AECOM

November 8, 2019

Mr. Panjini Balaraju
Washington State Department of Ecology
Toxics Cleanup Program Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503

Subject: Quarterly Progress Report – Fourth Quarter 2018
D Street Petroleum Site, Tacoma, Washington
CONSENT DECREE 91-2-2012-1

Dear Mr. Balaraju:

AECOM submits the following progress report for the D Street Petroleum Site located at 520 East D Street in Tacoma, Washington (the Site). This report is being submitted to the Washington State Department of Ecology (Ecology) on behalf of the D Street Potentially Liable Persons (PLP) Group: ExxonMobil Refining and Supply/Environmental Services (ExxonMobil, formerly Mobil), Shell Oil Company (Shell), and Chevron Environmental Management Company (Chevron EMC), in accordance with Consent Decree No. 91-2-2012-1. The Phillips 66 Company (formerly ConocoPhillips) transferred control of its allocated share of the D Street PLP Group to Chevron EMC, effective April 1, 2011.

A groundwater sampling and monitored natural attenuation program was implemented after the remedial system at the Site was turned off in October 2006. Groundwater monitoring is conducted in accordance with the Sampling and Analysis Plan for Groundwater Performance Monitoring Program and Work Plan for Well Installation/Decommissioning Activities, dated September 2011. This progress report covers the environmental monitoring data collected during the fourth quarter (October 1, 2018 through December 31, 2018). An evaluation of the fourth quarter 2018 data and natural attenuation processes will be presented in the 2019 Annual Progress Report, which is completed following the third quarter (September) 2019 monitoring event.

1.0 Site Description

The Site is an approximately 17 acres former Shell property located at 520 East D Street in Tacoma, Pierce County, Washington (Figure 1). The Site is located on a peninsula in Commencement Bay and is bounded to the west by the Thea Foss Waterway; to the north by various industrial properties, East 3rd Street, and Commencement Bay; to the east by East F Street and the Middle Waterway; and to the south by various industrial properties and 11th Street.

The Site includes an active bulk petroleum storage and distribution area currently occupied by Phillips 66 Company. Previous operators of the petroleum storage and distribution area include Mobil, British Petroleum (BP), Unocal/76 Products, and Tosco. The south and southwest end of the Site is owned and utilized by Globe Machine Manufacturing, a manufacturer of industrial machines. The east and northeast end of the Site is vacant and owned by Targa Resources with the exception of the northeastern-most area which is occupied by a pump station owned by Olympic Pipeline

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Company. These areas along with the groundwater monitoring well network and other site features are presented in Figure 2.

2.0 Summary of Sampling Activities Conducted During the Reporting Period

The fourth quarter 2018 monitoring event included the following groundwater sampling activities conducted from December 10th through December 12th, 2018:

- Water Level and Free Product Gauging
  - AECOM personnel measured water levels and free product, where present, in 36 upper sand unit monitoring wells, seven surface water compliance monitoring wells, and six lower sand unit monitoring wells. Measurable free product was not observed in the monitoring wells sampled during this event.
  - The depths to groundwater and the calculated groundwater elevations based on the December 2018 measurements are presented in Table 1. Groundwater elevation contour maps are not provided due to high variability in the groundwater elevation data caused by tidal influences and other factors.
  - The predominant groundwater flow direction within the upper and lower sand units has historically been toward the southwest (toward the Thea Foss Waterway). Groundwater and tidal influence studies conducted in 2011 indicate a more diminished flow pattern toward the Thea Foss Waterway.

- Groundwater/Surface Water Compliance Sampling
  - Groundwater and surface water compliance samples were collected from 18 groundwater monitoring wells during this event:
    - Ten upper sand unit groundwater monitoring wells (B-25, B-31, B-34, E-22, FW-5R, FW-14, HC-111, RW-5R, RW-8, and T-2). Wells E-22, FW-5R, FW-14, and T-2 also serve as sentinel wells
    - Three lower sand unit groundwater monitoring wells (DMW-2, DMW-4 and FW-13)
    - Four surface water compliance monitoring wells (RR-1, RR-2, RR-4, and RR-5)
  - The wells were purged and sampled following low-flow sampling methodology. An in-line (i.e., flow-thru cell) multi-parameter water quality measurement device was used to continuously monitor pH, temperature, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity. Representative water samples were collected when parameters stabilized over three recording intervals (three to five minutes each).

- Analytical Procedures
  - The groundwater and surface water compliance samples were submitted under proper chain-of-custody protocol to TestAmerica Laboratories, Incorporated of Spokane, Washington. The laboratory analytical report and chain-of-custody are provided in Appendix A.
  - The following methods were used to analyze the samples identified above:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency (EPA) Method 8260C
- Gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest total petroleum hydrocarbons Method NWTPH-Gx
- Diesel-range total petroleum hydrocarbons (TPH-D) and total petroleum hydrocarbons in the heavy oil range (TPH-O) by Northwest total petroleum hydrocarbons Method NWTPH-Dx
- Naphthalene, 1-methylnapthalene, and 2-methylnaphthalene by EPA Method 8270D selected ion monitoring (SIM)

- Purge water generated during this event was placed in a 55-gallon drum stored at the Site. The contents of the drum will be removed for disposal prior to the next quarterly groundwater monitoring event.

3.0 Summary of Data Validation Completed for Period Sampling Event

A data validation review was completed for the fourth quarter 2018 analytical data. The data was reviewed based on the EPA Contract Laboratory Program's *National Functional Guidelines for Organic Superfund Methods Data Review* dated January 2017 and standard laboratory quality control criteria.

The completeness of the analytical reports for this groundwater monitoring event is 100%. The data qualifiers assigned by the laboratory are shown on the laboratory reports. No additional data qualifiers were assigned based on the data validation review. Sample results and associated data qualifiers are presented in Table 2 and Appendix B: Table 1. The completed data review memorandum for this quarterly sampling event is provided in Appendix B.

4.0 Summary of Analytical Results for Period Sampling Event

This section provides a summary of the groundwater monitoring results from this event. Table 2 summarizes analytical results for groundwater monitoring wells sampled during the fourth quarter 2018. A copy of the laboratory analytical report is presented in Appendix A. Site-specific Surface Water Cleanup Levels and Groundwater Cleanup Levels were established by Ecology and D Street PLP Group representatives (effective September 3, 1991), as written in Appendix B of Consent Decree No. 91-2-2012-1. The cleanup levels were established for the following specific contaminants: benzene, toluene, and ethylbenzene. Cleanup levels were not established for total xylenes, TPH-G, TPH-D, or TPH-O.

- Benzene was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8) and two sentinel wells (E-22 and FW-5R). One well (B-25) was in exceedance of the groundwater cleanup standard of 0.16 milligrams per liter (mg/L). Three of the wells (B-34, HC-111, and RW-5R) were in exceedance of the surface water cleanup standard of 0.04 mg/L but did not exceed the groundwater cleanup standard. Benzene was not detected in the surface compliance wells or lower sand unit wells sampled during this event. Benzene

concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 3.

- Toluene was detected in six of the upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), one sentinel well (FW-5R), and one surface water compliance well (RR-5). None of the toluene detections exceeded the surface water cleanup standard of 5 mg/L or the groundwater cleanup standard of 20 mg/L. Toluene was not detected in the lower sand unit wells sampled during this event.
- Ethylbenzene was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8) and two sentinel wells (E-22 and FW-5R). None of the ethylbenzene detections exceeded the surface water cleanup standard of 0.43 mg/L or the groundwater cleanup standard of 1.7 mg/L. Ethylbenzene was not detected in the surface water compliance wells or the lower sand unit wells sampled during this event.
- Total xylenes were detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8) and one sentinel well (E-22). Total xylenes were not detected in the surface water compliance wells or lower sand unit wells sampled during this event. There are no cleanup standards for total xylenes for the Site.
- TPH-G was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), two sentinel wells (E-22 and FW-5R), one surface water compliance well (RR-5), and one lower sand unit well (DMW-4). There are no cleanup standards for TPH-G for the Site. TPH-G concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 4.
- TPH-D was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), three sentinel wells (E-22, FW-5R, and T-2), two surface water compliance wells (RR-1 and RR-5), and all lower sand unit wells (DMW-2, DMW-4, and FW-13). There are no cleanup standards for TPH-D for the Site. TPH-D concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 5.
- TPH-O was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), three sentinel well (E-22, FW-5R, and T-2), one surface water compliance well (RR-5), and all lower sand unit wells (DMW-2, DMW-4, and FW-13). There are no cleanup standards for TPH-O for the Site.
- Naphthalene was analyzed in three select wells (FW-5R, FW-14, and RR-2) during this quarterly sampling event. Naphthalene was detected in one sentinel well (FW-5R). There are no cleanup standards for naphthalene for the Site.

5.0 Summary of Field and Natural Attenuation Results for Period Sampling Event

Table 3 summarizes the field parameters for the groundwater monitoring wells sampled during this quarterly monitoring event. An evaluation of the natural attenuation processes occurring at the Site will be presented in the 2019 Annual Progress Report, which is completed following the third quarter (September) 2019 sampling event.

6.0 Discussion of Upper Sand Unit Shoreline Data

There were no exceedances of site groundwater or surface water cleanup standards in the sentinel wells (E-22, FW-5R, FW-14, and T-2) sampled during this event. TPH-D and TPH-O were detected

in three sentinel wells (E-22, FW-5R, and T-2), and TPH-G was detected in two sentinel wells (E-22 and FW-5R). Benzene and ethylbenzene were detected in sentinel wells E-22 and FW-5R. Toluene was detected in sentinel well FW-5R and total xylenes were detected in sentinel well E-22. Naphthalene was detected in sentinel well FW-5R.

There were no exceedances of site groundwater or surface water cleanup standards in the surface water compliance wells (RR-1 through RR-5) sampled during this event. TPH-G and TPH-O were detected in one surface water compliance well (RR-5), and TPH-D was detected in two surface water compliance wells (RR-1 and RR-5). Toluene was detected in one surface water compliance well (RR-5). Benzene, ethylbenzene, and total xylenes were not detected in the surface water compliance wells sampled during this event. Naphthalene was not detected in any of the surface water compliance wells sampled during this event. Further evaluation of this area will be provided in the 2019 Annual Progress Report.

7.0. Discussion of Lower Sand Unit Data

There were no exceedances of site groundwater or surface water cleanup standards in the lower sand unit wells (DMW-2, DMW-4, and FW-13). TPH-D and TPH-O were detected in all three lower sand unit wells. TPH-G was detected in lower sand unit well DMW-4. BTEX constituents were not detected in the lower sand unit wells.

8.0 Status of Recent and Upcoming Deliverables

- The 2018 Annual Progress Report was submitted in October 2019.
- The First Quarter 2019 Progress Report is anticipated to be submitted in November 2019.

If you have any questions regarding this progress report, please call me at (503) 222-7200.

