3	RunNo: 73 3	37	
Client ID: LCSS	Batch ID: 4029					Analysis Date	e: 2/4/201 3	3	SeqNo: 144	1721	
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/K	g-dry	Prep Date	e: 2/1/201 3	3	RunNo: 73 3	37	
Client ID: BATCH	Batch ID: 4029					Analysis Date	e: 2/4/201 3	3	SeqNo: 144	1723	
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/K	g-dry	Prep Date	e: 2/1/201 3	3	RunNo: 73 3	37	
Client ID: BATCH	Batch ID: 4029					Analysis Date	e: 2/4/201 3	3	SeqNo: 144	1724	
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/K	g-dry	Prep Date	e: 2/1/201 3	3	RunNo: 73 3	37	
Client ID: BATCH	Batch ID: 4029					Analysis Date	e: 2/4/201 3	3	SeqNo: 144	1725	
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

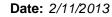
D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext

Project: Cal Portlan	d Plant Feed						Diesei a	ind Heavy (ו אא עם ווכ	I PH-DX/L	X EXt.
Sample ID: 1301157-001ADUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date	: 1/31/20	13	RunNo: 732	20	
Client ID: BATCH	Batch ID: 4023					Analysis Date	: 1/31/20	13	SeqNo: 144	1423	
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	e: 1/31/20°	13	RunNo: 732	20	
Client ID: LCSS	Batch ID: 4023					Analysis Date	e: 1/31/20	13	SeqNo: 144	4427	
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	e: 1/31/20 ⁻	13	RunNo: 732	20	
Client ID: MBLKS	Batch ID: 4023					Analysis Date	e: 1/31/20	13	SeqNo: 144	4428	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

Polychlorinated Biphenyls (PCB) by EPA 8082

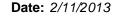
Sample ID: MB-4038	SampType: MBLK			Units: mg/Kg		Prep Dat	te: 2/5/201	3	RunNo: 736	64	
Client ID: MBLKS	Batch ID: 4038					Analysis Dat	te: 2/6/201	3	SeqNo: 14	5278	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0950									
Aroclor 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 Dat	te: 2/5/201	3	RunNo: 7364		
Client ID: LCSS	Batch ID: 4038					Analysis Dat	te: 2/6/201	3	SeqNo: 14	5279	
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 Dat	te: 2/5/201	3	RunNo: 736	64	
Client ID: CP-D	Batch ID: 4038					Analysis Dat	te: 2/6/201	3	SeqNo: 145	5281	
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	

Analyte detected below quantitation limits

Reporting Limit

ND

Not detected at the Reporting Limit





Work Order: 1301152

Aroclor 1260

Surr: Decachlorobiphenyl

Surr: Tetrachloro-m-xylene

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Polychlorinated Biphenyls (PCB) by EPA 8082

Project: Cal Portlan	d Plant Feed	Polychlorinated Biphenyls (PCB) by EPA 8082									
Sample ID: 1301152-001BDUP	SampType: DUP			Units: mg/K	g-dry	Prep Date	e: 2/5/201 :	3	RunNo: 736	64	
Client ID: CP-D	Batch ID: 4038					Analysis Date	e: 2/6/201 3	3	SeqNo: 145	5281	
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/K	g-dry	Prep Date	e: 2/5/201 :	3	RunNo: 73 6	64	
Client ID: CP-D	Batch ID: 4038					Analysis Date	e: 2/6/201 :	3	SeqNo: 14	5282	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

90.4

127

124

66.4

66.1

67.2

126

145

132

Qualifiers: B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

0.939

66.2

64.3

0.0987

R RPD outside accepted recovery limits

D Dilution was required

1.039

51.97

51.97

J Analyte detected below quantitation limits

L Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

R RPD outside accepted recovery limits

Organochlorine Pesticides by EPA Method 8081

S Spike recovery outside accepted recovery limits

Sample ID: MB-4040	SampType: MBLK			Units: mg/Kg		Prep Date:	2/5/2013		RunNo: 736	66	
Client ID: MBLKS	Batch ID: 4040					Analysis Date:	2/6/2013		SeqNo: 145	295	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
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´-DDE	ND	0.0200									
Endrin	ND	0.0200									
Endosulfan II	ND	0.0200									
I,4´-DDD	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
,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	<u> </u>	RunNo: 736	66	
Client ID: LCSS	Batch ID: 4040					Analysis Date:	2/6/2013		SeqNo: 145	296	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Alpha BHC	0.480	0.0100	0.5000	0	95.9	60.8	145				

RL Reporting Limit



Work Order: 1301152

Project:

Alpha BHC

Beta BHC

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Organochlorine Pesticides by EPA Method 8081

Sample ID: LCS-4040	SampType: LCS			Units: mg/Kg		Prep Dat	e: 2/5/2013		RunNo: 736	66	
Client ID: LCSS	Batch ID: 4040					Analysis Dat	e: 2/6/2013		SeqNo: 145	5296	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit F	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 Dat	e: 2/5/2013		RunNo: 736	66	
Client ID: CP-D	Batch ID: 4040					Analysis Dat	e: 2/6/2013		SeqNo: 145	5298	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit F	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

ND

ND

0.0102

0.0102

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

0

0

0

0

30

30



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Organochlorine Pesticides by EPA Method 8081

Sample ID: 1301152-001BDUP	SampType: DUP			Units: mg/l	(g-dry	Prep Da	te: 2/5/201	3	RunNo: 736	66	
Client ID: CP-D	Batch ID: 4040					Analysis Da	te: 2/6/201	3	SeqNo: 145	5298	
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: 736			
Client ID: CP-D	Batch ID: 4040					Analysis Dat	e: 2/6/201	3	SeqNo: 145	5299	
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				

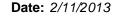
Qualifiers: B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

- D Dilution was required
- 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

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Organochlorine Pesticides by EPA Method 8081

Sample ID: 1301152-001BMS	SampType: MS			Units: mg/k	(g-dry	Prep Da	te: 2/5/201	3	RunNo: 736	66	
Client ID: CP-D	Batch ID: 4040					Analysis Da	te: 2/6/201	3	SeqNo: 145	5299	
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

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



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: MB-4041	SampType: MBLK			Units: µg/Kg		Prep Da	te: 2/5/20 1	3	RunNo: 739	6	
Client ID: MBLKS	Batch ID: 4041					Analysis Da	te: 2/7/20 1	3	SeqNo: 145	800	
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 detect

B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: MB-4041	SampType: MBLK			Units: µg/Kg		Prep Da	te: 2/5/20 1	3	RunNo: 739	96	
Client ID: MBLKS	Batch ID: 4041					Analysis Da	te: 2/7/20 1	3	SeqNo: 145	800	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

L Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Semi-Volatile Organic Compounds by EPA Method 8270

Project:	Cal Portland	Plant Feed				Sen	nı-Volatil	e Organ	ic Compour	nds by EP	A Method	3 8270
Sample ID: MB-	3-4041	SampType: MBLK			Units: µg/Kg		Prep Da	te: 2/5/201	3	RunNo: 739	96	
Client ID: MBL	BLKS	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 145	5800	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo (a) pyrene	ie	ND	80.0									
Indeno (1,2,3-cd)	d) pyrene	ND	80.0									
Dibenz (a,h) anth	thracene	ND	80.0									
Benzo (g,h,l) per	erylene	ND	80.0									
Surr: 2,4,6-Tri	ribromophenol	405		1,000		40.5	28.5	154				
Surr: 2-Fluorol	obiphenyl	494		500.0		98.8	42.6	139				
Surr: Nitroben:	nzene-d5	479		500.0		95.8	45.1	149				
Surr: Phenol-d	-d6	961		1,000		96.1	48.2	143				
Surr: p-Terphe	nenyl	501		500.0		100	33.3	149				
Surr: Nitroben: Surr: Phenol-d	nzene-d5 -d6	479 961		500.0 1,000		95.8 96.1	45.1 48.2	149 143				

Sample ID: LCS-4041	SampType: LCS			Units: µg/Kg		Prep Da	te: 2/5/201	3	RunNo: 739	16	
Client ID: LCSS	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 145	801	
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				

Analyte detected in the associated Method Blank Qualifiers:

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

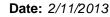
Dilution was required D

Analyte detected below quantitation limits

Reporting Limit

Value above quantitation range Е

ND Not detected at the Reporting Limit





Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Semi-Volatile Organic Compounds by EPA Method 8270

Proje	ct-	Cal	Portland	Plant	Feed
ı ıoje	CL.	Oai	i Ortiana	1 Idill	i ccu

Sample ID: LCS-4041	SampType: LCS			Units: µg/Kg		Prep Da	te: 2/5/201	3	RunNo: 739)6	
Client ID: LCSS	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 145	801	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

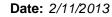
D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Semi-Volatile Organic Compounds by EPA Method 8270

Project: Cal Portland Plant Feed

Sample ID: LCS-4041	SampType: LCS			Units: µg/Kg		Prep Da	te: 2/5/2013	F	RunNo: 73 9	96	
Client ID: LCSS	Batch ID: 4041					Analysis Da	te: 2/7/2013	9	SeqNo: 145	5801	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Re	ef 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,l) 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

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



Work Order: 1301152

Sample ID: 1301152-001BDUP

Project:

Naphthalene

4-Chloroaniline

Hexachlorobutadiene

2-Methylnaphthalene

1-Methylnaphthalene

2,4,6-Trichlorophenol

2,4,5-Trichlorophenol

2-Chloronaphthalene

2-Nitroaniline

4-Chloro-3-methylphenol

Hexachlorocyclopentadiene

QC SUMMARY REPORT

RunNo: 7396

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

SampType: **DUP**

ND

82.9

518

104

518

82.9

82.9

104

207

207

104

518

Semi-Volatile Organic Compounds by EPA Method 8270

Prep Date: 2/5/2013

•						•					
Client ID: CP-D	Batch ID: 4041					Analysis Da	ite: 2/7/201	3	SeqNo: 145	803	
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	

Units: µg/Kg-dry

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

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

0

0

0

0

0

0

0

0

0

0

0

0

0

0

50

50

50

50

50

50

50

50

50

50

50



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BDUP	SampType: DUP			Units: µg/K	g-dry	Prep Da	te: 2/5/201	3	RunNo: 739	6	
Client ID: CP-D	Batch ID: 4041					Analysis Da	te: 2/7/20 1	3	SeqNo: 145	803	
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

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Semi-Volatile Organic Compounds by EPA Method 8270

Project:	Cal Portland Plant Feed
Project:	Cai Fullianu Fiant Feeu

Sample ID: 1301152-001BDUP	SampType: DUP			Units: µg/k	(g-dry	•	e: 2/5/201		RunNo: 73 9		
Client ID: CP-D	Batch ID: 4041					Analysis Dat	e: 2/7/201	3	SeqNo: 14	5803	
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/k	(g-dry	Prep Da	te: 2/5/201	3	RunNo: 739	96	
Client ID: CP-D	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 14	5804	
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				

Analyte detected in the associated Method Blank Qualifiers:

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

Dilution was required D

Analyte detected below quantitation limits

Reporting Limit

Value above quantitation range Е

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BMS	SampType: MS			Units: µg/K	g-dry	Prep Da	te: 2/5/201	3	RunNo: 73 9	96	
Client ID: CP-D	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 145	5804	
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

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

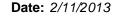
D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BMS	SampType: MS			Units: µg/K	g-dry	Prep Da	te: 2/5/201	3	RunNo: 73 9	96	
Client ID: CP-D	Batch ID: 4041					Analysis Da	te: 2/7/201	3	SeqNo: 145	5804	
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,l) 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:											

NOTES:

Qualifiers: B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

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).

D Dilution was required

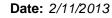
J Analyte detected below quantitation limits

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

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Project: Cal Portlan	d Plant Feed	0.							Gasoline	by NWT	PH-G
Sample ID: LCS-R7373	SampType: LCS			Units: mg/K	g	Prep Date	e: 2/4/201 :	3	RunNo: 73	73	
Client ID: LCSS	Batch ID: R7373					Analysis Date	e: 2/5/201 3	3	SeqNo: 14	5426	
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/K	g-dry	Prep Date	e: 2/4/201 :	3	RunNo: 73 7	73	
Client ID: CP-D	Batch ID: R7373					Analysis Date	e: 2/5/201 :	3	SeqNo: 14	5431	
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/K	g	Prep Date	e: 2/4/201 :	3	RunNo: 73	73	
Client ID: MBLKS	Batch ID: R7373					Analysis Date	e: 2/5/201 :	3	SeqNo: 14	5433	
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				

Analyte detected in the associated Method Blank Qualifiers:

> Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Dilution was required D

Analyte detected below quantitation limits

RL Reporting Limit

Value above quantitation range Е

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-001ADUP	SampType: DUP			Units: mg/K	g-dry	Prep Dat	e: 2/4/20 1	3	RunNo: 737	7 4	
Client ID: BATCH	Batch ID: 4033					Analysis Dat	e: 2/7/20 1	3	SeqNo: 145	5437	
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

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



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-001ADUP	SampType: DUP			Units: mg/h	(g-dry	Prep Da	te: 2/4/201	3	RunNo: 737	' 4	
Client ID: BATCH	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	437	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

J Analyte detected below quantitation limits

L Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Volatile Organic Compounds by EPA Method 8260

Drainet.	Cal Bortland Blant Food
Proiect:	Cal Portland Plant Feed

Sample ID: 1302013-001ADUP	SampType: DUP			Units: mg/K	g-dry	Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: BATCH	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5437	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
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/K	g-dry	Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: BATCH	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5439	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
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				

Analyte detected in the associated Method Blank Qualifiers:

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Dilution was required

Analyte detected below quantitation limits

Reporting Limit

Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-003AMS	SampType: MS			Units: mg/k	(g-dry	Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: BATCH	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5439	
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				
1,1,2,2-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

B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

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

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-003AMS	SampType: MS			Units: mg/	/Kg-dry	Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: BATCH	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5439	
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 Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: ICV	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5441	
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: E

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

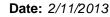
D Dilution was required

J Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: LCS-4033	SampType: LCS			Units: mg/Kg		Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: LCSS	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5442	
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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: LCS-4033	SampType: LCS			Units: mg/Kg		Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: LCSS	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5442	
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				
1,1,2,2-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

B Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

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

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

110,000											
Sample ID: LCS-4033	SampType: LCS			Units: mg/Kg		Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: LCSS	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5442	
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:											

Project:

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 Da	ate: 2/4/20 1	13	RunNo: 73	74	
Client ID: MBLKS	Batch ID: 4033					Analysis Da	ate: 2/7/20 1	13	SeqNo: 14	5443	
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	ne associated Method Blank		D Dilution wa	as required			E Valu	e above quantitation ra	ange		

Qualifiers: Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

Dilution was required

Analyte detected below quantitation limits

Reporting Limit

Value above quantitation range

ND Not detected at the Reporting Limit



Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Sample ID: MB-4033	SampType: MBLK			Units: mg/Kg		Prep Da	te: 2/4/20 1	3	RunNo: 737	' 4	
Client ID: MBLKS	Batch ID: 4033					Analysis Da	te: 2/7/20 1	3	SeqNo: 145	i443	
Analyte	Result	RL S	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									
1,1,2,2-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

Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

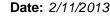
D Dilution was required

Analyte detected below quantitation limits

Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit





Work Order: 1301152

Project:

QC SUMMARY REPORT

CLIENT: Professional Service Industries, Inc.

Cal Portland Plant Feed

Volatile Organic Compounds by EPA Method 8260

Project. Cai Fortiant	a Flant Feed										
Sample ID: MB-4033	SampType: MBLK			Units: mg/Kg		Prep Da	te: 2/4/201	3	RunNo: 737	74	
Client ID: MBLKS	Batch ID: 4033					Analysis Da	te: 2/7/201	3	SeqNo: 145	5443	
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

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

D Dilution was required

Analyte detected below quantitation limits

RL Reporting Limit

E Value above quantitation range

ND Not detected at the Reporting Limit



Sample Log-In Check List

	nt Name: PSI ned by: Clare Griggs	Work Order Number: Date Received:		0:56:00 AM
Cha	ain of Custody			
1.	Were custodial seals present?	Yes	No 🗌	Not Required 🗹
2.	Is Chain of Custody complete?	Yes 🗸	No \square	Not Present
3.	How was the sample delivered?	Client		
Log	ı İn			
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 \square	
9.	Are samples properly preserved?	Yes 🗹	No \square	
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 \square	
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 \square	
16.	Were all holding times able to be met?	Yes 🗹	No \square	
<u>Spe</u>	ecial Handling (if applicable)			
17.	Was client notified of all discrepancies with this order?	Yes	No \square	NA 🗹
	Person Notified: By Whom: Regarding: Client Instructions:	•	ne Fax	In Person
18.	Additional remarks/Disrepancies			

Item Informa	<u>ition</u>	
Item #	Temp ⁰C	Condition
Cooler	9.6	Good
Sample	8.9	Good

	Fremont	받							5	Chain of Custody Record	ony Recor
3600 Fremont Ave N. Scottle, WA 98103	Tel: 206-352-3790 Fax: 206-352-7178		Dates	13/	10		Page	J. Project Na (ini	ernul).	Laboratory Project Na (Internal) 100 110 1-	
Client PST	L.				Ī	Project Name	V)	THE PORTIONO		PUNCTED	0
	13 5 GTH	ACE WE	7 6	1		Location	1	Puprot a	7		
Reports To (PM): STEVEN PAUL CA	MENTAL TENDENCE LATTER TO	10年	VI.	Ema	N III	TEVEN,	PHONE	Email STEVEN, PROVING PILLS OF PROJECTION	Projectiv	5082460	þ
Carring Marria	S demonstrated	Semple 36			1 3 3 3 3						Tools and the second
CP-0-01A	1/30/13	1.35 m	-		×	V	XX	×			
810-0-03:	e//æ//							1			
1CP-0-02 A	chell										
1 CP-D-02 B	1/3/13	3									
, CP-D-02C	(13/13	3	+								
1			Ħ			+					
eq.											
					-						
10			-		_(-8			-	(
'Metals Analysis (Circle): MTC(-5	RCRA-6	Pronty Polygents	141	Individual: (Ag.	, (E)	Ba (Ba) Ca)	0000	を HE ()	n function of	TOTAL CHECK (AB) A (AS) B BO (B) CO (CO) CO (CO) OF (HB) (MALE NOT THE NOTION - NO (PO) (B) ST ST TO TO TO	(vz)
"Anions (Gircle): Nitrate	Mirrire colorine	Sulfate	Ermride	D/Khtsphale		Pharme n	Nimale-Minite				
Sample Disposal	Retain to dient	Disprisal by Lah	13/100	and is assessed to existence for construct of the state of the	Wolfen byst dark	nmed Africa Bill R.	wei			Spicial Remons	
Reimounited.	Dau/Ting	w		The state of	1	A	A Pare Trans	वार-वा हा	20		
					0	+				TAT - New Day	Steam 20am CTD

8/7/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura		•	•	•	•	•	•	•
	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 T	onnage 8/7			8129 Sa	turated 2	Zone Fill		1174.9
•								
8/8/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura	ted Zone Fil	l						
	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 T	otal 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 T	onnage 8/1	0/2017		#8 x #30				88.7
				AASHTO	#8 Grav	rel .		28.7
- / - /								
8/15/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
4" x 8" Quar		20.22	20.20					
	BRI3T	28.33	28.29	-	-	-	-	-
	GRE2T	28.50	-	-	-	-	-	-
	SANI36T	28.43	-	-	-	-	-	-
04000	SANI14	31.17	-	-	-	-	-	-
8129 Satura			20.20	26.22	26.70			
	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	-
Total Dath T	BRI3T	28.10	28.02	30.08	27.49	- 	-	-
								144.72
						7		505.42

Arcadis 1 of 7

8/16/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Satura	ted Zone F	ill							
	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 1	Tonnage 8/	16/2017		8129 Sa	turated	Zone Fil		592.47	_
8/17/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8126 Berm I	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 1	Tonnage 8/	17/2017	1	8126 B	erm Fill			687.25	_
9/13/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Satura	ted Zone F	ill							
BRA2 31.31 31.29 31.83 31.64 31.40 30.20									
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 Satura	ted Zone F	ill							
	BRA2	32.15	32.25	30.61	31.36	30.54	30.16	30.32	
	CP6500	34.01	33.06	-	-	-	-	-	
Total Daily 1	Fonnage 9/	14/2017		8129 Sa	turated	Zone Fil	I	284.46	_
9/15/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Satura	ted Zone F	ill							
	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 1	Fonnage 9/	15/2017		8129 Sa	turated	Zone Fil	I	501.90	_
9/18/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	Trip 8
8129 Satura	ted Zone F	ill							
	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 1	Tonnage 9/	18/2017	1	8129 Sa	turated	Zone Fil	l		684.11

Arcadis 2 of 7

9/19/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8126 Berm F	ill							
	BRA2	32.40	30.62	31.11	31.50	-	-	-
	RRJI05T	29.77	29.16	29.31	29.63	-	-	-
8129 Satura	ted Zone Fi	ill						
	BRA2	31.15	31.13	-	-	-	-	-
	RRJI05T	30.49	30.07	-	-	-	-	-
Total Daily T	onnage 9/	19/2017		8126 Be	erm Fill			243.50
				8129 Sa	aturated	Zone Fil]	122.84
9/20/2017		•	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura	ted Zone Fi	ill						
	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 T	tal Daily Tonnage 9/20/2017 8129 Saturated Zone Fill							398.63
9/21/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura	ted Zone Fi	ill						
	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 T	onnage 9/	21/2017		8129 Sa	turated	Zone Fil	l	625.70
9/22/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura	ted Zone Fi	ill						
	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 T	onnage 9/	22/2017		8129 Sa	aturated	Zone Fil		801.62

Arcadis 3 of 7

0/22/2017	Truck #	Trip 1	Trin 2	Trin 2	Trip 4	Trin E	Trip 6	Trip 7	
9/23/2017 8126 Berm F		тір т	TTIP Z	TTIP 3	111þ 4	TTIP 3	Προ	TTIP 7	
0120 Dellii F		21.05							
8129 Saturat	RRJI05T	31.05	-	-	-	-	-	-	
6129 Satura			22.06	21.00					
	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									
	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 T	onnage 9/	23/2017		8126 Be	erm Fill			31.05	
				8129 Sa	turated	Zone Fil		347.66	
				8111 V	adose Zo	ne 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 T	onnage 9/	27/2017		8111 V	adose Zo	ne 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 T	onnago 0/						23.37	23.33	
•	Ullilage 3/	28/2017		8111 Va	adose Zo		23.37	200.42	•
	Offiliage 37	28/2017		8111 V			23.37		_
9/29/2017		28/2017 Trip 1				ne Fill	Trip 6		_
	Truck #		Trip 2		adose Zo	ne Fill		200.42	-
9/29/2017 8111 Vados e	Truck #	Trip 1	Trip 2	Trip 3	adose Zo Trip 4	re Fill		200.42	-
8111 Vadose	Truck # Zone Fill RRJ1075	Trip 1 29.28	Trip 2 28.21	Trip 3 28.24	Trip 4 28.31	rip 5 25.53	Trip 6	200.42 Trip 7	-
	Truck # Zone Fill RRJ1075	Trip 1 29.28	Trip 2 28.21	Trip 3 28.24	adose Zo Trip 4	rip 5 25.53	Trip 6	200.42	-
8111 Vadose Total Daily T	Truck # Zone Fill RRJ1075 onnage 9/	Trip 1 29.28 29/2017	Trip 2 28.21	Trip 3 28.24 8111 Va	Trip 4 28.31 adose Zo	Trip 5 25.53 ne Fill	Trip 6	200.42 Trip 7 - 139.57	-
8111 Vadose Total Daily T 10/2/2017	Truck # e Zone Fill RRJ1075 fonnage 9/ Truck #	Trip 1 29.28	Trip 2 28.21	Trip 3 28.24 8111 Va	Trip 4 28.31	Trip 5 25.53 ne Fill	Trip 6	200.42 Trip 7 - 139.57	<u>.</u>
8111 Vadose Total Daily T	Truck # Zone Fill RRJ1075 Connage 9/ Truck # Zone Fill	Trip 1 29.28 29/2017 Trip 1	Trip 2 28.21 Trip 2	Trip 3 28.24 8111 Va Trip 3	Trip 4 28.31 adose Zo Trip 4	Trip 5 25.53 ne Fill Trip 5	Trip 6 - Trip 6	200.42 Trip 7 - 139.57	-
8111 Vadose Total Daily T 10/2/2017	Truck # 2 Zone Fill RRJ1075 Connage 9/ Truck # 2 Zone Fill BRA2	Trip 1 29.28 29/2017 Trip 1 32.60	Trip 2 28.21 Trip 2 31.39	Trip 3 28.24 8111 Va Trip 3 30.38	Trip 4 28.31 adose Zo Trip 4 31.72	Trip 5 25.53 ne Fill Trip 5 30.52	Trip 6	200.42 Trip 7 - 139.57	-
8111 Vadose Total Daily T 10/2/2017	Truck # 2 Zone Fill RRJ1075 Connage 9/ Truck # 2 Zone Fill BRA2 SANI36T	Trip 1 29.28 29/2017 Trip 1 32.60 29.04	Trip 2 28.21 Trip 2 31.39 31.44	Trip 3 28.24 8111 Va Trip 3 30.38 30.39	Trip 4 28.31 adose Zo Trip 4 31.72	Trip 5 25.53 ne Fill Trip 5 30.52	Trip 6 - Trip 6 29.69 -	200.42 Trip 7 - 139.57	-
8111 Vadose Total Daily T 10/2/2017	Truck # 2 Zone Fill RRJ1075 Connage 9/ Truck # 2 Zone Fill BRA2 SANI36T SANI14T	Trip 1 29.28 29/2017 Trip 1 32.60 29.04 30.41	Trip 2 28.21 Trip 2 31.39 31.44 30.23	Trip 3 28.24 8111 Va Trip 3 30.38 30.39 30.64	Trip 4 28.31 adose Zo Trip 4 31.72	Trip 5 25.53 ne Fill Trip 5 30.52 -	Trip 6 - Trip 6	200.42 Trip 7 - 139.57	-

Arcadis 4 of 7

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 T	onnage 10	/3/2017		8111 V	adose Zo	ne 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 Satura	ted Zone Fi	ill						
	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 T	onnage 10	/4/2017		8111 V	adose Zo	ne Fill		185.59
				8129 Sa	turated	Zone Fil		456.90
10/5/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturat	ted Zone Fi	ill						
	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 T	onnage 10	/5/2017		8129 Sa	turated	Zone Fil	l	643.10
10/6/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturat	ted Zone Fi	ill						
	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 T	onnage 10	/6/2017		8129 Sa	turated	Zone Fil	I	363.17

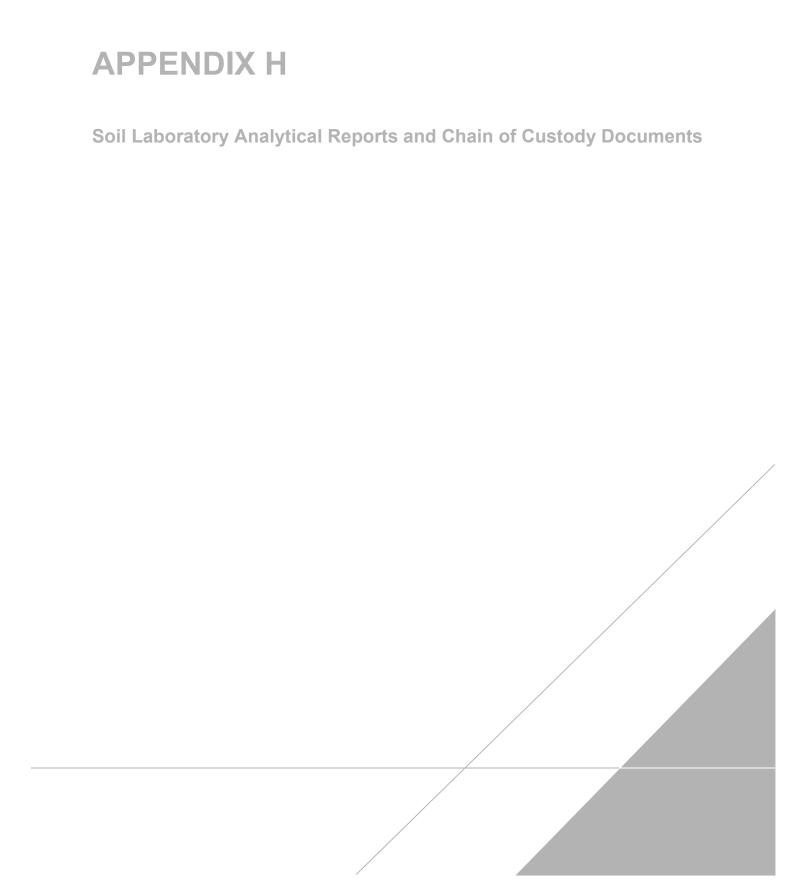
Arcadis 5 of 7

10/9/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Satura	ted Zone F	ill						
	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	-	-	-	-	-	-
	CANUAT	20.24				_		
	SANI14T	30.34	-				-	-
Total Daily T				8129 Sa	turated	Zone Fil		458.49
Total Daily T					turated adose Zo	Zone Fil		
Total Daily T						Zone Fil		458.49
Total Daily T	onnage 10					Zone Fil		458.49
	onnage 10 Truck #	/9/2017		8111 Va	adose Zo	Zone Fil one Fill	l	458.49 508.90
10/10/2017	onnage 10 Truck #	/9/2017		8111 Va	adose Zo	Zone Fil one Fill	l	458.49 508.90
10/10/2017	Truck #	7/9/2017 Trip 1	Trip 2	8111 V a	adose Zo Trip 4	Zone Fil one Fill Trip 5	Trip 6	458.49 508.90 Trip 7
10/10/2017	Truck # 2 Zone Fill BRA2	7/9/2017 Trip 1 32.55	Trip 2 32.08	8111 V a Trip 3 32.03	Trip 4 31.37	Zone Fill Trip 5 31.06	Trip 6 30.83	458.49 508.90 Trip 7 31.19
10/10/2017	Truck # 2 Zone Fill BRA2 FIT755 SANI38T	Trip 1 32.55 29.74 31.31	Trip 2 32.08 29.86 30.77	8111 Va Trip 3 32.03 29.75 31.64	Trip 4 31.37 29.52	Zone Fill Trip 5 31.06 28.7 29.42	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19
10/10/2017 8111 Vados e	Truck # 2 Zone Fill BRA2 FIT755 SANI38T	Trip 1 32.55 29.74 31.31	Trip 2 32.08 29.86 30.77	8111 Va Trip 3 32.03 29.75 31.64	Trip 4 31.37 29.52 31.64	Zone Fill Trip 5 31.06 28.7 29.42	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19
10/10/2017 8111 Vados e	Truck # 2 Zone Fill BRA2 FIT755 SANI38T Connage 10	Trip 1 32.55 29.74 31.31	Trip 2 32.08 29.86 30.77	8111 Va Trip 3 32.03 29.75 31.64	Trip 4 31.37 29.52 31.64	Zone Fill Trip 5 31.06 28.7 29.42	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19
10/10/2017 8111 Vadose Total Daily T	Truck # e Zone Fill BRA2 FIT755 SANI38T onnage 10	Trip 1 32.55 29.74 31.31 /10/201 Trip 1	Trip 2 32.08 29.86 30.77	8111 Va Trip 3 32.03 29.75 31.64 8111 Va	Trip 4 31.37 29.52 31.64 adose Zo	Zone Fill Trip 5 31.06 28.7 29.42 one Fill	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19 - - 553.18
10/10/2017 8111 Vadose Total Daily T	Truck # e Zone Fill BRA2 FIT755 SANI38T onnage 10	Trip 1 32.55 29.74 31.31 /10/201 Trip 1	Trip 2 32.08 29.86 30.77	8111 Va Trip 3 32.03 29.75 31.64 8111 Va	Trip 4 31.37 29.52 31.64 adose Zo	Zone Fill Trip 5 31.06 28.7 29.42 one Fill	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19 - - 553.18
10/10/2017 8111 Vadose Total Daily T	Truck # 2 Zone Fill BRA2 FIT755 SANI38T Connage 10 Truck # ted Zone F	Trip 1 32.55 29.74 31.31 3/10/201 Trip 1 iil	Trip 2 32.08 29.86 30.77 7	8111 Va Trip 3 32.03 29.75 31.64 8111 Va Trip 3	Trip 4 31.37 29.52 31.64 adose Zo Trip 4	Zone Fill Trip 5 31.06 28.7 29.42 one Fill Trip 5	Trip 6 30.83 29.72	458.49 508.90 Trip 7 31.19 - - 553.18

Arcadis 6 of 7

10/12/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7			
8129 Satura	ted Zone F	ill									
	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 T	onnage 10	/12/201	7	8129 Sa	aturated	Zone Fil	I	580.22	_		
				8111 V	adose Zo	ne 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 Satura	ted Zone F	ill									
	FIT755	30.14	29.76	-	-	-	-	-	_		
Total Daily T	onnage 10)/13/201	7		adose Zo			152.89			
					ravel Bo			158.76			
				8129 Sa	aturated	Zone Fil	I	59.90			
10/17/2017		Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	Trip 8	Trip 9	Trip 10
8128 Gravel											
	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 G	ravel Bo	rrow					575.08

Arcadis 7 of 7



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

Laboratory	Sample Date	Data Validation	Sample	Analyzes performed		San	nples Descrip	tion	
Report ID		Memorandum	Matrix		Sample	Rinsate Blank	Trip Blank	MS/MSD	Duplicate
Test America	Laboratories, Inc. (TA)	in Tacoma, Washington							
Soil Laborator	ry Analytical Reports a	nd Chain of Custody Doci	uments (A	opendix 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 Lanc	aster Laboratories En	vironmental (Eurofins) in	Lancaster,	Pennsylvania					
Soil Laborator	ry Analytical Reports a	nd Chain of Custody Doci	uments (A	ppendix 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).

Arcadis 1 of 1



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. Elains 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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Total Access

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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

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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.

TestAmerica Seattle 9/15/2017

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.

