Remediation Management Services Company

4 Centerpointe Drive, Suite 200
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January 19, 2021

Washington Department of Ecology
Southwest Regional Office
Attn: Mr. Tim Mullin
300 Desmond Drive SE
Lacey, WA 98503

Dear Mr. Mullin:

Please find the enclosed Semi-Annual Status Report - Second Half of 2020, that documents the results at Olympic Pipe Line Company LLC, Tacoma Junction located at 2660 Frank Albert Road East, Fife, Washington.

Sincerely yours,

Wade Melton
Operations Project Manager
Remediation Management Services Company
An affiliate of Atlantic Richfield Company

cc: File, Antea Group

Semi-Annual Status Report Second Half of 2020

OPLC Tacoma Junction
2660 Frank Albert Road East, Fife, Washington

Antea®Group

Understanding today.
Improving tomorrow.

PREPARED FOR
Remediation Management Services Company
An affiliate of Atlantic Richfield Company
4 Centerpointe Drive, Suite 200
La Palma, CA 90623
and
BP Pipelines and Logistics
Olympic District
600 SW 39th Street, Suite 275
Renton, WA 98057

PREPARED BY
Antea Group Seattle, WA
January 19, 2021
Project # WATJUAA201

us.anteagroup.com

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Semi-Annual Status Report

Second Half of 2020
OPLC Tacoma Junction
2660 Frank Albert Road East, Fife, Washington

Reporting Period	July 2020 – December 2020
Agency Contact	Tim Mullin, Toxics Cleanup Program +1 360 407 6265
Ecology Facility/Site ID No.	24529
RM Contact	Wade Melton, +1 360 594 7978
Olympic Contact	Alexandria Crooks, +1 425 981 2590
Antea®Group Contact	Megan Richard, +1 425 498 7711

1.0 SITE HISTORY

- This site is an active OPLC (Olympic Pipeline Company) facility that has been operating since 1965. A Site Location Map and Site Map are presented as Figures 1 and 2, respectively.
- In August 2015, OPLC personnel directed an excavation associated with a facility upgrade project. While excavating, OPLC personnel noted petroleum odors and soil staining. Soil and water samples indicated concentrations of petroleum hydrocarbons in excess of the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels. Upon completing the planned excavation, over-excavating was performed to remove contaminated soil to the maximum extent without comprising onsite structures. A total of 302.49 tons of petroleum impacted soil was removed from the Site for disposal. A total of 1,200 gallons of water was removed from the excavation and transported off-site for disposal. Additional information regarding soil excavation and sampling activities can be found in Antea Group's October 12, 2015 *Site Discovery and Independent Remedial Action Report*.
- The Site was listed on *Ecology's Confirmed and Suspected Contaminated Sites List* on October 15, 2015.
- In June 2016, monitoring wells MW-1 through MW-5 were installed at the Site. Due to the presence of quarry spalls down to groundwater, only one soil sample was collected during well installation. Groundwater analytical results indicated the presence of total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), and benzene in MW- 2 in excess of Ecology's MTCA Method A Cleanup Levels at concentrations of 2,300 µg/L, 810 µg/L, and 100 µg/L, respectively. Additional information can be found in Antea Group's November 17, 2016 *Subsurface Investigation Report.*

2.0 WORK PERFORMED DURING THE REPORTING PERIOD

- Quarterly groundwater monitoring and sampling events were conducted on September 23, 2020 and November 11, 2020. Groundwater samples were collected from monitoring wells MW-1 through MW-5.
- This semi-annual groundwater monitoring report was prepared.

3.0 PROJECT STATUS

- Quarterly groundwater sample collection from MW-1 through MW-5.
- Semi-annual reporting.

4.0 DATA REVIEW AND RECOMMENDATIONS

- Groundwater analytical data from the third and fourth quarter sampling events did not indicate concentrations of petroleum hydrocarbons in excess of MTCA Method A Cleanup Levels in monitoring wells MW-1 and MW-3 through MW-5. MW-2 had concentrations of benzene, TPH-G, and TPH-D in excess of MTCA Method A Cleanup Levels in the third and fourth quarter sampling events.
- Groundwater gauging data and analytical data are presented in Tables 1 and 2, respectively. The third and fourth quarter Groundwater Elevation Contour Maps are presented on Figures 3 and 4, respectively. The Groundwater Analytical Data Map is presented on Figure 5. The groundwater laboratory analytical reports are included as Appendix A.
- Antea Group is scheduled to conduct the next quarterly groundwater sampling and monitoring event in February 2021.

5.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Nathan Han
Staff Professional

Date: January 19, 2021

Reviewed by:

State of Washington 3157 Licensed Geologist
MEGAN RICHARD

Megan Richard, LG
Senior Project Manager

Date: January 19, 2021

cc: Mr. Tim Mullin, Department of Ecology Southwest Regional Office (Hardcopy, Electronic Copy)
Ms. Alexandria Crooks, OPLC, Renton, WA (Electronic Copy)
Mr. Wade Melton, Remediation Management Services Company (Electronic Copy - RMO Upload)
File, Antea Group File, Antea Group

6.0 CONTACT INFORMATION

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Tables

Table 1
Groundwater Gauging Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-1	6/29/2016	100.00	1.82	NP	--	98.18	--
MW-1	9/8/2016	100.00	1.95	NP	--	98.05	--
MW-1	12/1/2016	100.00	0.76	NP	--	99.24	--
MW-1	2/22/2017	100.00	0.90	NP	--	99.10	--
MW-1	5/10/2017	100.00	1.52	NP	--	98.48	--
MW-1	8/16/2017	100.00	2.04	NP	--	97.96	--
MW-1	10/31/2017	100.00	1.22	NP	--	98.78	--
MW-1	2/13/2018	100.00	1.05	NP	--	98.95	--
MW-1	5/2/2018	100.00	1.36	NP	--	98.64	--
MW-1	8/8/2018	100.00	2.15	NP	--	97.85	--
MW-1	10/23/2018	100.00	1.87	NP	--	98.13	--
MW-1	1/30/2019	100.00	0.96	NP	--	99.04	--
MW-1	4/24/2019	100.00	1.50	NP	--	98.50	--
MW-1	8/1/2019	100.00	1.90	NP	--	98.10	--
MW-1	10/30/2019	100.00	1.09	NP	--	98.91	--
MW-1	2/6/2020	100.00	0.70	NP	--	99.30	--
MW-1	6/24/2020	100.00	1.41	NP	--	98.59	--
MW-1	9/23/2020	100.00	1.69	NP	--	98.31	--
MW-1	11/11/2020	100.00	1.12	NP	--	98.88	--
MW-2	6/29/2016	99.59	2.49	NP	--	97.10	--
MW-2	9/8/2016	99.59	3.44	3.42	0.02	96.17	--
MW-2	12/1/2016	99.59	1.73	NP	--	97.86	--
MW-2	2/22/2017	99.59	1.13	NP	--	98.46	--
MW-2	5/10/2017	99.59	1.39	NP	--	98.20	--
MW-2	8/16/2017	99.59	2.85	2.82	0.03	96.76	--
MW-2	10/31/2017	99.59	1.79	1.70	0.09	97.87	--
MW-2	2/13/2018	99.59	1.63	NP	--	97.96	--
MW-2	5/2/2018	99.59	1.83	NP	--	97.76	--
MW-2	8/8/2018	99.59	3.35	NP	--	96.24	--

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Tacoma Junction
2660 Frank Albert Road E, Fife, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-2	10/23/2018	99.59	2.96	2.95	0.01	96.64	--
MW-2	1/30/2019	99.59	2.20	NP	--	97.39	--
MW-2	4/24/2019	99.59	1.53	1.52	0.01	98.07	--
MW-2	8/1/2019	99.59	2.87	NP	--	96.72	--
MW-2	10/30/2019	99.59	1.90	NP	--	97.69	--
MW-2	2/6/2020	99.59	0.87	NP	--	98.72	--
MW-2	6/24/2020	99.59	1.55	NP	--	98.04	--
MW-2	9/23/2020	99.59	2.23	NP	--	97.36	--
MW-2	11/11/2020	99.59	1.49	NP	--	98.10	--
MW-3	6/29/2016	99.91	1.98	NP	--	97.93	--
MW-3	9/8/2016	99.91	2.61	NP	--	97.30	--
MW-3	12/1/2016	99.91	1.02	NP	--	98.89	--
MW-3	2/22/2017	99.91	1.11	NP	--	98.80	--
MW-3	5/10/2017	99.91	1.32	NP	--	98.59	--
MW-3	8/16/2017	99.91	2.26	NP	--	97.65	--
MW-3	10/31/2017	99.91	1.51	NP	--	98.40	--
MW-3	2/13/2018	99.91	1.00	NP	--	98.91	--
MW-3	5/2/2018	99.91	1.28	NP	--	98.63	--
MW-3	8/8/2018	99.91	2.46	NP	--	97.45	--
MW-3	10/23/2018	99.91	2.11	NP	--	97.80	--
MW-3	1/30/2019	99.91	1.09	NP	--	98.82	--
MW-3	4/24/2019	99.91	1.33	NP	--	98.58	--
MW-3	8/1/2019	99.91	1.84	NP	--	98.07	--
MW-3	10/30/2019	99.91	1.21	NP	--	98.70	--
MW-3	2/6/2020	99.91	0.85	NP	--	99.06	--
MW-3	6/24/2020	99.91	1.29	NP	--	98.62	--
MW-3	9/23/2020	99.91	1.73	NP	--	98.18	--
MW-3	11/11/2020	99.91	1.00	NP	--	98.91	--

Table 1
Groundwater Gauging Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-4	6/29/2016	99.70	2.20	NP	--	97.50	--
MW-4	9/8/2016	99.70	2.75	NP	--	96.95	--
MW-4	12/1/2016	99.70	1.00	NP	--	98.70	--
MW-4	2/22/2017	99.70	1.05	NP	--	98.65	--
MW-4	5/10/2017	99.70	1.34	NP	--	98.36	--
MW-4	8/16/2017	99.70	2.44	NP	--	97.26	--
MW-4	10/31/2017	99.70	1.35	NP	--	98.35	--
MW-4	2/13/2018	99.70	1.02	NP	--	98.68	--
MW-4	5/2/2018	99.70	1.29	NP	--	98.41	--
MW-4	8/8/2018	99.70	3.63	NP	--	96.07	--
MW-4	10/23/2018	99.70	2.20	NP	--	97.50	--
MW-4	1/30/2019	99.70	1.05	NP	--	98.65	--
MW-4	4/24/2019	99.70	1.35	NP	--	98.35	--
MW-4	8/1/2019	99.70	2.16	NP	--	97.54	--
MW-4	10/30/2019	99.70	1.20	NP	--	98.50	--
MW-4	2/6/2020	99.70	0.80	NP	--	98.90	--
MW-4	6/24/2020	99.70	1.40	NP	--	98.30	--
MW-4	9/23/2020	99.70	2.00	NP	--	97.70	--
MW-4	11/11/2020	99.70	1.11	NP	--	98.70	--
MW-5	6/29/2016	99.60	1.49	NP	--	98.11	--
MW-5	9/8/2016	99.60	1.57	NP	--	98.03	--
MW-5	12/1/2016	99.60	0.61	NP	--	98.99	--
MW-5	2/22/2017	99.60	0.77	NP	--	98.83	--
MW-5	5/10/2017	99.60	1.27	NP	--	98.33	--
MW-5	8/16/2017	99.60	1.70	NP	--	97.90	--
MW-5	10/31/2017	99.60	1.02	NP	--	98.58	--
MW-5	2/13/2018	99.60	0.82	NP	--	98.78	--
MW-5	5/2/2018	99.60	1.12	NP	--	98.48	--
MW-5	8/8/2018	99.60	1.80	NP	--	97.80	--