Sincerely,

AECOM

Tyler Hemry
Deputy Project Manager/ Technical Manager

Mike Edwards, PE, MBA
Vice President

cc: Andrea Wing – Shell Oil Company (electronic only)
Jennifer Sedlachek – ExxonMobil (electronic only)
Ben Terry – Chevron (electronic only)
Rich Solomon – Phillips 66 (electronic only)

ATTACHMENTS:

Figure 1 – Vicinity Map
Figure 2 – Site Map
Figure 3 – Benzene Concentrations in Groundwater (Upper Sand Unit), December 2018
Figure 4 – TPH-G Concentrations in Groundwater (Upper Sand Unit), December 2018
Figure 5 – TPH-D Concentrations in Groundwater (Upper Sand Unit), December 2018
Table 1 – Groundwater Elevation Data, Fourth Quarter 2018
Table 2 – Summary of Groundwater Analytical Results, Fourth Quarter 2018
Table 3 – Summary of Field Parameters, Fourth Quarter 2018

Appendix A – Laboratory Analytical Data
Appendix B – Data Review

FIGURES

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

0 2,000 4,000 Feet

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VICINITY MAP

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 1

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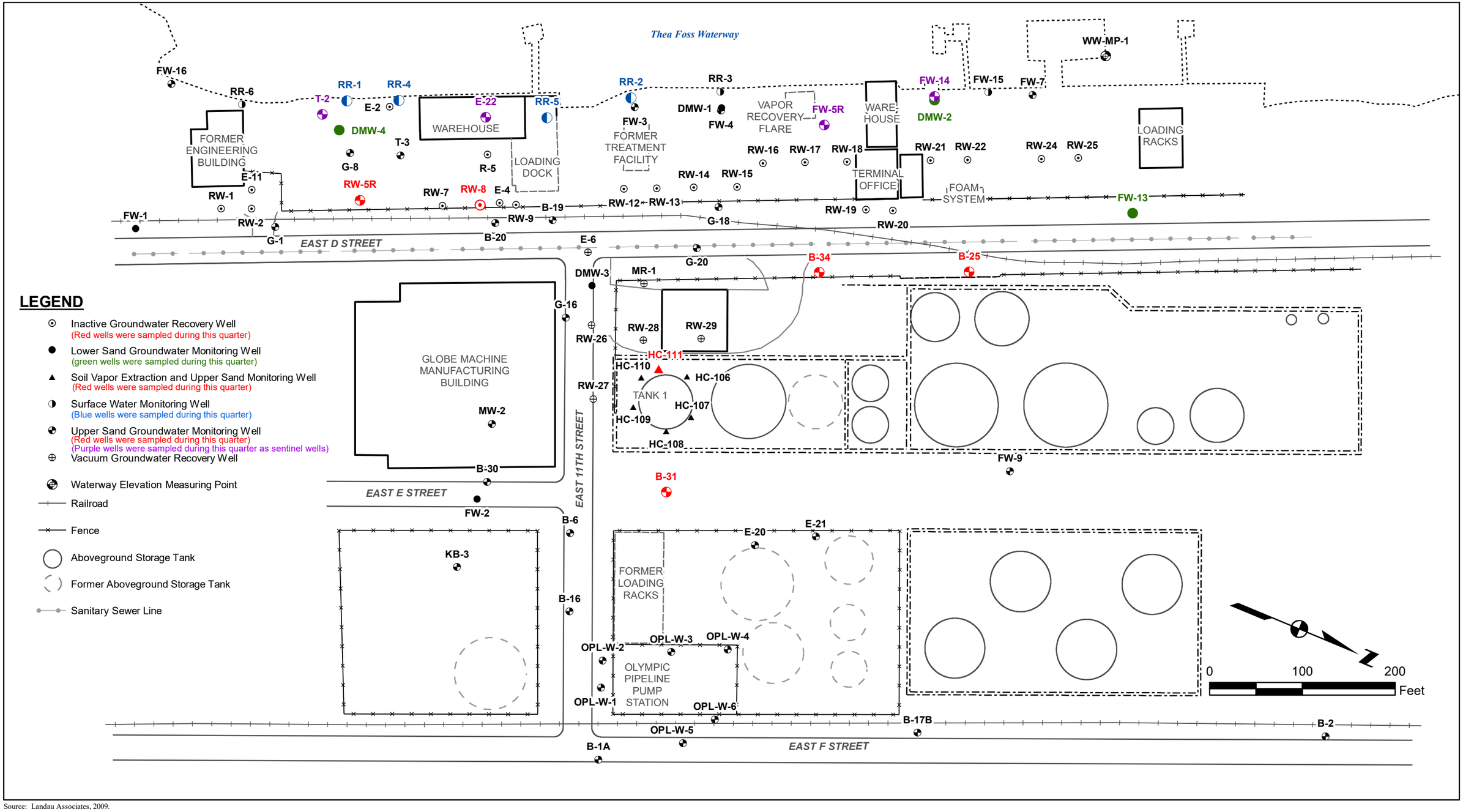

LEGEND

- Inactive Groundwater Recovery Well
  (Red wells were sampled during this quarter)
- Lower Sand Groundwater Monitoring Well
  (green wells were sampled during this quarter)
- Soil Vapor Extraction and Upper Sand Monitoring Well
  (Red wells were sampled during this quarter)
- Surface Water Monitoring Well
  (Blue wells were sampled during this quarter)
- Upper Sand Groundwater Monitoring Well
  (Red wells were sampled during this quarter)
  (Purple wells were sampled during this quarter as sentinel wells)
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.
URS, 2014.

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SITE MAP

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 2

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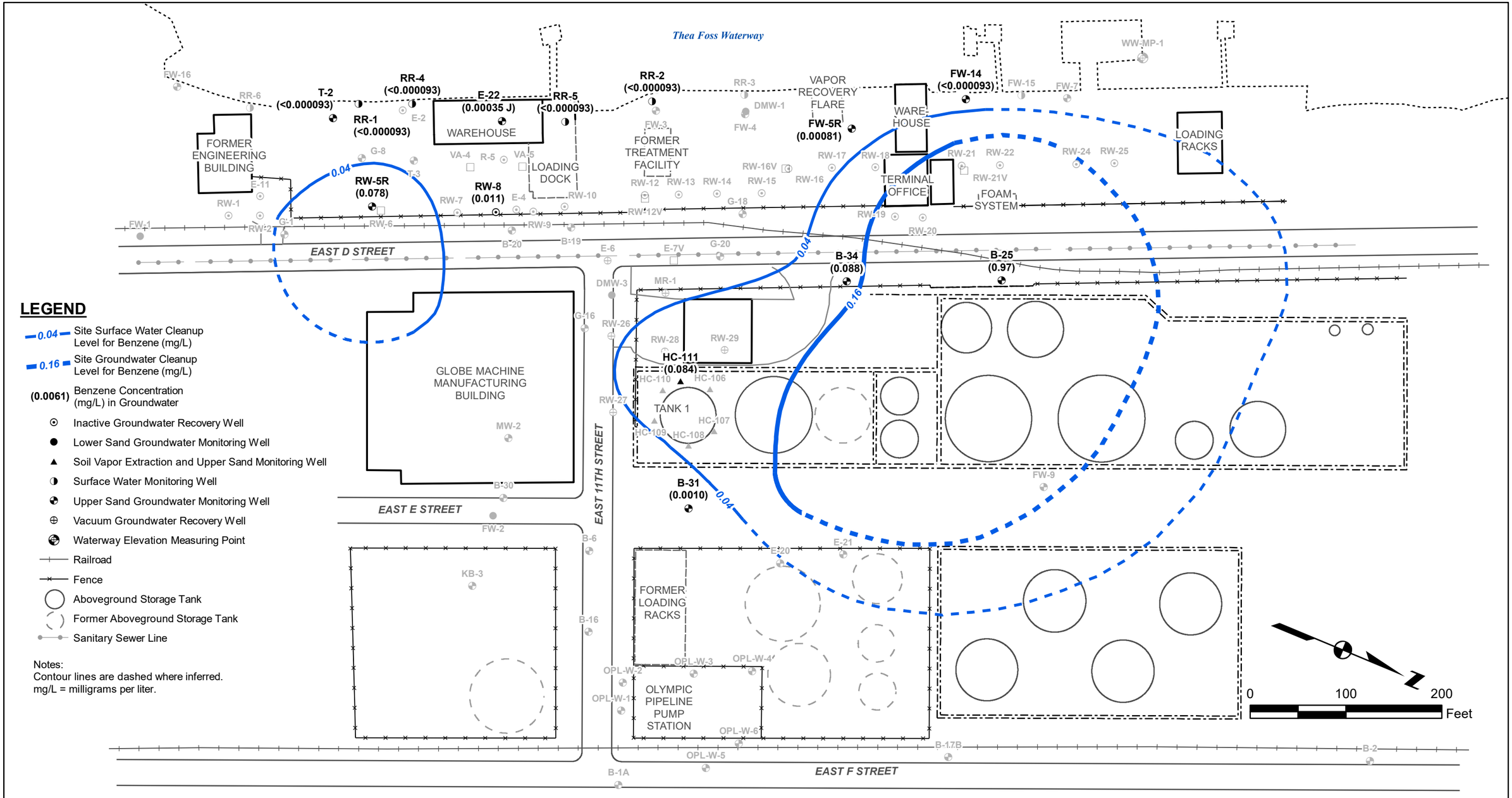

LEGEND

- 0.04 — Site Surface Water Cleanup Level for Benzene (mg/L)
- 0.16 — Site Groundwater Cleanup Level for Benzene (mg/L)
- (0.0061) Benzene Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.
URS, 2014.

BENZENE CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) DECEMER 2018

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 3

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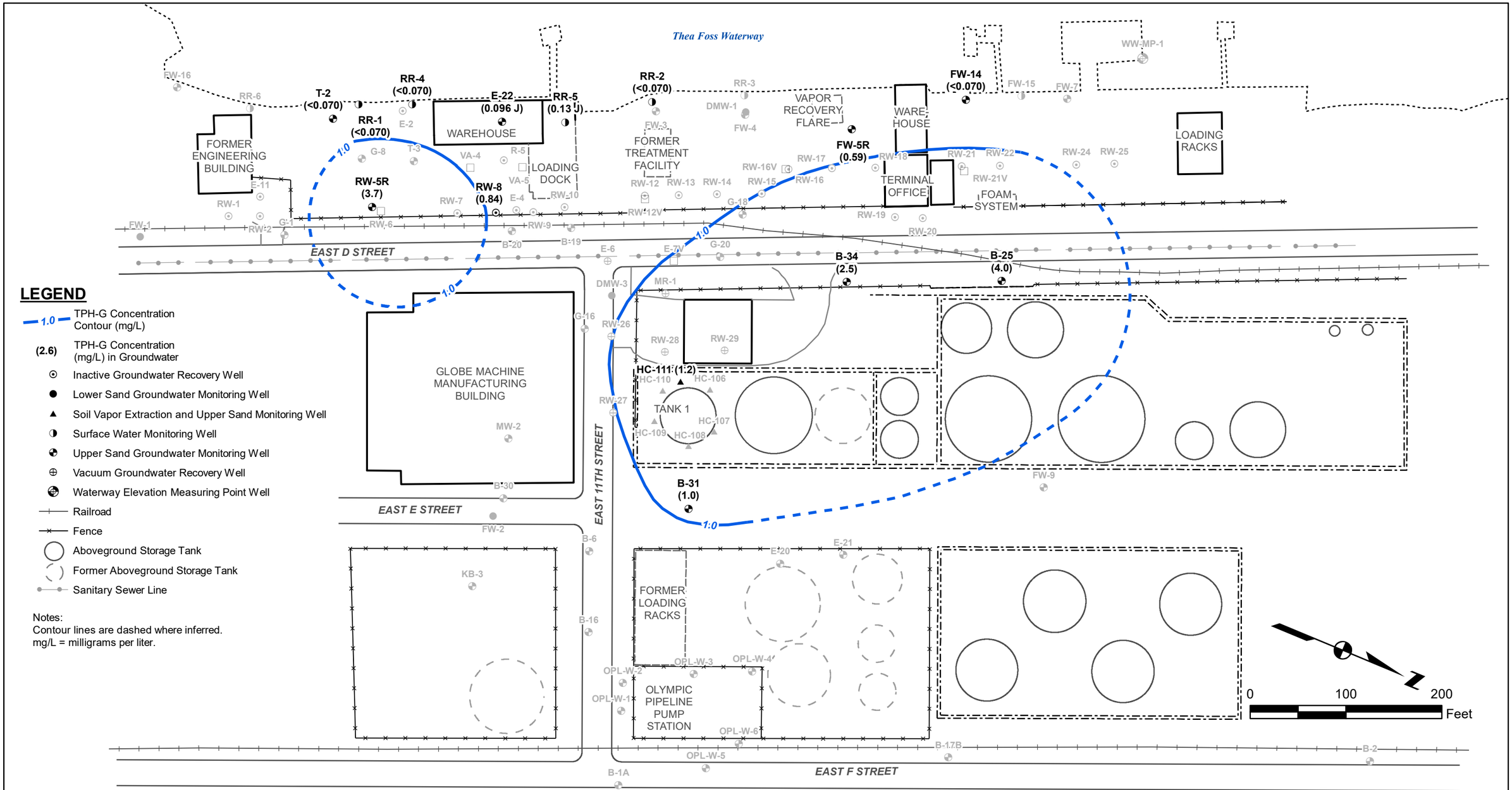

LEGEND

- 1.0 — TPH-G Concentration Contour (mg/L)
- (2.6) TPH-G Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point Well
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.
URS, 2014.