3

4

5

7

9

10

Definitions/Glossary

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
В	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 Somi VO	

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

LOQ

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	Design Layel Concentration (Design homistry)

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDI Mathed Detection Limit

Limit of Quantitation (DoD/DOE)

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)

TestAmerica Seattle

9/15/2017

3

4

__

4

0

10

Client: ARCADIS U.S. Inc

Analyte

Percent Solids

Percent Moisture

Date Collected: 09/06/17 16:45

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A3-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-1

Matrix: Solid

ate Received: 09/07/17 13:03								Percent Solid	43. 70.
Method: 8260C - Volatile Orga	•	•							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Benzene	ND		25	11	ug/Kg	#	09/07/17 15:08	09/08/17 11:33	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	97		75 - 120				09/07/17 15:08	09/08/17 11:33	
Trifluorotoluene (Surr)	102		60 - 150				09/07/17 15:08	09/08/17 11:33	
4-Bromofluorobenzene (Surr)	102		47 - 150				09/07/17 15:08	09/08/17 11:33	
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 11:33	
			80 - 121				09/07/17 15:08	09/08/17 11:33	
Method: NWTPH-Gx - Northwo	Result	Qualifier	ucts (GC)	MDL 2.6		D \overline{\overline{\pi}}	Prepared 09/07/17 15:08	Analyzed 09/08/17 13:38	Dil Fa
Method: NWTPH-Gx - Northwo Analyte Gasoline	est - Volatile Petro	Qualifier B	ucts (GC)		Unit mg/Kg		Prepared 09/07/17 15:08	09/08/17 13:38	Dil Fa
Method: NWTPH-Gx - Northwo Analyte Gasoline Surrogate	est - Volatile Petro Result 14	Qualifier B	ucts (GC) RL 5.0				09/07/17 15:08		Dil Fa
Method: NWTPH-Gx - Northwo Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	est - Volatile Petro Result 14 %Recovery 90	Qualifier B Qualifier	Limits 50 - 150				09/07/17 15:08 Prepared	09/08/17 13:38 Analyzed	Dil Fa
Method: NWTPH-Gx - Northweethod: NWTPH-Gx - Northweethod: NWTPH-Dx - NO	est - Volatile Petro Result 14 %Recovery 90 est - Semi-Volatile	Qualifier B Qualifier	Limits 50 - 150		mg/Kg		09/07/17 15:08 Prepared	09/08/17 13:38 Analyzed	Dil Fa
1,2-Dichloroethane-d4 (Surr) Method: NWTPH-Gx - Northwood Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwood Analyte #2 Diesel (C10-C24)	est - Volatile Petro Result 14 %Recovery 90 est - Semi-Volatile	Qualifier B Qualifier Petroleum	Limits 50 - 150 Products (GC)	2.6	mg/Kg	<u> </u>	09/07/17 15:08 Prepared 09/07/17 15:08	09/08/17 13:38 Analyzed 09/08/17 13:38	Dil Fa
Method: NWTPH-Gx - Northwo Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwo Analyte #2 Diesel (C10-C24)	est - Volatile Petro Result 14 %Recovery 90 est - Semi-Volatile Result	Qualifier B Qualifier Petroleum Qualifier	Limits 50 - 150 Products (GC) RL	2.6 MDL 13	mg/Kg	\tilde{\ti	09/07/17 15:08 Prepared 09/07/17 15:08 Prepared	09/08/17 13:38 Analyzed 09/08/17 13:38 Analyzed	Dil Fa
Method: NWTPH-Gx - Northwood Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwood Analyte	est - Volatile Petro Result 14 %Recovery 90 est - Semi-Volatile Result ND	Qualifier B Qualifier Petroleum Qualifier J	Limits 50 - 150 Products (GC) RL 53	2.6 MDL 13	mg/Kg Unit mg/Kg		09/07/17 15:08 Prepared 09/07/17 15:08 Prepared 09/07/17 13:43	09/08/17 13:38 Analyzed 09/08/17 13:38 Analyzed 09/07/17 21:10	Dil Fa

RL

0.1

0.1

MDL Unit

0.1 %

0.1 %

Prepared

Analyzed

09/07/17 19:10

09/07/17 19:10

Dil Fac

Result Qualifier

78.6

21.4

TestAmerica Seattle

Client: ARCADIS U.S. Inc

Motor Oil (>C24-C36)

Surrogate

o-Terphenyl

Date Collected: 09/07/17 11:25

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A4-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-2

09/07/17 13:43

Prepared

09/07/17 21:33

Analyzed

Matrix: Solid

ate Received: 09/07/17 13:03								Percent Soli	ds: 80
Method: 8260C - Volatile Orga	anic Compounds I	by GC/MS							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		24	10	ug/Kg	<u> </u>	09/07/17 15:08	09/08/17 11:58	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	99		75 - 120				09/07/17 15:08	09/08/17 11:58	
Trifluorotoluene (Surr)	99		60 - 150				09/07/17 15:08	09/08/17 11:58	
4-Bromofluorobenzene (Surr)	101		47 - 150				09/07/17 15:08	09/08/17 11:58	
Dibromofluoromethane (Surr)	104		80 - 118				09/07/17 15:08	09/08/17 11:58	
1,2-Dichloroethane-d4 (Surr)	107		80 - 121				09/07/17 15:08	09/08/17 11:58	
Method: NWTPH-Gx - Northw	est - Volatile Petro	oleum Prod	ucts (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline	ND		4.7	2.5	mg/Kg		09/07/17 15:08	09/08/17 14:09	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	92		50 - 150				09/07/17 15:08	09/08/17 14:09	
Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
#2 Diesel (C10-C24)	ND		53	13	mg/Kg	-	09/07/17 13:43	09/07/17 21:33	

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

Limits

50 - 150

53

16 J

%Recovery Qualifier

66

9.7 mg/Kg

9/15/2017

Dil Fac

Client: ARCADIS U.S. Inc

o-Terphenyl

Date Collected: 09/07/17 11:00

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A5-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-3

09/07/17 13:43 09/07/17 21:56

Matrix: Solid

Pate Received: 09/07/17 13:03								Percent Soli	ds: 77.8
Method: 8260C - Volatile Organic	Compounds b	ov GC/MS							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		27	12	ug/Kg	\	09/07/17 15:08	09/08/17 12:24	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	98		75 - 120				09/07/17 15:08	09/08/17 12:24	
Trifluorotoluene (Surr)	99		60 - 150				09/07/17 15:08	09/08/17 12:24	
4-Bromofluorobenzene (Surr)	98		47 - 150				09/07/17 15:08	09/08/17 12:24	
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 12:24	
1,2-Dichloroethane-d4 (Surr)	109		80 - 121				09/07/17 15:08	09/08/17 12:24	
Method: NWTPH-Gx - Northwest	- Volatile Petro	oleum Prod	ucts (GC)						
Method: NWTPH-Gx - Northwest Analyte Gasoline		Oleum Prod Qualifier	ucts (GC) RL 5.5	MDL 2.9	Unit mg/Kg	D	Prepared 09/07/17 15:08	Analyzed 09/08/17 14:39	Dil Fa
Analyte Gasoline	Result	Qualifier	RL						Dil Fa
Analyte Gasoline Surrogate	Result	Qualifier					09/07/17 15:08	09/08/17 14:39	
Analyte	Result ND %Recovery 89	Qualifier Qualifier	RL 5.5 <i>Limits</i> 50 - 150				09/07/17 15:08 Prepared	09/08/17 14:39 Analyzed	
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwest	Result ND %Recovery 89 - Semi-Volatile	Qualifier Qualifier	RL 5.5 <i>Limits</i> 50 - 150		mg/Kg		09/07/17 15:08 Prepared	09/08/17 14:39 Analyzed	Dil Fa
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwest Analyte	Result ND %Recovery 89 - Semi-Volatile	Qualifier Qualifier Petroleum	RL 5.5 <i>Limits</i> 50 - 150 Products (GC)	2.9 MDL	mg/Kg	<u> </u>	09/07/17 15:08 Prepared 09/07/17 15:08	09/08/17 14:39 Analyzed 09/08/17 14:39	Dil Fa
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	Result ND %Recovery 89 - Semi-Volatile Result	Qualifier Qualifier Petroleum Qualifier	RL 5.5 Limits 50 - 150 Products (GC) RL	2.9 MDL 13	mg/Kg		09/07/17 15:08 Prepared 09/07/17 15:08 Prepared	09/08/17 14:39 Analyzed 09/08/17 14:39 Analyzed	

١	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
Į	Percent Moisture	22.2		0.1	0.1	%			09/07/17 19:10	1

50 - 150

60

9/15/2017

Client: ARCADIS U.S. Inc

Date Collected: 09/07/17 10:50

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A6-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-4

Matrix: Solid	
Percent Solids: 75.8	

								Percent Solid	ds: 75.8
Method: 8260C - Volatile Orga	anic Compounds I	by GC/MS							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		29	13	ug/Kg	<u> </u>	09/07/17 15:08	09/08/17 12:50	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	97		75 - 120				09/07/17 15:08	09/08/17 12:50	
Trifluorotoluene (Surr)	98		60 - 150				09/07/17 15:08	09/08/17 12:50	
4-Bromofluorobenzene (Surr)	98		47 - 150				09/07/17 15:08	09/08/17 12:50	
Dibromofluoromethane (Surr)	101		80 - 118				09/07/17 15:08	09/08/17 12:50	
1,2-Dichloroethane-d4 (Surr)	110		80 - 121				09/07/17 15:08	09/08/17 12:50	
: Method: NWTPH-Gx - Northw Analyte		oleum Prod Qualifier	ucts (GC)	MDL	Unit	D	Prepared	Analyzed	Dil Fa
			· /	MDL 0.35	Unit mg/Kg	D <u>₩</u>	Prepared 09/07/17 15:08	Analyzed 09/08/17 15:10	Dil Fa
Analyte Gasoline	Result	Qualifier	RL						
Analyte Gasoline Surrogate	Result ND	Qualifier					09/07/17 15:08	09/08/17 15:10	
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	Result ND %Recovery 92	Qualifier Qualifier	RL 0.68 Limits 50 - 150				09/07/17 15:08 Prepared	09/08/17 15:10 Analyzed	
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwe	Result ND %Recovery 92 est - Semi-Volatile	Qualifier Qualifier	RL 0.68 Limits 50 - 150		mg/Kg		09/07/17 15:08 Prepared	09/08/17 15:10 Analyzed	Dil Fa
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwo	Result ND %Recovery 92 est - Semi-Volatile	Qualifier Qualifier Petroleum	RL 0.68	0.35	mg/Kg	<u> </u>	09/07/17 15:08 Prepared 09/07/17 15:08	09/08/17 15:10 Analyzed 09/08/17 15:10	Dil Fa
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Northwo	Result ND %Recovery 92 est - Semi-Volatile Result	Qualifier Qualifier Petroleum Qualifier	RL 0.68	0.35 MDL 16	mg/Kg		09/07/17 15:08 Prepared 09/07/17 15:08 Prepared	09/08/17 15:10 Analyzed 09/08/17 15:10 Analyzed	Dil Fa
Analyte	Result ND %Recovery 92 est - Semi-Volatile Result ND	Qualifier Qualifier Petroleum Qualifier J	RL 0.68	0.35 MDL 16	mg/Kg Unit mg/Kg		09/07/17 15:08 Prepared 09/07/17 15:08 Prepared 09/07/17 13:43	09/08/17 15:10 Analyzed 09/08/17 15:10 Analyzed 09/07/17 22:18	Dil Fa

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

9/15/2017

Client: ARCADIS U.S. Inc

Date Collected: 09/07/17 10:55

Date Received: 09/07/17 13:03

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A7-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-5

Matrix: Solid

Percent Solids: 70.5

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 - Northwe	est - Volatile Petro	oleum Prod	ucts (GC)						
Analyte	Result	Qualifier	` /RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Method: NWTPH-Gx - Northwest	- Volatile Petro	oleum Prod	ucts (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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	<u></u>	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	

General Chemistry Analyte	Result Q	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

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10

Client: ARCADIS U.S. Inc

Date Collected: 09/07/17 11:10

Date Received: 09/07/17 13:03

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A8-10

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-6

Matrix: Solid

Percent Solids: 81.8

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 - Northwe	est - Volatile Petro	oleum Prod	ucts (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	\tilde{\pi}	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

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: RB-09062017

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-7

Matrix: Water

Date Collected: 09/06/17 17:00 Date Received: 09/07/17 13:03

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

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Client Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: RB-09072017

Date Collected: 09/07/17 10:00

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-8

ab dample ib. 300-7 1003-0

Matrix: Water

Date Received: 09/07/17 13:03

Method: NWTPH-Gx - Northwe	st - Volatile Petro	oleum Prod	lucts (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

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Client Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: TB-09062017

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-9

Matrix: Solid

Date Collected: 09/06/17 00:00 Date Received: 09/07/17 13:03

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 - Northwe	est - Volatile Petro	oleum Prod	ucts (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	

TestAmerica Job ID: 580-71085-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

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

Matrix: Solid

Analyte

Analysis Batch: 255593

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

Prep Batch: 255582

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

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

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

Matrix: Solid

Analysis Batch: 255593

Prep Type: Total/NA

Prep Batch: 255582

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

	LCS	LCS	
Surrogate	%Recovery	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 Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 255593

Prep Type: Total/NA

Prep Batch: 255582

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

	LCSD	LCSD	
Surrogate	%Recovery	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 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 255559

MB MB

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

Project/Site: Chevron Edmonds Terminal

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

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

Lab Sample ID: LCS 580-255559/7 Client Sample ID: Lab Control Sample

Matrix: Water Prep Type: Total/NA

Analysis Batch: 255559

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

Gasoline 1.00 0.874 87 79 - 110 mg/L

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

Lab Sample ID: LCSD 580-255559/8 Client Sample ID: Lab Control Sample Dup

Matrix: Water Prep Type: Total/NA

Analysis Batch: 255559

Trifluorotoluene (Surr)

Spike LCSD LCSD %Rec. RPD Added Analyte Result Qualifier Unit %Rec Limits RPD Limit Gasoline 1.00 0.856 mg/L 86 79 - 11010

LCSD LCSD Surrogate Limits %Recovery Qualifier 4-Bromofluorobenzene (Surr) 97 58 - 133

95

Client Sample ID: Method Blank Lab Sample ID: MB 580-255574/1-A

77 - 128

Matrix: Solid Prep Type: Total/NA Analysis Batch: 255587 Prep Batch: 255574

мв мв Result Qualifier MDL Unit Analyte RL Prepared Analyzed Dil Fac

Gasoline 2.31 J 4.0 mg/Kg 09/07/17 15:03 09/08/17 11:33 MB MB

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

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

Matrix: Solid Prep Type: Total/NA Analysis Batch: 255587 Prep Batch: 255574

Spike LCS LCS Analyte Added Result Qualifier Limits Unit %Rec

95 Gasoline 40.0 38.1 mg/Kg 68 - 120

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

LCS LCS

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

Spike LCSD LCSD Added Analyte Result Qualifier %Rec Limits RPD Limit Unit D 2 40.0 98 68 - 120 25 Gasoline 39.0 mg/Kg

LCSD LCSD

Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 50 _ 150 98

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

Result Qualifier RL MDL Unit D Dil Fac Analyte Prepared Analyzed 50 12 mg/Kg 09/07/17 13:43 #2 Diesel (C10-C24) ND 09/07/17 20:02 Motor Oil (>C24-C36) 50 09/07/17 20:02 ND 9.1 mg/Kg 09/07/17 13:43

MB MB

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac o-Terphenyl 81 50 - 150 09/07/17 13:43 09/07/17 20:02

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**

LCS LCS Spike Added Limits Result Qualifier Unit D %Rec

Analyte #2 Diesel (C10-C24) 500 368 mg/Kg 74 64 - 127 500 79 Motor Oil (>C24-C36) 396 mg/Kg 70 - 125

LCS LCS

Surrogate %Recovery Qualifier I imits 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

RPD %Rec.

LCSD LCSD Spike Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit #2 Diesel (C10-C24) 500 360 mg/Kg 64 - 127 16 Motor Oil (>C24-C36) 500 402 80 70 - 125 mg/Kg 17

LCSD LCSD

Surrogate %Recovery 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 DU DU Sample Sample RPD Result Qualifier Result Qualifier Unit RPD Limit

Analyte ₩ #2 Diesel (C10-C24) ND ND NC mg/Kg 35 Ä Motor Oil (>C24-C36) 15 J 19.2 J mg/Kg 22 35

QC Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

DU DU

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	67		50 - 150

TestAmerica Job ID: 580-71085-1

4

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Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A3-10

Client Sample ID: EX-DB2-A3-10

Lab Sample ID: 580-71085-1

Matrix: Solid

Date Collected: 09/06/17 16:45 Date Received: 09/07/17 13:03

Date Collected: 09/06/17 16:45

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

Lab Sample ID: 580-71085-1

TAL SEA

TAL SEA

Matrix: Solid

Percent Solids: 78.6

Date Received: 09/07/17 13:03 Batch Batch Dilution Batch Prepared Method Factor Prep Type Туре Run Number or Analyzed Analyst Lab 5035 TAL SEA Total/NA Prep 255582 09/07/17 15:08 JSM Total/NA 8260C Analysis 255593 09/08/17 11:33 JSM TAL SEA 1 Total/NA 5035 TAL SEA Prep 255574 09/07/17 15:08 JCV Total/NA Analysis **NWTPH-Gx** 255587 09/08/17 13:38 IWH TAL SEA TAL SEA Total/NA Prep 3546 255553 09/07/17 13:43 DSO

Client Sample ID: EX-DB2-A4-10

Cleanup

Analysis

3630C

NWTPH-Dx

Lab Sample ID: 580-71085-2 Date Collected: 09/07/17 11:25

255607

09/07/17 17:34

255612 09/07/17 21:10

REY

ADB

Matrix: Solid

Date Received: 09/07/17 13:03

Total/NA

Total/NA

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

Client Sample ID: EX-DB2-A4-10

Date Collected: 09/07/17 11:25

Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-2

Percent Solids: 80.8

Matrix: Solid

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/07/17 11:00

Lab Sample ID: 580-71085-3

Matrix: Solid

Date Received: 09/07/17 13:03

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

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A5-10

Date Collected: 09/07/17 11:00 Date Received: 09/07/17 13:03 Lab Sample ID: 580-71085-3

שנו Sample ום: 580-71085-3 Matrix: Solid

Matrix: Solid Percent Solids: 77.8

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Date Collected: 09/07/17 10:50

Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Date Collected: 09/07/17 10:50

Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-4
Matrix: Solid

Percent Solids: 75.8

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/07/17 10:55

Date Received: 09/07/17 13:03

₋ab Sam	ple ID:	580-7	'1085-5
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Matrix: Solid

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

Client Sample ID: EX-DB2-A7-10

Date Collected: 09/07/17 10:55

Date Received: 09/07/17 13:03

Matrix: Solid

Percent Solids: 70.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

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Dilution

Factor

1

Batch

Number

255587

255553

255607

255612

09/07/17 17:34

09/07/17 22:40

REY

ADB

Client: ARCADIS U.S. Inc

Prep Type

Total/NA

Total/NA

Total/NA

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A7-10

Batch

Туре

Prep

Analysis

Cleanup

Batch

3546

3630C

Method

NWTPH-Gx

NWTPH-Dx

Date Collected: 09/07/17 10:55 Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-5

Matrix: Solid Percent Solids: 70.5

			reit
Prepared			
or Analyzed	Analyst	Lab	
09/08/17 15:41	IWH	TAL SEA	
09/07/17 13:43	DSO	TAL SEA	

TAL SEA

TAL SEA

Total/NA Analysis Client Sample ID: EX-DB2-A8-10

Run

Date Collected: 09/07/17 11:10 Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-6

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/06/17 17:00 Date Received: 09/07/17 13:03

Date Received: 09/07/17 13:03

Lab Sample ID: 580-71085-7

Matrix: Water

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

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

Lab Chronicle

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: TB-09062017

TestAmerica Job ID: 580-71085-1

Lab Sample ID: 580-71085-9

Matrix: Solid

Date Collected: 09/06/17 00:00 Date Received: 09/07/17 13:03

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

3

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

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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

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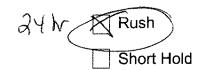
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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Loc: 580 71085 TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com



Chain of **Custody Record**

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X	M			Soil	1 0804
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	580-710	85 Chain of Ci	ustody		TAL-8274-580 (0210) 9/15/2017

Client			Client							***************************************	***************************************						Dat		ר'ו	20	17	Ch	ain of	Custody	Numbe 3	144	. Ո
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Sample I.D. and Location/Description (Containers for each sample may be combined or	n n one line)	Date	Time	Air	Aqueous Sed.	Soil	Unpres.	H2S04	ниоз	HCi	NaOH Zađa/	NaOF POST	N	NWTPH-DX/PRKE	20978	00£28											
EX-DB2-A3-10		9-6-17	1645			X	2					2	X	X	X	X							Em.	ail	esu	ts to	٥
EX-DBZ-A4-10		9-7-17	1125			X	2					2	X	X	Д	X											
EX-D82-A5-10		9-7-17	1100			X_{\perp}	2					2	X	X	X	X,						-		amue	-le	Jaca. Carca	dis con
EX-DB2-A6-10		9-7-17	1050			X	2					2	X	X	X	X_{\perp}								eric.k	rves	e <u>rO</u> cra	edy co
EX-DB2-A7-10		9-7-17	1055			X	2					2	X	X	$\langle \lambda \rangle$	Δ		_				1		scott. 2	zork	Darod	s.com
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DISTRIBUTION: WHITE - Stays with the Sample	s; CANARY	– Returned to Clie	ent with Repo	rt; PIÑ	IK Fie	eld Capy P	age	25 c	of 20	6					58	0-71	085 C	hain	of Cu	stody		H1 H11		Т	AL-82	74-580 (0 9/15/	210) 2017

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

Cleator. Force-webermott, monica	
Question	Answer Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td>	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



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

LINKS

Review your project results through

Total Access

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.

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

TestAmerica Job ID: 580-71120-1

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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 incorect 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 "...5-5-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).

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TestAmerica Job ID: 580-71120-1

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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 (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).

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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 (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-SWDU (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.

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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

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

A la la u a! a 4! a .a	Th				
Abbreviation	i nese commoniy	/ usea appreviations r	nay or ma	y not be	present in this report.

Eisted 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)

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Client Sample Results

Client: ARCADIS U.S. Inc

Date Collected: 09/08/17 10:50

Date Received: 09/08/17 14:25

Project/Site: Chevron Edmonds Terminal

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

TestAmerica Job ID: 580-71120-1

Lab Sample ID: 580-71120-1

Matrix: Solid

Percent Solids: 81.8

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 - Nort	hwest - Volatile	e Petroleui	m Products (GC)					
Analyte		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

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

9/19/2017 (Rev. 2)

Client Sample Results

Client: ARCADIS U.S. Inc

Date Collected: 09/08/17 10:00

Date Received: 09/08/17 14:25

Project/Site: Chevron Edmonds Terminal

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

TestAmerica Job ID: 580-71120-1

Lab Sample ID: 580-71120-2

Matrix: Solid

Percent Solids: 86.6

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 - Northy	vest - Volatile	Petroleur	n 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
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits 50 - 150					Analyzed 09/09/17 16:04	Dil Fac

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 Qual	lifier 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

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Project/Site: Chevron Edmonds Terminal

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		22	9.3	ug/Kg	₩	09/08/17 15:34	09/10/17 00:26	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	95		75 - 120				09/08/17 15:34	09/10/17 00:26	
Trifluorotoluene (Surr)	102		60 - 150				09/08/17 15:34	09/10/17 00:26	
4-Bromofluorobenzene (Surr)	100		47 - 150				09/08/17 15:34	09/10/17 00:26	
Dibromofluoromethane (Surr)	106		80 - 118				09/08/17 15:34	09/10/17 00:26	
1,2-Dichloroethane-d4 (Surr)	119		80 - 121				09/08/17 15:34	09/10/17 00:26	
Method: 8270D SIM - Semi	volatile Organi	c Compou	inds (GC/MS	SIM)					
Analyte		Qualifier	` RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzo[a]anthracene	1.0	JB	5.7	0.87	ug/Kg	₩	09/08/17 15:41	09/09/17 16:32	
Benzo[a]pyrene	0.61	J	5.7	0.46	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	
Benzo[b]fluoranthene	0.93	J	5.7	0.67	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	
Benzo[k]fluoranthene	ND		5.7	0.68	ug/Kg	₩	09/08/17 15:41	09/09/17 16:32	
Chrysene	ND		5.7	1.7	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	
Dibenz(a,h)anthracene	ND		5.7	0.82	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	
Indeno[1,2,3-cd]pyrene	ND		5.7	0.68	ug/Kg	₽	09/08/17 15:41	09/09/17 16:32	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Terphenyl-d14	89		68 - 138				09/08/17 15:41	09/09/17 16:32	
Method: NWTPH-Gx - Nort	hwest - Volatile	e Petroleu	m Products (GC)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline	ND		4.3	2.3	mg/Kg	<u>₩</u>	09/09/17 10:41	09/09/17 16:34	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	92		50 - 150				09/09/17 10:41	09/09/17 16:34	
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 16:34	
Method: NWTPH-Dx - Nortl	hwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
#2 Diesel (C10-C24)	34	J	55	14	mg/Kg	<u></u>	09/11/17 07:53	09/11/17 23:07	
(,									

Surrogate	%Recovery Qua	alifier 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

General Chemistry

Analyte

Percent Solids

Percent Moisture

Project/Site: Chevron Edmonds Terminal

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

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 - Semi	volatile Organi	c Compou	inds (GC/MS	SIM)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.0	JB	5.0		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 - Nort	hwest - Volatile	e Petroleui	m Products (GC)					
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.49	0.26	mg/Kg	<u>∓</u>	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 - Nort				•	•				
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	41	J	42		mg/Kg	<u>.</u> ₽	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

Analyzed

09/09/17 09:41

09/09/17 09:41

Dil Fac

1

RL

0.1

0.1

MDL Unit

0.1 %

0.1 %

D

Prepared

Result Qualifier

87.0

13.0

Project/Site: Chevron Edmonds Terminal

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

Date Collected: 09/07/17 15:45 Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-5

Matrix: Solid Percent Solids: 88.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.8	ug/Kg	<u> </u>	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.2	J B	4.6	0.71	ug/Kg	<u></u>	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
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Method: NWTPH-Gx - North	west - Volatile	Petroleu i	m 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 - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Únit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	20	J	53	13	mg/Kg	<u></u>	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

Benzo[k]fluoranthene

Chrysene

Project/Site: Chevron Edmonds Terminal

Lab Sample ID: 580-71120-6

© 09/08/17 15:41 09/09/17 17:45

© 09/08/17 15:41 09/09/17 17:45

TestAmerica Job ID: 580-71120-1

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

Date Collected: 09/07/17 15:35 Date Received: 09/08/17 14:25

ND

ND

Matrix: Solid

Percent Solids: 85.8

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 - Semi	volatile Organi	c Compou	nds (GC/MS	SIM)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.5	0.83	ug/Kg	<u> </u>	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

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 Qualifi	ier Limits		Prepared	Analyzed	Dil Fac
Terphenyl-d14	87	68 - 138		09/08/17 15:41	09/09/17 17:45	1

5.5

5.5

0.66 ug/Kg

1.6 ug/Kg

Method: NWTPH-Gx - Nort Analyte		Petroleui Qualifier	m Products (GC) MDL	Unit	D	Prepared	Analvzed	Dil Fac
Gasoline	— ND		4.2		mg/Kg	— 		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	
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 18:06	1

Method: NWTPH-Dx - No Analyte		Qualifier	RL	MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	30	J	44	11	mg/Kg	<u></u>	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

Project/Site: Chevron Edmonds Terminal

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

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	
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/08/17 15:34	09/10/17 02:09	1
Method: 8270D SIM - Semi			•	•	Unit	n	Prenared	Analyzed	Dil Fac
: Method: 8270D SIM - Semi	volatile Organi	c Compou	nds (GC/MS	SIM)					
Analyte	Result	Qualifier	RL	MDL	Unit	D ङ	Prepared 09/08/17 15:41	Analyzed	Dil Fac
Analyte Benzo[a]anthracene	Result 0.84	Qualifier	RL 5.2	MDL 0.79	ug/Kg		09/08/17 15:41	09/09/17 18:10	Dil Fac
Analyte Benzo[a]anthracene Benzo[a]pyrene	Result 0.84 ND	Qualifier J B	5.2 5.2	MDL 0.79 0.42	ug/Kg ug/Kg		09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10	Dil Fac 1 1
Analyte Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene	Result 0.84 ND 1.1	Qualifier J B	5.2 5.2 5.2	0.79 0.42 0.61	ug/Kg ug/Kg ug/Kg		09/08/17 15:41 09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10 09/09/17 18:10	Dil Fac 1 1 1
Analyte Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[k]fluoranthene	Result 0.84 ND 1.1 ND	Qualifier J B	5.2 5.2 5.2 5.2 5.2	0.79 0.42 0.61 0.62	ug/Kg ug/Kg ug/Kg ug/Kg		09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10	Dil Fac 1 1 1
Analyte Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[k]fluoranthene Chrysene	Result 0.84 ND 1.1 ND 2.1	Qualifier J B	5.2 5.2 5.2 5.2 5.2 5.2	0.79 0.42 0.61 0.62 1.6	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg		09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10	Dil Fac
Analyte Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[k]fluoranthene Chrysene Dibenz(a,h)anthracene	Result 0.84 ND 1.1 ND	Qualifier J B	5.2 5.2 5.2 5.2 5.2	0.79 0.42 0.61 0.62 1.6 0.75	ug/Kg ug/Kg ug/Kg ug/Kg	# # # # # #	09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10	Dil Fac
	Result 0.84 ND 1.1 ND 2.1 ND	Qualifier J B J	5.2 5.2 5.2 5.2 5.2 5.2 5.2	0.79 0.42 0.61 0.62 1.6 0.75	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	# # # # # #	09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41 09/08/17 15:41	09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10 09/09/17 18:10	Dil Fac 1 1 1 1 1 1 1 Dil Fac

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	<u> </u>	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

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	19	J	55	14	mg/Kg	<u></u>	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

Client Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Lab Sample ID: 580-71120-8

Matrix: Water

Client Sample ID: RB-09082017 Date Collected: 09/08/17 09:00

Date Received: 09/08/17 14:25

Method: NWTPH-Gx - North	west - Volatile	Petroleur	n 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
Surrogate 4-Bromofluorobenzene (Surr)		Qualifier	Limits 58 - 133				Prepared	Analyzed 09/09/17 20:50	Dil Fac

8

9

10

Client Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Lab Sample ID: 580-71120-9

Matrix: Solid

Client Sample ID: TB-09082017
Date Collected: 09/08/17 00:01

Date Received: 09/08/17 14:25

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
Toluene-d8 (Surr)	98		75 - 120				09/08/17 15:34	09/08/17 22:20	1
Trifluorotoluene (Surr)	98		60 - 150				09/08/17 15:34	09/08/17 22:20	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/08/17 15:34	09/08/17 22:20	1
Dibromofluoromethane (Surr)	103		80 - 118				09/08/17 15:34	09/08/17 22:20	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 121				09/08/17 15:34	09/08/17 22:20	1

Method: NWTPH-Gx - Nort	hwest - Volatile	Petroleu	m 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
4-Bromofluorobenzene (Surr)	90		50 - 150				09/09/17 10:41	09/09/17 15:02	1
Trifluorotoluene (Surr)							00/00/17 10:41	09/09/17 15:02	1

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 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 255708 Prep Batch: 255688** MB MB

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 21:03	1
	MB	MB							
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Prep Batch: 255688**

Analysis Batch: 255708

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

	LCS	LCS	
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Dup**

Matrix: Solid

Analysis Batch: 255708 Prep Batch: 255688 Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Limits **Analyte** Unit D %Rec RPD Limit Benzene 800 866 ug/Kg 108 79 - 135 0

	LCSD	LCSD		
Surrogate	%Recovery	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 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 255749 Prep Batch: 255689**

	MB	MR							
Analyte	Result	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

Prep Type: Total/NA

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

, , , , , , , , , , , , , , , , , , , ,	MB	MB							
Analyte	Result	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

MB MB

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

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 580-255689/2-A **Matrix: Solid**

Analysis Batch: 255749

Prep Type: Total/NA **Prep Batch: 255689**

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

LCS LCS

Surrogate %Recovery 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**

, , , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzo[a]anthracene	1.5	JB	1220	1250		ug/Kg	<u></u>	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	

MS MS

Surrogate %Recovery 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** iit 10

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

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

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

Prep Type: Total/NA

Analysis Batch: 255/49						Prep Batt			itcn: 2	icn: 255689	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene	1.2	J	1160	1010		ug/Kg	<u></u>	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

MSD MSD

Surrogate %Recovery 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	Result	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

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150	09/09/17 10:41 09/09/17 13:3	<u> </u>
Trifluorotoluene (Surr)	123		50 - 150	09/09/17 10:41 09/09/17 13:3	0 1

LCS LCS

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

%Rec.

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

LCS LCS

%Recovery Qualifier Surrogate 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**

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

LCSD LCSD

Surrogate	%Recovery Qualific	er Limits
4-Bromofluorobenzene (Surr)	91	50 - 150
Trifluorotoluene (Surr)	122	50 ₋ 150

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

Analyte

Gasoline

Analysis Batch: 255785

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

MB MB Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.25 0.0500 J 0.050 mg/L 09/09/17 19:13

MB MB

%Recovery Surrogate Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 93 58 - 133 09/09/17 19:13 97 Trifluorotoluene (Surr) 77 - 128 09/09/17 19:13

Lab Sample ID: LCS 580-255785/6

Analysis Batch: 255785

Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

LCS LCS Spike %Rec. **Analyte** Added Result Qualifier Limits Unit D %Rec Gasoline 1.00 0.857 86 79 - 110 mg/L

LCS LCS

Surrogate %Recovery Qualifier Limits 58 - 133 4-Bromofluorobenzene (Surr) 99 98 77 - 128 Trifluorotoluene (Surr)

Lab Sample ID: LCSD 580-255785/7 **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 255785

RPD Spike LCSD LCSD %Rec. Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline 1.00 0.836 mg/L 84 79 - 110

LCSD LCSD

%Recovery Surrogate Qualifier I imits 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** MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 50 #2 Diesel (C10-C24) ND 09/11/17 07:53 09/11/17 20:52 12 mg/Kg Motor Oil (>C24-C36) ND 50 09/11/17 07:53 09/11/17 20:52 9.1 mg/Kg

MB MB

Qualifier Limits Prepared Dil Fac Surrogate %Recovery Analyzed 50 - 150 09/11/17 07:53 09/11/17 20:52 o-Terphenyl 94 0.00003 09/11/17 07:53 09/11/17 20:52 n-Decanoic Acid (Surr) 0 - 1

TestAmerica Job ID: 580-71120-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Lab Sample ID: LCS 580-255792/2-B **Matrix: Solid**

Lab Sample ID: LCSD 580-255792/3-B

Analysis Batch: 255880

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

Prep Batch: 255792 %Rec.