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Groundwater Gauging Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-5	10/23/2018	99.60	1.52	NP	--	98.08	--
MW-5	1/30/2019	99.60	0.73	NP	--	98.87	--
MW-5	4/24/2019	99.60	1.20	NP	--	98.40	--
MW-5	8/1/2019	99.60	1.55	NP	--	98.05	--
MW-5	10/30/2019	99.60	0.89	NP	--	98.71	--
MW-5	2/6/2020	99.60	0.50	NP	--	99.10	--
MW-5	6/24/2020	99.60	1.13	NP	--	98.47	--
MW-5	9/23/2020	99.60	1.42	NP	--	98.18	--
MW-5	11/11/2020	99.60	0.87	NP	--	98.73	--

Notes:
TOC - Top of Casing
ft - feet
NP - No Product
LNAPL - Light Non-Aqueous Phase Liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
-- No Information Available

Table 2
Groundwater Analytical Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		**5**	**1000**	**700**	**1000**	**1000/800[1]**	**500**	**500**
Well ID	Date							
MW-1	6/29/2016	< 20	< 20	< 30	< 30	< 50	160	< 250
MW-1	9/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	150	< 250
MW-1	12/1/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	120	< 250
MW-1	2/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 250
MW-1	5/10/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 500	< 100	< 260
MW-1	8/16/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 100	140	330
MW-1	10/31/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 250	< 100	< 260
MW-1	2/13/2018	< 2.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	5/2/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	8/8/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	130	< 350
MW-1	10/23/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	1/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	4/24/2019	< 3.0	< 2.0	< 3.0	< 3.0 *	< 250	< 100	< 100
MW-1	8/1/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	180	< 350
MW-1	10/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	2/6/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-1	6/24/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	130	< 370
MW-1	9/23/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	140	< 350
MW-1	11/11/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	140	< 330
MW-2	6/29/2016	**100**	6.9	56	92	**2,300**	**810**	< 250
MW-2	12/1/2016	**170**	8.7	280	250	**7,000**	**1,700**	< 260
MW-2	2/22/2017	**90**	< 20	120	110	**6,500**	**1,300**	< 250
MW-2	5/10/2017	**85**	6.4	220	150	**6,000**	**990**	< 250
MW-2	2/13/2018	**180**	8.3	130	150	**5,000**	**2,100**	< 350
MW-2	5/2/2018	**170 ***	6.3 *	130	110	**4,200**	**1,100**	< 360
MW-2	8/8/2018	**63**	5.0	140	120	**4,400**	**4,900**	350
MW-2	1/30/2019	**130**	7.2	74	94	**4,500**	**1,800**	< 350
MW-2	8/1/2019	**110**	6.2	25	43	**1,600**	**1,000**	< 350

Table 2
Groundwater Analytical Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		**5**	**1000**	**700**	**1000**	**1000/800[1]**	**500**	**500**
Well ID	Date							
MW-2	10/30/2019	**140**	6.1	62	51	**3,400**	**2,000**	< 350
MW-2	2/6/2020	**120**	5.4	44	35	**2,300**	**930**	< 360
MW-2	6/24/2020	**13**	< 2.0	9.5	3.0	750	**590**	< 350
MW-2	9/23/2020	**15**	< 2.0	19	10	**1,100**	**590**	< 350
MW-2	11/11/2020	**99**	6.2	31	44	**1,500**	**970**	< 340
MW-3	6/29/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 250
MW-3	9/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 250
MW-3	12/1/2016	< 2.0	88	< 3.0	< 3.0	100	180	< 260
MW-3	2/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 260
MW-3	5/10/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 500	< 100	< 250
MW-3	8/16/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 100	< 100	< 250
MW-3	10/31/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 250	< 100	< 260
MW-3	2/13/2018	< 2.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	5/2/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	8/8/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	10/23/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	120	< 350
MW-3	1/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	4/24/2019	< 3.0	< 2.0	< 3.0	< 3.0 *	< 250	< 100	< 100
MW-3	8/1/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	110	< 350
MW-3	10/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	2/6/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	6/24/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 120	< 380
MW-3	9/23/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	110	< 350
MW-3	11/11/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-4	6/29/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	110	< 250
MW-4	9/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 250
MW-4	12/1/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 50	140	< 260

Table 2
Groundwater Analytical Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

CONSTITUENT UNIT		B ug/L	T ug/L	E ug/L	X ug/L	TPH-G ug/L	TPH-D ug/L	TPH-O ug/L
MTCA METHOD A CLEANUP LEVELS		**5**	**1000**	**700**	**1000**	**1000/800[1]**	**500**	**500**
Well ID	Date							
MW-4	2/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 50	< 110	< 250
MW-4	5/10/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 500	120	< 250
MW-4	8/16/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 100	< 100	< 250
MW-4	10/31/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 250	100	< 250
MW-4	2/13/2018	< 2.0	< 2.0	< 3.0	< 3.0	< 250	130	< 350
MW-4	5/2/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-4	8/8/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	130	< 350
MW-4	10/23/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	200	< 350
MW-4	1/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	110	< 350
MW-4	4/24/2019	< 3.0	< 2.0	< 3.0	< 3.0 *	< 250	< 100	< 100
MW-4	8/1/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	160	< 350
MW-4	10/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-4	2/6/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-4	6/24/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 120	< 380
MW-4	9/23/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	140	< 350
MW-4	11/11/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	120	< 350
MW-5	6/29/2016	< 2.0	< 2.0	< 3.0	< 3.0	300	230	< 250
MW-5	9/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	270	250	< 250
MW-5	12/1/2016	< 2.0	< 2.0	< 3.0	< 3.0	89	180	< 250
MW-5	2/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	97	< 110	< 250
MW-5	5/10/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 500	220	< 250
MW-5	8/16/2017	< 1.0	< 1.0	< 1.0	< 3.0	240	150	< 250
MW-5	10/31/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 250	120	< 260
MW-5	2/13/2018	3.4	< 2.0	7.4	< 3.0	330	250	< 370
MW-5	5/2/2018	< 3.0 *	< 2.0 *	< 3.0	< 3.0	< 250	< 110	< 350
MW-5	8/8/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	210	< 350
MW-5	10/23/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 250	200	< 350
MW-5	1/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	150	< 350

Table 2
Groundwater Analytical Data
Tacoma Junction
2660 Frank Albert Road E, Fife, WA

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		**5**	**1000**	**700**	**1000**	**1000/800[1]**	**500**	**500**
Well ID	Date							
MW-5	4/24/2019	< 3.0	< 2.0	< 3.0	< 3.0 *	< 250	130	< 100
MW-5	8/1/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	200	< 350
MW-5	10/30/2019	< 3.0	< 2.0	< 3.0	< 3.0	< 250	120	< 350
MW-5	2/6/2020	< 3.0	< 2.0	4.2	< 3.0	380	190	< 350
MW-5	6/24/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	210	< 360
MW-5	9/23/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	160	< 360
MW-5	11/11/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	120	< 340

Notes:

TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx

TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx

1,000/800[1] ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L

<1.0 = Concentrations were not detected above the laboratory method reporting limit.

ug/L = Micrograms per liter (ppb)

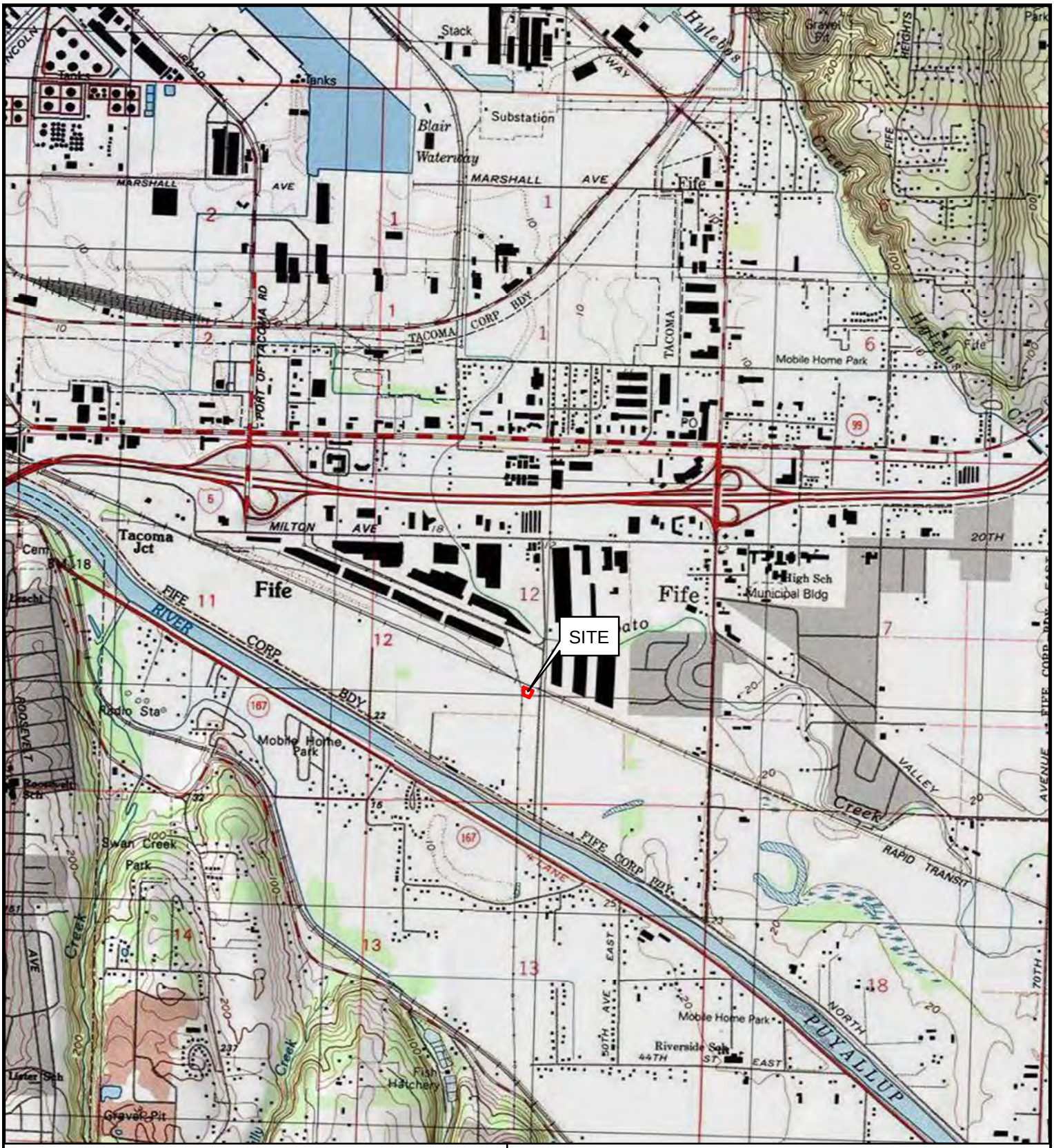
-- = No value given/Not analyzed/Not applicable