TPH-G CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) DECEMBER 2018

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 4

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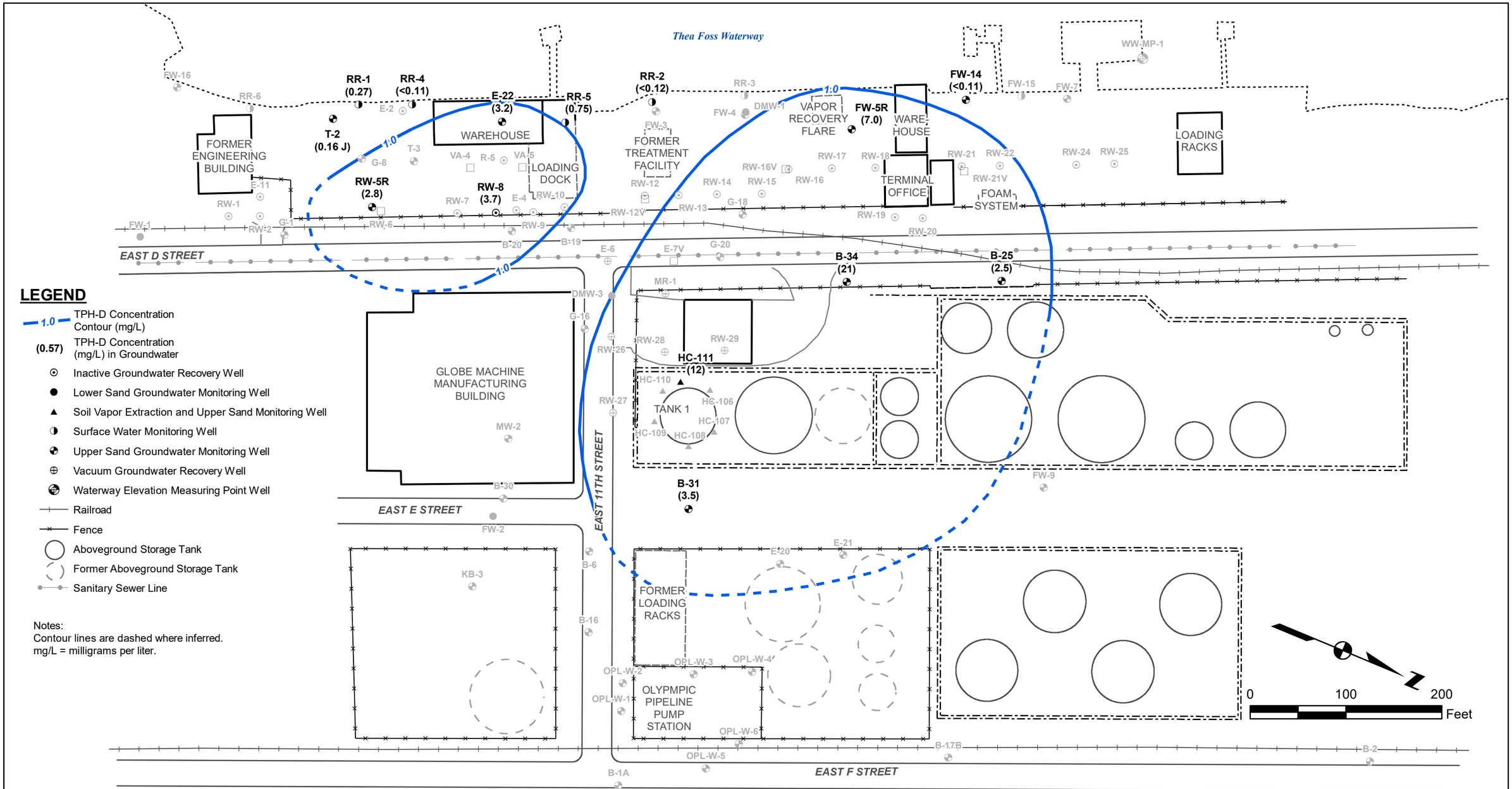

LEGEND

- 1.0 — TPH-D Concentration Contour (mg/L)
- (0.57) — TPH-D Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point Well
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.

TPH-D CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) DECEMBER 2018

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 5

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TABLES

Table 1
Groundwater Elevation Data
Fourth Quarter 2018
D Street Petroleum Site

Well ID	Well Elevation (ft) (a)	Date	Time	Depth to Groundwater (ft)	Apparent Product Thickness (ft)	Groundwater Elevation (ft)	
Upper Sand Unit							
B-1A	14.15	12/12/2018	10:35	7.20	--	6.95	
B-2	13.78	12/12/2018	10:44	7.00	--	6.78	
B-6	14.25	12/11/2018	8:45	NR	--	NR	Dry
B-16	14.40	12/11/2018	8:55	NR	--	NR	Unable to remove PVC cap
B-17B	14.16	12/12/2018	10:39	6.65	--	7.51	
B-19	13.31	12/12/2018	11:02	6.68	--	6.63	
B-20	13.48	12/12/2018	11:04	6.85	--	6.63	
B-25	13.96	12/11/2018	10:28	7.41	--	6.55	
B-30	14.46	12/12/2018	10:33	7.90	--	6.56	
B-31	14.46	12/11/2018	10:50	8.25	--	6.21	
B-34	14.36	12/10/2018	11:46	8.85	--	5.51	
E-4	12.09	12/12/2008	NR	NR	--	NR	Well cap stuck
E-6	12.14	12/12/2018	NR	NR		NR	In street
E-20	NS	12/11/2018	9:03	6.85	--	NS	
E-21	14.13	12/11/2018	9:00	7.25	--	6.88	
FW-3	14.11 (b)	12/10/2018	13:50	6.92	--	7.19	
FW-4	14.21	12/12/2018	11:54	6.98	--	7.23	
FW-16	12.35	12/12/2018	NR	NR	--	NR	Car parked on well
G-1	13.43 (b)	12/12/2018	11:30	7.22	--	6.21	
G-8	13.25	12/12/2018	NR	NR	--	NR	Under trailer
G-16	13.23	12/12/2018	10:29	6.95	--	6.28	
G-18	13.54	12/12/2018	11:36	6.82	--	6.72	
G-20	13.11	12/12/2018	NR	NR	--	NR	In street
HC-108	15.30	12/10/2018	11:13	8.63	--	6.67	
HC-111	14.62	12/10/2018	10:34	8.82	--	5.80	
MR-1	14.26	12/12/2018	NR	NR	--	NR	Lid bolted down
MW-2	NS	12/12/2018	10:20	8.59	--	NS	Gritty film on probe
R-5	11.69	12/12/2018	NR	NR	--	NR	Truck on well
RW-1	12.94	12/12/2018	11:13	5.82	--	7.12	
RW-2	12.76	12/12/2018	11:12	5.70	--	7.06	
RW-5R	13.76	12/10/2018	12:30	7.42	--	6.34	
RW-7	12.46	12/12/2012	NR	NR	--	NR	Steel beams on well
RW-8	12.71	12/10/2018	10:45	6.32	--	6.39	
RW-9	12.59	12/12/2018	NR	NR	--	NR	Under trailer
RW-12	13.21	12/12/2018	12:00	6.78	--	6.43	
RW-13	13.94	12/12/2018	12:02	7.15	--	6.79	
RW-14	13.52	12/12/2018	12:03	6.52	--	7.00	
RW-15	13.15	12/12/2018	12:04	6.35	--	6.80	
RW-17	12.29	12/12/2018	12:06	5.51	--	6.78	
RW-19	12.97	12/12/2018	10:09	6.57	--	6.40	
RW-20	12.80	12/12/2018	10:08	6.33	--	6.47	
RW-22	12.72	12/12/2018	NR	NR	--	NR	Well cap glued on
RW-24	13.63	12/12/2018	12:09	7.00	--	6.63	
RW-26	11.93	12/12/2018	NR	NR	--	NR	PVC
RW-28	14.62	12/12/2018	11:00	NR	--	NR	Well lid stuck
RW-29	13.83	12/12/2018	11:01	NR	--	NR	Well lid stuck
T-3	13.03	12/12/2018	11:23	6.41	--	6.62	
Upper Sand Unit - Sentinel							
E-22	16.74	12/11/2018	9:30	9.75	--	6.99	
FW-5R	12.78	12/10/2018	14:23	6.22	--	6.56	
FW-14	13.17	12/11/118	12:40	5.90	--	7.27	
T-2	11.62	12/10/2018	15:10	5.00	--	6.62	

Table 1
Groundwater Elevation Data
Fourth Quarter 2018
D Street Petroleum Site

Well ID	Well Elevation (ft) (a)	Date	Time	Depth to Groundwater (ft)	Apparent Product Thickness (ft)	Groundwater Elevation (ft)	
Lower Sand Unit							
FW-1	13.63	12/12/2018	11:15	6.28	--	7.35	
FW-2	14.32	NR	NR	NR	--	NR	paved over
FW-13	13.13	12/11/2018	12:49	5.58	--	7.55	
DMW-1	13.72	12/12/2018	11:47	6.15	--	7.57	
DMW-2	12.97	12/11/2018	13:45	6.20	--	6.77	
DMW-3	12.83	12/12/2018	10:53	4.95	--	7.88	
DMW-4	11.72	12/12/2018	8:05	3.92	--	NR	
Upper Sand Unit - Surface Water Compliance							
RR-1	14.79 (b)	12/11/2018	14:23	7.71	--	7.08	
RR-2	15.71 (b)	12/10/2018	13:10	8.84	--	6.87	
RR-3	15.78 (b)	12/12/2018	11:45	7.68	--	8.10	
RR-4	13.19 (c)	12/10/2018	13:25	6.40	--	6.79	
RR-5	16.53	12/11/2018	14:50	6.50	--	10.03	
RR-6	11.31	12/12/2018	11:10	3.44	--	7.87	
FW-15	NS	12/12/2018	12:15	6.45	--	NS	

Notes
Groundwater elevations corrected for free product using following equation, if applicable:
Well Elevation - Depth to Groundwater + (Apparent Product Thickness x 0.80)
ID = Identification
NS = No survey data provided or available
NR = Not recorded
-- = Product was not detected
(a) Top of casing elevation, October 2013, based on NAVD 88, unless otherwise noted
(b) Top of casing elevation, March 2011, based on NAVD 88
(c) Top of casing elevation, October 2011, based on NAVD 88
ft = Feet