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

LCS LCS

%Recovery Qualifier Surrogate Limits o-Terphenyl 91 50 - 150

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 255880

Prep Type: Total/NA

Prep Batch: 255792

LCSD LCSD RPD Spike %Rec. Result Qualifier Unit Limits RPD Limit **Analyte** Added D %Rec #2 Diesel (C10-C24) 500 493 mg/Kg 99 64 - 127 10 16 mg/Kg Motor Oil (>C24-C36) 500 494 99 70 - 125 17 10

LCSD LCSD

Surrogate %Recovery Qualifier Limits o-Terphenyl 96 50 - 150

Lab Sample ID: 580-71120-1 DU Client Sample ID: EX-DB2-A3-5-SW

Matrix: Solid

Analysis Batch: 255880

Prep Type: Total/NA

Prep Batch: 255792

DU DU Sample Sample **RPD** Analyte Result Qualifier Result Qualifier Unit D **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 DU

Surrogate %Recovery Qualifier Limits o-Terphenyl 96 50 - 150 0 - 1 n-Decanoic Acid (Surr) 0.0001

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71120-2 DU Client Sample ID: EX-DB2-A4-5-SW **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 255756

, ,, c.c = = cc. c	•							
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	86.6		92.1		%		 6	20
Percent Moisture	13.4		7.9	F3	%		52	20

2

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A3-5-SW Lab Sample ID: 580-71120-1

Date Collected: 09/08/17 10:50 Eds Sample 15: 000-7 1720-7

Date Received: 09/08/17 14:25

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

Client Sample ID: EX-DB2-A3-5-SW Lab Sample ID: 580-71120-1

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

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71120-2

Date Collected: 09/08/17 10:00

Date Received: 09/08/17 14:25

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

Client Sample ID: EX-DB2-A4-5-SW Lab Sample ID: 580-71120-2

Date Collected: 09/08/17 10:00

Date Received: 09/08/17 14:25

Matrix: Solid

Percent Solids: 86.6

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

Client Sample ID: EX-DB2-A5-5-SW Lab Sample ID: 580-71120-3

Date Collected: 09/08/17 08:30

Date Received: 09/08/17 14:25

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

TestAmerica Seattle

Matrix: Solid

Project/Site: Chevron Edmonds Terminal

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 Percent Solids: 86.1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/07/17 16:10 Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-4 **Matrix: Solid**

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/07/17 16:10 Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-4 **Matrix: Solid** Percent Solids: 87.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/07/17 15:45

Date Received: 09/08/17 14:25

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

TestAmerica Seattle

Lab Sample ID: 580-71120-5

Matrix: Solid

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Date Collected: 09/07/17 15:45 Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-5

Matrix: Solid	
Percent Solids: 88 8	

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Received: 09/08/17 14:25

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			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

Date Received: 09/08/17 14:25

Matrix: Solid Percent Solids: 85.8

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Date Received: 09/08/17 14:25

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

Matrix: Solid

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: DUP01-SO-09082017

Date Collected: 09/08/17 00:01

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-7

Matrix: Solid
Percent Solids: 89.9

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/08/17 09:00

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-8

Matrix: Water

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

Client Sample ID: TB-09082017

Date Collected: 09/08/17 00:01

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-9 Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 TestAmerica Job ID: 580-71120-1

Project/Site: Chevron Edmonds Terminal

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

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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

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TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com

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Short Hold

Chain of Custody Record

Wet/Packs Packing

Custody Seal: 9/19/20

146 (m)

	Client ,		Client	Conta	ect	***************************************												Da		,	,		Cha	ain of Custody Number
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	Project Name and Location (State)	A 98101	Billing (Chic	(ro)	-	Cin	~ "	νη	i Le			(0)	小	2							71120
	Edmands Terminal Edm	onds WA												(025)	(00%d)	(Benzin	SIM (CPAH)							Special Instructions/
	Contract/Purchase Order/Quote No.		•		A.	fatrix				Contail				1	7	8	Σ							Conditions of Receipt
	B0045362.0010			ļ						Preser	-	es	· · · · ·	1	1-1/	Ž								
	Sample I.D. and Location/Description (Containers for each sample may be combined on to	one line) Date	Time	Air	Aqueous	Sed.			H2S04	HC/	NaOH	ZnAc/	2	NWTPH-GX	NWTPH-Dx	82600	/							
7	EX-DB2-A3-5-SW		1050			À		2			-		2	X	X	X	*						[Email lab results to
	EX-DB2-A4-5-5W	9-8-17	1000			X		2					2	\boxtimes	Z	\bigvee_{X}	*							ryan. branchla grand.com
3	EX-DB2-A5-5-5W	9-8-17	0830			X		2			_		2	X	\angle	X	*						_	samuelimiter@ areadisicom
	EX-DB2-A6-5-5W	9-7-17	1610			X		2					2	X	X	\bigvee	*							eric kruye: @ avaidis, con
j	EX-DB2-A7-5-SW	9-7-17	1545					2					2	X	X	\boxtimes	*							scott, zorn@areadis.wm
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Į.	DUPOI-50-09082017	9-8-17				X		2					2	X	X	X	*						l	WBS Codes 8
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																							1	* only row if PRO/RRO
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		Possíble Hazard Identification □ Non-Hazard □ Flami	mahla [] Sk	in teri	itant		Poison	D		lnko	own	Sam	ple E Retur	•			□ Ois □ Arc		-		Month		(A fee may be assessed if samples are retained longer than 1 month)
	Turn Around Time Required (business days)	i Non-nazara 🗀 nami	niapie L			1(1)11	<u> </u>					ts (Spe		101077		01/01			111107	<u> </u>				a c recentled longer than r mortary
	t i	□ 10 Days □ 15 Days	□ Othe	er						,														
	1. Relinquished By Sign/Print Ryan	W Brauchla	Date 9-8-	-17	_	Time	Lj.		1. Rec	ceived	By	Sign/	Print	-/	N	N 6	yce		TF	4				Pate Time 102 pm
	2. Relipquished By Sign/Print	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Date			Time		14	2. Rec		_	Sign/	Print		L			12	/ /		/ <u>*</u>	***********	10	Pate Time 9/8/17 1425
/	a. Relinquished By Sign/Print		9-8-	1/			727	4	3. Rec	T &	BV	Sign/	Prim	\sim	$\overrightarrow{\ }$	5-	·),	10/	94 F	1951	11/2		1	7/8/ (†) (†) (†) (†) (†) (†) (†) (†
2	Signiffini												, , , ,							TP	<u>۸</u> ၁			_ 99 37
	Comments																					Coole Osc		Cor ^{2.9} Unc ^{3.7}
			EU UME 2000																	باياب		~ 32 <u>~</u>	<u> </u>	<u>walad</u>

Client: ARCADIS U.S. Inc

Job Number: 580-71120-1

Login Number: 71120 List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Creator. Diankinship, Toni A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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.

TestAmerica Job ID: 580-71216-1

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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.

TestAmerica Seattle 11/8/2017 (Rev. 1)

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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 (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.

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Definitions/Glossary

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier	Description
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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)

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

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)

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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

1,2-Dichloroethane-d4 (Surr)

Lab Sample ID: 580-71216-1

09/13/17 14:33 09/14/17 10:53

Matrix: Solid Percent Solids: 77.9

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

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		

80 - 121

Method: NWTPH-Dx - No Analyte		olatile Pet Qualifier	roleum Prod RL	ucts (GO MDL	•	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

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

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 - No				•	•	_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		51	13	mg/Kg	<u> </u>	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 Qu	ualifier	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

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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 Percent Solids: 77.0

Method: 8260C - Volatile Or	ganic Compo	unds by G	C/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 - Northy	west - Volatile	e Petroleui	m 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	

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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B6-10

Date Collected: 09/12/17 13:55 Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-4

Matrix. Solid	
Percent Solids: 73.1	

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 - Northw	est - Volatile	e Petroleui	m 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57	14	mg/Kg	<u> </u>	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 ID: EX-DB2-B7-10

Date Collected: 09/12/17 13:45 Date Received: 09/13/17 08:30 Lab Sample ID: 580-71216-5

Matrix: Solid Percent Solids: 80.1

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 - North	west - Volatile	Petroleu i	m 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 - No Analyte		Qualifier	RL	MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg	<u> </u>	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 ID: EX-DB2-B8-10

Date Collected: 09/12/17 13:40 Date Received: 09/13/17 08:30 Lab Sample ID: 580-71216-6

Matrix: Solid Percent Solids: 79.3

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 - No Analyte		olatile Pet Qualifier	roleum Prod RL	ucts (GO	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		49	12	mg/Kg	<u></u>	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

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Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

Lab Sample ID: 580-71216-7

Matrix: Water

Client Sample ID: RB-091217 Date Collected: 09/12/17 15:30

Date Received: 09/13/17 08:30

Method: NWTPH-Gx - North	west - Volatile P	Petroleun	n Products (GC)					
Analyte	Result Q	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 Q	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Surrogate 4-Bromofluorobenzene (Surr)		Qualifier	Limits 58 - 133				Prepared	Analyzed 09/13/17 18:26	Dil Fac

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Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

Client Sample ID: TB-091217

Date Collected: 09/12/17 00:01 Date Received: 09/13/17 08:30 Lab Sample ID: 580-71216-8

Matrix: Solid

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 - Northwe	est - Volatile	e Petroleum	Products (GC)					
Analyte Gasoline		Qualifier	4.0	MDL	Unit mg/Kg	D	Prepared 09/13/17 13:37	Analyzed 09/14/17 12:19	Dil Fac
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery 87	Qualifier	Limits 50 - 150				Prepared 09/13/17 13:37	Analyzed 09/14/17 12:19	Dil Fac

09/13/17 14:33 09/14/17 09:10

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

1,2-Dichloroethane-d4 (Surr)

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

117

Lab Sample ID: MB 580-256089/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256100 Prep Batch: 256089**

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

Lab Sample ID: LCS 580-256089/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 256100 **Prep Batch: 256089** LCS LCS Spike %Rec.

80 - 121

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

	LCS	LCS	
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 256100 **Prep Batch: 256089** Spike LCSD LCSD %Rec. Added Result Qualifier Limits **Analyte** Unit D %Rec

Benzene 800 896 ug/Kg 112 79 - 135 3 LCSD LCSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 101 75 - 120 Trifluorotoluene (Surr) 105 60 - 150 4-Bromofluorobenzene (Surr) 97 47 - 150 Dibromofluoromethane (Surr) 99 80 - 118

80 - 121

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

110

Lab Sample ID: MB 580-256071/6 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analysis Batch: 256071

1,2-Dichloroethane-d4 (Surr)

MB MB Analyte Result Qualifier RL **MDL** Unit D Dil Fac Prepared Analyzed 0.25 09/13/17 15:14 Gasoline $\overline{\mathsf{ND}}$ 0.050 mg/L

TestAmerica Seattle

RPD RPD Limit

TestAmerica Job ID: 580-71216-1

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

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

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

Lab Sample ID: LCS 580-256071/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 256071

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Gasoline 1.00 0.894 mg/L 89 79₋110

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

Lab Sample ID: MB 580-256074/1-A Client Sample ID: Method Blank

Matrix: Solid

Analysis Batch: 256098

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

MB MB

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

Lab Sample ID: LCS 580-256074/2-A

Matrix: Solid

Analysis Batch: 256098

Prep Batch: 256074 LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Gasoline 40.0 40.1 mg/Kg 100 68 - 120

LCS LCS Surrogate %Recovery Qualifier Limits

4-Bromofluorobenzene (Surr) 90 50 - 150

Lab Sample ID: LCSD 580-256074/3-A

Matrix: Solid Prep Type: Total/NA **Analysis Batch: 256098** Prep Batch: 256074 Spike LCSD LCSD %Rec. **RPD Analyte** Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline 40.0 40.9 102 68 - 120 mg/Kg

LCSD LCSD Surrogate %Recovery Qualifier

I imits 50 - 150 4-Bromofluorobenzene (Surr) 92

TestAmerica Seattle

Prep Type: Total/NA

Prep Batch: 256074

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

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

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 50 #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 12 mg/Kg 09/13/17 11:04 09/13/17 18:39 Motor Oil (>C24-C36) ND 50 9.1 mg/Kg 09/13/17 11:04 09/13/17 18:39

MB MB

Qualifier Limits Surrogate %Recovery Prepared Analyzed Dil Fac o-Terphenyl 71 50 - 150 09/13/17 11:04 09/13/17 18:39

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 580-256036/2-B **Matrix: Solid**

Analysis Batch: 256106

Prep Type: Total/NA

Prep Batch: 256036

LCS LCS Spike %Rec. Result Qualifier Limits **Analyte** Added Unit D %Rec #2 Diesel (C10-C24) 500 355 71 64 - 127 mg/Kg mg/Kg Motor Oil (>C24-C36) 500 372 74 70 - 125

LCS LCS

Surrogate %Recovery Qualifier I imits o-Terphenyl 50 - 150 74

Lab Sample ID: LCSD 580-256036/3-B

Matrix: Solid

Motor Oil (>C24-C36)

Analysis Batch: 256106

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 256036

17

LCSD LCSD Spike %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit #2 Diesel (C10-C24) 500 369 mg/Kg 64 - 127 16 500 77 70 - 125

385

mg/Kg

LCSD LCSD

Surrogate %Recovery Qualifier Limits o-Terphenyl 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

DU DU **RPD** Sample Sample Analyte Result Qualifier Result Qualifier Unit D RPD Limit ☼ #2 Diesel (C10-C24) ND ND mg/Kg NC 35 ά Motor Oil (>C24-C36) 19 J 14.7 J mg/Kg 35

DU DU

71 50 - 150 o-Terphenyl

Limits Surrogate %Recovery Qualifier

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71216-2 DU Client Sample ID: EX-DB2-B4-10 Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 256101 Sample Sample DU DU **RPD** Result Qualifier Result Qualifier Analyte Unit D **RPD** Limit % Percent Solids 81.5 80.5 20

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	Client Sample ID: EX-DB2-B4-10
Matrix: Solid	Prep Type: Total/NA
Analysis Ratch: 256101	

Analysis Batch: 256101
Sample Sample DU DU

	Campie	Campic	20	D0				וגו ט
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	18.5		 19.5		%		 5	20

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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

Batch Batch Dilution Batch **Prepared Prep Type** Method Run Factor Number or Analyzed Type Analyst Lab TAL SEA Total/NA Analysis D 2216 256101 09/13/17 16:05 JWL

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71216-2

Date Collected: 09/12/17 14:05 **Matrix: Solid**

Date Received: 09/13/17 08:30

Dilution Batch Batch Batch Prepared Method **Prep Type Factor** Number or Analyzed Type Run Analyst Lab TAL SEA Total/NA Analysis D 2216 256101 09/13/17 16:05 JWL

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71216-3

Date Collected: 09/12/17 14:00 **Matrix: Solid**

Date Received: 09/13/17 08:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	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 Percent Solids: 77.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/12/17 13:55

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B6-10

Date Collected: 09/12/17 13:55

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-4 **Matrix: Solid**

Percent Solids: 73.1

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/12/17 13:45

Date Received: 09/13/17 08:30

Lab	Samp	ole	ID:	580)-7	1	216	-5	
							_		

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/12/17 13:45 Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-5

Matrix: Solid

Percent Solids: 80.1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Client Sample ID: EX-DB2-B7-10

Date Collected: 09/12/17 13:45

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-5

Matrix: Solid

Percent Solids: 80.1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

Date Collected: 09/12/17 13:40

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-6

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			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

Date Received: 09/13/17 08:30

Matrix: Solid Percent Solids: 79.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/12/17 15:30

Date Received: 09/13/17 08:30

ab Sample ID: 580-71216-	7
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Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			256071	09/13/17 18:26	RSB	TAL SEA

Client Sample ID: TB-091217

Date Collected: 09/12/17 00:01

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-8

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Lab Chronicle

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71216-1

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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 TestAmerica Job ID: 580-71216-1

Project/Site: Edmonds Terminal

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

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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

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THE LEADER IN ENVIRONMENTAL TESTING

Loc: 580

TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com

X	Rush
	Short Hold

Chain of **Custody Record**

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Client	** ***	Client Contact	-	. 1				Date	Chain of Custon	tv Number	
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Seattle WA	78101	1 ,	uchla (RB)			00		Analysis (Attach list if more space is needed)			
Project Name and Location (State)		∃ Billing Contact	venja (~»	- Inine	WAI	rer	<u> </u>				
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Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time III	Sed. Soil	Unpres. H2S04 HN03	HC; NaOH	NaOH SeOH	NUTPH-GK NVTPH-DX 8260 C (B)	22700			
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RB-091217	9-12-17 19	530 X			2		X		WBS Ca		HELL TO.
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580-71216 Cha	in of Custody		1 1 1	hab con			eal: YesN	~ + + + + + + + + + + + + + + + + + + +	_ .	analyze if	
Cooler Possible H	azard Identification			ren (0						sample-extra	
☐ Yes ☐ No Cooler Temp: ☐ Non-Ha		ole 🗌 Skin li	ritant 🗀 P	oison B [□ Unkno		le Disposal eturn To Client	☐ Disposal By Lab☐ Archive For Mo	(A fee may be onths are retained l	assessed if samp	oles
Turn Around Time Required (business days)		·····			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(Specify)	non 10 onone		nois are retained i	onger than 1 mont	m)
24 Hours	rs 🗀 15 Days	Other									
1. Belinquished By Sign/Print		Date 9-13-17	0430		ved By	Sign/Print	Francis	cu Lung Ja	Date 9/13/1	7 0830	***************************************
2. Relinquished By Sign/Print		Date	Time			Sign/Print		7		Time	A
3. Relinquished By Sign/Print	<u> </u>	Date	, Time	3. Recei	ved Bv s	ign/Print			Date	Time	-
A.						.0 (1111			DAIG	rine	
Comments											
DISTRIBUTION: WHITE - Stays with the Samples; CANARY	- Returned to Client wi	th Report: PINK -	- Field Copy		. ·						*
		, ,,		ge 24 of 2	25				T	74/8/2019 (P	Řev. 1)

Client: ARCADIS U.S. Inc

Job Number: 580-71216-1

Login Number: 71216 List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Creator. Gail, Brandon A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	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	



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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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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

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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.

TestAmerica Seattle 11/22/2017 (Rev. 1)

Page 3 of 17

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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 (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.

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

Glossary

DLC

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

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)

Decision Level 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)

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A2-10

Date Collected: 09/13/17 12:10

Date Received: 09/14/17 10:30

TestAmerica Job ID: 580-71255-1

Lab Sample ID: 580-71255-1

. Matrix: Solid

Percent Solids: 77.9

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 - Nort	hwest - Volatile	e Petroleu	m Products (GC)					
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.6	mg/Kg	<u></u>	09/14/17 14:36	09/14/17 22:20	

ı	Method: NWTPH-Gx - Northw	rest - Volatile	Petroleur	n Products (0	GC)					
١	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
l	4-Bromofluorobenzene (Surr)	91		50 - 150				09/14/17 14:36	09/14/17 22:20	1

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

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: RB-091317

TestAmerica Job ID: 580-71255-1

Lab Sample ID: 580-71255-2

Date Collected: 09/13/17 15:45 Matrix: Water

Date Received: 09/14/17 10:30

Method: NWTPH-Gx - Nort	hwest - Volatile	e Petroleu	m 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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Lab Sample ID: 580-71255-3

Matrix: Solid

Client Sample ID: TB-091317 Date Collected: 09/13/17 00:01

Date Received: 09/14/17 10:30

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
Toluene-d8 (Surr)	104		75 - 120				09/14/17 15:32	09/14/17 22:29	1
Trifluorotoluene (Surr)	131		60 - 150				09/14/17 15:32	09/14/17 22:29	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/14/17 15:32	09/14/17 22:29	1
Dibromofluoromethane (Surr)	110		80 - 118				09/14/17 15:32	09/14/17 22:29	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/14/17 15:32	09/14/17 22:29	1

Method: NWTPH-Gx - Northw	est - Volatile	e Petroleui	m 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
4-Bromofluorobenzene (Surr)	92		50 - 150				09/14/17 14:36	09/14/17 21:47	1

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TestAmerica Job ID: 580-71255-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Lab Sample ID: MB 580-256189/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA Analysis Batch: 256211 **Prep Batch: 256189** MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND			8.6	ug/Kg		09/14/17 15:32	09/14/17 20:46	1
	MB	MB							
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Prep Batch: 256189**

Analysis Batch: 256211

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 79 - 135 Benzene 800 909 ug/Kg 114

LCS	LCS	
%Recovery	Qualifier	Limits
101		75 - 120
104		60 - 150
100		47 - 150
106		80 - 118
109		80 - 121
	%Recovery 101 104 100 106	104 100 106

Lab Sample ID: LCSD 580-256189/3-A **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 256211 **Prep Batch: 256189** Spike LCSD LCSD %Rec. RPD Added Result Qualifier Limits **Analyte** Unit D %Rec RPD Limit 800 79 ₋ 135 2 Benzene 895 ug/Kg 112

Bonzono			000	000	ug/itg	
	LCSD L	LCSD				
Surrogate	%Recovery (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 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analysis Batch: 256157

MB MB Analyte Result Qualifier RL MDL Unit D Dil Fac **Prepared** Analyzed 0.25 09/14/17 14:49 Gasoline $\overline{\mathsf{ND}}$ 0.050 mg/L

TestAmerica Job ID: 580-71255-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

MB MB

Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Prep Type: Total/NA**

Matrix: Water

Analysis Batch: 256157

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1.00 0.872 Gasoline mg/L 87 79₋110

LCS LCS Surrogate %Recovery Qualifier

Limits 4-Bromofluorobenzene (Surr) 97 58 - 133 Trifluorotoluene (Surr) 97 77 - 128

Lab Sample ID: LCSD 580-256157/8 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Batch: 256157

LCSD LCSD **RPD** Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit Gasoline 1.00 0.856 86 79 - 110 mg/L

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	96	58 - 133
Trifluorotoluene (Surr)	95	77 - 128

Lab Sample ID: MB 580-256181/16-A **Client Sample ID: Method Blank**

Matrix: Solid

Analysis Batch: 256190

Prep Batch: 256181 MB MB Result Qualifier RL **MDL** Unit Dil Fac

Analyte Prepared Analyzed 09/14/17 14:36 09/14/17 20:11 Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 91 50 - 150 09/14/17 14:36 09/14/17 20:11

Lab Sample ID: LCS 580-256181/17-A

Gasoline

Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA **Analysis Batch: 256190 Prep Batch: 256181** LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits

36.8

mg/Kg

40.0

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 96 50 - 150

TestAmerica Seattle

92

68 - 120

Prep Type: Total/NA

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

Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 40.0 95 68 - 120 3 25 Gasoline 38.0 mg/Kg

LCSD LCSD

Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 97

Limits 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

LCS LCS

LCSD LCSD

Prep Type: Total/NA

Prep Batch: 256151

MB MB Analyte Result Qualifier RL **MDL** Unit

Prepared Analyzed Dil Fac 50 09/14/17 10:59 09/15/17 17:59 #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 12 mg/Kg Motor Oil (>C24-C36) ND 50 9.1 mg/Kg 09/14/17 10:59 09/15/17 17:59

MB MB

%Recovery Qualifier Limits Surrogate Prepared Analyzed Dil Fac 50 - 150 o-Terphenyl 72 09/14/17 10:59 09/15/17 17:59

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

%Rec.

Analyte Added Result Qualifier Unit D %Rec Limits #2 Diesel (C10-C24) 500 382 mg/Kg 76 64 - 127 Motor Oil (>C24-C36) 500 410 mg/Kg 82 70 - 125

Spike

Spike

LCS LCS

Surrogate %Recovery Qualifier I imits 50 - 150 o-Terphenyl 79

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 %Rec. **RPD** Limits **RPD**

Added Result Qualifier D %Rec Limit Analyte Unit #2 Diesel (C10-C24) 500 387 64 - 127 16 mg/Kg 77 500 Motor Oil (>C24-C36) mg/Kg 70 - 125 17 419 84 2

LCSD LCSD

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

DU DU **RPD** Sample Sample Analyte Result Qualifier Result 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

QC Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Surrogate %Recovery Qualifier Limits o-Terphenyl 50 - 150 86

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71255-1 DU **Matrix: Solid**

Client Sample ID: EX-DB2-A2-10

Prep Type: Total/NA

Analysis Batch: 256218

	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Percent Solids	77.9		 78.2		%			0.5	20
Percent Moisture	22.1		21.8		%			2	20

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-A2-10

Client Sample ID: EX-DB2-A2-10

Lab Sample ID: 580-71255-1

Matrix: Solid

Date Collected: 09/13/17 12:10 Date Received: 09/14/17 10:30

Date Collected: 09/13/17 12:10

Date Received: 09/14/17 10:30

Batch Batch Dilution Batch Prepared Method Factor Number **Prep Type** Type Run or Analyzed Analyst Lab TAL SEA Total/NA Analysis D 2216 256218 09/14/17 17:23 APR

Lab Sample ID: 580-71255-1

TAL SEA

Matrix: Solid

Percent Solids: 77.9

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71255-2 **Matrix: Water**

Date Collected: 09/13/17 15:45

Analysis

NWTPH-Gx

Date Received: 09/14/17 10:30

Total/NA

Batch Batch Dilution Batch Prepared Method **Factor** Number or Analyzed **Prep Type** Type Run Analyst Lab

Client Sample ID: TB-091317 Lab Sample ID: 580-71255-3 Date Collected: 09/13/17 00:01 **Matrix: Solid**

256157 09/14/17 16:25 RSB

Date Received: 09/14/17 10:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 TestAmerica Job ID: 580-71255-1

Project/Site: Chevron Edmonds Terminal

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

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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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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

Rush

Short Hold

Chain of **Custody Record**

Client .			Client	Contact	t .					······································							Da					T	Chain of	Custody	Number		
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Address	1 000	1	Teleph	one Nur	nber (/	Area Cod	de)/Fax	Numi	ber								La	b Nun						<i>j</i>		1	
1100 Olive Way July	te DUU	<u> </u>	50	9-4	38-	982	8										<u></u>	71)	1	Page _		of		
Seattle	WA 2	p Code 1 S 1 O Î	Sample D	er R	ĺ	la (R)	e) La	b Con	tact I	1./	ш.,	_						s (Atta ace is									
Project Name and Location (State)	1-071	. 0.0.	Billing	Contact	UCH	ادلا	υ <u>ε</u>	lan	n 4_	W.	156,			0	3												
Edmonds Terminal	***************************************			,						*				(395)	202	22								Specia	l Instru	uctions/	
Contract/Purchase Order/Quote No.					Matri	ix			Conta				Ç	ž	وقع	ž							-	Conditi	ons of	Receipt	
B0045362.0010				1 2		 I I	-	1	Prese	rvativ		13: 1	714.	Ħ.	3	5.1											
Sample I.D. and Location/Descrip (Containers for each sample may be combine		Date	Time	Air	Sed.	Soil	Unpres.	H2S04	HN03	HC! NaOH	ZnAc/	Meore	NWTPH-GX	NWTPH-Px (56L)	32	8770D SIM (CPAHS											
EX-DB2-A2-10		9-13-17	1210			X	2					2	X	X	X	X							Ema	il re	زال	Fo:	
RB-091317		9-13-17	1545						-	2_			X										1			Oared	is, com
TR-091317		9-13-17	_			X	2						X		X								1			areadis	
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												oler t/Pa						v)La hod					Y/	1	ſ	cPAHs a	
		_	580-71255	Chain	of Cu	stody					·	6G		, ,		-	_	: Yes	_	No .	y 	+					
Cooler	Panaihla II	azard Identification								1	Q												it JK	,0/I+0 TK	B 15 (etectorbl	
☐ Yes ☐ No Cooler Temp:	□ Non-Ha		mable 🗆		rritant	П	Poisoi	n B		Unkoi	าพก	Samp □ Ri		,			-,	oosal l hive Fo	,)	Mc	onths				d if sample n 1 month,	
Turn Around Time Required (business days)									Require				0.01.11	10 0/			, , , ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				771010	aiciel	anieu ioi	iyer ma	r i invitati	<u></u>
💢 24 Hours 🗆 48 Hours 🗀 5 Days	☐ 10 Daj	ys 🗌 15 Days	□ Othe	Y	~							-															
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Comments						-	l										****		·		····				1	·	

Client: ARCADIS U.S. Inc

Job Number: 580-71255-1

Login Number: 71255 List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Creator. Dialikiliship, Tolli A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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

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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

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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)

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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 (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.

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TestAmerica Seattle 11/22/2017 (Rev. 1)

Definitions/Glossary

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Qualifiers

GC Semi VOA

E4	
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	on 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.
¤	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

ND

Not Detected at the reporting limit (or MDL or EDL if shown)

Practical Quantitation Limit

QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

Not Calculated

RLReporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points RPD

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S. Inc

Analyte

Percent Solids

Percent Moisture

Date Collected: 09/14/17 08:40

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-B2-10

TestAmerica Job ID: 580-71291-1

Lab Sample ID: 580-71291-1

Matrix: Solid	
Percent Solids: 83.5	

Method: 8260C - Volatile O Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		23	9.9	ug/Kg	₩	09/15/17 12:18	09/15/17 15:53	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	104		75 - 120				09/15/17 12:18	09/15/17 15:53	
Trifluorotoluene (Surr)	101		60 - 150				09/15/17 12:18	09/15/17 15:53	
4-Bromofluorobenzene (Surr)	102		47 - 150				09/15/17 12:18	09/15/17 15:53	
Dibromofluoromethane (Surr)	107		80 - 118				09/15/17 12:18	09/15/17 15:53	
1,2-Dichloroethane-d4 (Surr)	110		80 - 121				09/15/17 12:18	09/15/17 15:53	
Analyte		Petroleur Qualifier	m Products (0	MDL	Unit mg/Kg	D 萊	Prepared 09/15/17 11:45	Analyzed 09/15/17 14:50	Dil F
Analyte Gasoline	Result ND	Qualifier	RL 4.6	MDL			09/15/17 11:45	09/15/17 14:50	
Method: NWTPH-Gx - Nort Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	Result	Qualifier	RL `	MDL			•	09/15/17 14:50 Analyzed	Dil Fa
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nort		Qualifier Qualifier	RL 4.6 Limits 50 - 150	MDL 2.4	mg/Kg		09/15/17 11:45 Prepared	09/15/17 14:50 Analyzed	
Analyte Gasoline Surrogate	Result ND %Recovery 84 hwest - Semi-V Result	Qualifier Qualifier Olatile Pet	RL 4.6 Limits 50-150 roleum Produ	MDL 2.4	mg/Kg	<u> </u>	09/15/17 11:45 Prepared 09/15/17 11:45	09/15/17 14:50 Analyzed 09/15/17 14:50	Dil F
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nort Analyte #2 Diesel (C10-C24)	Result ND %Recovery 84 hwest - Semi-V Result 14	Qualifier Qualifier Colatile Pet Qualifier	RL 4.6 Limits 50 - 150 roleum Produ	MDL 2.4 ucts (GC MDL 13	mg/Kg O) Unit	D D	09/15/17 11:45 Prepared 09/15/17 11:45 Prepared 09/15/17 10:35	09/15/17 14:50 Analyzed 09/15/17 14:50 Analyzed	Dil F
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nort Analyte	Result ND %Recovery 84 hwest - Semi-V Result 14	Qualifier Qualifier Colatile Pet Qualifier J F1 J B	RL 4.6 Limits 50 - 150 roleum Produ RL 54	MDL 2.4 ucts (GC MDL 13	mg/Kg Unit mg/Kg		09/15/17 11:45 Prepared 09/15/17 11:45 Prepared 09/15/17 10:35	09/15/17 14:50 Analyzed 09/15/17 14:50 Analyzed 09/18/17 12:28	Dil F

RL

0.1

0.1

MDL Unit

0.1 %

0.1 %

D

Prepared

Analyzed

09/15/17 13:27

09/15/17 13:27

Dil Fac

Result Qualifier

83.5

16.5

Toct	۱mari	C2 S	eattle

Client: ARCADIS U.S. Inc

Analyte

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-C2-10

Date Collected: 09/14/17 11:55

TestAmerica Job ID: 580-71291-1

Lab Sample ID: 580-71291-2

Matrix: Solid	
Parcent Solids: 80 0	

Analyte	rganic Compo Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		24	10	ug/Kg	<u> </u>	09/15/17 12:18	09/15/17 17:10	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	103		75 - 120				09/15/17 12:18	09/15/17 17:10	
Trifluorotoluene (Surr)	98		60 - 150				09/15/17 12:18	09/15/17 17:10	
4-Bromofluorobenzene (Surr)	103		47 - 150				09/15/17 12:18	09/15/17 17:10	
Dibromofluoromethane (Surr)	101		80 - 118				09/15/17 12:18	09/15/17 17:10	
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/15/17 12:18	09/15/17 17:10	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Surrogato	% Pocovory	Qualifier	Limite		mg/Kg		Propared	Analyzod	Dil E
4-Bromofluorobenzene (Surr)	82		50 - 150				09/15/17 11:45	09/15/17 16:22	
					2)				
Analyte	Result	Olatile Pet Qualifier	RL	MDL	Únit	D	Prepared	Analyzed	Dil Fa
Method: NWTPH-Dx - Nort Analyte #2 Diesel (C10-C24)		Qualifier	RL 57	MDL 14	Unit mg/Kg	D	09/15/17 10:35	09/18/17 13:58	Dil Fa
Analyte #2 Diesel (C10-C24)	Result		RL	MDL 14	Únit		•	•	Dil Fa
Analyte	Result ND	Qualifier J B	RL 57	MDL 14	Unit mg/Kg		09/15/17 10:35	09/18/17 13:58	Dil Fa

Percent Solids	80.0	0.1	0.1 %	<u> </u>	09/15/17 13:27	1
Percent Moisture	20.0	0.1	0.1 %		09/15/17 13:27	1

RL

MDL Unit

Prepared

Analyzed

Dil Fac

Result Qualifier

Client: ARCADIS U.S. Inc

Trifluorotoluene (Surr)

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Lab Sample ID: 580-71291-4

09/16/17 18:39

Matrix: Water

Client Sample ID: RB-091417 Date Collected: 09/14/17 10:30

Date Received: 09/15/17 10:25

Method: NWTPH-Gx - Northw	est - Volatile	Petroleur	n 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

77 - 128

114

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Lab Sample ID: 580-71291-6

Matrix: Solid

Client Sample	ID:	TB-091417	(solid)

Date Collected: 09/14/17 00:01 Date Received: 09/15/17 10:25

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 - Northw	est - Volatile	e Petroleui	m Products (0	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		MDL Unit D Prepared Analyzed Dil F 2.0 mg/Kg 09/15/17 11:46 09/15/17 14:20	1			

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 Client Sample ID: Method Blank **Matrix: Solid Prep Type: Total/NA Analysis Batch: 256308 Prep Batch: 256290**

	IVID	IVID							
Analyte	Result	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
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		75 - 120				09/15/17 12:18	09/15/17 14:11	1

Surrogate	%Recovery	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

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 580-256290/2-A **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256308 Prep Batch: 256290**

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

·			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		 •	_	,		
Benzene			800	898	 ug/Kg	-	112	79 - 135	
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	101		75 - 120						

105 60 - 150Trifluorotoluene (Surr) 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 **Client Sample ID: Lab Control Sample Dup Matrix: Solid**

Analysis Batch: 256308

Prep Batch: 256290 LCSD LCSD Spike %Rec. **RPD** Added Result Qualifier Limits **Analyte** Unit D %Rec Benzene 800 866 ug/Kg 108

	LCSD	LCSD		
Surrogate	%Recovery	Qualifier	Limits	
Toluene-d8 (Surr)	101		75 - 120	
Trifluorotoluene (Surr)	96		60 - 150	
4-Bromofluorobenzene (Surr)	98		47 - 150	
Dibromofluoromethane (Surr)	101		80 - 118	

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Lab Sample ID: 580-71291-1 MS Client Sample ID: EX-DB2-B2-10 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 256308

1,2-Dichloroethane-d4 (Surr)

Prep Batch: 256290 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits

Benzene ND 537 637 ug/Kg 119 79 - 135 MS MS

80 - 121

Surrogate %Recovery Qualifier Limits 75 - 120 Toluene-d8 (Surr) 101 60 - 150 Trifluorotoluene (Surr) 99

TestAmerica Seattle

11/22/2017 (Rev. 1)

Prep Type: Total/NA

RPD Limit

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: ARCADIS U.S. Inc

Client Sample ID: EX-DB2-B2-10

Client Sample ID: EX-DB2-B2-10

Client Sample ID: Method Blank

Client Sample ID: EX-DB2-B2-10

Prep Type: Total/NA

Prep Batch: 256282

Prep Batch: 256290

Prep Type: Total/NA

MS MS Surrogate %Recovery 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

Prep Type: Total/NA **Prep Batch: 256290** Sample Sample Spike MSD MSD %Rec.

RPD Result Qualifier Added Limits RPD **Analyte** Result Qualifier Unit D %Rec Limit ☼ Benzene ND 537 641 ug/Kg 119 79 - 135 10

MSD MSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 102 75 - 120 Trifluorotoluene (Surr) 99 60 - 150 101 47 - 150 4-Bromofluorobenzene (Surr) 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

MB MB

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Gasoline 4.0 09/15/17 11:45 09/15/17 13:19 \overline{ND} 2.1 mg/Kg

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 09/15/17 11:45 09/15/17 13:19 4-Bromofluorobenzene (Surr) 82 50 - 150

Lab Sample ID: LCS 580-256282/2-A

Analysis Batch: 256288

Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA **Prep Batch: 256282**

LCS LCS Spike %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits Gasoline 40.0 40.0 mg/Kg 100 68 - 120

LCS LCS

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 50 - 150 90

Lab Sample ID: 580-71291-1 MS

Matrix: Solid

Prep Type: Total/NA Analysis Batch: 256288 **Prep Batch: 256282** MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Gasoline ND 46.2 42.9 mg/Kg ₩ 93 50 - 150

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

Lab Sample ID: 580-71291-1 MSD

Matrix: Solid

Matrix: Solid

Analysis Batch: 256288

Analysis Batch: 256288

Client Sample ID: EX-DB2-B2-10 Prep Type: Total/NA

Prep Batch: 256282

MS MS

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 50 - 150 89

Client Sample ID: EX-DB2-B2-10

Prep Type: Total/NA

Prep Batch: 256282 %Rec.