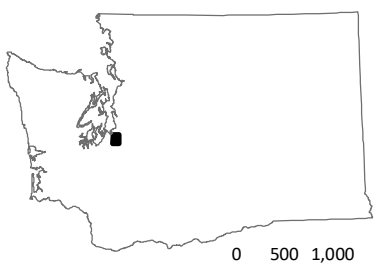
MTCA = Model Toxics Control Act

Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels

* = RPD of the LCS and LCSD exceeds the control limits. LCS or LCSD is outside acceptance limits.

Figures





USGS 7.5-minute Series
Topographic Serioes
Puyallup, WA, 2013

N

0 500 1,000 2,000 3,000 4,000 Feet

FIGURE 1

SITE LOCATION MAP
OLYMPIC PIPE LINE COMPANY - TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WA

PROJECT NO.	PREPARED BY	REF SCALE
WATJUAA201	MB	1:24,000
DATE	REVIEWED BY	MAP SCALE
12/22/2020	FS	1 INCH = 2,000 FEET

anteagroup

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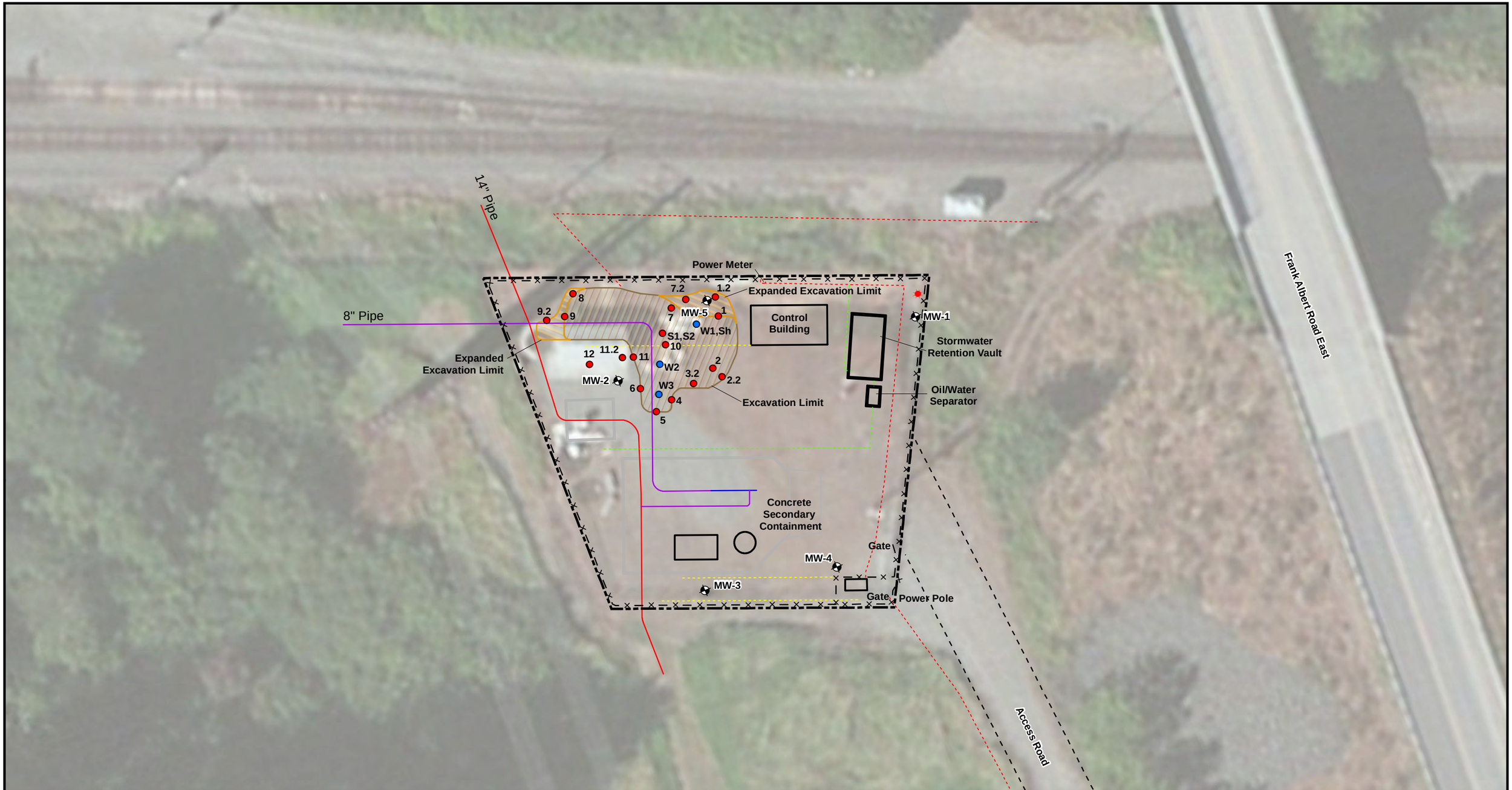

Legend

- Monitoring Well Location
- Light Pole
- Soil Sample Location
- Water Sample Location
- Original Excavation
- Expanded Excavation
- Property Boundary
- Fence
- 14" Pipeline
- 10" Pipeline
- 8" Pipeline
- Utility - Electric
- Utility - Storm Water
- Groundwire

Sources: 2013, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 15 30 60 90 120 Feet

FIGURE 2

SITE MAP
OLYMPIC PIPE LINE COMPANY - TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WA

PROJECT NO.	PREPARED BY	REF SCALE
WATJUAA201	MB	1:360
DATE	REVIEWED BY	MAP SCALE
12/22/2020	FS	1 INCH = 30 FEET

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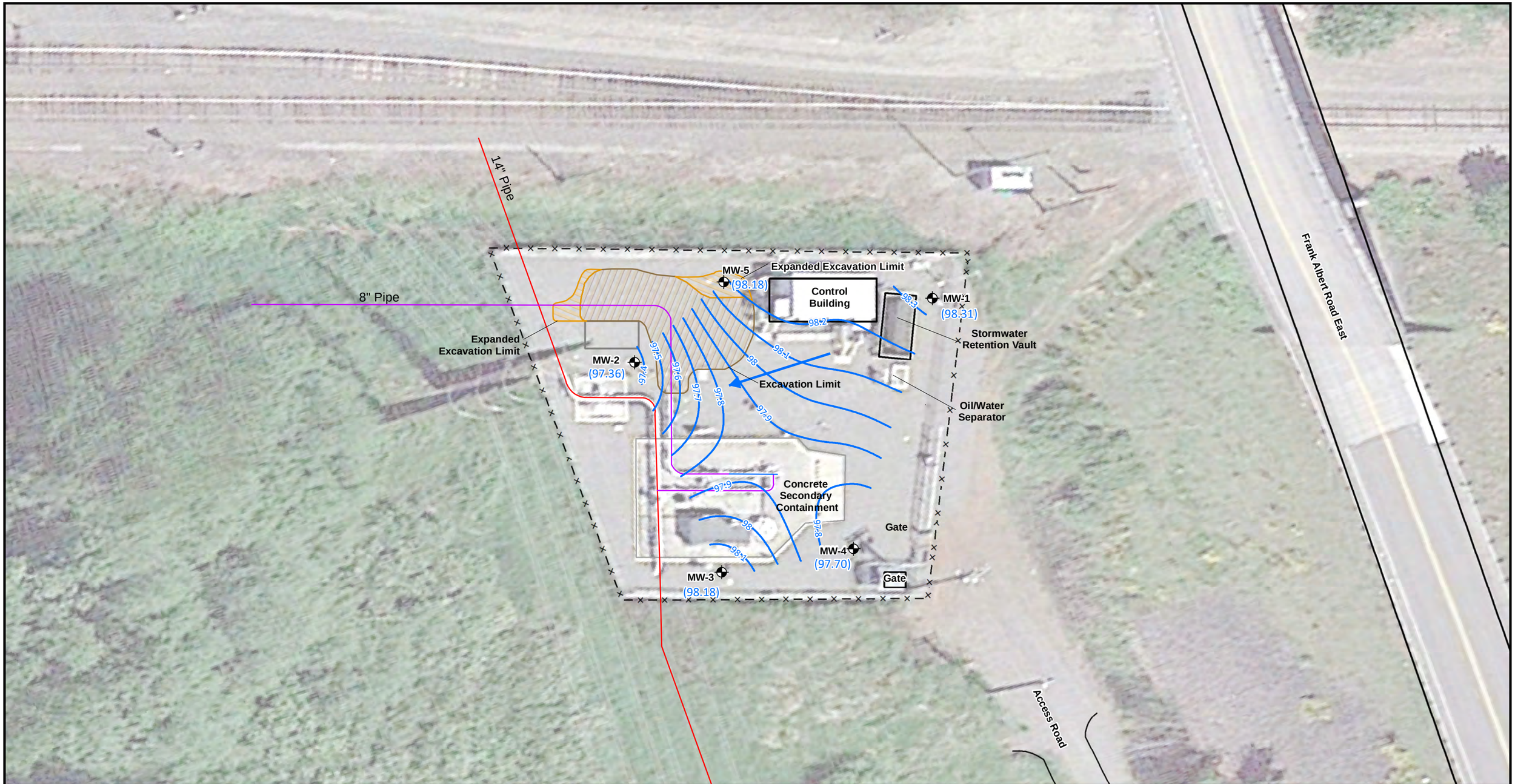