Table 2
Summary of Groundwater Analytical Results
Fourth Quarter 2018
D Street Petroleum Site

	Analyte:			TPH-G		TPH-D		TPH-O		Benzene		Ethylbenzene		m-Xylene & p-Xylene		o-Xylene		Toluene		Xylenes (total)		Naphthalene		2-Methylaphthalene		1-Methylaphthalene	
	Surface Water Cleanup Standards:			---		---		---		0.04		0.43		---		---		5		---		---		---		---	
	Groundwater Cleanup Standards:			---		---		---		0.16		1.7		---		---		20		---		---		---		---	
	Sample ID	**Lab ID**	**Date Collected**																								
Upper Sand Unit	B-25	580-82564-11	12/11/2018	4.0		2.5		0.58		**0.97**		0.0031		0.0064		0.00071	J	0.0053		0.0071		--		--		--	
	B-31	580-82564-12	12/11/2018	0.89		3.2		0.71		0.00092		0.0066		0.0084		0.00099	J	0.0035		0.0094		--		--		--	
	B-31 (DUP)	580-82564-13	12/11/2018	1.0		3.5		0.79		0.0010		0.0072		0.0092		0.0011		0.0038		0.010		--		--		--	
	B-34	580-82564-4	12/10/2018	2.5		21		3.5		**0.088**		0.0046		0.0011	J	0.00016	U	0.0051		0.0011	J	--		--		--	
	HC-111	580-82564-1	12/10/2018	1.2		12		2.7		**0.084**		0.020		0.0020		0.0010		0.0040		0.0030		--		--		--	
	RW-5R	580-82564-5	12/10/2018	3.7		2.8		0.82		**0.078**		0.017		0.00028	U	0.00073	J	0.00072	J	0.00073	J	--		--		--	
	RW-8	580-82564-2	12/10/2018	0.78		3.6		0.91		0.010		0.00071	J	0.0015	J	0.0012		0.0010		0.0027	J	--		--		--	
	RW-8 (DUP)	580-82564-3	12/10/2018	0.84		3.7		0.99		0.011		0.00064	J	0.0017	J	0.0013		0.00110		0.0030		--		--		--	
Upper Sand Unit - Sentinel	E-22	580-82564-10	12/11/2018	0.096	J	3.2		0.56		0.00035	**J**	0.00045	J	0.00044	J	0.00016	U	0.00031	U	0.00044	J	--		--		--	
	FW-5R	580-82564-8	12/11/2018	0.59		7.0		1.1		0.00081		0.00052	J	0.00028	U	0.00016	U	0.00040	J	0.00044	U	0.0010		0.350		0.320	
	FW-14	580-82564-14	12/11/2018	0.070	U	0.11	U	0.12	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	0.000054	U	0.000045	U	0.000023	U
	T-2	580-82564-9	12/11/2018	0.070	U	0.16	J	0.16	J	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
Upper Sand Unit - Surface Water Compliance	RR-1	580-82564-17	12/11/2018	0.070	U	0.27		0.14	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	RR-2	580-82564-6	12/11/2018	0.070	U	0.12	U	0.13	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	0.000057	U	0.000047	U	0.000025	U
	RR-4	580-82564-7	12/11/2018	0.070	U	0.11	U	0.12	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	RR-5	580-82564-18	12/11/2018	0.13	J	0.75		0.65		0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.018		0.00044	U	--		--		--	
Lower Sand Unit	DMW-2	580-82564-16	12/11/2018	0.070	U	1.7		0.70		0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	DMW-4	580-82564-19	12/11/2018	0.37		0.44		0.27	J	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	FW-13	580-82564-15	12/11/2018	0.070	U	0.82		0.43		0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	

Notes:
All results in milligrams per liter (mg/L).
-- = Not analyzed.
(DUP) = Field duplicate
EPA = Environmental Protection Agency
ID = Identification
J = The analyte is present in the sample; the reported concentration is an estimate.
TPH = Total Petroleum Hydrocarbons
NWTPH-Gx= Northwest Analytical method, Northwest Total Petroleum Hydrocarbons as Gasoline
NWTPH-Dx w SGC = Northwest Analytical method, Northwest Total Petroleum Hydrocarbons as Diesel with Silica Gel Cleanup
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-O = Total Petroleum Hydrocarbons as Oil
U = Not detected above the reported quantitation limit.
Bold indicates an exceedance of surface water cleanup levels.
Bold indicates an exceedance of groundwater cleanup levels.
Site-Specific Surface Cleanup Level, Consent Decree No. 91-2-2012-1, effective 9/3/91
Site-Specific Groundwater Cleanup Level, Consent Decree No. 91-2-2012-1, effective 9/3/91

Table 3
Summary of Field Parameters
Fourth Quarter 2018
D Street Petroleum Site

	Sample ID	Date Collected	Temperature (°C)	pH	Conductivity (mS/cm)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)
Upper Sand Unit	B-25	12/11/2018	10.59	6.63	0.625	-100	6.21
	B-31	12/11/2018	12.42	6.77	0.420	-212	1.77
	B-34	12/10/2018	14.38	6.39	1.04	-88	7.04
	HC-111	12/10/2018	12.31	6.23	0.867	-87	7.30
	RW-5R	12/10/2018	13.37	6.93	1.52	-72	2.61
	RW-8	12/10/2018	12.83	6.99	2.78	-108	3.43
Upper Sand Unit - Sentinel	E-22	12/11/2018	13.71	7.19	15.6	-32.5	1.60
	FW-5R	12/10/2018	14.67	6.47	4.31	-105	1.18
	FW-14	12/11/2018	8.95	7.17	30.2	43	6.70
	T-2	12/10/2018	11.44	6.50	23.2	-44	1.81
Upper Sand Unit - Surface Water Compliance	RR-1	12/11/2018	10.01	6.33	31.7	25	3.62
	RR-2	12/10/2018	11.20	6.86	33.2	40	6.97
	RR-4	12/10/2018	10.88	6.99	30.7	69	7.98
	RR-5	12/11/2018	8.83	6.70	11.6	-170	1.70
Lower Sand Unit	DMW-2	12/11/2018	9.40	7.63	12.2	-181	1.96
	DMW-4	12/12/2018	11.38	7.10	27.0	-308	11.56
	FW-13	12/11/2018	11.63	7.06	0.653	-116	4.53

Notes:

°C = degrees Celsius

mg/L = milligrams per liter

mS/m = millisiemens per meter

mV = millivolts

ID = Identification

Field parameters (pH, conductivity, dissolved oxygen, temperature, and Oxygen Reduction Potential) are measured during well purging. Final stabilized parameters are shown in the table above.

Conductivity units may have been incorrectly entered in the field - results may not be accurate.

[a]FW-28 is a duplicate of FW-13

[b]RW-18R is a duplicate of RW-5R

APPENDIX A
Laboratory Analytical Data

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82564-1
Client Project/Site: Tacoma D St Terminal-Phillips 66

For:
AECOM
111 SW Columbia Street, Suite 1500
Portland, Oregon 97201

Attn: Mr. Tyler Hemry

Authorized for release by:
12/20/2018 2:13:25 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

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

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

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Job ID: 580-82564-1

Laboratory: TestAmerica Seattle

Narrative

Receipt
The samples were received on 12/12/2018 12:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3º C and 1.3º C.

GC/MS Semi VOA
Method 8270D SIM: The following sample required a dilution due to the nature of the sample matrix: FW-5R (580-82564-8). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA
Method NWTPH-Dx: Detected hydrocarbons appear to be due to weathered diesel in the following samples: HC-11 (580-82564-1), RW-8 (580-82564-2), RW-8 DUP (580-82564-3), B-34 (580-82564-4), FW-5R (580-82564-8), T-2 (580-82564-9), E-22 (580-82564-10), FW-13 (580-82564-15), DMW-2 (580-82564-16), RR-5 (580-82564-18) and DMW-4 (580-82564-19).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to weathered diesel as well as gasoline overlap in the following samples: RW-5R (580-82564-5), B-25 (580-82564-11), B-31 (580-82564-12) and B-31-DUP (580-82564-13).

Method NWTPH-Dx: Detected hydrocarbons appear to be due to individual peaks and are a non-typical hydrocarbon pattern in the following sample: RR-1 (580-82564-17).

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

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

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

Definitions/Glossary

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC Semi VOA

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: HC-11
Date Collected: 12/10/18 11:03
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	84		0.40	0.093	ug/L			12/17/18 13:49	1
Ethylbenzene	20		1.0	0.20	ug/L			12/17/18 13:49	1
m,p-Xylene	2.0		2.0	0.28	ug/L			12/17/18 13:49	1
o-Xylene	1.0		1.0	0.16	ug/L			12/17/18 13:49	1
Toluene	4.0		1.0	0.31	ug/L			12/17/18 13:49	1
Xylenes, Total	3.0		3.0	0.44	ug/L			12/17/18 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*12/17/18 13:49*	*1*
4-Bromofluorobenzene (Surr)	*105*		*69 - 120*		*12/17/18 13:49*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*12/17/18 13:49*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/17/18 13:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1200		150	70	ug/L			12/17/18 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*12/17/18 13:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	12		0.26	0.12	mg/L		12/14/18 11:07	12/14/18 15:56	1
Residual Range Organics (RRO) (C25-C36)	2.7		0.44	0.13	mg/L		12/14/18 11:07	12/14/18 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*12/14/18 11:07*	*12/14/18 15:56*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*12/14/18 11:07*	*12/14/18 15:56*	*1*

Client Sample ID: RW-8

Date Collected: 12/10/18 11:30
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	10		0.40	0.093	ug/L			12/17/18 14:11	1
Ethylbenzene	0.71	J	1.0	0.20	ug/L			12/17/18 14:11	1
m,p-Xylene	1.5	J	2.0	0.28	ug/L			12/17/18 14:11	1
o-Xylene	1.2		1.0	0.16	ug/L			12/17/18 14:11	1
Toluene	1.0		1.0	0.31	ug/L			12/17/18 14:11	1
Xylenes, Total	2.7	J	3.0	0.44	ug/L			12/17/18 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*12/17/18 14:11*	*1*
4-Bromofluorobenzene (Surr)	*104*		*69 - 120*		*12/17/18 14:11*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 14:11*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/17/18 14:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	780		150	70	ug/L			12/17/18 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*12/17/18 14:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.6		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 16:17	1
Residual Range Organics (RRO) (C25-C36)	0.91		0.41	0.12	mg/L		12/14/18 11:07	12/14/18 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:17*	*1*
n-Triacontane-d62	*89*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:17*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RW-8 DUP

Date Collected: 12/10/18 11:30
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	11		0.40	0.093	ug/L			12/17/18 14:33	1
Ethylbenzene	0.64	J	1.0	0.20	ug/L			12/17/18 14:33	1
m,p-Xylene	1.7	J	2.0	0.28	ug/L			12/17/18 14:33	1
o-Xylene	1.3		1.0	0.16	ug/L			12/17/18 14:33	1
Toluene	1.1		1.0	0.31	ug/L			12/17/18 14:33	1
Xylenes, Total	3.0		3.0	0.44	ug/L			12/17/18 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 125*		*12/17/18 14:33*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/17/18 14:33*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 14:33*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 14:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	840		150	70	ug/L			12/17/18 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/17/18 14:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.7		0.25	0.11	mg/L		12/14/18 11:07	12/14/18 16:38	1
Residual Range Organics (RRO) (C25-C36)	0.99		0.41	0.12	mg/L		12/14/18 11:07	12/14/18 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:38*	*1*
n-Triacontane-d62	*91*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:38*	*1*