Sample Sample Spike MSD MSD **RPD** Result Qualifier Added Limits RPD **Analyte** Result Qualifier Unit D %Rec Limit ₩ Gasoline ND 46.2 44.2 mg/Kg 96 50 - 150 3 35

MSD MSD

Surrogate %Recovery 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

MB MB

Analyte	Result	Qualifier	RL	MDL Un	nit D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12 mg	ng/Kg	09/15/17 10:35	09/18/17 11:21	1
Motor Oil (>C24-C36)	9.72	J	50	9.1 mg	ng/Kg	09/15/17 10:35	09/18/17 11:21	1

MB MB

%Recovery Qualifier Surrogate Limits Prepared Dil Fac Analyzed 09/15/17 10:35 09/18/17 11:21 o-Terphenyl 82 50 - 150

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

Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits #2 Diesel (C10-C24) 500 405 mg/Kg 81 64 - 127 Motor Oil (>C24-C36) 500 428 86 70 - 125 mg/Kg

LCS LCS

Surrogate **%Recovery Qualifier** Limits 50 - 150 o-Terphenyl

Lab Sample ID: LCSD 580-256277/3-B

Matrix: Solid

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA **Prep Batch: 256277**

Analysis Batch: 256424 Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Unit D %Rec Limits RPD Limit **Analyte** #2 Diesel (C10-C24) 500 416 mg/Kg 83 64 - 127 3 16 500 Motor Oil (>C24-C36) 442 mg/Kg 88 70 - 1253 17

LCSD LCSD

Surrogate %Recovery Qualifier Limits o-Terphenyl 80 50 - 150

TestAmerica Job ID: 580-71291-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Lab Sample ID: 580-71291-1 MS Client Sample ID: EX-DB2-B2-10 **Matrix: Solid Prep Type: Total/NA** Analysis Batch: 256424 **Prep Batch: 256277**

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
#2 Diesel (C10-C24)	14	J F1	474	352		mg/Kg	<u> </u>	71	70 - 125	
Motor Oil (>C24-C36)	22	JB	474	378		mg/Kg	₩	75	64 - 127	
		MS								
Surrogato	%Recovery	Oualifier	l imite							

%Recovery o-Terphenyl 69 50 - 150

Lab Sample ID: 580-71291-1 MSD Client Sample ID: EX-DB2-B2-10 Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 256424 **Prep Batch: 256277** MSD MSD RPD Sample Sample Spike %Rec. Result Qualifier Unit Result Qualifier Limits RPD **Analyte** Added D %Rec

Limit 77 #2 Diesel (C10-C24) 14 JF1 520 372 F1 mg/Kg 69 70 - 125 16 Motor Oil (>C24-C36) 22 JB 520 399 mg/Kg 73 64 - 127 6 17

MSD MSD Surrogate %Recovery Qualifier Limits o-Terphenyl 70 50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71291-2 DU Client Sample ID: EX-DB2-C2-10 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 256325

DU DU Sample Sample Analyte Result Qualifier Result Qualifier **RPD** Limit Percent Solids 80.0 83.2 % 4 20 20.0 16.8 Percent Moisture % 17 20

TestAmerica Seattle

11/22/2017 (Rev. 1)

RPD

TestAmerica Job ID: 580-71291-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Batch Dilution Batch Batch **Prepared** Method Factor Number or Analyzed **Prep Type** Type Run Analyst Lab TAL SEA Total/NA Analysis D 2216 256325 09/15/17 13:27 APR

Client Sample ID: EX-DB2-B2-10 Lab Sample ID: 580-71291-1

Date Collected: 09/14/17 08:40 Date Received: 09/15/17 10:25

Matrix: Solid Percent Solids: 83.5

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71291-2

Date Collected: 09/14/17 11:55

Date Received: 09/15/17 10:25

Batch Batch Dilution Batch Prepared Method **Factor** Number or Analyzed **Prep Type** Type Run Analyst Lab Total/NA Analysis D 2216 256325 09/15/17 13:27 APR TAL SEA

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71291-4

Date Collected: 09/14/17 10:30 Date Received: 09/15/17 10:25

Dilution Batch **Batch** Batch **Prepared** Prep Type Type Method Run **Factor** Number or Analyzed Analyst Lab Total/NA Analysis NWTPH-Gx 256386 09/16/17 18:39 JCV TAL SEA

TestAmerica Seattle

Matrix: Water

Lab Chronicle

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Lab Sample ID: 580-71291-6

Matrix: Solid

Client Sample ID: TB-091417 (solid)
Date Collected: 09/14/17 00:01

Date Received: 09/15/17 10:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71291-1

Project/Site: Chevron Edmonds Terminal

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

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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

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* Analyze	sample	IF
DRO/HA		

WRS Codes:

Chain of

Custody Record

Chain of Custody Number

29436

Special Instructions/ Conditions of Receipt

nott zorn@arcidic com eric loveger Carado.com

NWENV PM 6001430803- W

NWENVPM 6001430804-501

Email results to

Short Hold

*

9-14-17

7129

Lab Number

Analysis (Attach list if more space is needed)

Cooler	Possible Hazard Id	lentification			Sample Disposal	Disposal By Lab	(A fee	may be assessed if sample
☐ Yes ☐ No Cooler Temp:	☐ Non-Hazard	☐ Flammable	Skin Irritant	☐ Poison B	☐ Unknown ☐ Return To Client	Archive For Mon		tained longer than 1 monti
turn Around Time Required (business days)				₁ QC	Requirements (Specify)			
24 Hours 🗆 5 Days	☐ 10 Days ☐	☐ 15 Days ☐	Other					
(D=0			Tions		Described During to		77 - 1 -	Tima

Lyn W Bll / Ryan Branchla	9-15-17 0900	of They nois () Lynn,)r	15/17	OACC
Relinquished By Sign/Print	Date Time	2. Received By Sign/Print /	Date	Time ZK/ 2
1 run LISCO Lungivi	713/1/ 1040	Tion Clark) / Blankinship	7/15/14	7040
3. Relinquished By Sign/Print	, Date , Time	3. Received By Sign/Print	Date /	Time

DISTRIBUTION: WHITE - Stays with the Samples; CA Wet/Packs Packing

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Project Name and Location (State) Edmonds Terminal
Contract/Purchase Order/Quote No.

WOO4536Z.0010

EX-D87-A2-5-SW

EX-DBZ-B2-10-MS

EX-DBZ-BZ-10-MSD

OUTFALL#002-091417

TB-091417

(water)

EX-DB2-B2-10

EX-DB2-C2-10

RB-091417

TB-091417

Comments

1100 Olive Way, Svite 800

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)

State Zip Code

98101

Date

9-14-17

9-14-17

9-14-17

9-14-17 0840

9-14-17 1155

9-14-17 1630

9-14-17 1030

In La Cons

Cooler Dsc La Blue

Custody Seal: Yes No x

@Lab

TB Cooler Cor O. Unc O. ?

TestAmerica Seattle 5755 8th Street E.

Tacoma, WA 98424

Tel. 253-922-2310

Fax 253-922-5047

Client Contact

Sampler

0840

0840

www.testamericainc.com

509-438-9828

Ryan Brauchle (RB)
Billing Contact

Matrix

Sed.

Ryan Brauchla
Telephone Number (Area Code)/Fax Number

Lab Contact

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Elaine Walker

Containers &

Preservatives

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Page 18 of 19



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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.</td <td>True</td> <td></td>	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	
s 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	



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

Kristine D. allen

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

····· Links ·····

Review your project results through

Total Access

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.

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

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Case Narrative

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

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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.

TestAmerica Seattle 9/19/2017

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-SWDU (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.

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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

Qualitier	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

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	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)

Toxicity Equivalent Quotient (Dioxin)

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Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

3

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

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 - North	west - Volatile	Petroleui	m 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

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: ARCADIS U.S. Inc

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	16	ug/Kg	<u> </u>	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

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 - Norti	hwest - Volatile	Petroleu i	m 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 - No Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1500		68	17	mg/Kg	<u> </u>	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

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

Date Collected: 09/15/17 14:30

Date Received: 09/16/17 11:05

Client Sample ID: EX-DB2-B1-8-SW

TestAmerica Job ID: 580-71327-1

Lab Sample ID: 580-71327-3

Matrix: Solid

Percent Solids: 78.7

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	

Method: NWTPH-Dx - No Analyte		Qualifier	RL	MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	<u> </u>	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 Qualifie	er 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

9/19/2017

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

Lab Sample ID: 580-71327-4 Client Sample ID: RB-091517 Date Collected: 09/15/17 11:25

Matrix: Water

Date Received: 09/16/17 11:05

Method: NWTPH-Gx - North	nwest - Volatile F	Petroleum	Products (GC)					
Analyte	Result Q	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND ND		0.25	0.050	mg/L			09/17/17 17:09	1
Surrogate	%Recovery Q	Dualifior	Limits				Prepared	Analvzed	Dil Fac
our oguto	with the second of the second	Ruanner	Liiiii				riepaieu	Allalyzeu	DII Fac
4-Bromofluorobenzene (Surr)	89	<u> </u>	58 - 133				Frepareu	09/17/17 17:09	1 Tac

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

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

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 - Nort	hwest - Volatile	Petroleu i	m 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

Client: ARCADIS U.S. Inc

TestAmerica Job ID: 580-71327-1

Project/Site: Edmonds Terminal

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

Lab Sample ID: MB 580-256448/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256476 Prep Batch: 256448** MD MD

Dil Fac
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Dil Fac
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37 37 37 37

Lab Sample ID: LCS 580-256448/2-A

Matrix: Solid

Analysis Batch: 256476

Prep Type: Total/NA **Prep Batch: 256448** LCS LCS Spike %Rec.

	Opino	L00 L00			/01 100 .	
Analyte	Added	Result Qualifier	Unit D	%Rec	Limits	
Benzene	800	920	ug/Kg	115	79 - 135	

	LCS	LCS	
Surrogate	%Recovery	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

Client Sample ID: Lab Control Sample

Prep Batch: 256448 %Rac

	Opine	LOOD	LOOD				/ortec.		IXI D
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	925		ug/Kg	_	116	79 - 135	1	10

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	LCSD	LCSD	
Surrogate	%Recovery	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 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256451 Prep Batch: 256380**

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Benzo[a]anthracene $\overline{\mathsf{ND}}$ 5.0 0.76 ug/Kg 09/16/17 12:06 09/18/17 13:09 Benzo[a]pyrene ND 5.0 0.40 ug/Kg 09/16/17 12:06 09/18/17 13:09 Benzo[b]fluoranthene ND 5.0 09/16/17 12:06 09/18/17 13:09 0.59 ug/Kg

TestAmerica Seattle

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

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

	MB	MR							
Analyte	Result	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

MB MB

%Recovery Qualifier Limits Surrogate Prepared Analyzed Dil Fac 68 - 138 09/16/17 12:06 09/18/17 13:09 Terphenyl-d14 96

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 580-256380/2-A **Matrix: Solid**

Analysis Batch: 256451

Prep Type: Total/NA **Prep Batch: 256380**

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

LCS LCS

Surrogate %Recovery 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

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzo[a]anthracene	160		1420	1420		ug/Kg	<u> </u>	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	

MS MS

Surrogate %Recovery Qualifier Limits Terphenyl-d14 73 68 - 138

Lab Sample ID: 580-71327-2 MSD

Matrix: Solid

Client Sample ID: EX-DB2-A2-5-SW Prep Type: Total/NA

Analysis Batch: 256451									Prep Ba	itcn: 2	3638U
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

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Client Sample ID: EX-DB2-A2-5-SW

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

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

Lab Sample ID: 580-71327-2 MSD

Matrix: Solid Analysis Batch: 256451								·	Prep Typ Prep Ba		
•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene	18	J	1410	1140		ug/Kg	<u></u>	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
	MSD	MSD									

RL

4.0

Spike

Added

50 - 150

50 - 150

Spike

Added

40.0

MDL Unit

LCS LCS

LCSD LCSD

39.8

Result Qualifier

39.7

Result Qualifier

Unit

Unit

mg/Kg

mg/Kg

2.1 mg/Kg

D

Surrogate %Recovery 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

	MB	MB
Re	sult	Qualifier

80

118

An Gasoline

nalyte	Result	Qua
noolino	ND	

	MB	MB	
Surrogate	%Recovery	Qualifier	

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		50 - 150
Trifluorotoluene (Surr)	121		50 - 150

Lab Sample ID: LCS 580-256403/2-A

Matrix: Solid

Analyte

Analysis Batch: 256406

THUI	313	Dateii.	200400	

Gasoline		40.0
	LCS LCS	
Surrogate	%Recovery Qualifier	Limits

ourrogute	
4-Bromofluorobenzene (Surr)	
Trifluorotoluene (Surr)	

Lab Sample ID: LCSD 580-256403/3-A

Matriv: Solid

Analyte

Gasoline

Matrix. Juliu	
Analysis Batch: 256406	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	82		50 - 150
Trifluorotoluene (Surr)	118		50 ₋ 150

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 256403**

Prepared	Analyzed	Dil Fac
09/17/17 08:04	09/17/17 13:28	1

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	

Client Sample ID: Lab Control Sample

Prep Type: Total/NA **Prep Batch: 256403**

%Rec.

Limits

68 - 120

Client Sample ID: Lab Control Sample Dup

D %Rec

99

Prep Type: Total/NA **Prep Batch: 256403** %Rec. **RPD**

D %Rec Limits RPD Limit 100

68 - 120 0 25

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

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

Lab Sample ID: MB 580-256407/6 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 256407

MB MB

Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.25 Gasoline $\overline{\mathsf{ND}}$ 0.050 mg/L 09/17/17 14:29

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 88 58 - 133 09/17/17 14:29 Trifluorotoluene (Surr) 93 77 - 128 09/17/17 14:29

Lab Sample ID: LCS 580-256407/7

Matrix: Water

Analysis Batch: 256407

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

09/16/17 12:05 09/18/17 21:29

09/16/17 12:05 09/18/17 21:29

Prep Type: Total/NA

Prep Type: Total/NA

LCS LCS Spike %Rec. **Analyte** Added Result Qualifier Limits Unit D %Rec Gasoline 1.00 0.864 86 79 - 110 mg/L

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 58 - 133 95 92 77 - 128 Trifluorotoluene (Surr)

Lab Sample ID: LCSD 580-256407/8

Matrix: Water

Analysis Batch: 256407

RPD Spike LCSD LCSD %Rec. Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline 1.00 0.882 mg/L 88 79 - 110

LCSD LCSD

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

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

ND

ND

Lab Sample ID: MB 580-256379/1-B **Client Sample ID: Method Blank**

Matrix: Solid

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Prep Type: Total/NA **Analysis Batch: 256507 Prep Batch: 256379** MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac

50

50

12 mg/Kg

9.1 mg/Kg

MB MB

Qualifier Limits Prepared Dil Fac Surrogate %Recovery Analyzed o-Terphenyl 50 - 150 09/16/17 12:05 09/18/17 21:29 78 n-Decanoic Acid (Surr) 0.0001 09/16/17 12:05 09/18/17 21:29 0 - 1

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

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

Lab Sample ID: LCS 580- Matrix: Solid Analysis Batch: 256507	256379/2-B					Clier	nt Sa	mple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 256379
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	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
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	72		50 - 150						
n-Decanoic Acid (Surr)	0.07		0 - 1						

Lab Sample ID: LCSD 580-256379/3-B Client Sample ID									Sampie	e Dup
	Matrix: Solid							Prep Typ	e: Tot	al/NA
	Analysis Batch: 256507							Prep Ba	itch: 2	56379
	-	Spike	LCSD	LCSD				%Rec.		RPD
	Analyte	Added	Result	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

	LCSD LCSD	
Surrogate	%Recovery Qualifier	Limits
o-Terphenyl	67	50 - 150
n-Decanoic Acid (Surr)	0.05	0 - 1

Lab Sample ID: 580-7132 Matrix: Solid Analysis Batch: 256507	7-3 DU					(Client Sam	mple ID: EX-DB2-B1-8-SW Prep Type: Total/NA Prep Batch: 256379		
	Sample	Sample		DU	DU				RPD	
Analyte	Result	Qualifier		Result	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	
	DU	DU								
Surrogate	%Recovery	Qualifier	Limits							
o-Terphenyl	74		50 - 150							
n-Decanoic Acid (Surr)	0.00003		0 - 1							

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71327 Matrix: Solid Analysis Batch: 256381	-3 DU					Client Samp	ole ID: EX-DB2-B1 Prep Type: To	
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	78.7		79.4		%			20
Percent Moisture	21.3		20.6		%		4	20

Client Sample ID: E	X-DB2-B1-8-SW

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

Lab Sample ID: 580-71327-1

Matrix: Solid

Matrix: Solid

Client Sample ID: EX-DB2-A1-8-SW

Date Collected: 09/15/17 11:50 Date Received: 09/16/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256381	09/16/17 12:16	APR	TAL SEA

Lab Sample 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

Matrix: Solid Percent Solids: 76.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71327-2

Date Collected: 09/15/17 10:35 Date Received: 09/16/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			256381	09/16/17 12:16	APR	TAL SEA

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Lab Sample ID: 580-71327-3 Client Sample ID: EX-DB2-B1-8-SW

Date Collected: 09/15/17 14:30 Date Received: 09/16/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256381	09/16/17 12:16	APR	TAL SEA

TestAmerica Seattle

Matrix: Solid

Page 16 of 21

9/19/2017

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

Date Collected: 09/15/17 14:30 Date Received: 09/16/17 11:05

Client Sample ID: EX-DB2-B1-8-SW

Lab Sample ID: 580-71327-3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71327-4

Date Collected: 09/15/17 11:25 **Matrix: Water** Date Received: 09/16/17 11:05

Batch Batch Dilution Batch Prepared or Analyzed Analyst Method Factor Number Lab **Prep Type** Type Run NWTPH-Gx 256407 09/17/17 17:09 RSB Total/NA Analysis TAL SEA

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

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 TestAmerica Job ID: 580-71327-1

Project/Site: Edmonds Terminal

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	

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Sample Summary

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71327-1

	011 / 0 L ID	••	.	
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

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THE LEADER IN ENVIRONMENTAL TESTING

Loc: 580 71327

TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com

X	Rush

Short Hold

Chain of Custody Record

Arcadis		lient Contact	de.			Date 9-15-2017	Chain of Custody Number
Address		Ryun Browch Dephone Number (Area				Lab Number	j j
1100 Olive Way, Svite 800	o Code Sa	509) 438-98 Impler	Lab Contact		Aı	253-922-2310 nalysis (Attach list if	Page of
Seattle WA	16101 R	van Rrauchle CRE	3) Elaine h	1. Les		ore space is needed)	
Project Name and Location (State) Edmonds Terming, Edmonds	Bit	lling Contact			-Gx -Dx (SGC) (Benzenc) SIM(PRH)		Special Instructions/
Contract/Purchase Order/Quote No.	s, w/1		Contai	ners &	TM (Be		Conditions of Receipt
AGO 80()		Matrix ∞		vatives	の天形は		
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date Time	S S & E	Unpres. H2S04 HN03	NaOH ZnAc/ NaOH McOH	NWTPH-Gx NWTFH-Dx 8260C (B 8270D SIM		
EX-DBZ-AI-8-SW	9-15-17 115	\circ χ	2	2	XXXX*		Email to
EX-DB2-A2-5-SW	9-15-17 103	5 X	2	2	XXX*		Nan. branche agadisicon
EX-DB2-B1-8-SW	9-15-17 143	0 X	2	2	XX XX		samuel miles@ areads, com
RB-091517	9-15-17 1125	5 X :		2	χ		scott. zorne nadis win
TB-091517	9-15-17 -			l	XX		eric. Liveger Chradis wim
3							ophelie encelle@arods.com
							w8's Codes:
							NWENIVPM 6 001430804-5;
				- TRAZ	Cooler	Cor 0.8 Unc 0.0	
				_ Cooler	Dschra Bh	Je @Lab	* Analyze For cPAHs
	580-	71327 Chain of Cust			acks Packin	g 13. Vbe	if PRO/ HO are
				F-ed	P.O Custou	ly Seal: 1es Z .10	Vetected
-	lazard Identification		C notice a		•	Disposal By Lab	(A fee may be assessed if samples
☐ Yes ☐ No Cooler Temp: ☐ Non-Ha Turn Around Time Required (business days)	azard 🗆 Flammable	Skin Irritant		Unknown 🔲 R. ments (Specify)	eturn 10 Cilent L	Archive For Month	s are retained longer than 1 month)
■ 24 Hours □ 48 Hours □ 5 Days □ 10 Da	ys 🗆 15 Days 🗀	Other		(*******************************			
1. Relinquished By Sign/Print / Ryan Brauchla	Dat 9		1. Received	By Sign/Print			Date Time 9-15-17 1600
2. Helinquished By Sign/Prini	Dat			By Sign/Print	Stall /	Brandon A. Uell	Date Time 9/16/17 110 5
3. Relinquished By Sign/Print	Dat	te Time	3. Received	By Sign/Print		<u> </u>	Date Time
Comments							

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

Creator: Gall, Brandon A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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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

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.

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71376-1 Project/Site: Edmonds Terminal

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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.

TestAmerica Seattle 11/22/2017 (Rev. 1)

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.

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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**

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**

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**

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

Percent Recovery %R **CFL** Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dilution Factor Dil Fac

DΙ Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) MDC

Method Detection Limit MDL ML Minimum Level (Dioxin)

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

PQL Practical Quantitation Limit

QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71376-1

9

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

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 - Northy	vest - Volatile	e Petroleur	n 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 - No Analyte	orthwest - Semi-Volatile Per Result Qualifier	troleum Prod RL	ucts (GO	•	n	Prepared	Analvzed	Dil Fac
#2 Diesel (C10-C24)	ND ND	60		mg/Kg	— =			
, ,				0 0				ļ
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 Qu	alifier	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71376-1

2

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 Soli	ds: 74.3	
ared	Analyzed	Dil Fac	5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	<u> </u>	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 - Northy	vest - Volatile	Petroleui	m 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

Analyte		Qualifier	roleum Prod RL	MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		65	16	mg/Kg	<u> </u>	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71376-1

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 Percent Solids: 75.8
Percent Solius. 75.6

Prepared

Analyzed

09/19/17 12:06 09/19/17 22:43

Dil Fac

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) Method: NWTPH-Gx - Nort Analyte			80 - 121 m Products (GC)	Unit	D	09/19/17 14:50 Prepared		1 Dil Fac
Method: NWTPH-Gx - Nort Analyte Gasoline	hwest - Volatile Result ND	Qualifier	m Products (6	MDL	Unit mg/Kg	— D	Prepared 09/19/17 12:34	Analyzed 09/20/17 07:15	Dil Fac
Method: NWTPH-Gx - Nort Analyte Gasoline Surrogate	hwest - Volatile Result ND %Recovery	Qualifier	m Products (4	MDL			Prepared 09/19/17 12:34 Prepared	Analyzed 09/20/17 07:15 Analyzed	1
Method: NWTPH-Gx - Nort Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nort	hwest - Volatile Result ND %Recovery 92 hwest - Semi-V	Qualifier Qualifier Olatile Pet	m Products (0 RL 5.6 Limits 50 - 150 roleum Products	MDL 2.9 ucts (G0	mg/Kg	<u>~</u>	Prepared 09/19/17 12:34 Prepared 09/19/17 12:34	Analyzed 09/20/17 07:15 Analyzed 09/20/17 07:15	Dil Fa
Method: NWTPH-Gx - Nort Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	hwest - Volatile Result ND %Recovery 92 hwest - Semi-V	Qualifier Qualifier	m Products (0 RL 5.6 Limits 50 - 150	2.9	mg/Kg		Prepared 09/19/17 12:34 Prepared	Analyzed 09/20/17 07:15 Analyzed	Dil Fac

- Conoral	Chomietry
General	Chemistry

Surrogate

o-Terphenyl

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

Limits

50 - 150

%Recovery Qualifier

73

09/19/17 12:04 09/19/17 22:04

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

Terphenyl-d14

Client Sample ID: EX-DB2-E0-1 Lab Sample ID: 580-71376-4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	12	ug/Kg	<u> </u>	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

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

68 - 138

Method: NWTPH-Gx - Northw	vest - Volatile	Petroleu i	m 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	

Method: NWTPH-Dx - No	rthwest - Semi-Volatil	e Petroleum Prod	lucts (G0	C)				
Analyte	Result Qualit	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	640	62	15	mg/Kg	<u></u>	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 Quality	fier 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

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71376-1

Lab Sample ID: 580-71376-5

Matrix: Water

Client Sample ID: RB-091817 Date Collected: 09/18/17 10:20

Date Received: 09/19/17 11:15

Analyte		Qualifier	m Products (RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND 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: 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

Analyte	Result C	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 G	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

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

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

Dibromofluoromethane (Surr)

1,2-Dichloroethane-d4 (Surr)

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

Lab Sample ID: MB 580-256615/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Total/NA** Analysis Batch: 256645 **Prep Batch: 256615** MB MB

Analyte Benzene	Result ND	Qualifier	RL 20	 Unit ug/Kg	D	Prepared 09/19/17 14:50	Analyzed 09/19/17 20:36	Dil Fac
	MB	МВ						
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 256645 **Prep Batch: 256615** LCS LCS Spike %Rec.

Analyte Benzene	Added 800	Result 937	Qualifier	Unit ug/Kg	D	%Rec 117	Limits 79 - 135	
LCS LCS	3							

Surrogate	%Recovery	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	
<u> </u>				

Lab Sample ID: LCSD 580-256615/3-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 256645 **Prep Batch: 256615** Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit Limits RPD Limit D %Rec

Benzene		800	909	ug/Kg	114	79 - 135	3	10
	LCSD LCSD							
Surrogate	%Recovery Qualifier	Limits						
Toluene-d8 (Surr)	102	75 - 120						
Trifluorotoluene (Surr)	105	60 - 150						
4-Bromofluorobenzene (Surr)	96	47 - 150						

80 - 118

80 - 121

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

103

109

Lab Sample ID: MB 580-256580/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256654 Prep Batch: 256580**

	MB MB							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND 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

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
Davis Datala 050500

Prep Batch: 256580

	MR MR							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND 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

MB MB

%Recovery Qualifier Limits Surrogate Prepared Analyzed Dil Fac 68 - 138 09/19/17 12:04 09/19/17 17:15 Terphenyl-d14 83

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**

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

LCS LCS

Surrogate %Recovery Qualifier Limits Terphenyl-d14

68 - 138

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

MB MB

MB MB

Lab Sample ID: MB 580-256576/6

Matrix: Water

Analysis Batch: 256576

Client	Sample	ID: I	Meth	od B	lank
	Pre	p T	ype:	Total	/NA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/19/17 11:21	1

Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 90 58 - 133 Trifluorotoluene (Surr) 104 77 - 128

Prepared Analyzed Dil Fac 09/19/17 11:21 09/19/17 11:21

Lab Sample ID: LCS 580-256576/7

Matrix: Water

Analysis Batch: 256576

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

_	Spike	LCS	LCS			%Rec.
Analyte	Added	Result	Qualifier	Unit E	%Rec	Limits
Gasoline	1.00	0.847		ma/l	85	79 110

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	95	58 - 133
Trifluorotoluene (Surr)	93	77 - 128

Client Sample ID: Method Blank

09/19/17 12:34 09/20/17 04:35

09/19/17 12:34 09/20/17 04:35

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256586

Prep Type: Total/NA

Prep Batch: 256586

Analyzed

Analyzed

Lab Sample ID: LCSD 580-256576/8

Matrix: Water

Analysis Batch: 256576

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

Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline 1.00 85 79 - 110 10 0.848 mg/L n

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 95 58 - 133 Trifluorotoluene (Surr) 92 77 - 128

Lab Sample ID: MB 580-256586/1-A

Lab Sample ID: LCS 580-256586/2-A

Matrix: Solid

Analysis Batch: 256602

MB MB

Result Qualifier **Analyte**

Gasoline $\overline{\sf ND}$

MR MR Surrogate %Recovery

4-Bromofluorobenzene (Surr)

Analysis Batch: 256602

91

Qualifier Limits

50 - 150

Spike

Added

40.0

RL

4.0

LCS LCS Result Qualifier

35.3

MDL Unit

2.1 mg/Kg

Unit mg/Kg

Prepared

Prepared

%Rec 88

Client Sample ID: Lab Control Sample Dup

Limits 68 - 120

%Rec.

LCS LCS

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

Lab Sample ID: LCSD 580-256586/3-A

Matrix: Solid

Gasoline

Matrix: Solid

Analyte

Gasoline

Analysis Batch: 256602

Analyte

Surrogate

4-Bromofluorobenzene (Surr)

Added 40.0

Spike

LCSD LCSD 36.5

Result Qualifier

Unit mg/Kg

%Rec 91

%Rec. Limits 68 - 120

Client Sample ID: Method Blank

09/19/17 12:06 09/19/17 20:30

09/19/17 12:06 09/19/17 20:30

RPD Limit

RPD

Prep Type: Total/NA

Prep Batch: 256586

LCSD LCSD

%Recovery Qualifier Limits 97 50 - 150

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

ND

ND

MB MB

Lab Sample ID: MB 580-256581/1-B

Matrix: Solid

Analysis Batch: 256605

MB MB Result Qualifier **Analyte**

#2 Diesel (C10-C24) Motor Oil (>C24-C36)

Surrogate

%Recovery Qualifier Limits o-Terphenyl 72 50 - 150

RL **MDL** Unit 50 12 mg/Kg 50 9.1 mg/Kg

Prepared

Prepared

Analyzed 09/19/17 12:06 09/19/17 20:30

Analyzed

Dil Fac

Prep Type: Total/NA **Prep Batch: 256581**

TestAmerica Seattle 11/22/2017 (Rev. 1)

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Dil Fac

Dil Fac

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

o-Terphenyl

2

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

Lab Sample ID: LCS 580-2 Matrix: Solid Analysis Batch: 256605	256581/2-B					Clier	it Sai	mple ID	Prep Type: Total/NA Prep Batch: 256581
•			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	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						
o-Terphenyl	73		50 - 150						

Lab Sample ID: LCSD 58 Matrix: Solid Analysis Batch: 256605	0-256581/3-B				(Client Sa	mple	ID: Lak	Control Prep Ty Prep Ba	pe: Tot	al/NA
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	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								

50 - 150

Lab Sample ID: 580-7137	o Sample ID: 580-71376-1 DU						lient Sam	ple ID: EX-DB2-C1-	-8-SW
Matrix: Solid								Prep Type: Tot	al/NA
Analysis Batch: 256605								Prep Batch: 2	56581
-	Sample	Sample		DU	DU				RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	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						
o-Terphenyl	72		50 - 150						

Method: D 2216 - Percent Moisture Lab Sample ID: 580-71376-2 DU Client Sample ID: EX-DB2-D1-8-SW

75

Matrix: Solid							Prep Type: Tot	al/NA
Analysis Batch: 256583								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	74.3		75.3		%			20
Percent Moisture	25.7		24.7		%		4	20

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

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

Batch Batch Dilution Batch Prepared Method Factor Number or Analyzed **Prep Type** Type Run Analyst Lab TAL SEA Total/NA Analysis D 2216 256583 09/19/17 12:19 REY

Lab Sample ID: 580-71376-1

Client Sample ID: EX-DB2-C1-8-SW Date Collected: 09/18/17 09:50 **Matrix: Solid**

Percent Solids: 77.8

Matrix: Solid

Matrix: Solid

Date Received: 09/19/17 11:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71376-2

Date Collected: 09/18/17 14:30

Date Received: 09/19/17 11:15

Dilution Batch Batch Batch Prepared **Prep Type** Type Method **Factor** Number or Analyzed Run Analyst Lab Total/NA Analysis D 2216 256583 09/19/17 12:19 REY TAL SEA

Client Sample ID: EX-DB2-D1-8-SW Lab Sample ID: 580-71376-2

Date Collected: 09/18/17 14:30

Date Received: 09/19/17 11:15 Percent Solids: 74.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71376-3

Date Collected: 09/18/17 16:00 **Matrix: Solid**

Date Received: 09/19/17 11:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			256583	09/19/17 12:19	REY	TAL SEA

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

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Date Received: 09/19/17 11:15

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256576	09/19/17 13:09	RSB	TAL SEA

Date Collected: 09/18/17 00:01 Date Received: 09/19/17 11:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA

TestAmerica Seattle

Matrix: Water

Matrix: Solid

Lab Chronicle

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

Client Sample ID: TB-091817

TestAmerica Job ID: 580-71376-1

Lab Sample ID: 580-71376-6

Matrix: Solid

Date Collected: 09/18/17 00:01 Date Received: 09/19/17 11:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 TestAmerica Job ID: 580-71376-1

Project/Site: Edmonds Terminal

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

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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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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

71376

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	THE PARTY OF THE P	Client Contact		14,			Date	Chain of Custody Number
Arcadis			or relate				9-18-2017	Chain of Custody Number 29435
Address		Telephone Numl	rauch(a per (Area Code)/Fa	ax Number			Lab Number	
	te 800	509-439	8-9828				253-922-230	Page of
City S	tate Zip Code	Sampler		ab Contact			alysis (Attach list if e space is needed)	
Seattle 1	14 98101	Billing Contact	uch!a(R\$	Elaine Wa	1 Ker			
Project Name and Location (State)	EL VIA	Billing Contact			-	(SCS)		Special Instructions/
Edmonds Termal Contract/Purchase Order/Quote No.	Edmonds, WA	1		Containers		7 × × ×		Conditions of Receipt
BOO45362.0010			Matrix	Preservativ	35	PH-L.Y PH-Dx (Benz DsIM(P)		Containion of History
Sample I.D. and Location/Description (Containers for each sample may be combined or	n n one line) Date	Time Vancous		HNO3 HCI NAOH	NaOH 151	NW/TPH-G.Y MW/TPH-Dx (SG) 8260C (Benzen) 8270DSIM(CPAHS)		
EX-DB2-C1-8-SW	9-18-170	950	X 2	2	2	XXX*		Email results to
EX-DB2-D1-8-SW	9-18-17 1	430	X = 2	2	2	XXX*		ryan, brauchle Caredis, con
EX-DB2-D2-10	9-18-17 1	600	χ 2	2	2	XXX*		samuel, miles Caradis, com
EX-DB2-E0-1	9-18-17 1	615	I	2	2)	$\times XX*$		ophelie, encelle Garads.com
RB-091817	9-18-17 11	20 X	}	2		X		scott, zorn@arcadis.com
TB-091817	9-18-17	-	X		1 2	$X \mid X \mid$		
								*Analyze for cPAHS
								if DRO/HO detected
					TD A	L Cooles	Cor O. Cunc O.C	
					Coole	r Dscla Bl	Cor	WBS Codes:
		680-71376 Chain	of Custody		Wed/F	Packs Packir	1g Dubble	NWENV PAGODI430804 - Soil
		l 1	F 1 1 2	ş (] .	Lab	Cov Custo	dy Seal: YesNo	NW ENV PMG001430803 - water
Cooler	Possible Hazard Identification				Sampi	le Disposal 🔲	Disposal By Lab	(A fee may be assessed if samples
	🗌 Non-Hazard 🔲 Flamma	ible 🗆 Skin Iri	ritant 🗀 Pois			turn To Client 🔲	Archive For Months	s are retained longer than 1 month)
Turn Around Time Required (business days)		□ au		QC Requirement	s (Specify)			
24 Hours	☐ 10 Days ☐ 15 Days	Date	, Time	1. Received By	Sign/Print			. Date , Time
Home Wy Steppering Rya.	n W Brauchla	9-19-17	0930	1. Necessed by	signizini Legal	Francis	co Lune Tr	Pate Time Time 0930
2. Reinguished By Sign/Print Chr Lis CU L	n W Bravehla	Date 9/14/17	Time 5	2. Received By	Sign/Print	B. Du	Co Lung Tr	Date Time 9/19/17 1115
3. Relinquished By Sign/Print	n11-y	Date	Time	3. Received By				Date Time
Comments		<u></u>						

Client: ARCADIS U.S. Inc

Job Number: 580-71376-1

Login Number: 71376 List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Creator: Gail, Brandon A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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. Elains 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

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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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

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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

TestAmerica Seattle 9/21/2017

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.