Legend

- Property Boundary
- Fence
- Monitoring Well Location
- 14" Pipeline
- 10" Pipeline
- 8" Pipeline
- Original Excavation
- Expanded Excavation
- Groundwater Elevation Contour (ft)
- Inferred Groundwater Flow Direction
- (98.18) Groundwater Elevation Contour (ft)

Sources: 2015, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 7.5 15 30 Feet

FIGURE 3

GROUNDWATER ELEVATION CONTOUR MAP
SEPTEMBER 23, 2020
OLYMPIC PIPELINE COMPANY
TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
WATJUAA201	MB	1:360
DATE	REVIEWED BY	MAP SCALE
1/12/2021	KY	1 INCH = 30 FEET

anteagroup

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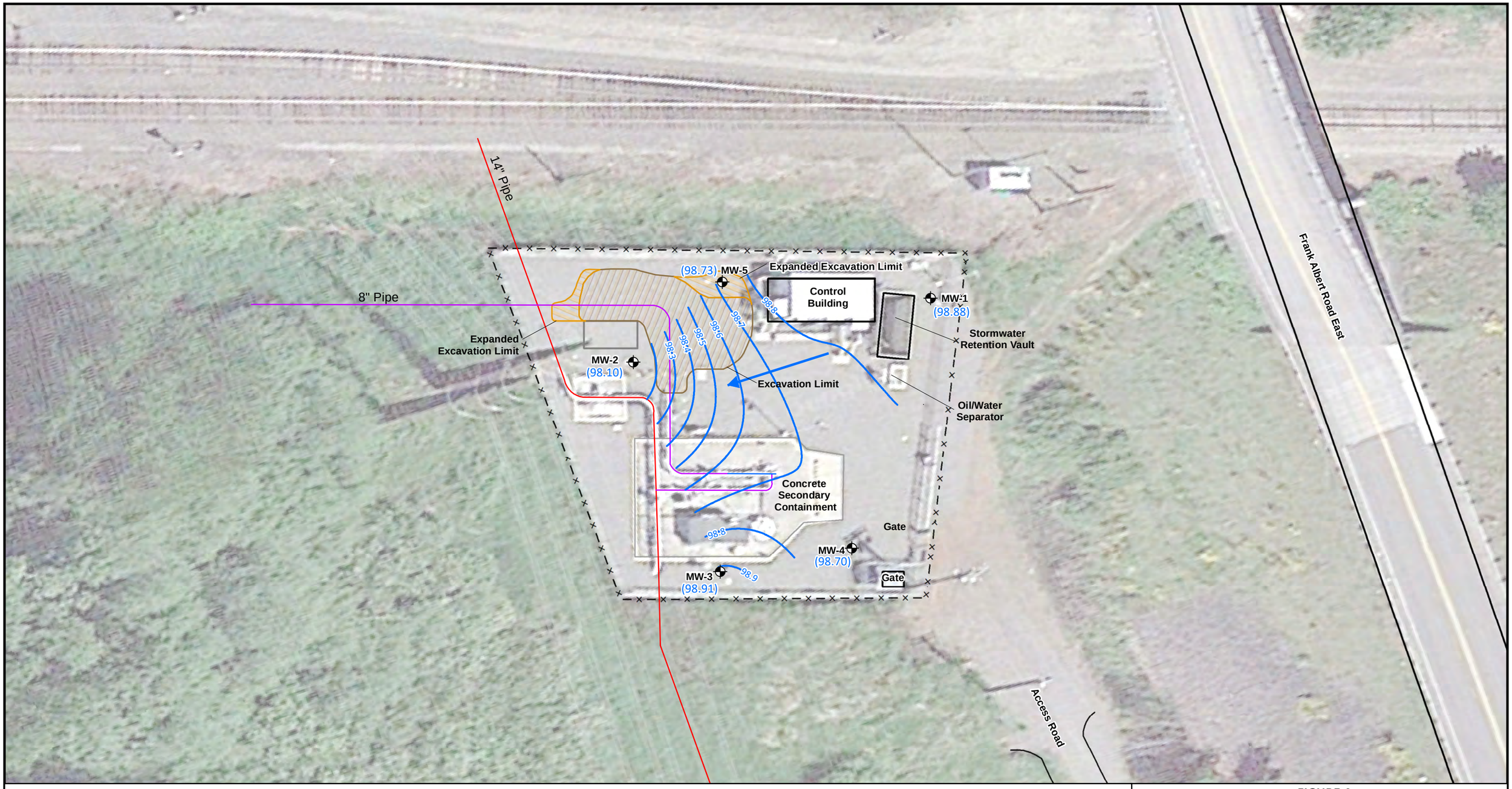

Legend

- Property Boundary
- Fence
- Monitoring Well Location
- 14" Pipeline
- 10" Pipeline
- 8" Pipeline
- Original Excavation
- Expanded Excavation
- Groundwater Elevation Contour (ft)
- Inferred Groundwater Flow Direction
- (98.18) Groundwater Elevation Contour (ft)

Sources: 2015, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 7.5 15 30 Feet

FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 11, 2020
OLYMPIC PIPELINE COMPANY
TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
WATJUAA201	MSS	1:360
DATE	REVIEWED BY	MAP SCALE
1/12/2021	KY	1 INCH = 30 FEET

anteagroup

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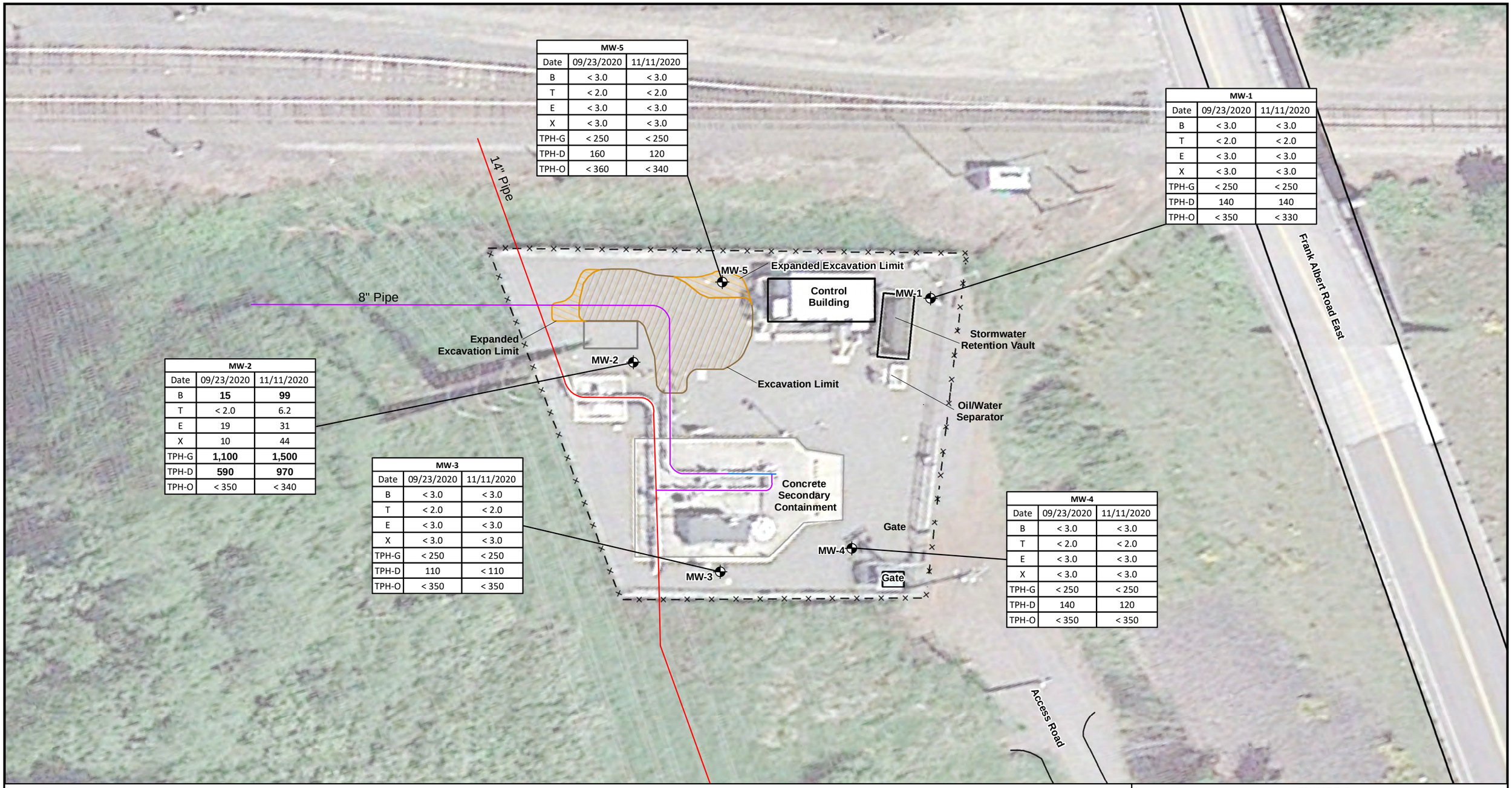

Legend

- Property Boundary
- Fence
- Monitoring Well Location
- 14" Pipeline
- 10" Pipeline
- 8" Pipeline
- Original Excavation
- Expanded Excavation

B - Benzene
T - Toluene
E - Ethylbenzene
X - Total Xylenes
TPH-G - Total petroleum hydrocarbons as gasoline
TPH-D - Total petroleum hydrocarbons as diesel
TPH-O - Total petroleum hydrocarbons as oil
< - Concentrations were not detected above the laboratory reporting limit
All values in micrograms per liter (µg/L)

Sources: 2015, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 7.5 15 30 Feet

FIGURE 5
GROUNDWATER ANALYTICAL DATA MAP
SEPTEMBER 23, 2020 AND NOVEMBER 11, 2020
OLYMPIC PIPELINE COMPANY
TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
WATJUAA201	*MSS*	*1:360*
DATE	**REVIEWED BY**	**MAP SCALE**
12/22/2020	*JS*	*1 INCH = 30 FEET*

anteagroup

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Appendix A - Analytical Lab Reports and Chain-of-Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 580-97679-1
Client Project/Site: BP - OPLC - Tacoma Junction
Sampling Event: OPLC-Tacoma Junction

For:
Antea USA Inc.
4006 148th Ave NE
Redmond, Washington 98052

Attn: Megan Richard

M. Elaine Walker

Authorized for release by:
9/30/2020 5:37:57 PM

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

Table of Contents

Definitions/Glossary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Case Narrative

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Job ID: 580-97679-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative
580-97679-1

Receipt
Five samples were received on 9/23/2020 12:56 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 9.5º C.

Receipt Exceptions

The cooler was received without a custody seal affixed.

A trip blank is listed on the chain of custody but no trip blank was received.