Client Sample ID: B-34

Date Collected: 12/10/18 12:08
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**88**		0.40	0.093	ug/L			12/17/18 14:56	1
Ethylbenzene	**4.6**		1.0	0.20	ug/L			12/17/18 14:56	1
m,p-Xylene	**1.1**	**J**	2.0	0.28	ug/L			12/17/18 14:56	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 14:56	1
Toluene	**5.1**		1.0	0.31	ug/L			12/17/18 14:56	1
Xylenes, Total	**1.1**	**J**	3.0	0.44	ug/L			12/17/18 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 125*		*12/17/18 14:56*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/17/18 14:56*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*12/17/18 14:56*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/17/18 14:56*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2500**		150	70	ug/L			12/17/18 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/17/18 14:56*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**21**		0.26	0.12	mg/L		12/14/18 11:07	12/14/18 16:59	1
Residual Range Organics (RRO) (C25-C36)	**3.5**		0.43	0.13	mg/L		12/14/18 11:07	12/14/18 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:59*	*1*
n-Triacontane-d62	*97*		*50 - 150*	*12/14/18 11:07*	*12/14/18 16:59*	*1*

Client Sample ID: RW-5R

Date Collected: 12/10/18 13:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**78**		0.40	0.093	ug/L			12/17/18 16:03	1
Ethylbenzene	**17**		1.0	0.20	ug/L			12/17/18 16:03	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 16:03	1
o-Xylene	**0.73**	**J**	1.0	0.16	ug/L			12/17/18 16:03	1
Toluene	**0.72**	**J**	1.0	0.31	ug/L			12/17/18 16:03	1
Xylenes, Total	**0.73**	**J**	3.0	0.44	ug/L			12/17/18 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 125*		*12/17/18 16:03*	*1*
4-Bromofluorobenzene (Surr)	*108*		*69 - 120*		*12/17/18 16:03*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*12/17/18 16:03*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/17/18 16:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3700**		150	70	ug/L			12/17/18 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*68.7 - 141*		*12/17/18 16:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**2.8**		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 17:19	1
Residual Range Organics (RRO) (C25-C36)	**0.82**		0.40	0.12	mg/L		12/14/18 11:07	12/14/18 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:19*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:19*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RR-2
Date Collected: 12/10/18 13:36
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 16:25	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 16:25	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 16:25	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 16:25	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 16:25	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*12/17/18 16:25*	*1*
4-Bromofluorobenzene (Surr)	*100*		*69 - 120*		*12/17/18 16:25*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*12/17/18 16:25*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/17/18 16:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/17/18 16:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.096	0.057	ug/L		12/14/18 13:13	12/14/18 22:53	1
2-Methylnaphthalene	ND		0.096	0.047	ug/L		12/14/18 13:13	12/14/18 22:53	1
1-Methylnaphthalene	ND		0.096	0.025	ug/L		12/14/18 13:13	12/14/18 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*56*		*45 - 126*	*12/14/18 13:13*	*12/14/18 22:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.26	0.12	mg/L		12/14/18 11:07	12/14/18 17:39	1
Residual Range Organics (RRO) (C25-C36)	ND		0.43	0.13	mg/L		12/14/18 11:07	12/14/18 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:39*	*1*
n-Triacontane-d62	*88*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:39*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RR-4
Date Collected: 12/10/18 14:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 17:09	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 17:09	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 17:09	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 17:09	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 17:09	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 125*		*12/17/18 17:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*69 - 120*		*12/17/18 17:09*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*12/17/18 17:09*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 17:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/17/18 17:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 17:58	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		12/14/18 11:07	12/14/18 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:58*	*1*
n-Triacontane-d62	*87*		*50 - 150*	*12/14/18 11:07*	*12/14/18 17:58*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: FW-5R

Date Collected: 12/10/18 14:59
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.81**		0.40	0.093	ug/L			12/17/18 17:31	1
Ethylbenzene	**0.52**	**J**	1.0	0.20	ug/L			12/17/18 17:31	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 17:31	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 17:31	1
Toluene	**0.40**	**J**	1.0	0.31	ug/L			12/17/18 17:31	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*12/17/18 17:31*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/17/18 17:31*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 17:31*	*1*
Toluene-d8 (Surr)	*118*		*80 - 120*		*12/17/18 17:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**590**		150	70	ug/L			12/17/18 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/17/18 17:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**1.0**		0.10	0.060	ug/L		12/14/18 13:13	12/14/18 23:19	1
2-Methylnaphthalene	**350**		10	5.0	ug/L		12/14/18 13:13	12/17/18 14:35	100
1-Methylnaphthalene	**320**		10	2.6	ug/L		12/14/18 13:13	12/17/18 14:35	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*62*		*45 - 126*	*12/14/18 13:13*	*12/14/18 23:19*	*1*
Nitrobenzene-d5	*142*	*X*	*45 - 126*	*12/14/18 13:13*	*12/17/18 14:35*	*100*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**7.0**		0.27	0.12	mg/L		12/14/18 11:07	12/14/18 18:38	1
Residual Range Organics (RRO) (C25-C36)	**1.1**		0.45	0.14	mg/L		12/14/18 11:07	12/14/18 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*87*		*50 - 150*	*12/14/18 11:07*	*12/14/18 18:38*	*1*
n-Triacontane-d62	*102*		*50 - 150*	*12/14/18 11:07*	*12/14/18 18:38*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: T-2

Date Collected: 12/10/18 15:50
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 17:53	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 17:53	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 17:53	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 17:53	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 17:53	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 125*		*12/17/18 17:53*	*1*
4-Bromofluorobenzene (Surr)	*103*		*69 - 120*		*12/17/18 17:53*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*12/17/18 17:53*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/17/18 17:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*12/17/18 17:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**0.16**	**J**	0.23	0.11	mg/L		12/14/18 11:07	12/14/18 18:57	1
Residual Range Organics (RRO) (C25-C36)	**0.16**	**J**	0.39	0.12	mg/L		12/14/18 11:07	12/14/18 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*12/14/18 11:07*	*12/14/18 18:57*	*1*
n-Triacontane-d62	*89*		*50 - 150*	*12/14/18 11:07*	*12/14/18 18:57*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: E-22

Date Collected: 12/11/18 10:10
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.35	J	0.40	0.093	ug/L			12/17/18 18:15	1
Ethylbenzene	0.45	J	1.0	0.20	ug/L			12/17/18 18:15	1
m,p-Xylene	0.44	J	2.0	0.28	ug/L			12/17/18 18:15	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 18:15	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 18:15	1
Xylenes, Total	0.44	J	3.0	0.44	ug/L			12/17/18 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 125*		*12/17/18 18:15*	*1*
4-Bromofluorobenzene (Surr)	*104*		*69 - 120*		*12/17/18 18:15*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 18:15*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 18:15*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	96	J	150	70	ug/L			12/17/18 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*12/17/18 18:15*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.2		0.23	0.11	mg/L		12/14/18 11:07	12/14/18 19:17	1
Residual Range Organics (RRO) (C25-C36)	0.56		0.39	0.12	mg/L		12/14/18 11:07	12/14/18 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:17*	*1*
n-Triacontane-d62	*87*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:17*	*1*

Client Sample ID: B-25

Date Collected: 12/11/18 10:56
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	970		40	9.3	ug/L			12/18/18 21:14	100
Ethylbenzene	3.1		1.0	0.20	ug/L			12/18/18 13:10	1
m,p-Xylene	6.4		2.0	0.28	ug/L			12/18/18 13:10	1
o-Xylene	0.71	J	1.0	0.16	ug/L			12/18/18 13:10	1
Toluene	5.3		1.0	0.31	ug/L			12/18/18 13:10	1
Xylenes, Total	7.1		3.0	0.44	ug/L			12/18/18 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 125*		*12/18/18 13:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 125*		*12/18/18 21:14*	*100*
4-Bromofluorobenzene (Surr)	*99*		*69 - 120*		*12/18/18 13:10*	*1*
4-Bromofluorobenzene (Surr)	*119*		*69 - 120*		*12/18/18 21:14*	*100*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*12/18/18 13:10*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*12/18/18 21:14*	*100*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/18/18 13:10*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/18/18 21:14*	*100*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	4000		150	70	ug/L			12/18/18 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*12/18/18 13:10*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.5		0.28	0.13	mg/L		12/14/18 11:07	12/14/18 19:36	1
Residual Range Organics (RRO) (C25-C36)	0.58		0.47	0.14	mg/L		12/14/18 11:07	12/14/18 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:36*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:36*	*1*

Client Sample ID: B-31

Date Collected: 12/11/18 11:35
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.92		0.40	0.093	ug/L			12/17/18 18:59	1
Ethylbenzene	6.6		1.0	0.20	ug/L			12/17/18 18:59	1
m,p-Xylene	8.4		2.0	0.28	ug/L			12/17/18 18:59	1
o-Xylene	0.99	J	1.0	0.16	ug/L			12/17/18 18:59	1
Toluene	3.5		1.0	0.31	ug/L			12/17/18 18:59	1
Xylenes, Total	9.4		3.0	0.44	ug/L			12/17/18 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 125*		*12/17/18 18:59*	*1*
4-Bromofluorobenzene (Surr)	*104*		*69 - 120*		*12/17/18 18:59*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 18:59*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/17/18 18:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	890		150	70	ug/L			12/17/18 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*12/17/18 18:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.2		0.25	0.11	mg/L		12/14/18 11:07	12/14/18 19:56	1
Residual Range Organics (RRO) (C25-C36)	0.71		0.41	0.12	mg/L		12/14/18 11:07	12/14/18 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:56*	*1*
n-Triacontane-d62	*90*		*50 - 150*	*12/14/18 11:07*	*12/14/18 19:56*	*1*

Client Sample ID: B-31-DUP

Date Collected: 12/11/18 11:35
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0		0.40	0.093	ug/L			12/17/18 19:21	1
Ethylbenzene	7.2		1.0	0.20	ug/L			12/17/18 19:21	1
m,p-Xylene	9.2		2.0	0.28	ug/L			12/17/18 19:21	1
o-Xylene	1.1		1.0	0.16	ug/L			12/17/18 19:21	1
Toluene	3.8		1.0	0.31	ug/L			12/17/18 19:21	1
Xylenes, Total	10		3.0	0.44	ug/L			12/17/18 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*		*12/17/18 19:21*	*1*
4-Bromofluorobenzene (Surr)	*106*		*69 - 120*		*12/17/18 19:21*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 19:21*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 19:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1000		150	70	ug/L			12/17/18 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*12/17/18 19:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.5		0.25	0.12	mg/L		12/14/18 11:07	12/14/18 20:15	1
Residual Range Organics (RRO) (C25-C36)	0.79		0.42	0.13	mg/L		12/14/18 11:07	12/14/18 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:15*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:15*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: FW-14

Date Collected: 12/11/18 13:10
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-14