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Definitions/Glossary

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Qualifiers

GC Semi VOA

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)

Mathe d Detection Unit

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)

TestAmerica Seattle

9/21/2017

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-1

Client Sample ID: EX-DB2-E1-8-SW Date Collected: 09/19/17 09:55 **Matrix: Solid** Date Received: 09/20/17 11:05

Percent Solids: 80.2

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 - Nortl	hwest - Volatile	e Petroleu	m 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 - No	rthwest - Semi-Volatil	le Petroleum Prod	ucts (GC	C)				
Analyte	Result Quali	ifier 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 Quali	lifier 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 Quali	ifier 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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E1-10

Date Collected: 09/19/17 09:50

Date Received: 09/20/17 11:05

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-2

Matrix: Solid

Percent Solids: 73.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	12	ug/Kg	<u> </u>	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 - Northy	vest - Volatile	Petroleur	n 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
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits 50 - 150					Analyzed 09/21/17 00:40	Dil Fac

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 Quali	ifier 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: ARCADIS U.S. Inc

Date Collected: 09/19/17 00:01

Date Received: 09/20/17 11:05

Project/Site: Chevron Edmonds Terminal

Client Sample ID: DUP02-SO-091917

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-3

Matrix: Solid

Percent Solids: 78.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	<u> </u>	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 - Northw	vest - Volatile P	Petroleum	Products (GC)					
Analyte	Result Q	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 Q	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Surrogate 4-Bromofluorobenzene (Surr)	Recovery Q	Qualifier	Limits 50 - 150					Analyzed 09/21/17 00:08	Dil Fac

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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: RB-091917

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-4

Matrix: Water

Date Collected: 09/19/17 10:00 Date Received: 09/20/17 11:05

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

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-5

Matrix: Solid

Date Collected: 09/19/17 00:01 Date Received: 09/20/17 11:05

Client Sample ID: TB-091917

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
Toluene-d8 (Surr)	99		75 - 120				09/20/17 15:46	09/21/17 09:50	1
Trifluorotoluene (Surr)	100		60 - 150				09/20/17 15:46	09/21/17 09:50	1
4-Bromofluorobenzene (Surr)	96		47 - 150				09/20/17 15:46	09/21/17 09:50	1
Dibromofluoromethane (Surr)	102		80 - 118				09/20/17 15:46	09/21/17 09:50	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121				09/20/17 15:46	09/21/17 09:50	1

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
4-Bromofluorobenzene (Surr)	91		50 - 150				09/20/17 13:41	09/20/17 23:36	1
Trifluorotoluene (Surr)							00/00/47 12:41	09/20/17 23:36	1

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Client: ARCADIS U.S. Inc

Benzene

Project/Site: Chevron Edmonds Terminal

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

Analysis balch: 250700								Prep Batch:	200113
-	MB	MB							
Analyte	Result	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
	MB	MB							
Surrogate	%Recovery	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

Spike

LCS LCS

Analyte

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

Prep Batch: 256773

KRec.

Added

Result Qualifier Unit D KRec Limits

889

ug/Kg

	LCS	LCS	
Surrogate	%Recovery	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

800

Lab Sample ID: LCSD 580-256773/3-A

Matrix: Solid

Analysis Batch: 256780

Spike

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

Prep Batch: 256773

RPD

Rec. RPD

Analyte
Benzene

Added Result Qualifier Unit ug/Kg

Benzene

LCSD LCSD

Surrogate

Added Result Qualifier Unit ug/Kg

Benzene

Unit ug/Kg

D %Rec Limits

RPD Limit

79 - 135 3 10

Surrogate	%Recovery	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

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

Analysis Batch: 256728

MB MB

 Analyte
 Result
 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

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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

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared Analyze	Dil Fac
	4-Bromofluorobenzene (Surr)	90		58 - 133	09/20/17 18	36 1
l	Trifluorotoluene (Surr)	105		77 - 128	09/20/17 15	:36 1

Lab Sample ID: LCS 580-256728/7 **Client Sample ID: Lab Control Sample Prep Type: Total/NA**

Matrix: Water

Analysis Batch: 256728

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1.00 Gasoline 0.871 mg/L 87 79₋110

LCS LCS Surrogate %Recovery 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

LCSD LCSD **RPD** Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit 1.00 Gasoline 0.865 86 79 - 110 mg/L

LCSD LCSD

Surrogate	%Recovery	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

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA **Prep Batch: 256737**

Prep Type: Total/NA

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 09/20/17 13:38 09/20/17 22:00 Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg

MB MB

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 90 50 - 150 09/20/17 13:38 09/20/17 22:00 Trifluorotoluene (Surr) 104 50 - 150 09/20/17 13:38 09/20/17 22:00

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** LCS LCS Spike %Rec.

Analyte Added Result Qualifier Limits Unit %Rec Gasoline 40.0 35.7 mq/Kq

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	95	50 - 150
Trifluorotoluene (Surr)	102	50 - 150

TestAmerica Seattle

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 Type: Total/NA Prep Batch: 256737 %Rec. RPD

Spike LCSD LCSD %Rec. Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 40.0 68 - 120 25 Gasoline 33.2 mg/Kg 83

LCSD LCSD

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

MB MB MDL Unit Result Qualifier RL D Analyte Prepared Analyzed Dil Fac #2 Diesel (C10-C24) ND 50 12 mg/Kg 09/20/17 12:02 09/20/17 21:14 50 09/20/17 12:02 09/20/17 21:14 Motor Oil (>C24-C36) ND 9.1 mg/Kg

 Surrogate
 %Recovery o-Terphenyl
 Qualifier o-Terphenyl
 Limits o-150
 Prepared o-150
 Analyzed o-1202
 Dil Fac o-150

 n-Decanoic Acid (Surr)
 0.00001
 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
%Rec.

Spike LCS LCS Added Result Qualifier Unit %Rec Limits Analyte #2 Diesel (C10-C24) 500 354 mg/Kg 64 - 127 Motor Oil (>C24-C36) 500 356 mg/Kg 70 - 125

 Surrogate
 %Recovery of Expression (a)
 Qualifier of Expression (b)
 Limits of Expression (c)

 0-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

LCSD LCSD Spike %Rec. **RPD** Analyte Added Result Qualifier D %Rec Limits **RPD** Limit Unit #2 Diesel (C10-C24) 500 364 mq/Kq 73 64 - 127 3 16 Motor Oil (>C24-C36) 500 356 71 70 - 125 mg/Kg 0 17

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	67		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: 580-71419-1

Client Sample ID: EX-DB2-E1-8-SW

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

Lab Sample ID: 580-71419-1 DU Client Sample ID: EX-DB2-E1-8-SW **Matrix: Solid Prep Type: Total/NA Analysis Batch: 256786 Prep Batch: 256715** Sample Sample DU DU **RPD** RPD Analyte Result Qualifier Result Qualifier Unit D Limit ₩ ND NC 35 #2 Diesel (C10-C24) ND mg/Kg Motor Oil (>C24-C36) ND 11.2 J mg/Kg ₩ NC 35 DU DU Surrogate %Recovery Qualifier Limits o-Terphenyl 73 50 - 150 0 - 1 n-Decanoic Acid (Surr) 0.0008

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71419-1 DU

Matrix: Solid Analysis Batch: 256727							Prep Type: Tot	:al/NA
Analysis Datch. 200727	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	80.2		78.8		%			20
Percent Moisture	19.8		21.2		%		7	20

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Batch Batch Dilution Batch Prepared Prep Type Method Run **Factor** Number or Analyzed Analyst Type Lab Total/NA 256727 09/20/17 12:43 JWL TAL SEA Analysis D 2216

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71419-2

Date Collected: 09/19/17 09:50

Date Received: 09/20/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71419-2

Date Collected: 09/19/17 09:50

Date Received: 09/20/17 11:05 Percent Solids: 73.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71419-3

Date Collected: 09/19/17 00:01

Date Received: 09/20/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216	 , - 	1	256727	09/20/17 12:43	JWL	TAL SEA

TestAmerica Seattle

Matrix: Solid

Matrix: Solid

Matrix: Solid

Lab Chronicle

Client: ARCADIS U.S. Inc

Date Collected: 09/19/17 00:01

Date Received: 09/20/17 11:05

Project/Site: Chevron Edmonds Terminal

Client Sample ID: DUP02-SO-091917

TestAmerica Job ID: 580-71419-1

Lab Sample ID: 580-71419-3

Matrix: Solid

Percent Solids: 78.8

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			256728	09/20/17 17:12	RSB	TAL SEA

Client Sample ID: TB-091917 Lab Sample ID: 580-71419-5

Matrix: Solid

Date Collected: 09/19/17 00:01 Date Received: 09/20/17 11:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

TestAmerica Seattle

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71419-1

Project/Site: Chevron Edmonds Terminal

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

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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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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



Chain of Custody Record

Client	Clia	nt Contact										Date					Cha	in of Custody N	umber	
Arcadis		yan Bra	schla											- 2c	217	2			94	1 4
Address		phone Number		/Fax Num	iber				·	******		Lab N					T	······		<u> </u>
1100 Olive Way, Suite 800	50	9-438-	9828											22.	~	0	Pag	re	of	
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	8101 Ryan	, Brauchl	a (RB)	Elair	re l	1	ker					ore space	c io ni					714	しフ	
Project Name and Location (State)		ng Contact						Ì		Dr. (SGC)	を変め							Special :	Inetructi	200/
Edmonds Terminal Edmonds Contract/Purchase Order/Quote No.	WA			· · · · · · · · · · · · · · · · · · ·					×	چ اچ	2 2							Special . Condition		
BOO 45362.0010		Ma	trix			iners e ervative			H-6	H.	1 0							Oonanio	13 01 1100	cipi
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date Time	Arr	Soil	Unpres. H2S04	HNO3	HC! NaOH	ZnAc/ NaOH	7.00 1.00	NWTPH-GX	NWTPH-DX	82.70									
EX-DB2-E1-8-SW	4-19-17 0955		X	Y				ŧ	X^{2}	X X	X						E	mail resul	ts to	
EX-DB2-E1-10	9-19-17 0950	7	X	1				1	X	XX	*							ryan, bro	whlee.	rediction
EX 082 DUPOZ-50-091917	9-19-17 -		X	١				١	χ	$\langle \chi $	*							samue m	اري0 در	edis.com
RB-091917	9-19-17-1000	×			1	2			X_									ophelie.	encelle C	rigolis.com
TB-091917	9-19-17 -		X	1					X_{\perp}	_X								scott zo		
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	!								e	b (σU						M	WENVPMGOO	1430803	surface water
Cooler Possible Ha	azard Identification			(<u> </u>		<u> </u>	Samp	ole Dis	posal		□ Dispo	sal By	/ Lab				A fee may be as		
☐ Yes ☐ No Cooler Temp: ☐ Non-Ha	zard 🗆 Flammable	☐ Skin Irrita	nnt 🗆 F	Poison B			ошп [eturn i	To Cliei	nt	☐ Archi	ve For			Мопі		ire retained long		
Turn Around Time Required (business days)				1 00	Requir	ement	ts (Spec	ify)												
	ys 🗌 15 Days 🗀 G																		Tima	
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2. Helinquished By Sign/Print	Date	1	Time	2.	Receive		Signf	Print	/_	\sim	,			/			1	ate /	Time	<i></i>
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3. Relinquished By Sign/Print	Date		Time	3.	Receive	ad By	Sign/P	rint'	Ü				/				D.	ate	Time	
Comments					 														L	

Client: ARCADIS U.S. Inc

Job Number: 580-71419-1

Login Number: 71419 List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Creator: Biankinsnip, Tom X		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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. Elains 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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Total Access

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.

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71458-1

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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.

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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 (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.

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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
В	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

Ciossary	
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)

ND Not Detected at the reporting limit (or MDL or EDL if shown)
PQL Practical Quantitation Limit

NC

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

Not Calculated

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)

TestAmerica Seattle

Page 5 of 21 9/22/2017

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

Client Sample ID: EX-DB2-A2-4-SW

Date Collected: 09/20/17 16:15 Date Received: 09/21/17 10:50 Lab Sample ID: 580-71458-1

Matrix: Solid Percent Solids: 48.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	65	В	10	1.5	ug/Kg	<u> </u>	09/21/17 11:23	09/21/17 19:38	1
Benzo[a]pyrene	84	В	10	0.80	ug/Kg	₩	09/21/17 11:23	09/21/17 19:38	1
Benzo[b]fluoranthene	130	В	10	1.2	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Benzo[k]fluoranthene	41	В	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	В	10	1.4	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Indeno[1,2,3-cd]pyrene	120	В	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			68 - 138				09/21/17 11:23	09/21/17 19:38	1

Method: NWTPH-Gx - Northw	est - Volatile	Petroleu	m 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1600		500	120	mg/Kg	<u> </u>	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 Qua	alifier 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

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

Client Sample ID: EX-DB2-F0-1

Date Collected: 09/20/17 13:20 Date Received: 09/21/17 10:50

Lab Sample ID: 580-71458-2

Matrix: Solid Percent Solids: 30.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		130	56	ug/Kg	<u> </u>	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	51	В	16	2.4	ug/Kg	-	09/21/17 11:23	09/21/17 20:28	1
Benzo[a]pyrene	49	В	16	1.3	ug/Kg	₩	09/21/17 11:23	09/21/17 20:28	1
Benzo[b]fluoranthene	110	В	16	1.9	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Benzo[k]fluoranthene	30	В	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	JB	16	2.3	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Indeno[1,2,3-cd]pyrene	60	В	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 - North	west - Volatile	Petroleur	n 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
Surrogate 4-Bromofluorobenzene (Surr)		Qualifier	Limits 50 - 150				-1	Analyzed 09/22/17 02:07	Dil Fac

Method: NWTPH-Dx - Noi	rthwest - Semi-Volatile	Petroleum Prod	ucts (G0	C)				
Analyte	Result Qualifi	ier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	180	160	38	mg/Kg	<u> </u>	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 Qualifi	ier 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 Q	ualifier	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

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-F1-10

Date Collected: 09/20/17 11:15 Date Received: 09/21/17 10:50

Lab Sample ID: 580-71458-3

Matrix: Solid 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 - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	<u></u>	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 December Asid (Over)	0.00000		0 1				00/04/47 44:00	00/00/47 40.50	

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	Qu
Percent Solids	78.1	

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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71458-1

Lab Sample ID: 580-71458-4 Client Sample ID: RB-092017 Date Collected: 09/20/17 12:40

Matrix: Water

Date Received: 09/21/17 10:50

Method: NWTPH-Gx - Nort	hwest - Volatile	Petroleui	m 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: 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

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		

Client: ARCADIS U.S. Inc

TestAmerica Job ID: 580-71458-1

09/21/17 13:40 09/21/17 14:37

Client Sample ID: Lab Control Sample

79 - 135

108

Project/Site: Edmonds Terminal

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

116

Lab Sample ID: MB 580-256890/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 256883 **Prep Batch: 256890** MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 20 09/21/17 13:40 09/21/17 14:37 Benzene $\overline{\mathsf{ND}}$ 8.6 ug/Kg MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 102 75 - 120 09/21/17 13:40 09/21/17 14:37 Trifluorotoluene (Surr) 101 60 - 150 09/21/17 13:40 09/21/17 14:37 4-Bromofluorobenzene (Surr) 99 47 - 150 09/21/17 13:40 09/21/17 14:37 109 80 - 118 09/21/17 13:40 09/21/17 14:37 Dibromofluoromethane (Surr)

80 - 121

Lab Sample ID: LCS 580-256890/2-A

Matrix: Solid

Benzene

1,2-Dichloroethane-d4 (Surr)

Prep Type: Total/NA Analysis Batch: 256883 **Prep Batch: 256890** LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 800

867

ug/Kg

	LCS	LCS	
Surrogate	%Recovery	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 Prep Batch: 256890 Analysis Batch: 256883 LCSD LCSD Spike %Rec. Added Result Qualifier Limits **Analyte** Unit D %Rec RPD Benzene 800 918 ug/Kg 115 79 - 135 6

	LCSD	LCSD	
Surrogate	%Recovery	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 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256923 Prep Batch: 256861**

	MB	MB							
Analyte	Result	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

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

RPD Limit

TestAmerica Job ID: 580-71458-1

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

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

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
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

MB MB

Limits Surrogate %Recovery Qualifier Prepared Analyzed Dil Fac 68 - 138 09/21/17 11:23 09/21/17 17:30 Terphenyl-d14 106

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 580-256861/2-A **Matrix: Solid**

Analysis Batch: 256923

Prep Type: Total/NA **Prep Batch: 256861**

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzo[a]anthracene	1000	878		ug/Kg		88	66 - 120	
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	

LCS LCS

Surrogate %Recovery Qualifier Limits 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**

Sample Sample Spike MS MS %Rec. Result Qualifier %Rec Analyte Result Qualifier Added Unit D Limits Benzo[a]anthracene ND 1260 1060 ug/Kg ₩ 85 66 - 120 ₩ Benzo[a]pyrene ND 1260 1100 72 - 124 ug/Kg 88 ₩ Benzo[b]fluoranthene ND 1260 984 ug/Kg 78 63 - 121 Ö ND 1260 89 Benzo[k]fluoranthene 1110 63 - 129 ug/Kg Chrysene ND 1260 980 Ö 78 69 - 120 ug/Kg Dibenz(a,h)anthracene ND 1260 803 F1 ug/Kg 64 70 - 125 Indeno[1,2,3-cd]pyrene ND F1 1260 801 F1 ug/Kg ₩ 64 65 - 121

MS MS

Surrogate %Recovery Qualifier Limits Terphenyl-d14 99 68 - 138

Client Sample ID: 580-71458-A-3-C MSD

Matrix: Solid

Lab Sample ID: 580-71458-A-3-C MSD

Prep Type: Total/NA **Analysis Batch: 256923 Prep Batch: 256861** Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added RPD Analyte Result Qualifier Unit D %Rec Limits Limit ₩ 1200 Benzo[a]anthracene ND 1020 ug/Kg 85 66 - 120 4 40 ND 1200 ₩ Benzo[a]pyrene 1040 ug/Kg 86 72 - 1246 40

TestAmerica Seattle

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9/22/2017

TestAmerica Job ID: 580-71458-1

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

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

Allalysis Datoli. 200520									i icp De	ILOII. Z	7000 1
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene	ND		1200	939		ug/Kg	<u> </u>	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

MSD MSD

Surrogate %Recovery Qualifier Limits Terphenyl-d14 106 68 - 138

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

MB MB

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	Result	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
	MD	MP							

Surrogate Qualifier Limits Prepared Analyzed Dil Fac %Recovery 09/21/17 12:04 09/21/17 23:26 4-Bromofluorobenzene (Surr) 91 50 - 150 Trifluorotoluene (Surr) 104 50 - 150 09/21/17 12:04 09/21/17 23:26

Lab Sample ID: LCS 580-256866/4-A

Matrix: Solid

Analysis Batch: 256897

Prep Type: Total/NA **Prep Batch: 256866** Spike LCS LCS %Rec.

LCSD LCSD

Analyte Added Result Qualifier Unit %Rec Limits Gasoline 40.0 36.7 92 68 - 120 mg/Kg

LCS LCS %Recovery Qualifier Surrogate 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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA **Prep Batch: 256866** %Rec. **RPD**

Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline 40.0 38.2 95 68 - 120 25 mg/Kg

LCSD LCSD Surrogate %Recovery Qualifier Limits 97 50 - 150 4-Bromofluorobenzene (Surr) 102 50 - 150 Trifluorotoluene (Surr)

TestAmerica Seattle

9/22/2017

TestAmerica Job ID: 580-71458-1

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

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

MD MD

Lab Sample ID: MB 580-256885/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 256885

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/21/17 14:55	1
	МВ	MB							

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 58 - 133 4-Bromofluorobenzene (Surr) 91 09/21/17 14:55 77 - 128 09/21/17 14:55 Trifluorotoluene (Surr) 106

Lab Sample ID: LCS 580-256885/7

Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 256885

	Spik	e LCS	LCS				%Rec.	
Analyte	Adde	d Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline	1.0	0.854		mg/L	_	85	79 - 110	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 58 - 133 96 Trifluorotoluene (Surr) 93 77 - 128

Lab Sample ID: LCSD 580-256885/8 **Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA**

Matrix: Water

Analysis Batch: 256885

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	 1.00	0.844		ma/L		84	79 - 110		10

LCSD LCSD %Recovery Qualifier Surrogate I imits 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 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 256959 Prep Batch: 256862**

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 50 #2 Diesel (C10-C24) ND 09/21/17 11:29 09/22/17 08:47 12 mg/Kg Motor Oil (>C24-C36) 50 09/21/17 11:29 09/22/17 08:47 ND 9.1 mg/Kg

	IVID	IVID				
Surrogate	%Recovery	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

TestAmerica Job ID: 580-71458-1

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

Surrogate

o-Terphenyl

n-Decanoic Acid (Surr)

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

Limits

0 - 1

50 - 150

Lab Sample ID: LCS 580-256862/2-B Matrix: Solid Analysis Batch: 256959				Clier	ıt Saı	mple ID	Prep Type: Total/NA Prep Batch: 256862
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	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 LCS							

Lab Sample ID: LCSD 580-256862/3 Matrix: Solid Analysis Batch: 256959	3-B Spike	LCSD	LCSD	Client Sa	mple	ID: Lat	Control Prep Tyl Prep Ba %Rec.	pe: Tot	al/NA
Analyte	Added	Result	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	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	72		50 - 150
n-Decanoic Acid (Surr)	0		0 - 1

%Recovery Qualifier

81

0

69.7

Lab Sample ID: 580-7145 Matrix: Solid Analysis Batch: 256959	8-1 DU					C	lient San	nple ID: EX-DB2-A2- Prep Type: Tot Prep Batch: 29	al/NA
	Sample	Sample		DU	DU				RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	1600			1820		mg/Kg	- - -		35
Motor Oil (>C24-C36)	2200			2330		mg/Kg	₩	5	35
	DU	DU							
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	55		50 - 150						
n-Decanoic Acid (Surr)	0.004		0 - 1						

Method: D 2216 - Percent Moisture

Percent Moisture

Lab Sample ID: 580-71458 Matrix: Solid Analysis Batch: 256863	-2 DU					Client	Sample ID: E Prep Typ		
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Percent Solids	30.3		 31.0		%			2	20

69.0

%

TestAmerica Seattle

20

KPD	LIIIII
 16	35
5	35

9/22/2017

TestAmerica Job ID: 580-71458-1

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

Client Sample ID: EX-DB2-A2-4-SW

Date Collected: 09/20/17 16:15 Date Received: 09/21/17 10:50

Lab Sample ID: 580-71458-1

Matrix: Solid

ı		Batch	Batch		Dilution	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	D 2216			256863	09/21/17 11:35	APR	TAL SEA

Client Sample ID: EX-DB2-A2-4-SW Lab Sample ID: 580-71458-1

256959 09/22/17 09:48 ADB

Date Collected: 09/20/17 16:15

Date Received: 09/21/17 10:50

Matrix: Solid Percent Solids: 48.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Client Sample ID: EX-DB2-F0-1

Analysis

NWTPH-Dx

Date Collected: 09/20/17 13:20 Date Received: 09/21/17 10:50

Total/NA

Lab Sample ID: 580-71458-2

TAL SEA

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			256863	09/21/17 11:35	APR	TAL SEA

Client Sample ID: EX-DB2-F0-1

Date Collected: 09/20/17 13:20

Date Received: 09/21/17 10:50

Lab Sample	ID:	580-71458-2
		Matrix: Solid

Percent Solids: 30.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

TestAmerica Job ID: 580-71458-1

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

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

Batch Batch Dilution Batch **Prepared Prep Type** Туре Method Run **Factor** Number or Analyzed Analyst Lab 256863 09/21/17 11:35 APR TAL SEA Total/NA Analysis D 2216

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Lab Sample ID: 580-71458-4 Client Sample ID: RB-092017

Date Collected: 09/20/17 12:40

Date Received: 09/21/17 10:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

TestAmerica Seattle

Matrix: Water

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71458-1

Project/Site: Edmonds Terminal

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

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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 R	eceived
580-71458-1	EX-DB2-A2-4-SW	Solid	09/20/17 16:15 09/2	1/17 10:50
580-71458-2	EX-DB2-F0-1	Solid	09/20/17 13:20 09/2	1/17 10:50
580-71458-3	EX-DB2-F1-10	Solid	09/20/17 11:15 09/2	1/17 10:50
580-71458-4	RB-092017	Water	09/20/17 12:40 09/2	1/17 10:50
580-71458-5	TB-092017	Solid	09/20/17 00:01 09/2	1/17 10:50

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<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Loc: 580 **71458** 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 A. J.	Client Contact	Rand la				P-20-201	2	Chain of Custody Nu	9437
Arcadis Address	Telephone Num	Brauchla ber (Area Code)/Fax	к Number			Lab Number		1	1
1100 Olive Way, Suite 800 City State Zip Code	509-43	8-9828				253-922-2	310	Page	of
	Sampler		b Contact	111		Analysis (Attach list if nore space is needed)		Landani de la companya de la company	
Seattle WA 98101 Project Name and Location (State)	Ryan Brauch Billing Contact	k(R)	Flaine h	alker					
Edmonds Terminal Edmonds, WA	bining contact				X X CHANGE			Special I	nstructions/
Contract/Purchase Order/Quote No.		Matrix	Containe		PH-GX PH-DX W (BENZENS STM (D)			Condition	s of Receipt
B0045362.0010			Preserva						
Sample I.D. and Location/Description (Containers for each sample may be combined on one line) Date	Air aut.			NaOH ZnAc/ NaOH NaOH	NWTPH-GX NWTPH-DX 8260K (Benze 8720 STM (
EX-DBZ-A2-4-SW 9-20-17	1615	X 2		2	XXXX	•		Email resu	1ts to
EX-DB2-FO-1 9-20-17	1320	X 2		2	XXXX	-			ravehla@arcadis, w
EX-DB2-F1-10 9-20-17	1115	X 2			XXX	1		samuel	miles Caredinion
RB-092017 9-20-17	1240 X		2		X			ophetie.	encelle Garadis.co
TB-092017 9-20-17		X		1	$X \mid X \mid$			scott.zs	orn@crediscom
								* Analyze	For cPAHs only
									tectal (extraction
				_	. .	×4 2		okcy)	
					Cooler_	Cor <mark>`^{©. 2}</mark> Unc كاسو @Lab		WBS CO	DES:
	580-71458 Cha	in of Custody				king B		NWENVPM	G001430804-Soil
	200) , , 400 0112	,		Lat	COLF C	ustody Seal: YesN	0 <u>×</u>	NWENVPM	4001410803 water
Cooler Possible Hazard Identification				,	ple D isposal	Disposal By Lab			sessed if samples
☐ Yes ☐ No Cooler Temp: ☐ Non-Hazard ☐ Flan	nmable 🗀 Skin li	rritant 🗌 Poisc			Return To Client	Archive For	Month	s are retained long	er than 1 month)
Turn Around Time Required (business days) ☑ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days	□ Other		uc Requirem	ents (Specify)					
1. Relinquished By Sign/Print	Date	Time	1. Received I	By Sign/Print	· · · · · · · · · · · · · · · · · · ·			Date /21/17	Time
Byan W Branchla	9-21-2017		27	54/	Francis	CO Lung, JI	•		0915
2. He linauished BV - Sign/Print	Date 9/21/17	Time 1050	2. Received	Sy Sign/Print	B. Call	SEATA		Date 9/2/117	Time 10 50
3. Relinquished By Sign/Print	Date	Time	3. Received I	By Sign/Print				Date	Time
Comments					·.·				

Client: ARCADIS U.S. Inc

Job Number: 580-71458-1

Login Number: 71458 List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Creator: Gail, Brandon A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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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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.

TestAmerica Job ID: 580-71539-1

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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[MS]), EX-DB2-C8-10 (580-71539-6[MS]), EX-DB2-C8-10 (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.

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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 (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.

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Definitions/Glossary

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71539-1

Qualifiers

GC/MS VOA

Qualifier **Qualifier Description**

 $\overline{\mathsf{X}}$ Surrogate is outside control limits

GC/MS Semi VOA

Qualifier **Qualifier Description**

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**

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**

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

Percent Recovery %R CFL Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor**

Detection Limit (DoD/DOE) DΙ

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)

FDI Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

Method Detection Limit MDL Minimum Level (Dioxin) ML

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) **TEQ**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	9.7	ug/Kg	<u> </u>	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 - Nortl	hwest - Volatile	e Petroleur	m Products (GC)					
Analyte		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 - No	orthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Únit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	<u></u>	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal

4-Bromofluorobenzene (Surr)

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

09/24/17 09:13 09/25/17 18:05

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 - Nort	hwest - Volatile	e Petroleui	m 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

Mothod: NWTDII Dv. North		Iolofila Daf	walawa Duad		~ \				
Method: NWTPH-Dx - North Analyte		Qualifier	roleum Prod RL	ucts (Go MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		69	17	mg/Kg	<u></u>	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

50 - 150

General Chemistry	Decute Overlities	DI	MDI	11-14	ь.	D	Amahamad	D:: F
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: 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	<u> </u>	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	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	<u> </u>	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: 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 Date Received: 09/23/17 09:50

Matrix: Solid Percent Solids: 82.5

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 - Nort	hwest - Volatile	e Petroleu	m Products (GC)					
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Casoline	ND		13	2 2	ma/Ka	<u> </u>	00/24/17 00:13	00/25/17 10:06	

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	

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

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C7-11

Date Collected: 09/22/17 13:10 Date Received: 09/23/17 09:50 Lab Sample ID: 580-71539-5

Matrix: Solid Percent Solids: 78.2

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 - Northy	west - Volatile	Petroleu i	m Products (GC)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.6	mg/Kg	<u> </u>	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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	<u> </u>	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 ID: EX-DB2-C8-10

Date Collected: 09/22/17 10:05 Date Received: 09/23/17 09:50 Lab Sample ID: 580-71539-6

Matrix: Solid Percent Solids: 78.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	<u> </u>	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 - Nortl	nwest - Volatile	e Petroleui	m Products (GC)					
Analyte		Qualifier	RL `	•	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	

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		60	15	mg/Kg	₽	09/23/17 11:59	09/27/17 03:46	1
ND		60	11	mg/Kg	₩	09/23/17 11:59	09/27/17 03:46	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
99		50 - 150				09/23/17 11:59	09/27/17 03:46	1
-	ND ND %Recovery	ND **Recovery Qualifier*	ND 60 ND 60 %Recovery Qualifier Limits	ND 60 15 ND 60 11 %Recovery Qualifier Limits	ND 60 15 mg/Kg ND 60 11 mg/Kg %Recovery Qualifier Limits	ND 60 15 mg/Kg ☼ ND 60 11 mg/Kg ☼ %Recovery Qualifier Limits	ND 60 15 mg/Kg © 09/23/17 11:59 ND 60 11 mg/Kg © 09/23/17 11:59 %Recovery Qualifier Limits Prepared	ND 60 15 mg/Kg © 09/23/17 11:59 09/27/17 03:46 ND 60 11 mg/Kg © 09/23/17 11:59 09/27/17 03:46 %Recovery Qualifier Limits Prepared Analyzed

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 ID: EX-DB2-D3-10

Date Collected: 09/22/17 07:45 Date Received: 09/23/17 09:50 Lab Sample ID: 580-71539-7

Matrix: Solid Percent Solids: 77.9

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 - No Analyte	orthwest - Semi-Volatile Pe Result Qualifier	troleum Prod RL	ucts (GO	•	n	Prepared	Analyzed	Dil Fac
								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 Qualifie	r 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

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

Indeno[1,2,3-cd]pyrene

Client Sample ID: EX-DB2-F2-12

Date Collected: 09/21/17 11:20 Date Received: 09/23/17 09:50 Lab Sample ID: 580-71539-8

© 09/23/17 11:59 09/26/17 01:52

Matrix: Solid Percent Solids: 92.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.7	ug/Kg	<u> </u>	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 - Semi	volatile Organi	c Compou	ndo (CC/MC	0184)					
	VOIDLING OI MUIII	c Collipou	nus (GC/IVIS	SIWI)					
Analyte	_	Qualifier	RL	•	Unit	D	Prepared	Analyzed	Dil Fac
	_	•	•	MDL	Unit ug/Kg	D <u>⇔</u>	Prepared 09/23/17 11:59	Analyzed 09/26/17 01:52	Dil Fac
Analyte	Result	Qualifier	RL	MDL 0.80		=		09/26/17 01:52	Dil Fac
Analyte Benzo[a]anthracene	Result ND	Qualifier J	5.3	0.80 0.42	ug/Kg	\	09/23/17 11:59	09/26/17 01:52 09/26/17 01:52	Dil Fac 1 1 1
Analyte Benzo[a]anthracene Benzo[a]pyrene	Result ND 1.1	Qualifier J	5.3 5.3	0.80 0.42 0.62	ug/Kg ug/Kg	<u> </u>	09/23/17 11:59 09/23/17 11:59	09/26/17 01:52 09/26/17 01:52 09/26/17 01:52	Dil Fac 1 1 1 1
Analyte Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene	Result ND 1.1 1.6	Qualifier J J	5.3 5.3 5.3	0.80 0.42 0.62 0.64	ug/Kg ug/Kg ug/Kg		09/23/17 11:59 09/23/17 11:59 09/23/17 11:59	09/26/17 01:52 09/26/17 01:52 09/26/17 01:52 09/26/17 01:52	Dil Fac 1 1 1 1 1 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 - Northwo	est - Volatile	e Petroleum	Products (G	C)			
Analyto		Qualifier	DI	MDI Unit	D Propared	Analyzod	Dil Esc

5.3

0.64 ug/Kg

0.87 J

Gasonne	2.1	J	3.0	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	

Method: NWTPH-Dx - No Analyte		Olatile Pet Qualifier	troleum Prod RL	ucts (GC MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	16	J	54	13	mg/Kg	<u></u>	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

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		

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	

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

Date Received: 09/23/17 09:50

TestAmerica Job ID: 580-71539-1

Lab Sample ID: 580-71539-11

Matrix: Solid

Client Sample ID: Trip Blank Date Collected: 09/21/17 00:01

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 - Northw	est - Volatile	e Petroleui	m 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

Benzene

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

118

Lab Sample ID: MB 580-257144/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257151 Prep Batch: 257144** MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 20 8.6 ug/Kg 09/25/17 08:34 09/25/17 10:27 Benzene ND MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 106 75 - 120 09/25/17 08:34 09/25/17 10:27 Trifluorotoluene (Surr) 101 60 - 150 09/25/17 08:34 09/25/17 10:27 4-Bromofluorobenzene (Surr) 100 47 - 150 09/25/17 08:34 09/25/17 10:27 111 80 - 118 09/25/17 08:34 09/25/17 10:27 Dibromofluoromethane (Surr) 1,2-Dichloroethane-d4 (Surr) 80 - 121 09/25/17 08:34 09/25/17 10:27

Lab Sample ID: LCS 580-257144/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Prep Batch: 257144 Analysis Batch: 257151** LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits

900

ug/Kg

113

79 - 135

	LCS	LCS	
Surrogate	%Recovery	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

800

Lab Sample ID: LCSD 580-257144/17-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA **Prep Batch: 257144 Analysis Batch: 257151** LCSD LCSD Spike %Rec. **RPD**

Added Result Qualifier Limits **Analyte** Unit D %Rec RPD Limit Benzene 800 988 ug/Kg 123 79 - 135 9 LCSD LCSD

Surrogate	%Recovery	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 Client Sample ID: EX-DB2-C8-10 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 257151 **Prep Batch: 257144** Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Benzene ND 582 702 ug/Kg 120 79 - 135 MS MS

Surrogate %Recovery Qualifier Limits 75 - 120 Toluene-d8 (Surr) 105 60 - 150 Trifluorotoluene (Surr) 102

Spike

Added

582

MSD MSD

677

Result Qualifier

Unit

ug/Kg

D

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

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

Lab Sample ID: 580-71539-6 MS

Lab Sample ID: 580-71539-6 MSD

Matrix: Solid

Matrix: Solid

Analyte

Benzene

Analysis Batch: 257151

Analysis Batch: 257151

Client Sample ID: EX-DB2-C8-10 Prep Type: Total/NA

Prep Batch: 257144

MS MS %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 101 47 - 150 Dibromofluoromethane (Surr) 106 80 - 118 1,2-Dichloroethane-d4 (Surr) 119 80 - 121

Client Sample ID: EX-DB2-C8-10

Prep Type: Total/NA Prep Batch: 257144

%Rec.