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

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

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

Detection Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Client Sample ID: MW-1_20200923 — Lab Sample ID: 580-97679-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	140		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-2_20200923 — Lab Sample ID: 580-97679-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	15		3.0		ug/L	1		8260D	Total/NA
Ethylbenzene	19		3.0		ug/L	1		8260D	Total/NA
Xylenes, Total	10		3.0		ug/L	1		8260D	Total/NA
Gasoline	1100		250		ug/L	1		NWTPH-Gx	Total/NA
#2 Diesel (C10-C24)	590		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-3_20200923 — Lab Sample ID: 580-97679-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	110		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-4_20200923 — Lab Sample ID: 580-97679-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	140		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-5_20200923 — Lab Sample ID: 580-97679-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	160		110		ug/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1_20200923

Lab Sample ID: 580-97679-1

Date Collected: 09/23/20 11:40

Matrix: Water

Date Received: 09/23/20 12:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/26/20 19:00	1
Ethylbenzene	ND		3.0		ug/L			09/26/20 19:00	1
Toluene	ND		2.0		ug/L			09/26/20 19:00	1
Xylenes, Total	ND		3.0		ug/L			09/26/20 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 126*		*09/26/20 19:00*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/26/20 19:00*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*09/26/20 19:00*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/26/20 19:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/26/20 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*50 - 150*		*09/26/20 14:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		110		ug/L		09/26/20 10:46	09/27/20 23:22	1
Motor Oil (>C24-C36)	ND		350		ug/L		09/26/20 10:46	09/27/20 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*76*		*50 - 150*	*09/26/20 10:46*	*09/27/20 23:22*	*1*

Client Sample ID: MW-2_20200923

Lab Sample ID: 580-97679-2

Date Collected: 09/23/20 10:35

Matrix: Water

Date Received: 09/23/20 12:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**15**		3.0		ug/L			09/26/20 19:25	1
Ethylbenzene	**19**		3.0		ug/L			09/26/20 19:25	1
Toluene	ND		2.0		ug/L			09/26/20 19:25	1
Xylenes, Total	**10**		3.0		ug/L			09/26/20 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 126*		*09/26/20 19:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/26/20 19:25*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*09/26/20 19:25*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/26/20 19:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1100**		250		ug/L			09/26/20 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*		*09/26/20 15:08*	*1*

Client Sample ID: MW-2_20200923

Lab Sample ID: 580-97679-2
Matrix: Water
Date Collected: 09/23/20 10:35
Date Received: 09/23/20 12:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**590**		110		ug/L		09/26/20 10:46	09/27/20 23:42	1
Motor Oil (>C24-C36)	ND		350		ug/L		09/26/20 10:46	09/27/20 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*76*		*50 - 150*	*09/26/20 10:46*	*09/27/20 23:42*	*1*

Client Sample ID: MW-3_20200923

Lab Sample ID: 580-97679-3
Matrix: Water
Date Collected: 09/23/20 10:10
Date Received: 09/23/20 12:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/26/20 19:50	1
Ethylbenzene	ND		3.0		ug/L			09/26/20 19:50	1
Toluene	ND		2.0		ug/L			09/26/20 19:50	1
Xylenes, Total	ND		3.0		ug/L			09/26/20 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 126*		*09/26/20 19:50*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/26/20 19:50*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*09/26/20 19:50*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*09/26/20 19:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/26/20 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*50 - 150*		*09/26/20 15:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**110**		110		ug/L		09/26/20 10:46	09/28/20 00:02	1
Motor Oil (>C24-C36)	ND		350		ug/L		09/26/20 10:46	09/28/20 00:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*67*		*50 - 150*	*09/26/20 10:46*	*09/28/20 00:02*	*1*

Client Sample ID: MW-4_20200923

Lab Sample ID: 580-97679-4
Matrix: Water
Date Collected: 09/23/20 09:55
Date Received: 09/23/20 12:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/26/20 20:15	1
Ethylbenzene	ND		3.0		ug/L			09/26/20 20:15	1
Toluene	ND		2.0		ug/L			09/26/20 20:15	1
Xylenes, Total	ND		3.0		ug/L			09/26/20 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 126*		*09/26/20 20:15*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/26/20 20:15*	*1*

Client Sample ID: MW-4_20200923

Lab Sample ID: 580-97679-4

Date Collected: 09/23/20 09:55
Date Received: 09/23/20 12:56

Matrix: Water

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*09/26/20 20:15*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/26/20 20:15*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/26/20 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*50 - 150*		*09/26/20 16:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		110		ug/L		09/26/20 10:46	09/28/20 00:22	1
Motor Oil (>C24-C36)	ND		350		ug/L		09/26/20 10:46	09/28/20 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*09/26/20 10:46*	*09/28/20 00:22*	*1*

Client Sample ID: MW-5_20200923

Lab Sample ID: 580-97679-5

Date Collected: 09/23/20 11:15
Date Received: 09/23/20 12:56

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/26/20 20:40	1
Ethylbenzene	ND		3.0		ug/L			09/26/20 20:40	1
Toluene	ND		2.0		ug/L			09/26/20 20:40	1
Xylenes, Total	ND		3.0		ug/L			09/26/20 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 126*		*09/26/20 20:40*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/26/20 20:40*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*09/26/20 20:40*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/26/20 20:40*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/26/20 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*50 - 150*		*09/26/20 16:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**160**		110		ug/L		09/26/20 10:46	09/28/20 00:42	1
Motor Oil (>C24-C36)	ND		360		ug/L		09/26/20 10:46	09/28/20 00:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*78*		*50 - 150*	*09/26/20 10:46*	*09/28/20 00:42*	*1*

Surrogate Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-126)	(80-120)	(80-120)	(80-120)
580-97679-1	MW-1_20200923	106	103	98	99
580-97679-2	MW-2_20200923	102	102	94	99
580-97679-3	MW-3_20200923	103	103	102	100
580-97679-4	MW-4_20200923	102	103	98	98
580-97679-5	MW-5_20200923	102	101	94	99
LCS 580-339225/6	Lab Control Sample	101	102	96	96
LCSD 580-339225/7	Lab Control Sample Dup	105	101	95	95
MB 580-339225/5	Method Blank	105	104	97	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB2
Lab Sample ID	Client Sample ID	(50-150)
580-97679-1	MW-1_20200923	83
580-97679-2	MW-2_20200923	94
580-97679-3	MW-3_20200923	80
580-97679-4	MW-4_20200923	86
580-97679-5	MW-5_20200923	81
LCS 580-339230/6	Lab Control Sample	84
LCSD 580-339230/7	Lab Control Sample Dup	82
MB 580-339230/5	Method Blank	78

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH
Lab Sample ID	Client Sample ID	(50-150)
580-97679-1	MW-1_20200923	76
580-97679-2	MW-2_20200923	76
580-97679-3	MW-3_20200923	67
580-97679-4	MW-4_20200923	81
580-97679-5	MW-5_20200923	78
LCS 580-339228/2-A	Lab Control Sample	88
LCSD 580-339228/3-A	Lab Control Sample Dup	97
MB 580-339228/1-A	Method Blank	50

Surrogate Legend

OTPH = o-Terphenyl

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

Lab Sample ID: MB 580-339225/5
Matrix: Water
Analysis Batch: 339225

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/26/20 11:32	1
Ethylbenzene	ND		3.0		ug/L			09/26/20 11:32	1
Toluene	ND		2.0		ug/L			09/26/20 11:32	1
Xylenes, Total	ND		3.0		ug/L			09/26/20 11:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 126*		*09/26/20 11:32*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*09/26/20 11:32*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*09/26/20 11:32*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/26/20 11:32*	*1*

Lab Sample ID: LCS 580-339225/6
Matrix: Water
Analysis Batch: 339225

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	9.33		ug/L		93	82 - 122
Ethylbenzene	10.0	9.61		ug/L		96	80 - 120
m-Xylene & p-Xylene	10.0	9.46		ug/L		95	80 - 120
o-Xylene	10.0	9.08		ug/L		91	80 - 125
Toluene	10.0	9.47		ug/L		95	80 - 120
Xylenes, Total	20.0	18.5		ug/L		93	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 126*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 580-339225/7
Matrix: Water
Analysis Batch: 339225

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	8.72		ug/L		87	82 - 122	7	14
Ethylbenzene	10.0	9.06		ug/L		91	80 - 120	6	14
m-Xylene & p-Xylene	10.0	8.73		ug/L		87	80 - 120	8	14
o-Xylene	10.0	8.33		ug/L		83	80 - 125	9	16
Toluene	10.0	8.75		ug/L		88	80 - 120	8	13
Xylenes, Total	20.0	17.1		ug/L		85	80 - 120	8	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 126*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

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

Lab Sample ID: MB 580-339230/5
Matrix: Water
Analysis Batch: 339230

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/26/20 11:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*50 - 150*		*09/26/20 11:41*	*1*

Lab Sample ID: LCS 580-339230/6
Matrix: Water
Analysis Batch: 339230

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	863		ug/L		86	79 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*50 - 150*

Lab Sample ID: LCSD 580-339230/7
Matrix: Water
Analysis Batch: 339230

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	873		ug/L		87	79 - 120	1	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*50 - 150*

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

Lab Sample ID: MB 580-339228/1-A
Matrix: Water
Analysis Batch: 339304

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		09/26/20 10:46	09/27/20 19:43	1
Motor Oil (>C24-C36)	ND		350		ug/L		09/26/20 10:46	09/27/20 19:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*50*		*50 - 150*	*09/26/20 10:46*	*09/27/20 19:43*	*1*

Lab Sample ID: LCS 580-339228/2-A
Matrix: Water
Analysis Batch: 339304

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339228

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			2000	1500		ug/L		75	50 - 120		
Motor Oil (>C24-C36)			2000	1850		ug/L		93	64 - 120		

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

Lab Sample ID: LCS 580-339228/2-A
Matrix: Water
Analysis Batch: 339304

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339228

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*88*		*50 - 150*

Lab Sample ID: LCSD 580-339228/3-A
Matrix: Water
Analysis Batch: 339304

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 339228

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			2000	1470		ug/L		74	50 - 120	2	26
Motor Oil (>C24-C36)			2000	2020		ug/L		101	64 - 120	9	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*97*		*50 - 150*