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 19:43	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 19:43	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 19:43	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 19:43	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 19:43	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 125*		*12/17/18 19:43*	*1*
4-Bromofluorobenzene (Surr)	*105*		*69 - 120*		*12/17/18 19:43*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*12/17/18 19:43*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/17/18 19:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*12/17/18 19:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.091	0.054	ug/L		12/14/18 13:13	12/14/18 23:46	1
2-Methylnaphthalene	ND		0.091	0.045	ug/L		12/14/18 13:13	12/14/18 23:46	1
1-Methylnaphthalene	ND		0.091	0.023	ug/L		12/14/18 13:13	12/14/18 23:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*60*		*45 - 126*	*12/14/18 13:13*	*12/14/18 23:46*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 20:35	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39	0.12	mg/L		12/14/18 11:07	12/14/18 20:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:35*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:35*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: FW-13
Date Collected: 12/11/18 14:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-15
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 20:05	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 20:05	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 20:05	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 20:05	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 20:05	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 125*		*12/17/18 20:05*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/17/18 20:05*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*12/17/18 20:05*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/17/18 20:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/17/18 20:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**0.82**		0.26	0.12	mg/L		12/14/18 11:07	12/14/18 20:54	1
Residual Range Organics (RRO) (C25-C36)	**0.43**		0.43	0.13	mg/L		12/14/18 11:07	12/14/18 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:54*	*1*
n-Triacontane-d62	*100*		*50 - 150*	*12/14/18 11:07*	*12/14/18 20:54*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: DMW-2

Date Collected: 12/11/18 14:20
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-16

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 20:27	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 20:27	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 20:27	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 20:27	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 20:27	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*		*12/17/18 20:27*	*1*
4-Bromofluorobenzene (Surr)	*104*		*69 - 120*		*12/17/18 20:27*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*12/17/18 20:27*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/17/18 20:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*12/17/18 20:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**1.7**		0.23	0.10	mg/L		12/14/18 11:07	12/14/18 21:14	1
Residual Range Organics (RRO) (C25-C36)	**0.70**		0.38	0.11	mg/L		12/14/18 11:07	12/14/18 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*12/14/18 11:07*	*12/14/18 21:14*	*1*
n-Triacontane-d62	*105*		*50 - 150*	*12/14/18 11:07*	*12/14/18 21:14*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RR-1
Date Collected: 12/11/18 14:47
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-17
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 21:11	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 21:11	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 21:11	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 21:11	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 21:11	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 125*		*12/17/18 21:11*	*1*
4-Bromofluorobenzene (Surr)	*105*		*69 - 120*		*12/17/18 21:11*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*12/17/18 21:11*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/17/18 21:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*12/17/18 21:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**0.27**		0.27	0.12	mg/L		12/14/18 11:07	12/14/18 21:34	1
Residual Range Organics (RRO) (C25-C36)	ND		0.45	0.14	mg/L		12/14/18 11:07	12/14/18 21:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*12/14/18 11:07*	*12/14/18 21:34*	*1*
n-Triacontane-d62	*101*		*50 - 150*	*12/14/18 11:07*	*12/14/18 21:34*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RR-5
Date Collected: 12/11/18 15:40
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-18
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 21:32	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 21:32	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 21:32	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 21:32	1
Toluene	**18**		1.0	0.31	ug/L			12/17/18 21:32	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 125*		*12/17/18 21:32*	*1*
4-Bromofluorobenzene (Surr)	*106*		*69 - 120*		*12/17/18 21:32*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/17/18 21:32*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*12/17/18 21:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**130**	**J**	150	70	ug/L			12/17/18 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*12/17/18 21:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**0.75**		0.25	0.11	mg/L		12/14/18 11:07	12/14/18 22:13	1
Residual Range Organics (RRO) (C25-C36)	**0.65**		0.41	0.12	mg/L		12/14/18 11:07	12/14/18 22:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*12/14/18 11:07*	*12/14/18 22:13*	*1*
n-Triacontane-d62	*101*		*50 - 150*	*12/14/18 11:07*	*12/14/18 22:13*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: DMW-4
Date Collected: 12/12/18 08:55
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-19
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 21:54	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 21:54	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 21:54	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 21:54	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 21:54	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 125*		*12/17/18 21:54*	*1*
4-Bromofluorobenzene (Surr)	*107*		*69 - 120*		*12/17/18 21:54*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*12/17/18 21:54*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/17/18 21:54*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**370**		150	70	ug/L			12/17/18 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*		*12/17/18 21:54*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**0.44**		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 22:32	1
Residual Range Organics (RRO) (C25-C36)	**0.27**	**J**	0.41	0.12	mg/L		12/14/18 11:07	12/14/18 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*12/14/18 11:07*	*12/14/18 22:32*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*12/14/18 11:07*	*12/14/18 22:32*	*1*

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: TRIP BLANK
Date Collected: 12/10/18 08:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-20
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 22:16	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 22:16	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 22:16	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 22:16	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 22:16	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 22:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 125*		*12/17/18 22:16*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/17/18 22:16*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/17/18 22:16*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 22:16*	*1*

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

Lab Sample ID: MB 590-20299/5
Matrix: Water
Analysis Batch: 20299

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/17/18 11:33	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/17/18 11:33	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/17/18 11:33	1
o-Xylene	ND		1.0	0.16	ug/L			12/17/18 11:33	1
Toluene	ND		1.0	0.31	ug/L			12/17/18 11:33	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/17/18 11:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 125*		*12/17/18 11:33*	*1*
4-Bromofluorobenzene (Surr)	*103*		*69 - 120*		*12/17/18 11:33*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*12/17/18 11:33*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/17/18 11:33*	*1*

Lab Sample ID: LCS 590-20299/1003
Matrix: Water
Analysis Batch: 20299

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	10.6		ug/L		106	80 - 120		
Ethylbenzene			10.0	9.65		ug/L		97	80 - 120		
m,p-Xylene			10.0	9.80		ug/L		98	80 - 120		
o-Xylene			10.0	9.32		ug/L		93	80 - 120		
Toluene			10.0	9.60		ug/L		96	80 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

Lab Sample ID: LCSD 590-20299/6
Matrix: Water
Analysis Batch: 20299

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	10.3		ug/L		103	80 - 120	2	25
Ethylbenzene			10.0	10.5		ug/L		105	80 - 120	8	25
m,p-Xylene			10.0	10.3		ug/L		103	80 - 120	5	25
o-Xylene			10.0	9.73		ug/L		97	80 - 120	4	25
Toluene			10.0	10.0		ug/L		100	80 - 123	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 125*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

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

Lab Sample ID: 580-82564-4 DU
Matrix: Water
Analysis Batch: 20299

Client Sample ID: B-34
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Benzene	88			86.0		ug/L				2	20
Ethylbenzene	4.6			4.73		ug/L				3	20
m,p-Xylene	1.1	J		0.918	J	ug/L				16	20
o-Xylene	ND			0.741	J	ug/L				NC	20
Toluene	5.1			4.79		ug/L				6	20
Xylenes, Total	1.1	J		1.66	J F5	ug/L				42	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*
4-Bromofluorobenzene (Surr)	*101*		*69 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: MB 590-20330/5
Matrix: Water
Analysis Batch: 20330

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			12/18/18 12:08	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/18/18 12:08	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/18/18 12:08	1
o-Xylene	ND		1.0	0.16	ug/L			12/18/18 12:08	1
Toluene	ND		1.0	0.31	ug/L			12/18/18 12:08	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/18/18 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*70 - 125*		*12/18/18 12:08*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*12/18/18 12:08*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*12/18/18 12:08*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/18/18 12:08*	*1*

Lab Sample ID: LCS 590-20330/1003
Matrix: Water
Analysis Batch: 20330

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	10.2		ug/L		102	80 - 120		
Ethylbenzene			10.0	9.38		ug/L		94	80 - 120		
m,p-Xylene			10.0	9.37		ug/L		94	80 - 120		
o-Xylene			10.0	9.51		ug/L		95	80 - 120		
Toluene			10.0	9.17		ug/L		92	80 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 120*
Toluene-d8 (Surr)	*93*		*80 - 120*

Lab Sample ID: LCSD 590-20330/6
Matrix: Water
Analysis Batch: 20330

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	9.41		ug/L		94	80 - 120	8	25
Ethylbenzene			10.0	9.11		ug/L		91	80 - 120	3	25
m,p-Xylene			10.0	9.49		ug/L		95	80 - 120	1	25
o-Xylene			10.0	9.41		ug/L		94	80 - 120	1	25
Toluene			10.0	9.22		ug/L		92	80 - 123	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 125*
4-Bromofluorobenzene (Surr)	*97*		*69 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*93*		*80 - 120*

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

Lab Sample ID: MB 590-20298/5
Matrix: Water
Analysis Batch: 20298

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/17/18 11:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*12/17/18 11:33*	*1*

Lab Sample ID: LCS 590-20298/1004
Matrix: Water
Analysis Batch: 20298

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	1080		ug/L		108	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

Lab Sample ID: LCSD 590-20298/1015
Matrix: Water
Analysis Batch: 20298

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	983		ug/L		98	80 - 120	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*

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

Lab Sample ID: 580-82564-4 DU
Matrix: Water
Analysis Batch: 20298

Client Sample ID: B-34
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline	2500			2370		ug/L				4	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*

Lab Sample ID: MB 590-20329/5
Matrix: Water
Analysis Batch: 20329

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			12/18/18 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/18/18 12:08*	*1*

Lab Sample ID: LCS 590-20329/1004
Matrix: Water
Analysis Batch: 20329

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	1090		ug/L		109	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*

Lab Sample ID: LCSD 590-20329/1015
Matrix: Water
Analysis Batch: 20329

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	997		ug/L		100	80 - 120	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*

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

Lab Sample ID: MB 590-20283/1-A
Matrix: Water
Analysis Batch: 20278

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090	0.053	ug/L		12/14/18 13:13	12/14/18 21:33	1
2-Methylnaphthalene	ND		0.090	0.044	ug/L		12/14/18 13:13	12/14/18 21:33	1
1-Methylnaphthalene	ND		0.090	0.023	ug/L		12/14/18 13:13	12/14/18 21:33	1

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

Lab Sample ID: MB 590-20283/1-A
Matrix: Water
Analysis Batch: 20278

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20283

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	70		45 - 126	12/14/18 13:13	12/14/18 21:33	1

Lab Sample ID: LCS 590-20283/2-A
Matrix: Water
Analysis Batch: 20278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 20283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	1.60	1.02		ug/L		64	52 - 121
2-Methylnaphthalene	1.60	1.01		ug/L		63	44 - 134
1-Methylnaphthalene	1.60	1.02		ug/L		64	56 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	82		45 - 126

Lab Sample ID: LCSD 590-20283/3-A
Matrix: Water
Analysis Batch: 20278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 20283

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	1.60	1.14		ug/L		71	52 - 121	11	30
2-Methylnaphthalene	1.60	1.17		ug/L		73	44 - 134	15	30
1-Methylnaphthalene	1.60	1.18		ug/L		74	56 - 123	15	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5	68		45 - 126

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

Lab Sample ID: MB 590-20273/1-A
Matrix: Water
Analysis Batch: 20263

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 20273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		12/14/18 11:07	12/14/18 14:53	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		12/14/18 11:07	12/14/18 14:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150	12/14/18 11:07	12/14/18 14:53	1
n-Triacontane-d62	80		50 - 150	12/14/18 11:07	12/14/18 14:53	1

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

Lab Sample ID: LCS 590-20273/2-A
Matrix: Water
Analysis Batch: 20263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 20273

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO) (C10-C25)			1.60	1.28		mg/L		80	50 - 150		
Residual Range Organics (RRO) (C25-C36)			1.60	1.57		mg/L		98	50 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*93*		*50 - 150*
n-Triacontane-d62	*95*		*50 - 150*

Lab Sample ID: LCSD 590-20273/3-A
Matrix: Water
Analysis Batch: 20263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 20273

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)			1.60	1.11		mg/L		69	50 - 150	15	25
Residual Range Organics (RRO) (C25-C36)			1.60	1.43		mg/L		90	50 - 150	9	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*85*		*50 - 150*
n-Triacontane-d62	*85*		*50 - 150*