Limits RPD Limit

%Rec 116 79 - 135 4

MSD MSD

Surrogate %Recovery Qualifier Limits 75 - 120 Toluene-d8 (Surr) 97 Trifluorotoluene (Surr) 101 60 - 150 95 47 - 150 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 105 80 - 118 1,2-Dichloroethane-d4 (Surr) 113 80 - 121

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

Sample Sample

ND

Result Qualifier

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**

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Benzo[a]anthracene 5.0 09/23/17 10:33 09/25/17 18:05 ND 0.76 ug/Kg ND 5.0 Benzo[a]pyrene 0.40 ug/Kg 09/23/17 10:33 09/25/17 18:05 ND 5.0 09/23/17 10:33 09/25/17 18:05 Benzo[b]fluoranthene 0.59 ug/Kg Benzo[k]fluoranthene ND 5.0 0.60 ug/Kg 09/23/17 10:33 09/25/17 18:05 Chrysene ND 5.0 09/23/17 10:33 09/25/17 18:05 1.5 ug/Kg ND 5.0 0.72 ug/Kg 09/23/17 10:33 09/25/17 18:05 Dibenz(a,h)anthracene 5.0 ND Indeno[1,2,3-cd]pyrene 0.60 ug/Kg 09/23/17 10:33 09/25/17 18:05

MB MB

Surrogate Qualifier Limits Dil Fac %Recovery Prepared Analyzed Terphenyl-d14 104 68 - 138 09/23/17 10:33 09/25/17 18:05

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**

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	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 Job ID: 580-71539-1

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

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

Lab Sample ID: LCS 580- Matrix: Solid Analysis Batch: 257232	257103/2-A					Clie	nt Sai	mple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 257103
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Indeno[1,2,3-cd]pyrene			1000	822		ug/Kg		82	65 - 121
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
Terphenyl-d14	91		68 - 138						

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

Lab Sample ID: MB 580-257 Matrix: Solid Analysis Batch: 257198	123/1-A						i i	le ID: Method Prep Type: To Prep Batch: :	otal/NA
, c.c	MB	MB							
Analyte	Result	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
	MB	MB							
Surrogate	%Recovery	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 580-2 Matrix: Solid Analysis Batch: 257198	257123/2-A					Clien	t Sa	mple ID	Prep Typ	trol Sample e: Total/NA tch: 257123
, , , , , , , , , , , , , , , , , , , ,			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline			40.0	40.5		mg/Kg		101	68 - 120	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	93		50 - 150							

Lab Sample ID: 580-71539 Matrix: Solid Analysis Batch: 257198	9-6 MS						Clie	nt Sam	ple ID: EX-DB2-C8-10 Prep Type: Total/NA Prep Batch: 257123
7 maryolo Batom 207 100	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline	ND		50.1	45.3		mg/Kg	<u> </u>	90	50 - 150
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	94		50 - 150						

Lab Sample ID: 580-71539	Sample ID: 580-71539-6 MSD								Client Sample ID: EX-DB2-C8-10				
Matrix: Solid									Prep Ty	e: Tot	al/NA		
Analysis Batch: 257198									Prep Ba	tch: 2	57123		
•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
Gasoline	ND		50.1	49.9		mg/Kg	\	100	50 - 150	10	35		
	MSD	MSD											
Surrogate	%Recovery	Qualifier	Limits										
4-Bromofluorobenzene (Surr)	92		50 - 150										

TestAmerica Job ID: 580-71539-1

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

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

MB MB

Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.25 Gasoline 0.050 mg/L 09/25/17 10:29 ND

MB MB

Surrogate Qualifier Limits Prepared Analyzed Dil Fac %Recovery 4-Bromofluorobenzene (Surr) 93 58 - 133 09/25/17 10:29 09/25/17 10:29 Trifluorotoluene (Surr) 113 77 - 128

Lab Sample ID: LCS 580-257188/7

Matrix: Water

Analysis Batch: 257188

LCS LCS Spike %Rec. **Analyte** Added Result Qualifier Limits Unit D %Rec Gasoline 1.00 0.895 90 79 - 110 mg/L

LCS LCS

Surrogate %Recovery Qualifier Limits 58 - 133 4-Bromofluorobenzene (Surr) 100 97 77 - 128 Trifluorotoluene (Surr)

Lab Sample ID: LCSD 580-257188/8

Matrix: Water

Analysis Batch: 257188

Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline 1.00 0.880 mg/L 88 79 - 110

LCSD LCSD

%Recovery Qualifier Surrogate I imits 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

Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257364 Prep Batch: 257102**

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Dil Fac Analyzed 50 #2 Diesel (C10-C24) ND 09/23/17 10:32 09/27/17 00:49 12 mg/Kg Motor Oil (>C24-C36) ND 50 09/23/17 10:32 09/27/17 00:49 9.1 mg/Kg

MB MB

Limits Dil Fac Surrogate %Recovery Qualifier Prepared Analyzed 09/23/17 10:32 09/27/17 00:49 50 - 150 o-Terphenyl 102

Lab Sample ID: LCS 580-257102/2-B

Matrix: Solid

Prep Type: Total/NA **Analysis Batch: 257364 Prep Batch: 257102** Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits #2 Diesel (C10-C24) 500 462 mg/Kg 92 64 - 127

TestAmerica Seattle

Client Sample ID: Lab Control Sample

TestAmerica Job ID: 580-71539-1

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

Analysis Batch: 257364

Lab Sample ID: LCS 580-257102/2-B

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

Spike

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

Prep Batch: 257102

%Rec. Unit D %Rec Limits

Added Result Qualifier 500 524 mg/Kg 105 70 - 125

LCS LCS

LCS LCS

%Recovery Qualifier Limits Surrogate o-Terphenyl 50 - 150 97

Lab Sample ID: LCSD 580-257102/3-B Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Matrix: Solid

Motor Oil (>C24-C36)

Analyte

Analysis Batch: 257364

Prep Type: Total/NA **Prep Batch: 257102**

%Rec. **RPD** Limits **RPD** Limit

LCSD LCSD Spike Analyte Added Result Qualifier Unit %Rec 500 #2 Diesel (C10-C24) 447 89 64 - 127 3 16 mg/Kg 500 mg/Kg Motor Oil (>C24-C36) 503 101 70 - 1254 17

LCSD LCSD

Surrogate %Recovery Qualifier Limits o-Terphenyl 88 50 - 150

Lab Sample ID: 580-71539-6 MS Client Sample ID: EX-DB2-C8-10

Matrix: Solid

Analysis Batch: 257364

Prep Type: Total/NA **Prep Batch: 257102**

MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits ₩ #2 Diesel (C10-C24) ND 557 413 74 70 - 125 mg/Kg Motor Oil (>C24-C36) ND 557 465 mg/Kg 83 64 - 127

MS MS Surrogate %Recovery Qualifier Limits 50 - 150 o-Terphenyl 78

Lab Sample ID: 580-71539-6 MSD Client Sample ID: EX-DB2-C8-10

Matrix: Solid

Prep Type: Total/NA **Analysis Batch: 257364 Prep Batch: 257102** Sample Sample Spike MSD MSD %Rec. **RPD**

Result Qualifier Added Result Qualifier Unit Limits **RPD** Limit Analyte D %Rec ₩ #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

MSD MSD Limits Surrogate %Recovery Qualifier 50 - 150 o-Terphenyl 87

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

Batch Batch Dilution Batch Prepared Prep Type Method Run **Factor** Number or Analyzed Analyst Type Lab Total/NA 257107 09/23/17 11:39 JWL TAL SEA Analysis D 2216

Client Sample ID: EX-DB2-C3-10 Lab Sample ID: 580-71539-1

Date Collected: 09/22/17 07:55

Date Received: 09/23/17 09:50

Matrix: Solid

Percent Solids: 81.2

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71539-2

Date Collected: 09/22/17 08:10

Date Received: 09/23/17 09:50

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71539-2

Date Collected: 09/22/17 08:10

Date Received: 09/23/17 09:50

Matrix: Solid

Percent Solids: 70.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71539-3

Date Collected: 09/22/17 08:30

Date Received: 09/23/17 09:50

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	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

Percent Solids: 75.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/22/17 08:45

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/22/17 08:45

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-4 **Matrix: Solid**

Percent Solids: 82.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/22/17 13:10

Date Received: 09/23/17 09:50

Lab Sam	ple II	D: 580	0-715	539-5
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Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Date Collected: 09/22/17 13:10

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-5 **Matrix: Solid**

Percent Solids: 78.2

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Job ID: 580-71539-1

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

Client Sample ID: EX-DB2-C7-11

Date Collected: 09/22/17 13:10 Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-5

Matrix: Solid Percent Solids: 78.2

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

Date Received: 09/23/17 09:50

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Date Received: 09/23/17 09:50

Batch Dilution Batch Batch Prepared Factor Number or Analyzed Prep Type Type Method Run Analyst Lab Total/NA Analysis D 2216 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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

Matrix: Solid

Client Sample ID: EX-DB2-D3-10

Date Collected: 09/22/17 07:45 Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-7

Matrix: Solid

Percent Solids: 77.9

TAL SEA

Batch Dilution Batch **Prepared** Batch **Prep Type** Type Method Run **Factor** Number or Analyzed Analyst Lab TAL SEA Total/NA Analysis NWTPH-Dx 257364 09/27/17 04:45 ADB

Client Sample ID: EX-DB2-F2-12 Lab Sample ID: 580-71539-8

Date Collected: 09/21/17 11:20 Date Received: 09/23/17 09:50

Matrix: Solid

Dilution Batch Batch **Batch** Prepared Method **Prep Type** Type Run **Factor** Number or Analyzed Lab Analyst D 2216 JWL TAL SEA Total/NA 257107 09/23/17 11:39 Analysis

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Lab Sample ID: 580-71539-9 Client Sample ID: RB-092117 Matrix: Water

Date Collected: 09/21/17 12:40 Date Received: 09/23/17 09:50

Analysis

NWTPH-Gx

Total/NA

Batch Batch Dilution Batch **Prepared** Method Factor Number or Analyzed Type Run **Prep Type Analyst** Lab

Client Sample ID: RB-092217 Lab Sample ID: 580-71539-10

257188 09/25/17 12:51 RSB

Date Collected: 09/22/17 09:00 **Matrix: Water** Date Received: 09/23/17 09:50

Batch Batch Dilution Batch Prepared or Analyzed **Prep Type** Type Method Run **Factor** Number Analyst Lab TAL SEA Total/NA Analysis NWTPH-Gx 257188 09/25/17 13:23 RSB

Lab Chronicle

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

Client Sample ID: Trip Blank

TestAmerica Job ID: 580-71539-1

Lab Sample ID: 580-71539-11

Matrix: Solid

Date Collected: 09/21/17 00:01 Date Received: 09/23/17 09:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71539-1

Project/Site: Edmonds Terminal

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

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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

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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

Fed set



Short Hold

Chain of **Custody Record**

Client		Client Conta					Date	Chain of Custody Number
Areadis	**************************************	Ryan B	rauchla	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			9-22-2017 Lab Number	29433
Address C 1 00	(C)	Telephone N 509-439	lumber (Area Code)/	Fax Number			253-922-2310	Page 1 of
1100 Olive Way, Soite 80	nte Zip Code	Sampler		Lab Contact			nalysis (Attach list if	
Senttle W.		Ryan Bo	ravehla (RD)	Flaine	Walker	TEN TEN	ore space is needed)	
Project Name and Location (State)		Billing Conta	nct			3,33		0
Contract/Purchase Order/Quote No.						74-6x 74-Dx d/ss (Berzent (c. PAHs)		Special Instructions/ Conditions of Receipt
B0045362.0010		-	Matrix		ainers & ervatives			bunditions of necespe
Sample I.D. and Location/Description (Containers for each sample may be combined on	one line) Date	Time 漫	Aqueous Sed. Soil	Unpres. H2S04 HNO3	NaOH NaOH NaOH			
EX-DB2-C3-10		755	X	2	2	XXX*		Email results to:
EX-DB2-C4-10		1810	X	2	2	XXX*		ryan brandle Caredi us
EX-DBZ-C5-10	9-22-17 0	830	X	2	2	XXX*		Samuel mile Carredis con
EX-DB2-C6-10	9-22-17 0	845	X	2	2	XXX*		ophelie encelle Carado car
EX-DB2-C7-11	9-22-17 1	310	X,	2	2	XXX*		scott.zorn@aradis.com
EX-DB2-C8-10	9-22-17 10	005	X	2	2	XXX		
EX-DB2-C8-10-MS	9-22-17 10	205	X	2	2	XXX		*Analyze Gr cPAHs only
EX-DB2-C8-10-MSD	9-22-17 10	005	X	2	2	XXX*		if DRO/10 detected Cextraction
EX-DBZ-D3-10	9-22-17-0	745	X	2	2	XXX*		okay)
EX-DBZ-F2-12	9-21-17 1	120	X	2	2	XXX*		WBS Codes:
RB-092117	9-21-171	240	X		2 '	X		NWENV PMG ODI430804 - Soil
RR-092217	9-22-170	900	$X \cdot \cdot $		2	$X \sqcup \bot$		WWENY PMG001430803 - water
	Possible Hazard Identification	🗆 a			•		☐ Disposal By Lab ☐ Archive For Monti	(A fee may be assessed if samples
☐ Yes ☐ No Cooler Temp: ☐ L Turn Around Time Required (business days)	□ Non-Hazard □ Flamma	abie 🗀 Ski	in Irritant 🔲 P		Unknown 🔲 F rements (Specify)	Return To Client	Archive For Month	hs are retained longer than 1 month)
	☐ 10 Days ☐ 15 Days	🗆 Other		_ An	alyze trip 1	blak for	NWTPH-GX/826	oc(Benzene)
T. Reunquished By Sign/Print		Date	Time	1. Receiv	ed By Sign/Print	•	••	Pate Time 9-22-17 1600
2. Relinquished By Sign/Print	auch19	9-22-1 Date	7 1600 Time					Date Time
Z. Tomaquiorea Dy Gagair 7 mil				, , ,	Sign/Print	,	all Seath	
3. Relinquished By Sign/Print		Data	Time		ed By Sign/Prin	1.000 pp 1141 pp 1141	E-Planter-Plante hallende (1982) (\$100) (erford exten exten e	Date Time
Comments		ML Coole	erCor_	Unc_0.	5			
			vs Green	Lab <u> 695</u>	<u>D</u>			And the state of t
OISTRIBUTION: WHITE - Stays with the Samples;		i/Packs I	Packing (>- Custody Sealag	ge 29 of 3		580-7153 9 Ch	ain of Custody	TAL-8274-580 (0210) 11/22/2017 (Rev. 2)

Client: ARCADIS U.S. Inc

Job Number: 580-71539-1

Login Number: 71539 List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Groutor. Gail, Brandon A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Seattle



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: 580-71582-1

Client Project/Site: Edmonds Terminal

For:

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

Attn: Samuel Miles

M. Elains 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

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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.

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71582-1

Table of Contents

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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

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)

RLReporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ**

Page 5 of 17

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 Percent Solids: 68.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		36	15	ug/Kg	<u> </u>	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
1,2-Dichioroethane-u4 (Sulf)	117		00 - 121				03/20/11 10:20	03/20/11 11.01	•
Method: NWTPH-Gx - Nort Analyte	hwest - Volatile	Petroleur Qualifier		•	Unit	D	Prepared	Analyzed	Dil Fac
	hwest - Volatile		n Products (MDL	Unit mg/Kg	D <u>⇔</u>			Dil Fac
Method: NWTPH-Gx - Nort Analyte	hwest - Volatile Result	Qualifier	n Products (MDL			Prepared	Analyzed	1
Method: NWTPH-Gx - Nort Analyte Gasoline	hwest - Volatile Result ND	Qualifier	m Products (MDL			Prepared 09/26/17 12:58	Analyzed 09/27/17 00:25	1
Method: NWTPH-Gx - Nort Analyte Gasoline Surrogate	hwest - Volatile Result ND %Recovery 95	Qualifier Qualifier	m Products (1 RL 7.2 Limits 50 - 150	3.8	mg/Kg		Prepared 09/26/17 12:58	Analyzed 09/27/17 00:25 Analyzed	Dil Fac Dil Fac 1

Method: NW I PH-Dx - Nor	thwest - Semi-Vo	platile Pet	roleum Prod	ucts (GC	(ز				
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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71582-1

Lab Sample ID: 580-71582-2

Matrix: Water

Client Sample ID: RB-092517 Date Collected: 09/25/17 16:30

Date Received: 09/26/17 12:00

Method: NWTPH-Gx - Norti	hwest - Volatile	e Petroleu	m 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

1

9

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71582-1

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

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		Qualifier	RL `	•	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	

TestAmerica Job ID: 580-71582-1

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

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

Lab Sample ID: MB 580-257309/1-A

Matrix: Solid

Analysis Batch: 257319

MB MB

Analyte

Result Qualifier

RL MDL Unit

D Prepared Analyzed Dil Fac

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 15:24	1
	MB	MB							
Surrogate	%Recovery	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

Spike

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257309
%Rec.

Analyte Benzene Added Result Qualifier Unit ug/Kg D MRec Limits 79 - 135

LCS LCS

Surrogate	%Recovery	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

Spike

LCSD LCSD

Spike

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

Prep Batch: 257309

Rec. RPD

Analyte Added Result Qualifier Limits Unit D %Rec RPD Limit Benzene 800 916 ug/Kg 115 79 - 135 LCSD LCSD Surrogate %Recovery Qualifier

Surrogate	/orvecovery	Qualifier	Liiiii
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

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

Analysis Batch: 257293

 Analyte
 Result
 Qualifier
 RL
 MDL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Gasoline
 ND
 0.25
 0.050
 mg/L
 D
 Prepared
 Analyzed
 Dil Fac

TestAmerica Seattle

Client: ARCADIS U.S. Inc

TestAmerica Job ID: 580-71582-1

Project/Site: Edmonds Terminal

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

MB MB

Surrogate	%Recovery 0	Qualifier Limits	Prepared A	nalyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	58 - 133	09/2	26/17 11:02	1
Trifluorotoluene (Surr)	104	77 - 128	09/2	26/17 11:02	1

Lab Sample ID: LCS 580-257293/7 **Client Sample ID: Lab Control Sample Prep Type: Total/NA**

Matrix: Water

Analysis Batch: 257293

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1.00 0.901 Gasoline mg/L 90 79₋110

LCS LCS Surrogate %Recovery 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

LCSD LCSD **RPD** Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit 1.00 Gasoline 0.895 mg/L 90 79 - 110

LCSD LCSD

Surrogate	%Recovery	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

Prep Type: Total/NA

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 09/26/17 12:58 09/26/17 22:17 Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg

MR MR

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 95 50 - 150 09/26/17 12:58 09/26/17 22:17

Lab Sample ID: LCS 580-257301/2-A

Matrix: Solid

Analysis Batch: 257315

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

Client Sample ID: Lab Control Sample Dup

Prep Batch: 257301

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 40.0 95 68 - 120 Gasoline 37.9 mg/Kg

LCS LCS

Surrogate %Recovery Qualifier Limits 50 - 150 4-Bromofluorobenzene (Surr) 100

TestAmerica Seattle

9/27/2017

TestAmerica Job ID: 580-71582-1

68 - 120

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 257298

0

95

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

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

Lab Sample ID: LCSD 580-257301/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257315 Prep Batch: 257301** Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit

37.9

mg/Kg

LCSD LCSD Surrogate %Recovery Qualifier

Limits 50 - 150

40.0

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

98

Lab Sample ID: MB 580-257298/1-B

Matrix: Solid

Gasoline

Analysis Batch: 257364

4-Bromofluorobenzene (Surr)

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 50 09/26/17 12:40 09/26/17 20:30 #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 12 mg/Kg Motor Oil (>C24-C36) ND 50 9.1 mg/Kg 09/26/17 12:40 09/26/17 20:30

MB MB %Recovery Qualifier Limits Surrogate o-Terphenyl 89 50 - 150

Dil Fac Prepared Analyzed 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

Lab Sample ID: LCS 580-257298/2-B

Matrix: Solid

Analysis Batch: 257364

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %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 80 50 - 150 o-Terphenyl 0-1 n-Decanoic Acid (Surr) 0.09

Lab Sample ID: LCSD 580-257298/3-B

Matrix: Solid

Analysis Batch: 257364 Prep Batch: 257298 LCSD LCSD Spike %Rec. RPD Analyte Added Result Qualifier %Rec Limits Unit D #2 Diesel (C10-C24) 500 396 79 64 - 127 16 mq/Kq Motor Oil (>C24-C36) 500 90 70 - 125 17 448 mg/Kg

LCSD LCSD %Recovery Qualifier Surrogate Limits 50 - 150 o-Terphenyl 0.08 n-Decanoic Acid (Surr) 0 - 1

TestAmerica Seattle

25

Prep Type: Total/NA

Prep Batch: 257298

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

QC Sample Results

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71582-1 Project/Site: Edmonds Terminal

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

Lab Sample ID: 580-7158 Matrix: Solid Analysis Batch: 257364	2-1 DU					С	lient San	nple ID: EX-DB2-A2- Prep Type: Tot Prep Batch: 29	al/NA
-	Sample	Sample		DU	DU				RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	-		35
Motor Oil (>C24-C36)	22	J		ND		mg/Kg	₩	NC	35
	DU	DU							
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	76		50 - 150						
n-Decanoic Acid (Surr)	0.0003		0 - 1						

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71 Matrix: Solid Analysis Batch: 25730						Client Samp	le ID: EX-DB2-A2- Prep Type: Tot	
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	68.7		64.5		%		6	20
Percent Moisture	31.3		35.5		%		13	20

9/27/2017

TestAmerica Job ID: 580-71582-1

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

Client Sample ID: EX-DB2-A2-6-SW Lab Sample ID: 580-71582-1

Date Collected: 09/25/17 16:00 Matrix: Solid

Date Collected: 09/25/17 16:00 Matrix: Solid Date Received: 09/26/17 12:00

Batch Dilution Batch Batch **Prepared** Method Factor Number **Prep Type** Type Run or Analyzed Analyst Lab TAL SEA Total/NA Analysis D 2216 257304 09/26/17 13:04 REY

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

Batch Batch Dilution Batch **Prepared Prep Type** Type Method Run Factor Number or Analyzed Analyst Lab Total/NA 5035 TAL SEA Prep 257309 09/26/17 13:25 JSM Total/NA Analysis 8260C 257319 TAL SEA 1 09/26/17 17:07 TL1 Total/NA Prep 5035 09/26/17 12:58 RSB TAL SEA 257301 Total/NA Analysis **NWTPH-Gx** 1 257315 09/27/17 00:25 CJ TAL SEA TAL SEA Total/NA Prep 3546 257298 09/26/17 12:40 REY Total/NA 3630C TAL SEA Cleanup 257356 09/26/17 16:15 APR Total/NA Analysis NWTPH-Dx 257364 09/26/17 21:29 ADB TAL SEA 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

Batch Batch Dilution Batch Prepared Method **Factor** Number or Analyzed **Prep Type** Type Run **Analyst** Lab Total/NA Analysis NWTPH-Gx 257293 09/26/17 14:20 TAL SEA

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

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TestAmerica Seattle

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71582-1

Project/Site: Edmonds Terminal

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			

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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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5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047

www.testamericainc.com

TestAmerica Seattle

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Short Hold

Chain of Custody Record

Client				Conta			k										Date	' ۔	_			Chain i	ot Custoay	מוחטאי	er	is as
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Project Name and Location (State)	- I		Billing	Conta	ict									Ĭ		1										
Edmonds Terminal Contract/Purchase Order/Quote No.	Edin	ronds, WA		-										3	5	ं							Specia			
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RB-092517		9-25-17	1630		X.	B		ļ		2			X										yanı	genu	chk(garadis.u
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Comments												,		· · · · · · · · · · · · · · · · · · ·	····						.,,			L_		

Client: ARCADIS U.S. Inc

List Source: TestAmerica Seattle

Job Number: 580-71582-1

Login Number: 71582 List Number: 1

Creator: Blankinship, Tom X

Grouter: Blankingrip, Terrix		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Seattle



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. Elains Walker

Authorized for release by: 9/29/2017 10:08:22 AM

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.

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71607-1

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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.

TestAmerica Seattle 9/29/2017

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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 (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.

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TestAmerica Seattle 9/29/2017

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.
¤	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)

MDA MDC

LOD

LOQ

Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry)

Limit of Detection (DoD/DOE)

Limit of Quantitation (DoD/DOE)

MDL Method Detection Limit Minimum Level (Dioxin) ML 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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

TestAmerica Seattle

9/29/2017

Page 5 of 17

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

Date Collected: 09/26/17 16:10

Date Received: 09/27/17 11:00

Client Sample ID: EX-DB2-E2-10

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

TestAmerica Job ID: 580-71607-1

Lab Sample ID: 580-71607-1

Matrix: Solid Percent Solids: 79.1

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	%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

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	%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 - Northwee Analyte #2 Diesel (C10-C24)		Qualifier	roleum Pro	MDL	Unit mg/Kg	D ¬	Prepared 09/27/17 11:35	Analyzed 09/28/17 16:02	Dil Fac

1	raidiyto	Hoodit	Quaiiiioi			0	_	opu.ou	7 tilaly 20a	D uo
	#2 Diesel (C10-C24)	ND	*	63	16	mg/Kg	₩	09/27/17 11:35	09/28/17 16:02	1
١	Motor Oil (>C24-C36)	ND	*	63	11	mg/Kg	₩	09/27/17 11:35	09/28/17 16:02	1
١										
	Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	Surrogate o-Terphenyl	%Recovery	Qualifier	Limits 50 - 150					Analyzed 09/28/17 16:02	Dil Fac

09/27/17 11:35	09/28/17 16:02	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: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71607-1

Lab Sample ID: 580-71607-2

Matrix: Water

Client Sample ID: RB-092617 Date Collected: 09/26/17 16:30

Date Received: 09/27/17 11:00

Method: NWTPH-Gx - North	west - Volatile	Petrole ur	n 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
Surrogate 4-Bromofluorobenzene (Surr)		Qualifier	Limits 58 - 133				Prepared	Analyzed 09/27/17 15:43	Dil Fac

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Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71607-1

Lab Sample ID: 580-71607-3

Matrix: Solid

Client Sample ID: TB-092617

Date Collected: 09/26/17 00:01

Date Received: 09/27/17 11:00

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

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)							00/07/47 40:50	09/28/17 02:51	1

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TestAmerica Job ID: 580-71607-1

09/27/17 12:15 09/27/17 13:01

09/27/17 12:15 09/27/17 13:01

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

Dibromofluoromethane (Surr)

1,2-Dichloroethane-d4 (Surr)

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

105

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Lab Sample ID: MB 580-257436/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257443** Prep Batch: 257436 MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 20 Benzene 09/27/17 12:15 09/27/17 13:01 ND 8.6 ug/Kg MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 100 75 - 120 09/27/17 12:15 09/27/17 13:01 Trifluorotoluene (Surr) 101 60 - 150 09/27/17 12:15 09/27/17 13:01 4-Bromofluorobenzene (Surr) 96 47 - 150 09/27/17 12:15 09/27/17 13:01

Lab Sample ID: LCS 580-257436/2-A Client Sample ID: Lab Control Sample **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257443** Prep Batch: 257436 LCS LCS Spike

80 - 118

80 - 121

%Rec. Analyte Added Result Qualifier Unit D %Rec Limits Benzene 800 916 ug/Kg 115 79 - 135

LCS LCS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 100 75 - 120 103 60 - 150 Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) 98 47 - 150 109 80 - 118 Dibromofluoromethane (Surr) 1,2-Dichloroethane-d4 (Surr) 109 80 - 121

Lab Sample ID: LCSD 580-257436/3-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid**

Prep Batch: 257436 **Analysis Batch: 257443** LCSD LCSD Spike %Rec. **Analyte** Added Result Qualifier Unit D %Rec

Benzene 800 942 ug/Kg LCSD LCSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 99 75 - 120 Trifluorotoluene (Surr) 105 60 - 150 98 47 - 150 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 108 80 - 118

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

117

Lab Sample ID: MB 580-257440/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

80 - 121

Analysis Batch: 257440

1,2-Dichloroethane-d4 (Surr)

MB MB Result Qualifier RL **MDL** Unit D Analyte Prepared Analyzed Dil Fac Gasoline $\overline{\mathsf{ND}}$ 0.25 0.050 mg/L 09/27/17 14:08

TestAmerica Seattle

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Prep Type: Total/NA

RPD RPD Limit

118

9/29/2017

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

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared An	nalyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133	09/27	7/17 14:08	1
Trifluorotoluene (Surr)	110		77 - 128	09/27	7/17 14:08	1

Lab Sample ID: LCS 580-257440/7

Matrix: Water

Analysis Batch: 257440

_	Spik	e LCS	LCS				%Rec.
Analyte	Adde	d Result	Qualifier	Unit	D	%Rec	Limits
Gasoline		0.886		mg/L	_	89	79 - 110

77 - 128

LCS LCS %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 95 58 - 133

Lab Sample ID: LCSD 580-257440/8

Matrix: Water

Trifluorotoluene (Surr)

Analysis Batch: 257440

		Spike	LCSD	LCSD			%Rec.		RPD
Analyte		Added	Result	Qualifier	Unit	%Re		RPD	Limit
Gasoline		1.00	0.887		ma/L	- 8	9 79 - 110		10

LCSD LCSD

98

Surrogate	%Recovery 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

Cheffic Sample ID. Wethou Blank
Prep Type: Total/NA

MB MB Analyte **Result Qualifier** RL **MDL** Unit Prepared Analyzed Dil Fac 4.0 09/27/17 12:52 09/28/17 01:15 Gasoline ND 2.1 mg/Kg

MR MR

Surrogate	%Recovery 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 Prep Batch: 257446 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Gasoline 40.0 36.5 mg/Kg

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	95	50 - 150
Trifluorotoluene (Surr)	104	50 - 150

TestAmerica Seattle

9/29/2017

Client Comple ID: Method Blank

Prep Type: Total/NA

Prep Batch: 257446

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

TestAmerica Job ID: 580-71607-1

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 257428

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

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

Lab Sample ID: LCSD 580-257446/3-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA **Matrix: Solid Analysis Batch: 257452** Prep Batch: 257446 Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 40.0 94 68 - 120 3 25 Gasoline 37.7 mg/Kg

LCSD LCSD Surrogate %Recovery 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

MB MB

MDL Unit Result Qualifier RL D Analyte Prepared Analyzed Dil Fac #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 50 12 mg/Kg 09/27/17 11:35 09/28/17 14:58 50 Motor Oil (>C24-C36) ND 9.1 mg/Kg 09/27/17 11:35 09/28/17 14:58

MB MB Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed o-Terphenyl 82 50 - 150 09/27/17 11:35 09/28/17 14:58 n-Decanoic Acid (Surr) 0.00008 0-1 09/27/17 11:35 09/28/17 14:58

Lab Sample ID: LCS 580-257428/2-C

Matrix: Solid

Analysis Batch: 257523

	Spike	LUS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
#2 Diesel (C10-C24)	 500	385		mg/Kg		77	64 - 127	
Motor Oil (>C24-C36)	500	440		mg/Kg		88	70 - 125	

LCS LCS Surrogate %Recovery Qualifier I imits o-Terphenyl 66 50 - 150 n-Decanoic Acid (Surr) 0.08 0 - 1

Lab Sample ID: LCSD 580-257428/3-C

Matrix: Solid

Motor Oil (>C24-C36)

Analysis Batch: 257523 LCSD LCSD Spike %Rec. Added Result Qualifier Unit %Rec Limits **RPD** Analyte Limit #2 Diesel (C10-C24) 500 317 63 mg/Kg

364 *

mg/Kg

500

LCSD LCSD Limits Surrogate %Recovery Qualifier 50 - 150 o-Terphenyl 61 n-Decanoic Acid (Surr) 0.07 0 - 1

TestAmerica Seattle

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

Prep Batch: 257428

Client Sample ID: Lab Control Sample Dup

73

Prep Batch: 257428 **RPD**

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 Client Sample ID: EX-DB2-E2-10 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257523** Prep Batch: 257428 Sample Sample DU DU **RPD** Analyte Result Qualifier Result Qualifier Unit D RPD Limit ₩ ND ND * NC 35 #2 Diesel (C10-C24) mg/Kg Motor Oil (>C24-C36) ND * ND * mg/Kg ₩ NC 35 DU DU Surrogate %Recovery Qualifier Limits

50 - 150

0-1

Method: D 2216 - Percent Moisture

79

0.0008

Lab Sample ID: 580-71607-1 DU

Matrix: Solid

Client Sample ID: EX-DB2-E2-10

Prep Type: Total/NA

Analysis Batch: 257435

o-Terphenyl

n-Decanoic Acid (Surr)

DU DU RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit RPD Limit D 79.1 76.0 % 20 Percent Solids Percent Moisture 20.9 24.0 % 14 20

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

Lab Sample ID: 580-71607-1

Matrix: Solid

Client Sample ID: EX-DB2-E2-10 Date Collected: 09/26/17 16:10

Client Sample ID: EX-DB2-E2-10

Date Received: 09/27/17 11:00

Date Collected: 09/26/17 16:10

Date Received: 09/27/17 11:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257435	09/27/17 12:15	REY	TAL SEA

Lab Sample ID: 580-71607-1

Matrix: Solid

Percent Solids: 79.1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71607-2 Date Collected: 09/26/17 16:30

Matrix: Water

Date Received: 09/27/17 11:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257440	09/27/17 15:43	CJ	TAL SEA

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

TestAmerica Seattle

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				

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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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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

Rush	
Short Hold	

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Arcadis Arcadis			Client Contact Ryan Brankla Telephone Number (Area Code)/Fax Number						1	Date 9-2'	7-7	201	·7	Ch	Chain of Custody Number 29427								
1100 Olive Way Suite 80	00	509-	509-438-9828						Lab Nui 2 5 3	mber - 92	2-2			ige	1	_ of _							
State Zip C Seattle WA 9	816		Sampler Lab Contact Ryan Branchla (RB) Elaine Walker Billing Contact						X.		more	rsis (Atta space is	ach lis s need	it if ded)	ТТ								
Edmonds Terminal Contract/Purchase Order/Quote No.				Matrix				Containers & Preservatives					Kulkin i.e.								nstruct s of Re		
BOO45362.0010 Sample 1.D. and Location/Description (Containers for each sample may be combined on one line)), and Location/Description		Aqueous Sed.		Unpres.				NaOH FOST	المراز المقوالما													
EX-DB2-E2-10	1-26 -17	1610		X	2				2	X	$X\rangle$	(*							Emgil	resul	k to:		
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TB-092617	1-26-17			X					ĭ	X	\rightarrow											arcabis	
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		580-71607 C	chain o	f Custor	dy					a	6 C	N										304-50 03-500	
Cooler Possible Haze	ard Identification				II	1			Samp	ole Di	sposal		<u> </u>	Disposal	By La	b b			NWENV (A fee ma				100
🔯 Yes □ No Cooler Temp: 🔀 Non-Haza	rd 🗌 Flami	mable 🗀 .	Skin Irri	tant	□ Poiso					eturn	To Clie	nt		rchive I	For		Moi		are retail				
Turn Around Time Required (business days) ☑ 24 Hours □ 48 Hours □ 5 Days □ 10 Days	☐ 15 Days	☐ Other				QC Re	quirem	ents (S	pecify)														
1. Relinquished By Sign/Print Py UB / Ryem W Brouch a 2. Relinquished By Sign/Print		Date 9-27-2	017	Time	945		·		n/Print	Fr	G4 (:)`\$	ری	L	y h C	Ţ,	-	[)ate 4/27,	17	Time U91	15	
2. Kelinguished by Sign/Print			7	Time 112	0	2. Received By Sign/Print							1					9/27,	/17	Time	120		
3. Relinquished By Sign/Print		Date	<i>i /</i>	Time					a/Print	\bigcirc)	·						Date	17	Time	<u> </u>	
Comments				,,,,,,			***************************************					······································	- 4										

Client: ARCADIS U.S. Inc

Job Number: 580-71607-1

Login Number: 71607 List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Grouter: Blankingrip, Terrix		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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. Elains 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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Have a Question?