QC Association Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

GC/MS VOA

Analysis Batch: 339225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-97679-1	MW-1_20200923	Total/NA	Water	8260D	
580-97679-2	MW-2_20200923	Total/NA	Water	8260D	
580-97679-3	MW-3_20200923	Total/NA	Water	8260D	
580-97679-4	MW-4_20200923	Total/NA	Water	8260D	
580-97679-5	MW-5_20200923	Total/NA	Water	8260D	
MB 580-339225/5	Method Blank	Total/NA	Water	8260D	
LCS 580-339225/6	Lab Control Sample	Total/NA	Water	8260D	
LCSD 580-339225/7	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 339230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-97679-1	MW-1_20200923	Total/NA	Water	NWTPH-Gx	
580-97679-2	MW-2_20200923	Total/NA	Water	NWTPH-Gx	
580-97679-3	MW-3_20200923	Total/NA	Water	NWTPH-Gx	
580-97679-4	MW-4_20200923	Total/NA	Water	NWTPH-Gx	
580-97679-5	MW-5_20200923	Total/NA	Water	NWTPH-Gx	
MB 580-339230/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 580-339230/6	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 580-339230/7	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 339228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-97679-1	MW-1_20200923	Total/NA	Water	3510C	
580-97679-2	MW-2_20200923	Total/NA	Water	3510C	
580-97679-3	MW-3_20200923	Total/NA	Water	3510C	
580-97679-4	MW-4_20200923	Total/NA	Water	3510C	
580-97679-5	MW-5_20200923	Total/NA	Water	3510C	
MB 580-339228/1-A	Method Blank	Total/NA	Water	3510C	
LCS 580-339228/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 580-339228/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 339304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-97679-1	MW-1_20200923	Total/NA	Water	NWTPH-Dx	339228
580-97679-2	MW-2_20200923	Total/NA	Water	NWTPH-Dx	339228
580-97679-3	MW-3_20200923	Total/NA	Water	NWTPH-Dx	339228
580-97679-4	MW-4_20200923	Total/NA	Water	NWTPH-Dx	339228
580-97679-5	MW-5_20200923	Total/NA	Water	NWTPH-Dx	339228
MB 580-339228/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	339228
LCS 580-339228/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	339228
LCSD 580-339228/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	339228

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Client Sample ID: MW-1_20200923
Date Collected: 09/23/20 11:40
Date Received: 09/23/20 12:56

Lab Sample ID: 580-97679-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	339225	09/26/20 19:00	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	339230	09/26/20 14:43	DCV	TAL SEA
Total/NA	Prep	3510C			339228	09/26/20 10:46	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	339304	09/27/20 23:22	TL1	TAL SEA

Client Sample ID: MW-2_20200923
Date Collected: 09/23/20 10:35
Date Received: 09/23/20 12:56

Lab Sample ID: 580-97679-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	339225	09/26/20 19:25	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	339230	09/26/20 15:08	DCV	TAL SEA
Total/NA	Prep	3510C			339228	09/26/20 10:46	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	339304	09/27/20 23:42	TL1	TAL SEA

Client Sample ID: MW-3_20200923
Date Collected: 09/23/20 10:10
Date Received: 09/23/20 12:56

Lab Sample ID: 580-97679-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	339225	09/26/20 19:50	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	339230	09/26/20 15:32	DCV	TAL SEA
Total/NA	Prep	3510C			339228	09/26/20 10:46	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	339304	09/28/20 00:02	TL1	TAL SEA

Client Sample ID: MW-4_20200923
Date Collected: 09/23/20 09:55
Date Received: 09/23/20 12:56

Lab Sample ID: 580-97679-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	339225	09/26/20 20:15	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	339230	09/26/20 16:21	DCV	TAL SEA
Total/NA	Prep	3510C			339228	09/26/20 10:46	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	339304	09/28/20 00:22	TL1	TAL SEA

Client Sample ID: MW-5_20200923
Date Collected: 09/23/20 11:15
Date Received: 09/23/20 12:56

Lab Sample ID: 580-97679-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	339225	09/26/20 20:40	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	339230	09/26/20 16:45	DCV	TAL SEA
Total/NA	Prep	3510C			339228	09/26/20 10:46	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	339304	09/28/20 00:42	TL1	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Laboratory References:

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

Accreditation/Certification Summary

Client: Antea USA Inc.
Job ID: 580-97679-1
Project/Site: BP - OPLC - Tacoma Junction

Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C553	02-18-21

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
8260D		Water	Benzene
8260D		Water	Ethylbenzene
8260D		Water	Toluene
8260D		Water	Xylenes, Total
NWTPH-Dx	3510C	Water	#2 Diesel (C10-C24)
NWTPH-Dx	3510C	Water	Motor Oil (>C24-C36)
NWTPH-Gx		Water	Gasoline

Method Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SEA
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL SEA
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SEA
5030B	Purge and Trap	SW846	TAL SEA

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-97679-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-97679-1	MW-1_20200923	Water	09/23/20 11:40	09/23/20 12:56	
580-97679-2	MW-2_20200923	Water	09/23/20 10:35	09/23/20 12:56	
580-97679-3	MW-3_20200923	Water	09/23/20 10:10	09/23/20 12:56	
580-97679-4	MW-4_20200923	Water	09/23/20 09:55	09/23/20 12:56	
580-97679-5	MW-5_20200923	Water	09/23/20 11:15	09/23/20 12:56	

bp rm Laboratory Management Program (LaMP) Chain of Custody Record

Soil, Sediment and Groundwater Samples

BP Site Node Path: Olympic Pipeline Company | Req Due Date (mm/dd/yy): Standard TAT | Rush TAT Yes ____ No X

BP/RM Facility No: Tacoma Junction | Lab Work Order Number: 97679

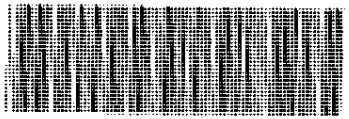
Lab Name:	Test America	BP/ARC Facility Address:	2660 Frank Albert Road East	Consultant/Contractor:	Antea Group
Lab Address:	Tacoma, WA	City, State, ZIP Code:	Fife, Washington 98424	Consultant/Contractor Project No:	WATJUAA201.10123
Lab PM:	Elaine Walker	Lead Regulatory Agency:	Washington Department of Ecology	Address:	4006 148th Ave NE, Redmond, WA 98052
Lab Phone:	253.248.4972	California Global ID No.:	NA	Consultant/Contractor PM:	Megan Richard
Lab Shipping Accnt:	NA	Enfos Proposal No:	WR826964/00BPT-0008	Phone: 425-498-7711	Email: Megan.Richard@anteagroup.com
Lab Bottle Order No:	NA	Accounting Mode:	Provision __X__ OOC-BU ____ OOC-RM ____	Send/Submit EDD to:	Megan.Richard@anteagroup.com
Other Info:	elaine.walker@testamericainc.com	Stage	1_Appraise (10) Activity Interim Measures (123)	Invoice To:	BP-RM ____ BP/ARC ___X___
BP/RM PM:	Wade Melton				
PM Phone:	360-594-7978				
PM Email:	wade.melton@bp.com				

Sample Details | **Requested Analyses** | **Report Type & QC Level**

Report Type & QC Level: Limited (Standard) Package ____ ; Limited Plus Package ____ ; Full Package ____ (Blanks IR6)

Therm. ID: ~~IR8~~ Cor: 9.5 ° Unc: 10.4 °
Cooler Dsc: Sm Blue
Packing: bub
Cust. Seal: Yes ___ No X
Blue Ice, Wet, Dry, None
FedEx: ____ UPS: ____ Lab Cour: ____ Other: Client

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Filt	Pres	Analysis: B260BTEX	NWTPH-Gx	NWTPH-DX
	MW-1_20200923	9/23/20	1140	W				G				X	X	X
	MW-2_20200923	9/23/20	1035	W				G				X	X	X
	MW-3_20200923	9/23/20	1010	W				G				X	X	X
	MW-4_20200923	9/23/20	0955	W				G				X	X	X
	MW-5_20200923	9/23/20	1115	W				G				X	X	X
	Trip Blank			W				G				X	X	



580-97679 Chain of Custody

Sampler's Name:	Katelyn Younger	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	Antea Group	Katelyn Younger / Antea	9/23	1250	Tom Blanton / TA-Sea	9/23/20	1250
Ship Method:	Ship Date:						
Shipment Tracking No:							

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: _____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

BP LaMP Soil/H2O COC July 2018

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 580-97679-1

Login Number: 97679
List Number: 1
Creator: Blankinship, Tom X

List Source: Eurofins TestAmerica, Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	custody seals not present.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
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	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-97679-1

SDG No.:

Batch Number: 339225 Batch Start Date: 09/26/20 10:17 Batch Analyst: Vaughan, Dmiitra C

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	5X SUR/IS 00001	VOAMasterMix 00060	
MB 580-339225/5		8260D		5 mL	5 mL		2 uL		
LCS 580-339225/6		8260D		5 mL	5 mL		2 uL	20 uL	
LCSD 580-339225/7		8260D		5 mL	5 mL		2 uL	20 uL	
580-97679-B-1	MW-1_20200923	8260D	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-B-2	MW-2_20200923	8260D	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-B-3	MW-3_20200923	8260D	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-B-4	MW-4_20200923	8260D	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-B-5	MW-5_20200923	8260D	T	5 mL	5 mL	<2 SU	2 uL		

Batch Notes	
Vial Lot Number	0103101F

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-97679-1

SDG No.:

Batch Number: 339230 Batch Start Date: 09/26/20 10:52 Batch Analyst: Vaughan, Dmiitra C

Batch Method: NWTPH-Gx Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	BFBGRO ARCHON 00044	GRO_LCS 00064	V2.4TFT-EX 00057
MB 580-339230/5		NWTPH-Gx		5 mL	5 mL		2 uL		
LCS 580-339230/6		NWTPH-Gx		5 mL	5 mL		2 uL	50 uL	2500 uL
LCSD 580-339230/7		NWTPH-Gx		5 mL	5 mL		2 uL	50 uL	2500 uL
580-97679-A-1	MW-1_20200923	NWTPH-Gx	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-A-2	MW-2_20200923	NWTPH-Gx	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-A-3	MW-3_20200923	NWTPH-Gx	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-A-4	MW-4_20200923	NWTPH-Gx	T	5 mL	5 mL	<2 SU	2 uL		
580-97679-A-5	MW-5_20200923	NWTPH-Gx	T	5 mL	5 mL	<2 SU	2 uL		

Batch Notes	
Vial Lot Number	0103101F

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-97679-1

SDG No.:

Batch Number: 339228 Batch Start Date: 09/26/20 10:46 Batch Analyst: Laplace, Richard J