Lab Chronicle

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: HC-11
Date Collected: 12/10/18 11:03
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 13:49	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 13:49	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 15:56	NMI	TAL SPK

Client Sample ID: RW-8
Date Collected: 12/10/18 11:30
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 14:11	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 14:11	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 16:17	NMI	TAL SPK

Client Sample ID: RW-8 DUP
Date Collected: 12/10/18 11:30
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 14:33	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 14:33	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 16:38	NMI	TAL SPK

Client Sample ID: B-34
Date Collected: 12/10/18 12:08
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 14:56	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 14:56	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 16:59	NMI	TAL SPK

Client Sample ID: RW-5R
Date Collected: 12/10/18 13:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 16:03	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 16:03	MRS	TAL SPK

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 17:19	NMI	TAL SPK

Client Sample ID: RR-2
Lab Sample ID: 580-82564-6
Date Collected: 12/10/18 13:36
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 16:25	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 16:25	MRS	TAL SPK
Total/NA	Prep	3510C			20283	12/14/18 13:13	MO	TAL SPK
Total/NA	Analysis	8270D SIM		1	20278	12/14/18 22:53	NMI	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 17:39	NMI	TAL SPK

Client Sample ID: RR-4
Lab Sample ID: 580-82564-7
Date Collected: 12/10/18 14:00
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 17:09	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 17:09	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 17:58	NMI	TAL SPK

Client Sample ID: FW-5R
Lab Sample ID: 580-82564-8
Date Collected: 12/10/18 14:59
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 17:31	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 17:31	MRS	TAL SPK
Total/NA	Prep	3510C			20283	12/14/18 13:13	MO	TAL SPK
Total/NA	Analysis	8270D SIM		1	20278	12/14/18 23:19	NMI	TAL SPK
Total/NA	Prep	3510C			20283	12/14/18 13:13	MO	TAL SPK
Total/NA	Analysis	8270D SIM		100	20306	12/17/18 14:35	NMI	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 18:38	NMI	TAL SPK

Client Sample ID: T-2
Lab Sample ID: 580-82564-9
Date Collected: 12/10/18 15:50
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 17:53	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 17:53	MRS	TAL SPK

Lab Chronicle

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: T-2
Lab Sample ID: 580-82564-9
Date Collected: 12/10/18 15:50
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 18:57	NMI	TAL SPK

Client Sample ID: E-22
Lab Sample ID: 580-82564-10
Date Collected: 12/11/18 10:10
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 18:15	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 18:15	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 19:17	NMI	TAL SPK

Client Sample ID: B-25
Lab Sample ID: 580-82564-11
Date Collected: 12/11/18 10:56
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20330	12/18/18 13:10	MRS	TAL SPK
Total/NA	Analysis	8260C		100	20330	12/18/18 21:14	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20329	12/18/18 13:10	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 19:36	NMI	TAL SPK

Client Sample ID: B-31
Lab Sample ID: 580-82564-12
Date Collected: 12/11/18 11:35
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 18:59	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 18:59	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 19:56	NMI	TAL SPK

Client Sample ID: B-31-DUP
Lab Sample ID: 580-82564-13
Date Collected: 12/11/18 11:35
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 19:21	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 19:21	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK

Client Sample ID: B-31-DUP
Lab Sample ID: 580-82564-13

Date Collected: 12/11/18 11:35
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 20:15	NMI	TAL SPK

Client Sample ID: FW-14
Lab Sample ID: 580-82564-14

Date Collected: 12/11/18 13:10
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 19:43	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 19:43	MRS	TAL SPK
Total/NA	Prep	3510C			20283	12/14/18 13:13	MO	TAL SPK
Total/NA	Analysis	8270D SIM		1	20278	12/14/18 23:46	NMI	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 20:35	NMI	TAL SPK

Client Sample ID: FW-13
Lab Sample ID: 580-82564-15

Date Collected: 12/11/18 14:00
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 20:05	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 20:05	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 20:54	NMI	TAL SPK

Client Sample ID: DMW-2
Lab Sample ID: 580-82564-16

Date Collected: 12/11/18 14:20
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 20:27	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 20:27	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 21:14	NMI	TAL SPK

Client Sample ID: RR-1
Lab Sample ID: 580-82564-17

Date Collected: 12/11/18 14:47
Matrix: Water
Date Received: 12/12/18 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 21:11	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 21:11	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK

Lab Chronicle

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Client Sample ID: RR-1
Date Collected: 12/11/18 14:47
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 21:34	NMI	TAL SPK

Client Sample ID: RR-5
Date Collected: 12/11/18 15:40
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 21:32	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 21:32	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 22:13	NMI	TAL SPK

Client Sample ID: DMW-4
Date Collected: 12/12/18 08:55
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 21:54	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	20298	12/17/18 21:54	MRS	TAL SPK
Total/NA	Prep	3510C			20273	12/14/18 11:07	MO	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	20263	12/14/18 22:32	NMI	TAL SPK

Client Sample ID: TRIP BLANK
Date Collected: 12/10/18 08:00
Date Received: 12/12/18 12:40

Lab Sample ID: 580-82564-20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	20299	12/17/18 22:16	MRS	TAL SPK

Laboratory References:

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

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	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Sample Summary

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

TestAmerica Job ID: 580-82564-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82564-1	HC-11	Water	12/10/18 11:03	12/12/18 12:40
580-82564-2	RW-8	Water	12/10/18 11:30	12/12/18 12:40
580-82564-3	RW-8 DUP	Water	12/10/18 11:30	12/12/18 12:40
580-82564-4	B-34	Water	12/10/18 12:08	12/12/18 12:40
580-82564-5	RW-5R	Water	12/10/18 13:00	12/12/18 12:40
580-82564-6	RR-2	Water	12/10/18 13:36	12/12/18 12:40
580-82564-7	RR-4	Water	12/10/18 14:00	12/12/18 12:40
580-82564-8	FW-5R	Water	12/10/18 14:59	12/12/18 12:40
580-82564-9	T-2	Water	12/10/18 15:50	12/12/18 12:40
580-82564-10	E-22	Water	12/11/18 10:10	12/12/18 12:40
580-82564-11	B-25	Water	12/11/18 10:56	12/12/18 12:40
580-82564-12	B-31	Water	12/11/18 11:35	12/12/18 12:40
580-82564-13	B-31-DUP	Water	12/11/18 11:35	12/12/18 12:40
580-82564-14	FW-14	Water	12/11/18 13:10	12/12/18 12:40
580-82564-15	FW-13	Water	12/11/18 14:00	12/12/18 12:40
580-82564-16	DMW-2	Water	12/11/18 14:20	12/12/18 12:40
580-82564-17	RR-1	Water	12/11/18 14:47	12/12/18 12:40
580-82564-18	RR-5	Water	12/11/18 15:40	12/12/18 12:40
580-82564-19	DMW-4	Water	12/12/18 08:55	12/12/18 12:40
580-82564-20	TRIP BLANK	Water	12/10/18 08:00	12/12/18 12:40

TestAmerica Spokane
11922 E. 1st Ave.

Spokane, WA 99206
phone 509.924.9200 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: ~~Craig Riley~~ Tyler Hemery	Site Contact: Mark Tauscher	Date: 12/12/2018	COC No:
AECOM	Tel/Fax: 503-478-2766	Lab Contact: Randee Arrington	Carrier:	1 of 2 COCs
111 SW Columbia, Suite 1500	Analysis Turnaround Time			Sampler:
Portland, Oregon 97201	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
503-222-7200 Phone	TAT if different from Below ____			Walk-in Client:
Email: craig.riley@aecom.com	☑ 2 weeks			Lab Samplin
Project Name: D Street Terminal Tacoma, WA	☐ 1 week			Loc: 580
Site: P66 Terminal	☐ 2 days			Job / SDG N 82564
P O # 60483190	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	8260B BTEX	NWTPH-Gx	NWTPH-Dx	300.0 Sulfate	300.0 Nitrate (48 Hr. Hold Time)	6020 Dissolved Lead and Mn- Lab Fi	310.1 Alkalinity	6020 Total Lead	Naphalenes SIMPAH8270
HC-111	12/10/18	11:03	G	W	3	N	N	X	X	X						
RW-8		11:30			3	N	N	X	X	X						
RW-8-DUP		11:30			3	N	N	X	X	X						
B-34		12:08			9	N	Y	X	X	X						
RW-5R		13:00			3	N	N	X	X	X						
RR-2		13:36			5	N	N	X	X	X						X
RR-4		14:00			3	N	N	X	X	X						
FW-5R		14:59			5	N	N	X	X	X						X
T-2		15:50			3	N	N	X	X	X						
E-22	12/11/18	10:10			3	N	N	X	X	X						
B-25		10:56			3	N	N	X	X	X						
B-31		11:35			3	N	N	X	X	X						

Sample Specific Notes:

580-82564 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Please Contact ~~Craig Riley~~ with questions
Tyler Hemery

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	AECOM	12/12/2018 12:40		TASE2	12-12-18 1240
	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Received in Laboratory by:	Company:	Date/Time:

Therm. ID: 92 Cor: 0.3 Unc: 0.0
Cooler Dsc: LB
Packing: Bub
Cust. Seal: Yes ___ No 4
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: ___
Other: CD

Therm. ID: A2 Cor: 1.3 Unc: 1.0
Cooler Dsc: LB
Packing: Bub
Cust. Seal: Yes ___ No 4
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: ___
Other: CD

TestAmerica Spokane
11922 E. 1st Ave.

Spokane, WA 99206
phone 509.924.9200 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: ~~Craig Riley~~ Tyler Hemry	Site Contact: Mark Tauscher	Date: 12/12/2018	COC No:
AECOM	Tel/Fax: 503-478-2766	Lab Contact: Randee Arrington	Carrier:	2 of 2 COCs
111 SW Columbia, Suite 1500	**Analysis Turnaround Time**			Sampler:
Portland, Oregon 97201	☐ CALENDAR DAYS ☑ WORKING DAYS			**For Lab Use Only:**
503-222-7200 Phone	TAT if different from Below _____			Walk-in Client:
Email: craig.riley@aecom.com	☑ 2 weeks			Lab Sampling:
Project Name: D Street Terminal Tacoma, WA	☐ 1 week			
Site: P66 Terminal	☐ 2 days			Job / SDG No.:
P O # 60483190	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	8260B BTEX	NWTPH-Gx	NWTPH-Dx	300.0 Sulfate	300.0 Nitrate (48 Hr. Hold Time)	6020 Dissolved Lead and Mn- Lab Fi	310.1 Alkalinity	6020 Total Lead	Naphalenes SIMPAH8270	Sample Specific Notes:
B-31-DUP	12/11/18	11:35	G	W	3	N	N	X	X	X							
FW-14		13:10			5	N	N	X	X	X						X	
FW-13		14:00			3	N	N	X	X	X							
DMW-2		14:20			3	N	N	X	X	X							
RR-1		14:47			3	N	N	X	X	X							
RR-5		15:40			3	N	N	X	X	X							
DMW-4	12/12/18	08:55			3	N	N	X	X	X							
Trip blank	—	—	—		1	N	N	X									

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Please Contact ~~Craig Riley~~ Tyler Hemry with questions