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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.

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71638-1

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Sample Summary	21
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Receipt Checklists	23

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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.

TestAmerica Seattle 9/29/2017 2

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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 (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.

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Definitions/Glossary

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71638-1

Qualifiers

GC Semi VOA

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)

RLReporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ**

9/29/2017

Page 5 of 23

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**

Percent Solids: 74.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND			12	ug/Kg	<u> </u>	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 - Nort	hwest - Volatile	e Petroleui	m Products (GC)					
Analyte		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 - Nor	thwest - Semi-V	olatile Pet	roleum Prod	ucts (G0	3)				
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
	Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate o-Terphenyl	Analyte Result #2 Diesel (C10-C24) ND Motor Oil (>C24-C36) ND Surrogate %Recovery o-Terphenyl 88	Analyte Result Qualifier #2 Diesel (C10-C24) ND Motor Oil (>C24-C36) ND Surrogate %Recovery Qualifier o-Terphenyl 88	Analyte Result #2 Diesel (C10-C24) ND 60 Motor Oil (>C24-C36) ND 60 Surrogate %Recovery o-Terphenyl Qualifier Limits 50 - 150	Analyte Result #2 Diesel (C10-C24) ND 60 15 Motor Oil (>C24-C36) ND 60 11 Surrogate o-Terphenyl %Recovery 88 Qualifier 50 - 150	Analyte Result #2 Diesel (C10-C24) ND 60 15 mg/Kg Motor Oil (>C24-C36) ND 60 11 mg/Kg Surrogate o-Terphenyl %Recovery Recovery 88 Limits 50 - 150	Analyte Result #2 Diesel (C10-C24) ND Qualifier RL MDL wint Unit D mg/Kg Motor Oil (>C24-C36) ND 60 15 mg/Kg 30 Surrogate o-Terphenyl %Recovery 88 Qualifier wints Limits 50 - 150 50 - 150 50 - 150	Analyte Result #2 Diesel (C10-C24) ND G0 15 mg/Kg © 09/28/17 11:48 Motor Oil (>C24-C36) ND 60 11 mg/Kg © 09/28/17 11:48 Surrogate %Recovery Oualifier Limits Prepared 0-Terphenyl 88 50 - 150 09/28/17 11:48	#2 Diesel (C10-C24) ND 60 15 mg/Kg 09/28/17 11:48 09/29/17 04:03 Motor Oil (>C24-C36) ND 60 11 mg/Kg 09/28/17 11:48 09/29/17 04:03 Surrogate %Recovery Qualifier Limits 09/28/17 11:48 09/29/17 04:03 88 50 - 150 Prepared 09/28/17 11:48 09/29/17 04:03

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

9/29/2017

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

Date Collected: 09/27/17 11:15

Date Received: 09/28/17 11:45

Client Sample ID: EX-DB2-D5-10

TestAmerica Job ID: 580-71638-1

Lab Sample ID: 580-71638-2

Matrix: Solid Percent Solids: 79.1

ds: 79.1	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	<u> </u>	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 - Northw	est - Volatile	Petroleui	m 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 - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
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

9/29/2017

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

Date Collected: 09/27/17 14:30 Date Received: 09/28/17 11:45

Client Sample ID: EX-DB2-D6-10

TestAmerica Job ID: 580-71638-1

Lab Sample ID: 580-71638-3

Matrix: Solid
Percent Solids: 76.6

Method: 8260C - Volatile Or	ganic Compo	unds by G	C/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
Analyte Gasoline	ND ND	Qualifier	RL 5.2	MDL 2.7	mg/Kg	— D	Prepared 09/29/17 09:16		Dil Fac
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
	west - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Únit	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	00/00/47 04 45	1

General Chemistry Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.6	0.1	0.1	%		<u> </u>	09/28/17 11:59	1
Percent Moisture	23.4	0.1	0.1	%			09/28/17 11:59	1

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

Date Collected: 09/27/17 15:10

Date Received: 09/28/17 11:45

Client Sample ID: EX-DB2-D7-11

TestAmerica Job ID: 580-71638-1

Lab Sample ID: 580-71638-4

Matrix: Solid Percent Solids: 76.1

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Analyte	Organic Compo	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	Qualifier	26	11	ug/Kg	— =	09/28/17 14:36	09/28/17 23:01	1
Benzene	ND		20		ugntg		00/20/17 14:00	00/20/17 20:01	
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 - Nort	hwest - Volatile	e Petroleui	m Products (GC)					
Analyte		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 - Nort	hwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
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	
` ,	115		56	14	5 5				
Motor Oil (>C24-C36)	ND		58	11		₽	09/28/17 11:48	09/29/17 05:05	1
Motor Oil (>C24-C36) Surrogate		Qualifier				₩	09/28/17 11:48 Prepared	09/29/17 05:05 Analyzed	1 Dil Fac
,	ND	Qualifier	58			\$			1
Surrogate	ND %Recovery	Qualifier	58 Limits			₩	Prepared	Analyzed	1 Dil Fac
Surrogate o-Terphenyl n-Decanoic Acid (Surr)	ND %Recovery 78	Qualifier	58 <i>Limits</i> 50 - 150			₩	Prepared 09/28/17 11:48	Analyzed 09/29/17 05:05	Dil Fac
Surrogate o-Terphenyl	%Recovery 78 0.0001	Qualifier Qualifier	58 <i>Limits</i> 50 - 150		mg/Kg	₽	Prepared 09/28/17 11:48	Analyzed 09/29/17 05:05	Dil Fac
Surrogate o-Terphenyl n-Decanoic Acid (Surr) General Chemistry	%Recovery 78 0.0001		58 Limits 50 - 150 0 - 1	11	mg/Kg		Prepared 09/28/17 11:48 09/28/17 11:48	Analyzed 09/29/17 05:05 09/29/17 05:05	1 Dil Fac

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

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 - Nort				•		_			
Analyte		Qualifier	RL	MDL		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 - Nort	hwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Únit	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									
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
General Chemistry Analyte Percent Solids	Result 79.0	Qualifier	RL 0.1	MDL 0.1	Unit %	D	Prepared	Analyzed 09/28/17 11:59	Dil Fac

Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71638-1

Client Sample ID: RB-092717

Date Collected: 09/27/17 10:50 Date Received: 09/28/17 11:45 Lab Sample ID: 580-71638-6

Matrix: Water

Method: NWTPH-Gx - Nort	hwest - Volatile Petrol	eum Products	(GC)				
Analyte	Result Qualifier	r RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	0.25	0.050 mg/L			09/28/17 14:40	1
Surrogate	%Recovery Qualified	r 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

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Client: ARCADIS U.S. Inc Project/Site: Edmonds Terminal TestAmerica Job ID: 580-71638-1

Client Sample ID: TB-092717

Date Collected: 09/27/17 00:01 Date Received: 09/28/17 11:45 Lab Sample ID: 580-71638-7

Matrix: Solid

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-Bromofluorohenzene (Surr)	92	-	50 150				09/29/17 09:16	09/29/17 12:28		

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

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

Lab Sample ID: MB 580-257566/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257575 Prep Batch: 257566** MB MB Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 09/28/17 14:36 09/28/17 20:01 Benzene 20 8.6 ua/Ka

Delizerie	ND		20	0.0 ug/kg	09/20/17 14.50	03/20/17 20.01	'
	MB	MB					
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257575 Prep Batch: 257566** LCS LCS Spike %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits Benzene 800 906 ug/Kg 113 79 - 135

	LCS	LCS	
Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 257575 Spike LCSD LCSD %Rec. **RPD** D %Rec Added Result Qualifier Limits **Analyte** Unit RPD Limit Benzene 800 930 ug/Kg 116

LCSD LCSD Surrogate %Recovery Qualifier Limits 102 Toluene-d8 (Surr) 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 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analysis Batch: 257531

MB MB Analyte Result Qualifier RL **MDL** Unit D Dil Fac Prepared Analyzed 09/28/17 13:05 0.25 Gasoline $\overline{\mathsf{ND}}$ 0.050 mg/L

TestAmerica Seattle

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Prep Batch: 257566

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

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

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 58 - 133 09/28/17 13:05 90 Trifluorotoluene (Surr) 109 77 - 128 09/28/17 13:05

Lab Sample ID: LCS 580-257531/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 257531

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1.00 0.895 Gasoline mg/L 90 79₋110

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 96 58 - 133 Trifluorotoluene (Surr) 101 77 - 128

Lab Sample ID: LCSD 580-257531/8 **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA **Matrix: Water**

Analysis Batch: 257531

		Spike	LCSD	LCSD				%Rec.		RPD
Analyte	A	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline		1.00	0.857		mg/L		86	79 - 110	4	10

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

Lab Sample ID: MB 580-257636/1-A **Client Sample ID: Method Blank** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 257643

MB MB Result Qualifier RL **MDL** Unit **Analyte** Prepared Analyzed Dil Fac 09/29/17 09:16 09/29/17 10:52 Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 92 50 - 150 09/29/17 09:16 09/29/17 10:52

Lab Sample ID: LCS 580-257636/2-A **Matrix: Solid**

Analysis Batch: 257643

Prep Batch: 257636 LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 68 - 120 Gasoline 40.0 37.9 mg/Kg 95

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 98 50 - 150

TestAmerica Seattle

Prep Batch: 257636

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

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

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 %Rec. **RPD**

Spike LCSD LCSD Analyte Added Result Qualifier Unit D %Rec Limits RPD 40.0 68 - 120 5 Gasoline 40.0 mg/Kg 100

Limit 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

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 50 09/28/17 11:48 09/29/17 03:01 #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 12 mg/Kg Motor Oil (>C24-C36) ND 50 9.1 mg/Kg 09/28/17 11:48 09/29/17 03:01

MB MB

%Recovery Qualifier Limits Dil Fac Surrogate Prepared Analyzed 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

Lab Sample ID: LCS 580-257527/2-B

Lab Sample ID: LCSD 580-257527/3-B

Matrix: Solid

Matrix: Solid

Analysis Batch: 257523

Analysis Batch: 257523

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 257527

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits #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 78 50 - 150 o-Terphenyl 0-1 n-Decanoic Acid (Surr) 0

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 257527 %Rec. **RPD**

LCSD LCSD Spike RPD Analyte Added Result Qualifier %Rec Limits Limit Unit D #2 Diesel (C10-C24) 500 392 78 64 - 127 0 16 mq/Kq Motor Oil (>C24-C36) 500 90 70 - 125 451 mg/Kg 17

LCSD LCSD

Surrogate %Recovery Qualifier Limits 50 - 150 o-Terphenyl 83 n-Decanoic Acid (Surr) n 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)

0 - 1

Lab Sample ID: 580-71638 Matrix: Solid Analysis Batch: 257523	3-5 DU						Client S	ample ID: EX-DB2-l Prep Type: Tot Prep Batch: 29	al/NA
	Sample	Sample		DU	DU			•	RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg			35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼	NC	35
	DU	DU							
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	87		50 - 150						

Method: D 2216 - Percent Moisture

0.00004

n-Decanoic Acid (Surr)

Lab Sample ID: 580-71638- Matrix: Solid Analysis Batch: 257529	C-5 DU					Client Samp	le ID: 580-71638-C Prep Type: Tot	
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	_		79.7		%			
Percent Moisture			20.3		%			

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

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

Batch Batch Dilution Batch Prepared **Prep Type** Method Run Factor Number or Analyzed Type Analyst Lab 257529 09/28/17 11:59 REY TAL SEA Total/NA Analysis D 2216

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71638-2

Date Collected: 09/27/17 11:15 **Matrix: Solid**

Date Received: 09/28/17 11:45

Dilution Batch Batch Batch Prepared Method **Prep Type** Type **Factor** Number or Analyzed Run Analyst Lab TAL SEA Total/NA Analysis D 2216 257529 09/28/17 11:59 REY

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 Lab Sample ID: 580-71638-3

Date Collected: 09/27/17 14:30 **Matrix: Solid**

Date Received: 09/28/17 11:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

TestAmerica Seattle

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9/29/2017

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

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 Percent Solids: 76.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/27/17 15:10

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/27/17 15:10

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-4 **Matrix: Solid**

Percent Solids: 76.1

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/27/17 16:20

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-5

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			257529	09/28/17 11:59	REY	TAL SEA

Client Sample ID: EX-DB2-D8-10

Date Collected: 09/27/17 16:20 Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-5 **Matrix: Solid**

Percent Solids: 79.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

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Lab Chronicle

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

Client Sample ID: EX-DB2-D8-10

TestAmerica Job ID: 580-71638-1

Lab Sample ID: 580-71638-5

Matrix: Solid

Date Collected: 09/27/17 16:20 Date Received: 09/28/17 11:45 Percent Solids: 79.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

Lab Sample ID: 580-71638-6 Client Sample ID: RB-092717

Date Collected: 09/27/17 10:50 **Matrix: Water**

Date Received: 09/28/17 11:45

ĺ	_	Batch	Batch		Dilution	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

TestAmerica Seattle

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71638-1

Project/Site: Edmonds Terminal

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

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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

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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



Short Hold

Chain of **Custody Record**

Client		Client Conta										ite			Chain of	Custody Nu	ımber
Arcadis	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Kyan I	Brauch Jumber (Area C	19							(7-27	7-20	17			<u> 29428 </u>
Address C 1 Qn	า				Number							b Numb		A7(A		1	
1100 Olive Way, Suite 800	<u>/</u>		138-98					·						-2310	Page _	1	of/
		Sampler	11 6		Contact		11.				Analysi more se	s (Attacl ace is n	list if				
Seattle WA	98101	Kran Br	auchla (P	5) E	lane	W	Ner		74			200 13 11					
Project Name and Location (State)		Billing Conta	act						755/m	(Bersell STM/PAR)							
Edmonds Terminal Contract/Purchase Order/Quote No.								. 🔀	, ş	2 3	2				1		nstructions/
B0045362.0010			Matrix			intainers eservati		7	7H-DX	٤٤	4				- '	ionaition	is of Receipt
			8 1 1	50	T			NWTPHG	2	8260C (Benzere 8770 STALPANE							
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time \\ \bar{\xi}	Aqueous Sed. Soil	Unpres.	H2S04 HN03	FC.	MaUH ZnAc/ NaOH NoOH	3	₹	8260C	j						
	(A S S	2	X X	#	2 2 2 6	V	Ź	× ×	7						ìì r
EX-DB2-D4-10	9-27-17 11	015				1	- 4	\triangle	\triangle	<u> </u>	1-1				Ema	il nesu	lls to:
EX-DB2-D5-10	9-27-17	115	X	2			2	X	X,	X *					٥	phelici	encell@arads.6
EX-DB2-D6-10	9-27-17 14	t30	\perp \times	Z			2	X	X	K X					دلا	an brai	MO areadis tom
EX-DB2-D7-11	9-27-17 1	510	X	2			Z	X	X	X					٥	muel, n	ules Caradis, com
EY-DB2-D8-10	9-27-17 1	620	X	2			2	X	χ	XX	+				Ś	off zo	Marcadis, con
RB-092717	9-27-17 1	050	X	2		2	Z	X	XXX								
TR-097712	9-27-17 -	-	X	2			7	X	j	X					WR	S Code	. (.*
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							Coo	ler	Dsc	_4.4	Blus	_(a)	Lab_			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
							Wet	/Pa	icks	Pac	king	į į	<u> 196</u>		*A	سعدرا عم	for cPAHs
	580-7163	38 Chain of C	ustody						CE	40	07J			•	-F 1	20/40	detected (extraction)
Cooler Possible H.	azard Identification			,			Sami	nle D	isposa		X Dis	posal B	v I ah				-
¥ Yes □ No Cooler Temp: XNon-Ha		ıble 🗆 Ski.	n Irritant 🛚 🗀] Poisor	1B [□ Unk	nown 🗆 R					hive For		Month			sessed if samples er than 1 month)
Turn Around Time Required (business days)		· · · · · · · · · · · · · · · · · · ·		1			nts (Specify)										
24 Hours 🗆 5 Days 🗀 10 Da	ys 🗌 15 Days	Other															
1. Relinquished By Sign/Print	. 1	Date	Time		1. Rece	jved By	Sign/Print Sign/Print	ـــ					~		Date	8/17	Time
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Francisco Lung) ~			j							-M						
3. Relinquished By Sign/Print		Date	Time		3. Recei	ived By	Sign/Print								Date	I	Time
Comments					***************************************				·	· · · · · · · · · · · · · · · · · · ·							
Comments																	

Client: ARCADIS U.S. Inc

Job Number: 580-71638-1

Login Number: 71638 List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Grouter: Blankinerip, Tem X		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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. Elains 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

Total Access

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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

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Receint Checklists	23

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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.

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TestAmerica Job ID: 580-71704-1

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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 (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.

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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**

Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis

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

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** 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

Not Detected at the reporting limit (or MDL or EDL if shown) ND

PQL Practical Quantitation Limit

QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ**

TestAmerica Seattle

Page 5 of 23

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E3-11

Date Collected: 09/29/17 11:10

Date Received: 09/30/17 09:15

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-1

Matrix: Solid

Percent Solids: 77.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	<u> </u>	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 - No	rthwest - Semi-Volatile Pet	troleum Prod	ucts (G	C)				
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND ND	56	14	mg/Kg	<u></u>	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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E4-10

Date Collected: 09/29/17 14:20

Date Received: 09/30/17 09:15

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-2

Matrix: Solid

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 - Northy	vest - Semi-Volatile Pe	troleum Prod	ucts (GC	C)				
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: ARCADIS U.S. Inc

Date Collected: 09/29/17 15:15

Date Received: 09/30/17 09:15

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E5-10

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-3

Matrix: Solid

Percent Solids: 76.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	11	ug/Kg	<u> </u>	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 - Northw	est - Volatile	Petroleui	n 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 - Northy	vest - Semi-Volatile Pet	troleum Prod	ucts (G0	C)				
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND ND	64	16	mg/Kg	<u> </u>	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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E6-11

Date Collected: 09/29/17 16:25

Date Received: 09/30/17 09:15

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-4

Matrix: Solid

Percent Solids: 76.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		28	12	ug/Kg	<u> </u>	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 - Northw	est - Volatile	Petroleu i	m 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 - Northy	vest - Semi-Volatile P	etroleum Prod	ucts (GC	C)				
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

TestAmerica Seattle

Client: ARCADIS U.S. Inc

Date Collected: 09/29/17 00:00

Date Received: 09/30/17 09:15

Project/Site: Chevron Edmonds Terminal

Client Sample ID: DUP03-SO-092917

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-5

Matrix: Solid

Percent Solids: 79.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	<u> </u>	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
		Detector	on Dunadounte (00)					
Method: NWTPH-Gx - Nort			•	•	Unit	D		Analyzed	Dil Fac
Method: NWTPH-Gx - Nort Analyte Gasoline		Petroleur Qualifier	m Products (MDL	Unit mg/Kg	D 章	Prepared 10/03/17 09:57	Analyzed 10/03/17 14:42	Dil Fac
Analyte	Result	Qualifier	RL	MDL		_	Prepared		Dil Fac
Analyte Gasoline	Result ND	Qualifier	4.8	MDL		_	Prepared 10/03/17 09:57	10/03/17 14:42	1
Analyte Gasoline Surrogate 4-Bromofluorobenzene (Surr)	Result ND %Recovery 91	Qualifier Qualifier	4.8 Limits 50 - 150	2.5	mg/Kg	_	Prepared 10/03/17 09:57 Prepared	10/03/17 14:42 Analyzed	1
Analyte Gasoline Surrogate	Result ND %Recovery 91 hwest - Semi-V	Qualifier Qualifier	4.8 Limits 50 - 150	MDL 2.5	mg/Kg	_	Prepared 10/03/17 09:57 Prepared	10/03/17 14:42 Analyzed	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	<u> </u>	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
Surrogate o-Terphenyl	%Recovery	Qualifier	Limits 50 - 150				Prepared 10/02/17 08:40		Dil Fac

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

9

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11

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-6

Matrix: Water

Date Collected: 09/29/17 11:50 Date Received: 09/30/17 09:15

Client Sample ID: RB-092917

Method: NWTPH-Gx - Nortl	nwest - Volatile Pe	troleum Products	(GC)				
Analyte	Result Qua	alifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND ND	0.25	0.050 mg/L			10/03/17 11:47	1
Surrogate	%Recovery Qua	alifier 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

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7

8

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Lab Sample ID: 580-71704-7

Matrix: Solid

Client Sample ID: TB-092917 Date Collected: 09/29/17 00:00 Date Received: 09/30/17 09:15

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 - North	thwest - Volatile	Petroleur	n 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

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

Analyte

Benzene

Analysis Batch: 257828

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

Prep Batch: 257819

MB MB Result Qualifier RL **MDL** Unit Analyzed Prepared Dil Fac 20 10/02/17 13:14 10/02/17 15:12 ND 8.6 ug/Kg

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 104 75 - 120 10/02/17 13:14 10/02/17 15:12 Trifluorotoluene (Surr) 101 60 - 150 10/02/17 13:14 10/02/17 15:12 4-Bromofluorobenzene (Surr) 99 47 - 150 10/02/17 13:14 10/02/17 15:12 80 - 118 10/02/17 13:14 10/02/17 15:12 Dibromofluoromethane (Surr) 112 80 - 121 10/02/17 13:14 10/02/17 15:12 1,2-Dichloroethane-d4 (Surr) 119

Client Sample ID: Lab Control Sample

Matrix: Solid

Analysis Batch: 257828

Lab Sample ID: LCS 580-257819/2-A

Prep Type: Total/NA

Prep Batch: 257819 %Rec.

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 800 910 ug/Kg 114 79 - 135

LCS LCS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 101 75 - 120 102 60 - 150 Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) 98 47 - 150 101 80 - 118 Dibromofluoromethane (Surr) 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**

LCSD LCSD Spike %Rec. **RPD** Limits **Analyte** Added Result Qualifier Unit D %Rec RPD Limit Benzene 800 936 ug/Kg 117 79 - 135 3

LCSD LCSD Surrogate %Recovery Qualifier Limits 75 - 120 Toluene-d8 (Surr) 102 Trifluorotoluene (Surr) 100 60 - 150 95 47 - 150 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 106 80 - 118 115 80 - 121 1,2-Dichloroethane-d4 (Surr)

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

MB MB Result Qualifier RL **MDL** Unit Analyte Prepared Analyzed Dil Fac Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg 10/03/17 09:57 10/03/17 10:07

TestAmerica Seattle

TestAmerica Job ID: 580-71704-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

MB MB

%Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 10/03/17 09:57 10/03/17 10:07 4-Bromofluorobenzene (Surr) 50 - 150 87

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 %Rec.

Added Result Qualifier Limits **Analyte** Unit D %Rec Gasoline 40.0 38.7 mg/Kg 97 68 - 120

Spike

LCS LCS

LCS LCS

Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 50 - 150 96

Lab Sample ID: LCSD 580-257883/3-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 257893

Prep Type: Total/NA

Prep Batch: 257883

LCSD LCSD Spike %Rec. **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit 40.0 25 Gasoline 41.3 103 68 - 120 mg/Kg

LCSD LCSD

Surrogate %Recovery 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

MR MR

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Gasoline 0.25 0.050 mg/L 10/03/17 10:12 ND

MB MB

Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed 4-Bromofluorobenzene (Surr) 93 58 - 133 10/03/17 10:12 Trifluorotoluene (Surr) 104 77 - 128 10/03/17 10:12

Lab Sample ID: LCS 580-257895/7

Matrix: Water

Analysis Batch: 257895

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

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Gasoline 1.00 0.892 89 79 - 110 mg/L

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 99 58 - 133 Trifluorotoluene (Surr) 101 77 - 128

TestAmerica Seattle

TestAmerica Job ID: 580-71704-1

Prep Batch: 257768

Prep Type: Total/NA

Prep Batch: 257768

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

100

70 - 125

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

Lab Sample ID: LCSD 580-257895/8 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 257895

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1.00 2 Gasoline 0.879 mg/L 88 79 - 110

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 58 - 133 99 Trifluorotoluene (Surr) 98 77 - 128

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

Lab Sample ID: MB 580-257768/1-B Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 257849 MB MB

MDL Unit Result Qualifier RL D Prepared Analyte Analyzed Dil Fac #2 Diesel (C10-C24) $\overline{\mathsf{ND}}$ 50 12 mg/Kg 10/02/17 08:40 10/02/17 18:38 50 9.1 mg/Kg 10/02/17 18:38 Motor Oil (>C24-C36) ND 10/02/17 08:40

MB MB Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed o-Terphenyl 96 50 - 150 10/02/17 08:40 10/02/17 18:38 n-Decanoic Acid (Surr) 0.0001 0-1 10/02/17 08:40 10/02/17 18:38

Lab Sample ID: LCS 580-257768/2-B

Matrix: Solid

Analysis Batch: 257849

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Analyte D #2 Diesel (C10-C24) 500 479 96 mg/Kg 64 - 127 Motor Oil (>C24-C36) 500 540 mg/Kg 108 70 - 125

LCS LCS Limits Surrogate %Recovery Qualifier o-Terphenyl 90 50 - 150 n-Decanoic Acid (Surr) 0 0 - 1

Lab Sample ID: LCSD 580-257768/3-B

Matrix: Solid

Motor Oil (>C24-C36)

Prep Type: Total/NA **Analysis Batch: 257849 Prep Batch: 257768** LCSD LCSD **RPD** Spike %Rec. Added Result Qualifier Unit %Rec Limits **RPD** Analyte Limit #2 Diesel (C10-C24) 500 439 88 64 - 127 16 mg/Kg 9

500

mg/Kg

500

LCSD LCSD Limits Surrogate %Recovery Qualifier 50 - 150 o-Terphenyl 78 n-Decanoic Acid (Surr) 0 0 - 1

TestAmerica Seattle

10/3/2017

QC Sample Results

Client: ARCADIS U.S. Inc

Analysis Batch: 257849

Matrix: Solid

Project/Site: Chevron Edmonds Terminal

Lab Sample ID: 580-71704-3 DU

TestAmerica Job ID: 580-71704-1

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

Client Sample ID: EX-DB2-E5-10 **Prep Type: Total/NA**

Prep Batch: 257768

	Sample	Sample	DU	טט				RPD
Analyte	Result	Qualifier	Result	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

DU DU

Surrogate	%Recovery Qualifie	er Limits
o-Terphenyl	90	50 - 150
n-Decanoic Acid (Surr)	0	0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71704-1 DU Client Sample ID: EX-DB2-E3-11 **Matrix: Solid Prep Type: Total/NA**

Analysis Batch: 257773

DU DU RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit RPD Limit D % 77.6 75.9 2 20 Percent Solids Percent Moisture 22.4 24.1 % 20

Project/Site: Chevron Edmonds Terminal

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

Batch Batch Dilution Batch Prepared **Prep Type** Method Run Factor Number or Analyzed Type Analyst Lab 257773 10/02/17 09:23 TAL SEA Total/NA Analysis D 2216 JWL

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71704-2

Date Collected: 09/29/17 14:20 **Matrix: Solid**

Date Received: 09/30/17 09:15

Dilution Batch Batch Batch Prepared Method **Prep Type** Type **Factor** Number or Analyzed Analyst Run Lab TAL SEA Total/NA Analysis D 2216 257773 10/02/17 09:23 JWL

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71704-3

Date Collected: 09/29/17 15:15 **Matrix: Solid**

Date Received: 09/30/17 09:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

TestAmerica Seattle

Project/Site: Chevron Edmonds Terminal

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

Percent Solids: 76.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/29/17 16:25

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/29/17 16:25

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-4 **Matrix: Solid**

Percent Solids: 76.9

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/29/17 00:00

Date Received: 09/30/17 09:15

Lab Sample	ID: 580-71704-5	

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Date Collected: 09/29/17 00:00

Lab Sample ID: 580-71704-5 Matrix: Solid Date Received: 09/30/17 09:15 Percent Solids: 79.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

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10/3/2017

Lab Chronicle

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: DUP03-SO-092917

Date Collected: 09/29/17 00:00

Lab Sample ID: 580-71704-5 **Matrix: Solid**

Date Received: 09/30/17 09:15 Percent Solids: 79.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

Lab Sample ID: 580-71704-6 Client Sample ID: RB-092917

Date Collected: 09/29/17 11:50 **Matrix: Water**

Date Received: 09/30/17 09:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 11:47	RSB	TAL SEA

Lab Sample ID: 580-71704-7 Client Sample ID: TB-092917 Date Collected: 09/29/17 00:00 **Matrix: Solid**

Date Received: 09/30/17 09:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

TestAmerica Seattle

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71704-1

Project/Site: Chevron Edmonds Terminal

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	9/30/17 09:15
580-71704-2	EX-DB2-E4-10	Solid	09/29/17 14:20 09	9/30/17 09:15
580-71704-3	EX-DB2-E5-10	Solid	09/29/17 15:15 09	9/30/17 09:15
580-71704-4	EX-DB2-E6-11	Solid	09/29/17 16:25 09	9/30/17 09:15
580-71704-5	DUP03-SO-092917	Solid	09/29/17 00:00 09	9/30/17 09:15
580-71704-6	RB-092917	Water	09/29/17 11:50 09	9/30/17 09:15
580-71704-7	TB-092917	Solid	09/29/17 00:00 09	9/30/17 09:15

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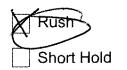
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TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com



Chain of **Custody Record**

												Data			Chain	of Cuntody I	llumbor	
Client		Client Cont	ggt Yan	Ro	aL	de						Date 4	129/	'. 	GHAIH	of Custody I	2943	n
Address		Telephone I	Vumber (Area	Code)/Fax	Number							Lab Nu	mber	17			<u> </u>	
Client Arcadis Address 100 Olive Way, Suite 800 City Seattle WA Project Name and Location (State)		50	9-43	8-5	72)	8								2310	Page		of	
City State Zi	p Code	Sampler		Lal	Contact								ach list if is needed)					
Seattle Project Name and Location (State)	98101	Kyan	, Brai act	edl E	laine	e b	ValKer		ات	7	$\overline{}$	s space i	S needed)					
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B0045362. 0010			Matrix			ntainers servati	ves	NV TP III-(S.	NWTPH-DK		7.7.X					Conunit	nis or nece	iμι
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time 岩	Aqueous Sed. Soil	Unpres.	HZS04 HIVO3	HCI	NaOH ZnAc/ NaOH	3 5	IL I	37,000	8270DSIM(······································		
EX-DB2-E3-11	9-29-17 1	110	X	2				<u> </u>	X	X,	*						ults to	decrease and the second
EX-DB2-E4-10		120	X	2				^{2}X	X	X!	t					ryanbr	niles@ar	regircon
EX-DB2-E5-10	9-29-17 1	S15	X	2					\bigvee	X!	+					samvel,	niles@ are	<u>adis.com</u>
EX-D82-E6-11	9-29-17 1	625	$\mid \mid \mid X$	2			1	2	$\langle X \rangle$		ķ.					ephelie.	encelle Qui	rudii.com
DUP03-50-092917	9-29-17		X	2			7	$X \times X$	X	kX	¥					xett, 20	nQ areas	15.com
RB-092917	9-29-17 1	150	X			2		X										·
TB-092917	9-29-17		X					X	,	X_{\perp}					*	Analyze f	or PAHs i	F DROLHO
								l							eve.	blocked (extraction	day)
TBA2 Cooler CorOO Unc 7 -																		
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Wet/Packs Packing Schole					Land			-		_	_	\top	11		-			
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	Hazard Identification			_			1	imple L			•	Disposa					assessed if sa	
☑ Yes ☐ No Cooler Temp:	lazard 🗀 Flamm	able 🗆 SI	din Irritant	☐ Poisoi			nown 🗀		n To C	lient	Ш	Archive	For	Mont	hs are	retained loi	nger than 1 m	onth)
Turn Around Time Required (business days)		C Other			ис неди	iiremei	nts (Specif	0										
24 Hours □ 48 Hours □ 5 Days □ 10 Da 1. Belinquished By Sign/Pgin	ays 🗌 15 Days	□ Other _ □ Date 3 0	, Time		1. Recei	ved Rv	Sign/Pri	nt		7			<u> </u>		, Date	7 , ,	, Time	·
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3. Relinquished By Sign/Print	<u> </u>	Date	Time		3. Recei	ved By	Sign/Pri	nt	•						Date	,	Time	
.																		
Comments																		

Job Number: 580-71704-1

Login Number: 71704 List Source: TestAmerica Seattle

List Number: 1

Creator: Bean, Dennis L

ordator: Boarr, Borrino E		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	
s 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	



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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: 580-71754-1

Client Project/Site: Chevron Edmonds Terminal

For:

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

Attn: Samuel Miles

M. Elains 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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Total Access

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.

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

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Sample Summary	24
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Receipt Checklists	26

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

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TestAmerica Job ID: 580-71754-1

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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 (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.

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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.