Batch Method: 3510C Batch End Date: 09/26/20 20:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 580-339228/1		3510C, NWTPH-Dx				250 mL	1.0 mL	7.0 SU	2.0 SU
LCS 580-339228/2		3510C, NWTPH-Dx				250 mL	1.0 mL	7.0 SU	2.0 SU
LCSD 580-339228/3		3510C, NWTPH-Dx				250 mL	1.0 mL	7.0 SU	2.0 SU
580-97679-G-1	MW-1_20200923	3510C, NWTPH-Dx	T	00434.46 g	00184.98 g	249.5 mL	1.0 mL	2.0 SU	2.0 SU
580-97679-G-2	MW-2_20200923	3510C, NWTPH-Dx	T	00415.56 g	00166.85 g	248.7 mL	1.0 mL	2.0 SU	2.0 SU
580-97679-G-3	MW-3_20200923	3510C, NWTPH-Dx	T	00434.41 g	00187.69 g	246.7 mL	1.0 mL	2.0 SU	2.0 SU
580-97679-G-4	MW-4_20200923	3510C, NWTPH-Dx	T	00414.88 g	00167.76 g	247.1 mL	1.0 mL	2.0 SU	2.0 SU
580-97679-G-5	MW-5_20200923	3510C, NWTPH-Dx	T	00411.39 g	00166.60 g	244.8 mL	1.0 mL	2.0 SU	2.0 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	TPH_Water_Spk 00026	TPH_WaterSurr 00057				
MB 580-339228/1		3510C, NWTPH-Dx			100 uL				
LCS 580-339228/2		3510C, NWTPH-Dx		100 uL	100 uL				
LCSD 580-339228/3		3510C, NWTPH-Dx		100 uL	100 uL				
580-97679-G-1	MW-1_20200923	3510C, NWTPH-Dx	T		100 uL				
580-97679-G-2	MW-2_20200923	3510C, NWTPH-Dx	T		100 uL				
580-97679-G-3	MW-3_20200923	3510C, NWTPH-Dx	T		100 uL				
580-97679-G-4	MW-4_20200923	3510C, NWTPH-Dx	T		100 uL				
580-97679-G-5	MW-5_20200923	3510C, NWTPH-Dx	T		100 uL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-97679-1

SDG No.:

Batch Number: 339228 Batch Start Date: 09/26/20 10:46 Batch Analyst: Laplace, Richard J

Batch Method: 3510C Batch End Date: 09/26/20 20:38

Batch Notes	
Acid Used for pH Adjustment ID	2646724
Balance ID	sea225
Batch Comment	vialed by rjl
Analyst ID - Concentration	rjl
Concentration 1 Corrected Temperature	74.2-79.2 Degrees C
Concentration 2 Corrected Temperature	19.2 Degrees C
Equipment ID - Concentration 1	steambath 1
Equipment ID - Concentration 2	turbovap 5
Analyst ID - Extraction	rjl
Filter ID	2707788
Method/Fraction	3510C_LVI/dx
Na2SO4 ID	2681383
pH Indicator ID	6003004
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2706522
Prep Solvent Volume Used	100 mL
Silica Gel ID	2674937
Analyst ID - Spike Analyst	rjl
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	61013-040-1
Thermometer ID - Concentration 2	digital readout
Concentration 1 Uncorrected Temperature	75-80 Degrees C
Concentration 2 Uncorrected Temperature	21 Degrees C
Vial Lot Number	24159736
Reagent Water ID	di

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

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ANALYTICAL REPORT

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

Laboratory Job ID: 580-98956-1
Client Project/Site: BP - OPLC - Tacoma Junction
Sampling Event: OPLC-Tacoma Junction

For:
Antea USA Inc.
4006 148th Ave NE
Redmond, Washington 98052

Attn: Megan Richard

M. Elaine Walker

Authorized for release by:
11/24/2020 3:55:41 PM

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

Table of Contents

Definitions/Glossary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Case Narrative

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Job ID: 580-98956-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative
580-98956-1

Receipt
Six samples were received on 11/11/2020 11:45 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.9º C.

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

GC VOA
Method NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-2_20201111 (580-98956-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

Detection Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Client Sample ID: MW-1_20201111 — Lab Sample ID: 580-98956-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	140		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-2_20201111 — Lab Sample ID: 580-98956-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	99		3.0		ug/L	1		8260D	Total/NA
Ethylbenzene	31		3.0		ug/L	1		8260D	Total/NA
Toluene	6.2		2.0		ug/L	1		8260D	Total/NA
Xylenes, Total	44		3.0		ug/L	1		8260D	Total/NA
Gasoline	1500		250		ug/L	1		NWTPH-Gx	Total/NA
#2 Diesel (C10-C24)	970		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-3_20201111 — Lab Sample ID: 580-98956-3

No Detections.

Client Sample ID: MW-4_20201111 — Lab Sample ID: 580-98956-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	120		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-5_20201111 — Lab Sample ID: 580-98956-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	120		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: Trip Blank_20201111 — Lab Sample ID: 580-98956-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Seattle

Client Sample ID: MW-1_20201111

Lab Sample ID: 580-98956-1

Date Collected: 11/11/20 10:55

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 04:04	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 04:04	1
Toluene	ND		2.0		ug/L			11/21/20 04:04	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 04:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 126*		*11/21/20 04:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/21/20 04:04*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/21/20 04:04*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/21/20 04:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/21/20 04:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*50 - 150*		*11/21/20 04:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**140**		110		ug/L		11/20/20 10:31	11/21/20 22:28	1
Motor Oil (>C24-C36)	ND		330		ug/L		11/20/20 10:31	11/21/20 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*11/20/20 10:31*	*11/21/20 22:28*	*1*

Client Sample ID: MW-2_20201111

Lab Sample ID: 580-98956-2

Date Collected: 11/11/20 10:10

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**99**		3.0		ug/L			11/21/20 04:30	1
Ethylbenzene	**31**		3.0		ug/L			11/21/20 04:30	1
Toluene	**6.2**		2.0		ug/L			11/21/20 04:30	1
Xylenes, Total	**44**		3.0		ug/L			11/21/20 04:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 126*		*11/21/20 04:30*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*11/21/20 04:30*	*1*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*11/21/20 04:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/21/20 04:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1500**		250		ug/L			11/21/20 04:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*152*	*X*	*50 - 150*		*11/21/20 04:28*	*1*

Client Sample ID: MW-2_20201111

Lab Sample ID: 580-98956-2

Date Collected: 11/11/20 10:10

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**970**		110		ug/L		11/20/20 10:31	11/21/20 22:48	1
Motor Oil (>C24-C36)	ND		340		ug/L		11/20/20 10:31	11/21/20 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*11/20/20 10:31*	*11/21/20 22:48*	*1*

Client Sample ID: MW-3_20201111

Lab Sample ID: 580-98956-3

Date Collected: 11/11/20 09:50

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 04:55	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 04:55	1
Toluene	ND		2.0		ug/L			11/21/20 04:55	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 04:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 126*		*11/21/20 04:55*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/21/20 04:55*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/21/20 04:55*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*11/21/20 04:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/21/20 04:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*		*11/21/20 04:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		11/20/20 10:31	11/21/20 23:08	1
Motor Oil (>C24-C36)	ND		350		ug/L		11/20/20 10:31	11/21/20 23:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*11/20/20 10:31*	*11/21/20 23:08*	*1*

Client Sample ID: MW-4_20201111

Lab Sample ID: 580-98956-4

Date Collected: 11/11/20 09:25

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 05:20	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 05:20	1
Toluene	ND		2.0		ug/L			11/21/20 05:20	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 05:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 126*		*11/21/20 05:20*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/21/20 05:20*	*1*

Client Sample ID: MW-4_20201111

Lab Sample ID: 580-98956-4

Date Collected: 11/11/20 09:25
Matrix: Water
Date Received: 11/11/20 11:45

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/21/20 05:20*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/21/20 05:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/21/20 05:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*50 - 150*		*11/21/20 05:17*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**120**		110		ug/L		11/20/20 10:31	11/21/20 23:48	1
Motor Oil (>C24-C36)	ND		350		ug/L		11/20/20 10:31	11/21/20 23:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*11/20/20 10:31*	*11/21/20 23:48*	*1*

Client Sample ID: MW-5_20201111

Lab Sample ID: 580-98956-5

Date Collected: 11/11/20 10:30
Matrix: Water
Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 05:45	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 05:45	1
Toluene	ND		2.0		ug/L			11/21/20 05:45	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 05:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 126*		*11/21/20 05:45*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/21/20 05:45*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/21/20 05:45*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/21/20 05:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/21/20 05:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*		*11/21/20 05:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**120**		110		ug/L		11/20/20 10:31	11/21/20 23:28	1
Motor Oil (>C24-C36)	ND		340		ug/L		11/20/20 10:31	11/21/20 23:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*11/20/20 10:31*	*11/21/20 23:28*	*1*

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Client Sample ID: Trip Blank_20201111

Lab Sample ID: 580-98956-6

Date Collected: 11/11/20 00:00

Matrix: Water

Date Received: 11/11/20 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 02:25	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 02:25	1
Toluene	ND		2.0		ug/L			11/21/20 02:25	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 02:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 126*		*11/21/20 02:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/21/20 02:25*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/21/20 02:25*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/21/20 02:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/20/20 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*50 - 150*		*11/20/20 21:07*	*1*

Surrogate Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-126)	(80-120)	(80-120)	(80-120)
580-98956-1	MW-1_20201111	101	100	95	101
580-98956-2	MW-2_20201111	103	104	91	100
580-98956-3	MW-3_20201111	111	97	95	105
580-98956-4	MW-4_20201111	104	98	97	103
580-98956-5	MW-5_20201111	106	99	94	101
580-98956-6	Trip Blank_20201111	102	99	96	102
LCS 580-343728/6	Lab Control Sample	99	102	97	100
LCSD 580-343728/7	Lab Control Sample Dup	99	100	96	104
MB 580-343728/5	Method Blank	104	99	96	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB2
Lab Sample ID	Client Sample ID	(50-150)
580-98956-1	MW-1_20201111	89
580-98956-2	MW-2_20201111	152 X
580-98956-3	MW-3_20201111	91
580-98956-4	MW-4_20201111	88
580-98956-5	MW-5_20201111	91
580-98956-6	Trip Blank_20201111	88
LCS 580-343732/5	Lab Control Sample	97
LCSD 580-343732/6	Lab Control Sample Dup	92
MB 580-343732/4	Method Blank	88

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH
Lab Sample ID	Client Sample ID	(50-150)
580-98956-1	MW-1_20201111	93
580-98956-2	MW-2_20201111	81
580-98956-3	MW-3_20201111	89
580-98956-4	MW-4_20201111	93
580-98956-5	MW-5_20201111	83
LCS 580-343686/2-A	Lab Control Sample	77
LCSD 580-343686/3-A	Lab Control Sample Dup	76
MB 580-343686/1-A	Method Blank	82

Surrogate Legend

OTPH = o-Terphenyl

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

Lab Sample ID: MB 580-343728/5
Matrix: Water
Analysis Batch: 343728

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			11/21/20 00:45	1
Ethylbenzene	ND		3.0		ug/L			11/21/20 00:45	1
Toluene	ND		2.0		ug/L			11/21/20 00:45	1
Xylenes, Total	ND		3.0		ug/L			11/21/20 00:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 126*		*11/21/20 00:45*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/21/20 00:45*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/21/20 00:45*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/21/20 00:45*	*1*