Tyler Hemry

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____		
Relinquished by:	Company: AECOM	Date/Time: 12/12/18 12:40	Received by:	Company: TABS	Date/Time: 12-12-18 1240
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-62089.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-82564-1
Address: 11922 East 1st Ave,	Due Date Requested: 12/18/2018			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: Tacoma D St Terminal-Phillips 66/Quarter	Project #: 59000882			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C (MOD) BTEX only	NWTPH_Gx_MS/5030C Gx by GCMS	NWTPH_Dx/3510C_LVI_14d DRO and RRO	8270D_SIM/3510C_LVI Naphthalenes	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HC-11 (580-82564-1)	12/10/18	11:03 Pacific		Water			X	X	X		3	
RW-8 (580-82564-2)	12/10/18	11:30 Pacific		Water			X	X	X		3	
RW-8 DUP (580-82564-3)	12/10/18	11:30 Pacific		Water			X	X	X		3	
B-34 (580-82564-4)	12/10/18	12:08 Pacific		Water			X	X	X		9	
RW-5R (580-82564-5)	12/10/18	13:00 Pacific		Water			X	X	X		3	
RR-2 (580-82564-6)	12/10/18	13:36 Pacific		Water			X	X	X	X	5	
RR-4 (580-82564-7)	12/10/18	14:00 Pacific		Water			X	X	X		3	
FW-5R (580-82564-8)	12/10/18	14:59 Pacific		Water			X	X	X	X	5	
T-2 (580-82564-9)	12/10/18	15:50 Pacific		Water			X	X	X		3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 12-13-18	Company TAsea	Received by: Sheila Kraly	Date/Time: 12/14/18 1030	Company TA Sea
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: 469371	Cooler Temperature(s) °C and Other Remarks: 0.5c IR005

Ver: 09/20/2016

12/20/2018

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-62089.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-82564-1
Address: 11922 East 1st Ave, ,	Due Date Requested: 12/18/2018			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: Tacoma D St Terminal-Phillips 66/Quarter	Project #: 59000882			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C (MOD) BTEX only	NWTPH_Gx_MS/5030C Gx by GCMS	NWTPH_Dx/3510C_LVI_14d DRO and RRO	8270D_SIM/3510C_LVI Naphthalenes	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HC-11 (580-82564-1)	12/10/18	11:03 Pacific		Water			X	X	X		3	
RW-8 (580-82564-2)	12/10/18	11:30 Pacific		Water			X	X	X		3	
RW-8 DUP (580-82564-3)	12/10/18	11:30 Pacific		Water			X	X	X		3	
B-34 (580-82564-4)	12/10/18	12:08 Pacific		Water			X	X	X		9	
RW-5R (580-82564-5)	12/10/18	13:00 Pacific		Water			X	X	X		3	
RR-2 (580-82564-6)	12/10/18	13:36 Pacific		Water			X	X	X	X	5	
RR-4 (580-82564-7)	12/10/18	14:00 Pacific		Water			X	X	X		3	
FW-5R (580-82564-8)	12/10/18	14:59 Pacific		Water			X	X	X	X	5	
T-2 (580-82564-9)	12/10/18	15:50 Pacific		Water			X	X	X		3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Kerry Hibbs	12-13-18	TASEA	Sheila Kraly	12/14/18 1030	TA SPO
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 469371	Cooler Temperature(s) °C and Other Remarks: 0.5°C IR005

Ver: 09/20/2016

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-62089.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-82564-1
Address: 11922 East 1st Ave.	Due Date Requested: 12/18/2018			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: Tacoma D St Terminal-Phillips 66/Quarter	Project #: 59000882			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C (MOD) BTEX only	NWTPH_Gx_MS/5030C Gx by GCMS	NWTPH_Dx/3510C_LVI_14d DRO and RRO	8270D_SIM/3510C_LVI Naphthalenes	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
E-22 (580-82564-10)	12/11/18	10:10 Pacific		Water			X	X	X		3	
B-25 (580-82564-11)	12/11/18	10:56 Pacific		Water			X	X	X		3	
B-31 (580-82564-12)	12/11/18	11:35 Pacific		Water			X	X	X		3	
B-31-DUP (580-82564-13)	12/11/18	11:35 Pacific		Water			X	X	X		3	
FW-14 (580-82564-14)	12/11/18	13:10 Pacific		Water			X	X	X	X	5	
FW-13 (580-82564-15)	12/11/18	14:00 Pacific		Water			X	X	X		3	
DMW-2 (580-82564-16)	12/11/18	14:20 Pacific		Water			X	X	X		3	
RR-1 (580-82564-17)	12/11/18	14:47 Pacific		Water			X	X	X		3	
RR-5 (580-82564-18)	12/11/18	15:40 Pacific		Water			X	X	X		3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Kenny Ashley	12-13-18	TASea	Sheila Grady	12/14/18 1030	TA SPO
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 469371 | Cooler Temperature(s) °C and Other Remarks: 0.5c IR005

Ver: 09/20/2016

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-62089.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-82564-1
Address: 11922 East 1st Ave,	Due Date Requested: 12/18/2018			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: Tacoma D St Terminal-Phillips 66/Quarter	Project #: 59000882			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C (MOD) BTEX only	NWTPH_Gx_MS/5030C Gx by GCMS	NWTPH_Dx/3510C_LVI_14d DRO and RRO	8270D_SIM/3510C_LVI Naphthalenes	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
DMW-4 (580-82564-19)	12/12/18	08:55 Pacific		Water			X	X	X		3	
TRIP BLANK (580-82564-20)	12/10/18	08:00 Pacific		Water			X				2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Kenny Stutz	Date/Time: 12-13-18	Company: TASea	Received by: Sheila Kraty	Date/Time: 12/14/18 1080	Company: TA SPC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes X No | Custody Seal No.: 469371 | Cooler Temperature(s) °C and Other Remarks: 0.5c IR005

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-82564-1

Login Number: 82564
List Number: 1
Creator: Hobbs, Kenneth F

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-82564-1

Login Number: 82564
List Number: 2
Creator: Kratz, Sheila J

List Source: TestAmerica Spokane
List Creation: 12/14/18 10:45 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	# 469371
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	0.5 IR005
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?	N/A	Received project as a subcontract.
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	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-82564-1

Login Number: 82564
List Number: 3
Creator: Kratz, Sheila J

List Source: TestAmerica Spokane
List Creation: 12/14/18 10:46 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	# 469371
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	0.5 IR005
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?	N/A	Received project as a subcontract.
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	No analysis requiring residual chlorine check assigned.

APPENDIX B
Data Review

AECOM
1111 3rd Ave
Suite 1600
Seattle, WA 98101
www.aecom.com

206 438 2700 tel
866 495 5288 fax

Memorandum

To	Rebecca Tortorello, Project Manager	Info	FINAL
Subject	Summary Data Quality Review Phillips 66 – D Street Terminal, Tacoma Washington 2018 Fourth Quarter Groundwater Sampling		
From	Lucy Panteleeff, Chemist Jennifer B. Garner, Chemist		
Date	March 15, 2019		

The summary data quality review of 19 groundwater samples and 1 trip blank collected between December 10 and December 12, 2018, has been completed. The samples were analyzed at TestAmerica Laboratories, Incorporated (TA) located in Spokane and Seattle, Washington for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260C; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and heavy oil-range TPH); and/or naphthalenes by EPA Method 8270D modified by selected ion monitoring (SIM). The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. The following samples are associated with TA laboratory group 580-82564-1:

Sample ID	Laboratory ID	Requested Analyses
HC-111	580-82564-1	BTEX, TPH-Gx, TPH-Dx
RW-8	580-82564-2	BTEX, TPH-Gx, TPH-Dx
RW-8-Dup (Duplicate of RW-8)	580-82564-3	BTEX, TPH-Gx, TPH-Dx
B-34	580-82564-4	BTEX, TPH-Gx, TPH-Dx
RW-5R	580-82564-5	BTEX, TPH-Gx, TPH-Dx
RR-2	580-82564-6	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
RR-4	580-82564-7	BTEX, TPH-Gx, TPH-Dx
FW-5R	580-82564-8	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
T-2	580-82564-9	BTEX, TPH-Gx, TPH-Dx
E-22	580-82564-10	BTEX, TPH-Gx, TPH-Dx
B-25	580-82564-11	BTEX, TPH-Gx, TPH-Dx
B-31	580-82564-12	BTEX, TPH-Gx, TPH-Dx
B-31 Dup (Duplicate of B-31)	580-82564-13	BTEX, TPH-Gx, TPH-Dx
FW-14	580-82564-14	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
FW-13	580-82564-15	BTEX, TPH-Gx, TPH-Dx
DMW-2	580-82564-16	BTEX, TPH-Gx, TPH-Dx
RR-1	580-82564-17	BTEX, TPH-Gx, TPH-Dx
RR-5	580-82564-18	BTEX, TPH-Gx, TPH-Dx
DMW-4	580-82564-19	BTEX, TPH-Gx, TPH-Dx
Trip Blank	580-82564-20	BTEX, TPH-Gx, TPH-Dx

Data were evaluated based on validation criteria established in the *National Functional Guidelines for Organic Superfund Methods Data Review*, dated January 2017, as applied to the reported methodology.

AECOM

Summary Data Quality Review
Phillips 66 - D Street Terminal, Tacoma, Washington
2018 Fourth Quarter Groundwater Sampling
Laboratory Group: 580-82564-1

The following data components were reviewed during the limited data validation procedure for compliance with method specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times, field/method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in this laboratory group are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies related to sample identifications were noted by the laboratory and the coolers were received at temperatures within the EPA recommended temperature limits of greater than 0°C and less than or equal to 6°C.

Sample HC-111 was reported by the laboratory as HC-11. For the purposed of this report, the correct sample identification, HC-111, was used.

Organic Analyses

Samples were analyzed for BTEX, TPHs, and/or naphthalenes by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Surrogates – Acceptable except as noted below:

   Naphthalenes by EPA Method 8270D-SIM – The percent recovery for nitrobenzene-d5 (142%) exceeded the control limits of 45-126% in the dilution (100x) performed for FW-5R.

The surrogate recovery in the undiluted analysis was acceptable; therefore, data were not qualified based on the surrogate result in the dilution.

4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

   General – MS/MSDs were not performed in association with these analyses. Precision and accuracy were assessed using the LCS/LCSD.

6. Laboratory Duplicate – Acceptable

   Laboratory duplicates were performed for BTEX and TPH-Gx using B-34. The relative percent difference (RPD) for total xylenes (42%) exceeded the control limit of +/- 20%. The sample and duplicate results were less than five times the reporting limit; therefore, data were not qualified based on this duplicate RPD.

7. Field Duplicate (applicable to BTEX and TPH analyses only) – Acceptable

   General – Field duplicates were submitted for RW-8 and B-31 and identified as RW-8 Dup and B-31 Dup, respectively. Results were comparable.

8. Reporting Limits – Acceptable except as noted below:

   General – One or more results were flagged 'J' by the laboratory to indicate a concentration that was less than the reporting limit, but above the method detection limit (MDL). Laboratory 'J'-flagged results are considered estimated. As the result is between the MDL and the reporting limit, there is a greater level of uncertainty associated with the numerical result.

9. Other Items of Note:

   Diesel-range TPH by NWTPH-Dx – The laboratory noted that the diesel-range TPH chromatographic patterns for all detected results appear to be due to gasoline overlap and/or weathered diesel, with the exception of RR-1. Detected hydrocarbons in RR-1 appear to be due to individual peaks that are not typical of a hydrocarbon pattern.

Overall Assessment of Data

The data reported in this laboratory group, as reported, are considered to be usable for meeting project objectives. The completeness for TestAmerica laboratory group 580-82564-1 is 100%.

Table 1 - Summary of Qualified Data

Sample ID	Laboratory ID	Analyte	Laboratory Result	Units	Final Result	Reason
No data qualifiers were assigned based on this data validation.						