Example 2 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)

TestAmerica Seattle

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Client: ARCADIS U.S. Inc

Percent Moisture

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-B6-1

Date Collected: 10/02/17 18:00 Date Received: 10/03/17 08:45 TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-1

Matrix: Solid
Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		20	8.6	ug/Kg	<u> </u>	10/03/17 10:40	10/03/17 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	105		75 - 120				10/03/17 10:40	10/03/17 14:51	
Trifluorotoluene (Surr)	101		60 - 150				10/03/17 10:40	10/03/17 14:51	
4-Bromofluorobenzene (Surr)	100		47 - 150				10/03/17 10:40	10/03/17 14:51	
Dibromofluoromethane (Surr)	107		80 - 118				10/03/17 10:40	10/03/17 14:51	
1,2-Dichloroethane-d4 (Surr)	122	X	80 - 121				10/03/17 10:40	10/03/17 14:51	
Method: NWTPH-Gx - Nort	hwest - Volatile	Petroleui	m Products (GC)					
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline	ND		4.0	2.1	mg/Kg	-	10/03/17 10:09	10/03/17 15:43	
0	0/5								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
<u> </u>	89	Qualifier	50 - 150				10/03/17 10:09	Analyzed 10/03/17 15:43	
4-Bromofluorobenzene (Surr)	89		50 - 150	ucts (G(2)			•	
4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nortl	89 hwest - Semi-V		50 - 150	ucts (GC	•	D		•	
4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nortl Analyte	89 hwest - Semi-V	olatile Pet	50 - 150	MDL	•	D <u>□</u> □ □	10/03/17 10:09	10/03/17 15:43	
4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Norti Analyte #2 Diesel (C10-C24)	89 hwest - Semi-V Result	olatile Pet	50 - 150 roleum Prod RL	MDL 12	Únit	_	10/03/17 10:09 Prepared	10/03/17 15:43 Analyzed	Dil Fa
4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Norti Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36)	hwest - Semi-V Result	olatile Pet Qualifier	750 - 150 roleum Prod RL 49	MDL 12	Únit mg/Kg	\	70/03/17 10:09 Prepared 10/03/17 10:01	10/03/17 15:43 Analyzed 10/04/17 08:02	Dil Fac
#4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - North Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate	hwest - Semi-V Result ND ND	olatile Pet Qualifier	50 - 150 roleum Prod RL 49 49	MDL 12	Únit mg/Kg	\	Prepared 10/03/17 10:01 10/03/17 10:01	Analyzed 10/04/17 08:02 10/04/17 08:02	Dil Fa
#4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - North Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate o-Terphenyl	hwest - Semi-V Result ND ND %Recovery	olatile Pet Qualifier	50 - 150 roleum Prode RL 49 49 Limits	MDL 12	Únit mg/Kg	\	Prepared 10/03/17 10:01 10/03/17 10:01 Prepared	Analyzed 10/04/17 08:02 10/04/17 08:02 Analyzed	Dil Fac
### A-Bromofluorobenzene (Surr) Method: NWTPH-Dx - North Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate 0-Terphenyl n-Decanoic Acid (Surr)	ND	olatile Pet Qualifier	50 - 150 roleum Prode RL 49 49 Limits 50 - 150	MDL 12	Únit mg/Kg	\	Prepared 10/03/17 10:01 10/03/17 10:01 Prepared 10/03/17 10:01	Analyzed 10/04/17 08:02 10/04/17 08:02 Analyzed 10/04/17 08:02	Dil Fac
Surrogate 4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nortl Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate o-Terphenyl n-Decanoic Acid (Surr) General Chemistry Analyte	### ### ##############################	olatile Pet Qualifier	50 - 150 roleum Prode RL 49 49 Limits 50 - 150	MDL 12	Únit mg/Kg mg/Kg	\	Prepared 10/03/17 10:01 10/03/17 10:01 Prepared 10/03/17 10:01	Analyzed 10/04/17 08:02 10/04/17 08:02 Analyzed 10/04/17 08:02	Dil Fac

0.1

0.1 %

6.5

10/4/2017

10/03/17 11:18

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-B4-4

Date Collected: 10/02/17 18:05

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-2

Matrix: Solid

Percent Solids: 93.0

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 - Nort	hwest - Volatile	e Petroleui	m Products (GC)					
Analyte		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	

Allalyte	Result	Qualifier	NL.	INIDL	Ullit	U	riepaieu	Allalyzeu	DIIFac
Gasoline	ND		4.0	2.1	mg/Kg	₩	10/03/17 10:09	10/03/17 16:14	1
Surrogate	%Recovery	Qualifier	Limits 50 - 150				Prepared	Analyzed 10/03/17 16:14	Dil Fac
4-Bromofluorobenzene (Surr)	90		<i>50 - 150</i>				10/03/17 10.09	10/03/17 10.14	1
Method: NWTPH-Dx - Northwe	st - Semi-V	olatile Pet	roleum Pro	ducts (G	C)				

iiwest - Seiiii-V	Clatile Fet	ioleum Frou	ucis (G	•)				
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
23	J	50	12	mg/Kg	<u> </u>	10/03/17 10:01	10/04/17 08:22	1
25	J	50	9.2	mg/Kg	₩	10/03/17 10:01	10/04/17 08:22	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
84		50 - 150				10/03/17 10:01	10/04/17 08:22	1
0.003		0 - 1				10/03/17 10:01	10/04/17 08:22	1
	Result 23 25 %Recovery 84	Result Qualifier 23 J 25 J %Recovery Qualifier 84	Result 23 J Qualifier 50 25 J 50 %Recovery 84 Seconds Qualifier Limits 50 - 150	Result 23 J Qualifier 50 RL 50 MDL 12 25 J 50 9.2 %Recovery 84 Qualifier Limits 50 - 150	23 J 50 12 mg/Kg 25 J 50 9.2 mg/Kg	Result 23 J Qualifier 50 RL 50 MDL mg/Kg D mg/Kg 25 J 50 9.2 mg/Kg □ %Recovery 84 Qualifier Limits 50 - 150 □ □	Result 23 J Qualifier RL 50 MDL mg/Kg D mg/Kg Prepared 10/03/17 10:01 25 J 50 9.2 mg/Kg 10/03/17 10:01 %Recovery 84 Limits 50 - 150 Prepared 10/03/17 10:01	Result 23 J Qualifier RL 50 MDL mg/Kg Unit mg/Kg D mg/Kg Prepared 10/03/17 10:01 Analyzed 10/04/17 08:22 25 J 50 9.2 mg/Kg 10/03/17 10:01 10/04/17 08:22 %Recovery 84 Limits 50 - 150 Prepared 10/03/17 10:01 Analyzed 10/04/17 08:22

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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-I8-1

Date Collected: 10/02/17 18:10

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-3

Matrix: Solid

Percent Solids: 94.0

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 - Nort	hwest - Volatile	e Petroleu	m Products (GC)					
Analyte		Qualifier	RL `	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND.		30	2 1	ma/Ka	<u></u>	10/03/17 10:09	10/03/17 16:44	1

Analyte Gasoline		Qualifier	RL 3.9	 Unit mg/Kg	D <u>☆</u>	Prepared 10/03/17 10:09	Analyzed 10/03/17 16:44	Dil Fac
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits 50 - 150			Prepared 10/03/17 10:09	Analyzed 10/03/17 16:44	Dil Fac

Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND 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 Quali	fier 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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-C6-13

Date Collected: 10/02/17 18:15

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-4

Matrix: Solid

Percent Solids: 93.0

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

orthwest - Volatile	Petroleu	m Products (GC)					
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		3.9	2.0	mg/Kg	\	10/03/17 10:09	10/03/17 17:15	1
	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	Result ND %Recovery	Result Qualifier ND %Recovery Qualifier	Result ND Qualifier Qualifier RL 3.9 %Recovery Qualifier Limits	ND 3.9 2.0 **Recovery Qualifier Limits**		Result Qualifier RL MDL Unit D 3.9 2.0 mg/Kg □ MDL mg/Kg		Result ND Qualifier RL 3.9 MDL mg/Kg Unit mg/Kg D mg/Kg Prepared 10/03/17 10:09 Analyzed 10/03/17 17:15 %Recovery Qualifier Limits Prepared Analyzed

Method: NWTPH-Dx - Northw	est - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
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: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-H4-4

Date Collected: 10/02/17 18:20

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-5

Matrix: Solid

Percent Solids: 93.4

Method: 8260C - Volatile O	rganic Compo	unds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		13	5.7	ug/Kg	<u> </u>	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 - North	nwest - Volatile	e Petroleu	m Products (GC)					
Analyte		Qualifier	RL `	•	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
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Method: NWTPH-Dx - Nor	thwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
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

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Client: ARCADIS U.S. Inc

n-Decanoic Acid (Surr)

Project/Site: Chevron Edmonds Terminal

Client Sample ID: SP-B1-B5-7

Date Collected: 10/02/17 18:25

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-6

10/03/17 10:01 10/04/17 10:25

Matrix: Solid

Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		19	8.3	ug/Kg	<u> </u>	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
Surrogate	%Recovery	Qualifier	Limits	2.0	mg/Kg		Prepared	Analyzed	
Surrogato	% Pocovory	Qualifier	Limite				Propared	Analyzad	
							•	7 117 a 1 y 2 o a	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150				10/03/17 10:09	10/03/17 18:16	Dil Fac
4-Bromofluorobenzene (Surr) Method: NWTPH-Dx - Nort Analyte	hwest - Semi-V	olatile Pet		ucts (GO	•	D	10/03/17 10:09 Prepared		Dil Fac
Method: NWTPH-Dx - Nort	hwest - Semi-V		roleum Prod		•	D — ≅		10/03/17 18:16	1
Method: NWTPH-Dx - Nort Analyte	hwest - Semi-V Result	Qualifier	roleum Prod	MDL 12	Únit		Prepared	10/03/17 18:16 Analyzed	Dil Fac
Method: NWTPH-Dx - Nort Analyte #2 Diesel (C10-C24)	hwest - Semi-V Result ND	Qualifier J	roleum Prodi	MDL 12	Únit mg/Kg	- =	Prepared 10/03/17 10:01	10/03/17 18:16 Analyzed 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

0 - 1

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Project/Site: Chevron Edmonds Terminal

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.8	ug/Kg	<u> </u>	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 - Sem	ivolatile Organi	c Compou	inds (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	<u> </u>	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 - No Analyte		olatile Pet Qualifier	roleum Prod RL	ucts (G(MDL	•	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	130	<u> </u>	50	12	mg/Kg	<u></u>	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

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-9

Matrix: Water

Date Collected: 10/02/17 19:10 Date Received: 10/03/17 08:45

Client Sample ID: RB-100217

Method: NWTPH-Gx - North	nwest - Volatile	Petroleu	m 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

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Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Client Sample ID: EX-DB2-E7-10

Date Collected: 10/02/17 15:30

Date Received: 10/03/17 08:45

TestAmerica Job ID: 580-71754-1

Lab Sample ID: 580-71754-10

Matrix: Solid

Percent Solids: 75.3

		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		27	11	ug/Kg	<u> </u>	10/03/17 10:40	10/03/17 17:52	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
101		75 - 120				10/03/17 10:40	10/03/17 17:52	1
104		60 - 150				10/03/17 10:40	10/03/17 17:52	1
98		47 - 150				10/03/17 10:40	10/03/17 17:52	1
107		80 - 118				10/03/17 10:40	10/03/17 17:52	1
113		80 - 121				10/03/17 10:40	10/03/17 17:52	1
		•	•	1114	_	Dunmanad	A a l a al	Dil Fac
	101 104 98 107 113 west - Volatile	104 98 107 113	101 75 - 120 104 60 - 150 98 47 - 150 107 80 - 118 113 80 - 121 west - Volatile Petroleum Products (101 75 - 120 104 60 - 150 98 47 - 150 107 80 - 118 113 80 - 121 west - Volatile Petroleum Products (GC)	101 75 - 120 104 60 - 150 98 47 - 150 107 80 - 118 113 80 - 121 west - Volatile Petroleum Products (GC)	101 75 - 120 104 60 - 150 98 47 - 150 107 80 - 118 113 80 - 121 west - Volatile Petroleum Products (GC)	101 75 - 120 10/03/17 10:40 104 60 - 150 10/03/17 10:40 98 47 - 150 10/03/17 10:40 107 80 - 118 10/03/17 10:40 113 80 - 121 10/03/17 10:40 west - Volatile Petroleum Products (GC)	101 75 - 120 10/03/17 10:40 10/03/17 17:52 104 60 - 150 10/03/17 10:40 10/03/17 17:52 98 47 - 150 10/03/17 10:40 10/03/17 17:52 107 80 - 118 10/03/17 10:40 10/03/17 17:52 113 80 - 121 10/03/17 10:40 10/03/17 17:52 west - Volatile Petroleum Products (GC)

Method: NWTPH-Gx - Northy	west - Volatile	e Petroleu	m 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 - Northy	vest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
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

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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

MB MB

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257894

	IND	1410							
Analyte	Result	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
	МВ	MB							
Surrogate	%Recovery	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
 Added Benzene
 Spike Added Result 800
 LCS LCS LCS Unit Qualifier Unit ug/Kg
 Unit Ug/Kg
 D %Rec Limits 79 - 135

LCS LCS	
ecovery Qualifie	r Limits
102	75 - 120
106	60 - 150
97	47 - 150
104	80 - 118
119	80 - 121
	102 106 97 104

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 %Rec. RPD

 Analyte
 Added Benzene
 Result 800
 Result 880
 Unit 889
 Unit 10g/Kg
 Unit 111
 Parameter 120 MRec.
 RPD Limit RPD Limit 120 MRec.
 RPD Limit RPD Limit 120 MRec.

	LCSD	LCSD	
Surrogate	%Recovery	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

	MB M	IB							
Analyte	Result Q	ualifier	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	ua/Ka		10/03/17 09:59	10/03/17 18:43	1

TestAmerica Seattle

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TestAmerica Job ID: 580-71754-1

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

	MB MB							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND 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

MB MB

Qualifier Limits Surrogate %Recovery Prepared Analyzed Dil Fac <u>10/03/17 09:59</u> <u>10/03/17 18:43</u> 68 - 138 Terphenyl-d14 95

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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	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	

LCS LCS

Surrogate %Recovery Qualifier Limits Terphenyl-d14 91 68 - 138

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

Lab Sample ID: MB 580-257883/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA Analysis Batch: 257893 **Prep Batch: 257883**

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed 10/03/17 09:57 10/03/17 10:07 Gasoline $\overline{\mathsf{ND}}$ 4.0 2.1 mg/Kg

MB MB

Limits Surrogate %Recovery Qualifier Prepared Analyzed Dil Fac 50 - 150 4-Bromofluorobenzene (Surr) 87 <u>10/03/17 09:57</u> <u>10/03/17 10:07</u>

Lab Sample ID: LCS 580-257883/2-A

Matrix: Solid

Client Sample ID: Lab Control Sample Prep Type: Total/NA **Analysis Batch: 257893 Prep Batch: 257883** Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit %Rec Limits Gasoline 40.0 38.7 97 mg/Kg

LCS LCS

%Recovery Qualifier Limits Surrogate 50 - 150 4-Bromofluorobenzene (Surr) 96

TestAmerica Seattle

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 Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 257893

Prep Batch: 257883 Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Unit D %Rec Limits RPD Limit 40.0 68 - 120 25 41.3 mg/Kg 103

LCSD LCSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 97 50 - 150

Lab Sample ID: MB 580-257895/6

Matrix: Water

Analyte

Gasoline

Analysis Batch: 257895

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

MB MB

Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 0.25 10/03/17 10:12 Gasoline 0.050 mg/L $\overline{\mathsf{ND}}$

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 58 - 133 10/03/17 10:12 93 Trifluorotoluene (Surr) 104 77 - 128 10/03/17 10:12

Lab Sample ID: LCS 580-257895/7

Matrix: Water

Analysis Batch: 257895

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 1.00 Gasoline 0.892 mg/L 89 79 - 110

LCS LCS

%Recovery Surrogate 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

Spike LCSD LCSD %Rec. Result Qualifier **Analyte** Added Unit Limits **RPD** Limit D %Rec Gasoline 1.00 0.879 88 79 - 110 10 mg/L

LCSD LCSD

Surrogate %Recovery Qualifier Limits 58 - 133 4-Bromofluorobenzene (Surr) 99 98 77 - 128 Trifluorotoluene (Surr)

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

Lab Sample ID: MB 580-257885/1-B

Matrix: Solid

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

Analysis Batch: 257985 Prep Batch: 257885 MR MR

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac #2 Diesel (C10-C24) ND 50 10/03/17 10:01 10/03/17 20:46 12 mg/Kg Motor Oil (>C24-C36) ND 50 mg/Kg 10/03/17 10:01 10/03/17 20:46

TestAmerica Seattle

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RPD

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Client Sample ID: SP-B1-B4-4

3

35

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	88		50 - 150	10/03/17 10:01	10/03/17 20:46	1	
n-Decanoic Acid (Surr)	0.0001		0 - 1	10/03/17 10:01	10/03/17 20:46	1	

Matrix: Solid

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 580-257885/2-B Prep Type: Total/NA **Analysis Batch: 257985 Prep Batch: 257885**

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
#2 Diesel (C10-C24)	 500	414		mg/Kg		83	64 - 127	
Motor Oil (>C24-C36)	500	469		mg/Kg		94	70 - 125	

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
o-Terphenyl	84	50 - 150
n-Decanoic Acid (Surr)	0	0 - 1

Lab Sample ID: LCSD 580-257885/3-B

Matrix: Solid

Analysis Batch: 257985							Prep Ba	itch: 28	7885
-	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	383		mg/Kg		77	64 - 127	8	16
Motor Oil (>C24-C36)	500	421		mg/Kg		84	70 - 125	11	17

LCSD LCSD

25 J

Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	76		50 - 150
n-Decanoic Acid (Surr)	0		0 - 1

Lab Sample ID: 580-71754-2 DU

Matrix: Solid

Analyte

Analysis Batch: 257985

							Prep Type: Tot	al/NA
5							Prep Batch: 2	57885
	Sample	Sample	DU	DU			•	RPD
	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
	23	J	25.6	J	mg/Kg	-		35

mg/Kg

25.6 J

#2 Diesel (C10-C24) Motor Oil (>C24-C36)

DU DU Surrogate %Recovery Qualifier Limits o-Terphenyl 86 50 - 150 n-Decanoic Acid (Surr) 0-1 0.0003

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71754-3 DU Client Sample ID: SP-B1-I8-1 Matrix: Solid Prep Type: Total/NA

l	Analysis Batch: 257901										
	-	Sample	Sample	DU	DU					RPD	
	Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit	
	Percent Solids	94.0		 94.1		%			0.09	20	
l	Percent Moisture	6.0		5.9		%			1	20	

TestAmerica Seattle

Project/Site: Chevron Edmonds Terminal

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

Batch Dilution Batch Batch **Prepared** Method Factor Number or Analyzed **Prep Type** Type Run Analyst Lab TAL SEA Total/NA Analysis D 2216 257901 10/03/17 11:18 JWL

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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71754-2

Date Collected: 10/02/17 18:05

Date Received: 10/03/17 08:45

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-B4-4 Lab Sample ID: 580-71754-2

Date Collected: 10/02/17 18:05

Date Received: 10/03/17 08:45

Matrix: Solid

Percent Solids: 93.0

Batch Batch Dilution **Batch Prepared Prep Type** Method Number Type Run **Factor** or Analyzed Analyst Lab TAL SEA Total/NA Prep 5035 257894 SHK 10/03/17 10:40 Total/NA Analysis 8260C 257902 10/03/17 15:17 P1P TAL SEA 1 TAL SEA Total/NA Prep 5035 257883 10/03/17 10:09 JCV TAL SEA Total/NA Analysis **NWTPH-Gx** 257893 10/03/17 16:14 JCV 1 Total/NA 3546 TAL SEA Prep 257885 10/03/17 10:01 JWL Total/NA TAL SEA Cleanup 3630C 257959 10/03/17 15:38 JWL

Client Sample ID: SP-B1-I8-1 Lab Sample ID: 580-71754-3

1

257985 10/04/17 08:22 ADB

Date Collected: 10/02/17 18:10

Total/NA

Date Received: 10/03/17 08:45

Analysis

NWTPH-Dx

Matrix: Solid

TAL SEA

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

TestAmerica Seattle

Project/Site: Chevron Edmonds Terminal

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Lab Sample ID: 580-71754-4

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Matrix: Solid

Percent Solids: 93.0

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

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Project/Site: Chevron Edmonds Terminal

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx			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

Date Received: 10/03/17 08:45

Matrix: Solid

Dilution Batch Batch Batch Prepared Method **Prep Type** Type Run **Factor** Number or Analyzed Analyst Lab TAL SEA Total/NA Analysis D 2216 257901 10/03/17 11:18 JWL

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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

Lab Sample ID: 580-71754-7 Client Sample ID: SP-B1-D8-2

Date Collected: 10/02/17 18:30 Date Received: 10/03/17 08:45

Γ	Batch	Batch		Dilution	Batch	Branarad			
	Datch	Datch		Dilution	Daten	Prepared			
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Δnalveie	D 2216			257901	10/03/17 11:18	IVVI	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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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

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10/4/2017

Matrix: Solid

4

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

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

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71754-9

Date Collected: 10/02/17 19:10 Matrix: Water

Date Received: 10/03/17 08:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 Lab Sample ID: 580-71754-10

Date Collected: 10/02/17 15:30 Matrix: Solid

Date Received: 10/03/17 08:45

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	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 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

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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 TestAmerica Job ID: 580-71754-1

Project/Site: Chevron Edmonds Terminal

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

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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

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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

Short Hold

Rush

Chain of **Custody Record**

		- 1		,											- 1	Date				Cha	in of Custody Nu	mber	
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Contract/Purchase Order/Quote No.				Mati	rix			Prese	ainers ervativ	es	4	은 유	S = 3	والمراد الما	11		***************************************				OUNDATION	0 01 110001	γ.
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous Sed.	Soil	Unpres.	H2S04	HNO3	HCI	ZnAc/ NaOH	-	3		_	رم						Email res		
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E>-082-E7-10	10/2/17	1530)		×	2	4				2	Y	V		\vee			De	c le l	A	ώ/kn a Lab		
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☐ Yes ☐ No Cooler Temp: ☐ Non-I	lazard 🗆 Flam	ımable	□ Sk	in Irrita	nt 🗆	Poisi] Unk		☐ A	leturi	To Ci	ient		Archive	e Hor		NIO	onths	are retained lon	yer man i m	unun
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3. Relinquished By Sign/Print		Date		_	Time		3. Fi	Recei	ived By	Sign	/Print						_						

Comments																		580-	71754 (III.IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	of Custody	MA INT.	

Job Number: 580-71754-1

Login Number: 71754 List Source: TestAmerica Seattle

List Number: 1

Creator: Ponce-McDermott, Monica

Creator. Ponce-McDermott, Monica		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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. Elains 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

Total Access

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.

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Table of Contents

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Sample Summary	10
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Receint Checklists	12

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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.

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Definitions/Glossary

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Quality Control

TestAmerica Job ID: 580-71754-2

Glossary

ND

PQL

QC

RER

RPD TEF

TEQ

RL

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

10/4/2017

Client Sample Results

Client: ARCADIS U.S. Inc

Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Lab Sample ID: 580-71754-8

Matrix: Solid

Client Sample ID: TB-100217 Date Collected: 10/02/17 00:00

Date Received: 10/03/17 08:45

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

10/4/2017

TestAmerica Job ID: 580-71754-2

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

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

Lab Sample ID: MB 580-257894/10-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257902 Prep Batch: 257894** MB MB Analyto Posult Qualifier ы MDI IInit

Analyte Benzene	Result Quali	ifier RL 20	8.6 U	 Prepared 10/03/17 10:41	Analyzed 10/03/17 13:08	Dil Fac
	MB MB					
Surrogate	%Recovery Quali	ifier 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 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257902 Prep Batch: 257894** LCS LCS Spike %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits Benzene 800 938 ug/Kg 117 79 - 135

	LCS	LCS	
Surrogate	%Recovery	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
<u> </u>			

Lab Sample ID: LCSD 580-257894/12-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 257902 Prep Batch: 257894 Spike LCSD LCSD %Rec. **RPD** Added Limits Analyte Result Qualifier Unit D %Rec RPD Limit

Benzene		800	892	ug/Kg	 79 - 135	5	10
	LCSD LCS	SD					
Surrogate	%Recovery Qua	alifier Limits					
Toluene-d8 (Surr)	102	75 - 120					
Trifluorotoluene (Surr)	99	60 - 150					
4-Bromofluorobenzene (Surr)	98	47 - 150					
Dibromofluoromethane (Surr)	105	80 - 118					

80 - 121

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

108

1,2-Dichloroethane-d4 (Surr)

Lab Sample ID: MB 580-257883/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 257893 Prep Batch: 257883**

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 4.0 2.1 mg/Kg 10/03/17 09:57 10/03/17 10:07 Gasoline $\overline{\mathsf{ND}}$

TestAmerica Seattle

10/4/2017

QC Sample Results

40.0

41.3

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**

Dil Fac

25

Prep Batch: 257883

MB MB

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		50 - 150
Trifluorotoluene (Surr)	127		50 - 150

Prepared Analyzed 10/03/17 09:57 10/03/17 10:07 10/03/17 09:57 10/03/17 10:07 1

Lab Sample ID: LCS 580-257883/2-A

Lab Sample ID: LCSD 580-257883/3-A

Matrix: Solid

Analyte

Gasoline

Analysis Batch: 257893

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 257883

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits 40.0 38.7 mg/Kg 97 68 - 120

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 96 50 - 150 Trifluorotoluene (Surr) 50 - 150 118

Client Sample ID: Lab Control Sample Dup

103

68 - 120

Matrix: Solid

Analyte

Gasoline

Analysis Batch: 257893

Prep Type: Total/NA **Prep Batch: 257883** LCSD LCSD **RPD** Spike %Rec. Added Limits Result Qualifier Unit D %Rec **RPD** Limit

mg/Kg

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
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

Lab Sample ID: 580-71754-8

Matrix: Solid

Client Sample ID: TB-100217 Date Collected: 10/02/17 00:00

Date Received: 10/03/17 08:45

Batch Batch Dilution Batch Prepared **Prep Type** Method Run **Factor** Number or Analyzed Type Analyst Lab Total/NA Prep 5035 257894 10/03/17 10:40 SHK TAL SEA TAL SEA Total/NA Analysis 8260C 257902 10/03/17 14:26 P1P 1 Total/NA Prep 5035 257883 10/03/17 10:09 JCV TAL SEA Total/NA 257893 10/03/17 12:09 JCV TAL SEA Analysis **NWTPH-Gx** 1

Laboratory References:

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

5

6

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc TestAmerica Job ID: 580-71754-2

Project/Site: Chevron Edmonds Terminal

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

Q

4.6

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

3

4

5

7

8

9

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

Short Hold

Rush

Chain of Custody Record

		1	2 . 1													Date				C	hain of	Custody Nu	nber	
Client Arcadis		Client			V											10/	2/1	7					318	<u>49</u>
L.M. (*417)					Area Co	de)/Fax	Numb	er								Lab Nu	mber							
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City State Zip	101	1 4		lizi	l(12	oine	W	rlhe			र्च्रा	\overline{A}			ie space i	3 77000	100/						
Project Name and Location (State) Edmads Torming (WA)		Billing	Contac	ct					***************************************			PHIM	7 Z	X)	·						1	,	nstructions of Reco	
Contract/Purchase Order/Quote No.				Mai	rix			Pres	tainers ervativ	es		ORO/HO (NWHING DXC)	CPAH(SO700 Sin	GRO(North -	3		-		***************************************			CONDITION	S UI NEU	gihr
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Soil	Unpres.	H2S04	ниоз	HCI	ZnAc/	Nach Ne e	080	CPA	989	80,72						Em	ioil resu	hs to) ်
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☐ Yes ☐ No Cooler Temp: ☐ Non-F	lazard 🗆 Flam	mable [□ Sk	in Irrit	ant [☐ Pois			□ Uni				n Io	Clien	į	Archiv	re For_		^	nonuis	arer	Etanicu ion	jei man i i	monay
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3. Relinquished By Sign/Print		Date			Time		3.	Rece	ived B	V Sigi	n/Prin	ıt												
Comments																		11111			n of C	rate articles istody		

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.</td <td>True</td> <td></td>	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:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 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,

Élisabeth A. Knisley Project Manager

(717) 556-7262









SAMPLE INFORMATION

Client Sample Description

Sample Collection
Date/Time

ELLE#

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.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Sample Description: EX-DB2-A2-5-SW-S-170915 Grab Soil

Unocal Edmonds Terminal

11720 Unoco Road - Edmonds, WA

Project Name: Edmonds Terminal

Submittal Date/Time: 09/16/2017 09:15 Collection Date/Time: 09/15/2017 10:35 Chevron Environmental Mgmt Co ELLE Sample #: SW 9212720 ELLE Group #: 1851306

Matrix: Soil

No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	mg/kg	mg/kg	
10237	Benzene	71-43-2	N.D.	0.031	42.74
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/kg	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
		d internal standard areas are again			
outsio	le of the QC acceptance lime ported data is from the init	nits, indicating a matrix effect.	mg/kg	mg/kg	
outsic The r	le of the QC acceptance lime ported data is from the init	nits, indicating a matrix effect. ial analysis of the sample.		mg/kg 64	1124.07
outsic The r	le of the QC acceptance lime ported data is from the init	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a.	mg/kg N.D.	• •	1124.07
outsic The r GC Vol 02005 Repo	le of the QC acceptance lime eported data is from the init atiles NWTPH-GX Soil C7-C12	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a.		• •	1124.07
outsic The r GC Vol 02005 Repo	le of the QC acceptance lime ported data is from the inite atiles NWTPH-GX Soil C7-C12 rting limits were raised due croleum	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a. to sample foaming. ECY 97-602 NWTPH-Dx	N.D.	64	1124.07 5
outsic The r GC Voi 02005 Repo GC Per Hydrod	le of the QC acceptance lime ported data is from the inite attiles NWTPH-GX Soil C7-C12 rting limits were raised due carbons w/Si	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a. to sample foaming. ECY 97-602 NWTPH-Dx modified	N.D.	64 mg/kg	
GC Volume of the control of the cont	le of the QC acceptance lime ported data is from the inite atiles NWTPH-GX Soil C7-C12 rting limits were raised due croleum carbons w/Si DRO C12-C24 w/Si Gel	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a. to sample foaming. ECY 97-602 NWTPH-Dx modified n.a.	N.D. mg/kg 970	64 mg/kg 21	5
outsic The r GC Vol 02005 Repo GC Per Hydrod 12006 12006	le of the QC acceptance lime ported data is from the inite atiles NWTPH-GX Soil C7-C12 rting limits were raised due croleum carbons w/Si DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	nits, indicating a matrix effect. ial analysis of the sample. ECY 97-602 NWTPH-Gx n.a. to sample foaming. ECY 97-602 NWTPH-Dx modified n.a. n.a. %Moisture- Dry Wt	N.D. mg/kg 970 750	64 mg/kg 21 71	5

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		



Analysis Report

Chevron Environmental Mgmt Co

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

EX-DB2-A2-5-SW-S-170915 Grab Soil Sample Description:

Unocal Edmonds Terminal

11720 Unoco Road - Edmonds, WA

ELLE Group #: Matrix: Soil

ELLE Sample #:

SW 9212720 1851306

Edmonds Terminal

Submittal Date/Time: 09/16/2017 09:15 Collection Date/Time: 09/15/2017 10:35

Project Name:

Laboratory Sample Analysis Record

		Labor	ato. y c		1100014		
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 06/97	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 Group Number: 1851306

Reported: 11/01/2017 14:54

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 Batch number: Q172621AA Benzene	Result mg/kg Sample number(N.D.	MDL mg/kg s): 9212720 0.025
Delizerie	ug/kg	ug/kg
Batch number: 17264SLA026 Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene	Sample number(N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D	
Batch number: 17260A34A NWTPH-GX Soil C7-C12	mg/kg Sample number(N.D.	mg/kg s): 9212720 1.0
Batch number: 172590022A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(N.D. N.D.	s): 9212720 3.0 10

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
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

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.

⁽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.

Quality Control Summary

Client Name: Chevron Environmental Mgmt Co Group Number: 1851306

Reported: 11/01/2017 14:54

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	Sample number	(s): 9212720							
NWTPH-GX Soil C7-C12	11	9.16	11	9.85	83	90	71-120	7	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 172590022A	Sample number	(s): 9212720							
DRO C12-C24 w/Si Gel	133	105.22			79		50-133		
	%	%	%	%					
Batch number: 17261912201A	Sample number	(s): 9212720							
Moisture	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	Sample numbe	r(s): 9212720	UNSPK: P2	211276						
DRO C12-C24 w/Si Gel	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	Sample number(s): 9212	720 BKG: P211276		
DRO C12-C24 w/Si Gel	5.02	5.76	14 (1)	20
HRO C24-C40 w/Si Gel	N.D.	N.D.	0 (1)	20
	%	%		
Batch number: 17261912201A	Sample number(s): 9212	720 BKG: P211602		
Moisture	5.33	5.33	0	3

^{*-} Outside of specification

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.

⁽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.



Quality Control Summary

Client Name: Chevron Environmental Mgmt Co Group Number: 1851306

Reported: 11/01/2017 14:54

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

	i riffuorotoluene-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

💸 eurofins

Lancaster Laboratories Environmental

Acct.#	1964
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For Eurofins Lancaster Laboratories Environmental use only
Group # 1653002 Sample # 1313730
Instructions on reverse side correspond with circled numbers.

				4	Ma	atrix			5	5 Analyses Requested													
Facility# WBS Edmonds Terminal NWENVPMG001430804 Site Address														T			TI					SCR #:	
Chevron PM Chevron PM Lead Consultant Tylie Lee Consultant/Office Arcadis Seattle/1100 Olive Way Suite W, M, 98001 Consultant Project Mgr. Scott Zorn Consultant Phone #			Sediment	Ground	NPDES Surface	Air 🗌		802		Oxygenates		NWTPH-Dx with Silica Gel Cleanup		1	☐ Diss. ☐ Method	rzene	STM (PAH)			Results in Dry Weight J value reporting needed Must meet lowest detection limits possible for 8260 compounds 8021 MTBE Confirmation Confirm MTBE + Naphthales Confirm highest hit by 8260			
.509-438-9828 Sampler Ryan Brauchla 2			3	osite	Ø	1	i		Total Number	MTBE	scan	ŏ	ıl l	-Dx with	-Dx with		Total	()	15	1 1		Run oxy's on highes Run oxy's on all hits	
Sample Identification	2) Collected Sample Identification Date Time			Composite	Soil	Water	1,5	iio	rotal N	BTEX + MTBE	8260 full scan		NWTPH-Gx	-HALL	WTPH-	WA VPH	Lead	8260	82700			Damayla	-
EX-DB2-A2-5-SW	Annual Control of the	17 1035			X				<i>i</i>		Š		×	Z	2	\$	3-1					6) Remarks Run sample for CPI only of PRO/HO of detected. Email results to samuel will Caradi ryan. branch acadis. ophelie. encelle Caradi	ve
7) Turnaround Time Requested (TAT) (please circle) Standard 5 day 4 day Relinquished to Reli			•	or L	<u> </u>			Date			Time	90C		Receiv	ved by					P-15-17 1600	9		
72 hour 48 hour	24 hour	ır	Relihqı	uished	by	UUN	**************************************	No. 10 to 4 to 5	24 - 100-24 (14 - 15 - 16 - 16 - 16 - 16 - 16 - 16 - 16	Date) - I	7	Time	<u> </u>		Receive			and the Palace of the Control	*Thirthis Triproping	ing 4 many incluses	Date Time	:
8 Data Package (circle if required) EDD (circle if required) Relinquished			shed by Commercial Carrier: Received by							Date Time													
			PS FedEx Other Temperature Upon Receipt / 3 °C Custody								-Co		1/16/17 915										
Type VI (Raw Data)	Other:			ıer	mper	rature	ع Upr	on F	₹ece	∍ipt_		<u>/, 3</u>	°(°C		Cu	stod	ly Sea	als I	ntact	t?	Yes∕ No	



Sample Administration Receipt Documentation Log

Doc Log ID: 194658

Group Number(s): 1851306

Client: Arcadis

Delivery and Receipt Information

Delivery Method: <u>UPS</u> Arrival Timestamp: <u>09/16/2017 9:15</u>

Number of Packages: 1 Number of Projects: 1

State/Province of Origin: WA

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 ≥ 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.

Cooler #Thermometer IDCorrected TempTherm. TypeIce TypeIce Present?Ice ContainerElevated Temp?1DT42-011.3DTWetYBaggedN



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)
С	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	aqueous liquids, ppm is usually taken to	be equivalent to milli	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weight uivalent to one microliter per liter of gas.
ppb	parts per billion		
Dry weight basis			oisture content. This increases the analyte weight ample without moisture. All other results are reported on an

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
С	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 >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Р	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.