Lab Sample ID: LCS 580-343728/6
Matrix: Water
Analysis Batch: 343728

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	10.8		ug/L		108	82 - 122
Ethylbenzene	10.0	11.6		ug/L		116	80 - 120
m-Xylene & p-Xylene	10.0	11.8		ug/L		118	80 - 120
o-Xylene	10.0	11.8		ug/L		118	80 - 125
Toluene	10.0	11.2		ug/L		112	80 - 120
Xylenes, Total	20.0	23.6		ug/L		118	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 126*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 580-343728/7
Matrix: Water
Analysis Batch: 343728

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	11.0		ug/L		110	82 - 122	2	14
Ethylbenzene	10.0	11.4		ug/L		114	80 - 120	1	14
m-Xylene & p-Xylene	10.0	11.7		ug/L		117	80 - 120	1	14
o-Xylene	10.0	11.7		ug/L		117	80 - 125	1	16
Toluene	10.0	11.7		ug/L		117	80 - 120	4	13
Xylenes, Total	20.0	23.4		ug/L		117	80 - 120	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 126*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

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

Lab Sample ID: MB 580-343732/4
Matrix: Water
Analysis Batch: 343732

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			11/20/20 19:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*50 - 150*		*11/20/20 19:04*	*1*

Lab Sample ID: LCS 580-343732/5
Matrix: Water
Analysis Batch: 343732

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	908		ug/L		91	79 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*50 - 150*

Lab Sample ID: LCSD 580-343732/6
Matrix: Water
Analysis Batch: 343732

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	910		ug/L		91	79 - 120	0	10

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

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

Lab Sample ID: MB 580-343686/1-A
Matrix: Water
Analysis Batch: 343787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 343686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		11/20/20 10:31	11/21/20 17:26	1
Motor Oil (>C24-C36)	ND		350		ug/L		11/20/20 10:31	11/21/20 17:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82*		*50 - 150*	*11/20/20 10:31*	*11/21/20 17:26*	*1*

Lab Sample ID: LCS 580-343686/2-A
Matrix: Water
Analysis Batch: 343787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 343686

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			2000	1710		ug/L		86	50 - 120		
Motor Oil (>C24-C36)			2000	1940		ug/L		97	64 - 120		

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

Lab Sample ID: LCS 580-343686/2-A
Matrix: Water
Analysis Batch: 343787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 343686

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*77*		*50 - 150*

Lab Sample ID: LCSD 580-343686/3-A
Matrix: Water
Analysis Batch: 343787

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 343686

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			2000	1610		ug/L		81	50 - 120	6	26
Motor Oil (>C24-C36)			2000	1890		ug/L		94	64 - 120	3	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*76*		*50 - 150*

QC Association Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

GC/MS VOA

Analysis Batch: 343728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-98956-1	MW-1_20201111	Total/NA	Water	8260D	
580-98956-2	MW-2_20201111	Total/NA	Water	8260D	
580-98956-3	MW-3_20201111	Total/NA	Water	8260D	
580-98956-4	MW-4_20201111	Total/NA	Water	8260D	
580-98956-5	MW-5_20201111	Total/NA	Water	8260D	
580-98956-6	Trip Blank_20201111	Total/NA	Water	8260D	
MB 580-343728/5	Method Blank	Total/NA	Water	8260D	
LCS 580-343728/6	Lab Control Sample	Total/NA	Water	8260D	
LCSD 580-343728/7	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 343732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-98956-1	MW-1_20201111	Total/NA	Water	NWTPH-Gx	
580-98956-2	MW-2_20201111	Total/NA	Water	NWTPH-Gx	
580-98956-3	MW-3_20201111	Total/NA	Water	NWTPH-Gx	
580-98956-4	MW-4_20201111	Total/NA	Water	NWTPH-Gx	
580-98956-5	MW-5_20201111	Total/NA	Water	NWTPH-Gx	
580-98956-6	Trip Blank_20201111	Total/NA	Water	NWTPH-Gx	
MB 580-343732/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 580-343732/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 580-343732/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 343686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-98956-1	MW-1_20201111	Total/NA	Water	3510C	
580-98956-2	MW-2_20201111	Total/NA	Water	3510C	
580-98956-3	MW-3_20201111	Total/NA	Water	3510C	
580-98956-4	MW-4_20201111	Total/NA	Water	3510C	
580-98956-5	MW-5_20201111	Total/NA	Water	3510C	
MB 580-343686/1-A	Method Blank	Total/NA	Water	3510C	
LCS 580-343686/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 580-343686/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 343787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-98956-1	MW-1_20201111	Total/NA	Water	NWTPH-Dx	343686
580-98956-2	MW-2_20201111	Total/NA	Water	NWTPH-Dx	343686
580-98956-3	MW-3_20201111	Total/NA	Water	NWTPH-Dx	343686
580-98956-4	MW-4_20201111	Total/NA	Water	NWTPH-Dx	343686
580-98956-5	MW-5_20201111	Total/NA	Water	NWTPH-Dx	343686
MB 580-343686/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	343686
LCS 580-343686/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	343686
LCSD 580-343686/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	343686

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Client Sample ID: MW-1_20201111
Date Collected: 11/11/20 10:55
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 04:04	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/21/20 04:04	CJ	TAL SEA
Total/NA	Prep	3510C			343686	11/20/20 10:31	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343787	11/21/20 22:28	ADB	TAL SEA

Client Sample ID: MW-2_20201111
Date Collected: 11/11/20 10:10
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 04:30	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/21/20 04:28	CJ	TAL SEA
Total/NA	Prep	3510C			343686	11/20/20 10:31	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343787	11/21/20 22:48	ADB	TAL SEA

Client Sample ID: MW-3_20201111
Date Collected: 11/11/20 09:50
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 04:55	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/21/20 04:53	CJ	TAL SEA
Total/NA	Prep	3510C			343686	11/20/20 10:31	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343787	11/21/20 23:08	ADB	TAL SEA

Client Sample ID: MW-4_20201111
Date Collected: 11/11/20 09:25
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 05:20	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/21/20 05:17	CJ	TAL SEA
Total/NA	Prep	3510C			343686	11/20/20 10:31	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343787	11/21/20 23:48	ADB	TAL SEA

Client Sample ID: MW-5_20201111
Date Collected: 11/11/20 10:30
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 05:45	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/21/20 05:42	CJ	TAL SEA
Total/NA	Prep	3510C			343686	11/20/20 10:31	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343787	11/21/20 23:28	ADB	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Client Sample ID: Trip Blank_20201111

Date Collected: 11/11/20 00:00
Date Received: 11/11/20 11:45

Lab Sample ID: 580-98956-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343728	11/21/20 02:25	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	343732	11/20/20 21:07	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

Client: Antea USA Inc. Job ID: 580-98956-1
Project/Site: BP - OPLC - Tacoma Junction

Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C553	02-18-21

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
8260D		Water	Benzene
8260D		Water	Ethylbenzene
8260D		Water	Toluene
8260D		Water	Xylenes, Total
NWTPH-Dx	3510C	Water	#2 Diesel (C10-C24)
NWTPH-Dx	3510C	Water	Motor Oil (>C24-C36)
NWTPH-Gx		Water	Gasoline

Method Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SEA
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL SEA
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SEA
5030B	Purge and Trap	SW846	TAL SEA

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: Antea USA Inc.
Project/Site: BP - OPLC - Tacoma Junction

Job ID: 580-98956-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-98956-1	MW-1_20201111	Water	11/11/20 10:55	11/11/20 11:45	
580-98956-2	MW-2_20201111	Water	11/11/20 10:10	11/11/20 11:45	
580-98956-3	MW-3_20201111	Water	11/11/20 09:50	11/11/20 11:45	
580-98956-4	MW-4_20201111	Water	11/11/20 09:25	11/11/20 11:45	
580-98956-5	MW-5_20201111	Water	11/11/20 10:30	11/11/20 11:45	
580-98956-6	Trip Blank_20201111	Water	11/11/20 00:00	11/11/20 11:45	

Loc: 580
98956

Laboratory Management Program (LaMP) Chain of Custody Record
Soil, Sediment and Groundwater Samples

Page 1 of 1

BP Site Node Path: Olympic Pipeline Company | Req Due Date (mm/dd/yy): Standard TAT | No X

BP/RM Facility No: Tacoma Junction | Lab Work Order Number:

Lab Name:	Test America	BP/ARC Facility Address:	2660 Frank Albert Road East	Consultant/Contractor:	Antea Group
Lab Address:	Tacoma, WA	City, State, ZIP Code:	Fife, Washington 98424	Consultant/Contractor Project No:	WATJUAA201.10123
Lab PM:	Elaine Walker	Lead Regulatory Agency:	Washington Department of Ecology	Address:	4006 148th Ave NE, Redmond, WA 98052
Lab Phone:	253.248.4972	California Global ID No.:	NA	Consultant/Contractor PM:	Megan Richard
Lab Shipping Accnt:	NA	Enfos Proposal No:	WR826964/00BPT-0008	Phone: 425-498-7711 Email:	Megan.Richard@anteagroup.com
Lab Bottle Order No:	NA	Accounting Mode:	Provision __X__ OOC-BU _____ OOC-RM _____	Send/Submit EDD to:	Megan.Richard@anteagroup.com
Other Info:	elaine.walker@testamericainc.com	Stage	1_Appraise (10) Activity Interim Measures (123)	Invoice To:	BP-RM _____ BP/ARC ____X____
BP/RM PM:	Wade Melton				
PM Phone:	360-594-7978				
PM Email:	wade.melton@bp.com				

Sample Details | **Requested Analyses** | **Report Type & QC Level**

Report Type & QC Level: Limited (Standard) Package ____ Limited Plus Package ____ Full Package ____

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Filt	Pres	Analysis: 8260BTEX	NWTPH-Gx	NWTPH-DX
	MW-1_20201111	11/1/20	1055	W				G				X	X	X
	MW-2_20201111		1010	W				G				X	X	X
	MW-3_20201111		0950	W				G				X	X	X
	MW-4_20201111		0925	W				G				X	X	X
	MW-5_20201111		1030	W				G				X	X	X
	Trip Blank	↓	0000	W				G				X	X	

Comments

580-98956 Chain of Custody

Sampler's Name:	Katelyn Younger	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	Antea Group	Katelyn Younger Antea	11/1/20	1145	TASC2	11-11-20	1145
Ship Method:	Ship Date:						
Shipment Tracking No:							

Special Instructions:

Therm. ID: 8 Cor: 4.9 ° Unc: 5.1 ° | y Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: _____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Cooler Dsc: LB FedEx: BO

Packing: Bub UPS:

Cust. Seal: Yes No Lab Cour:

Blue Ice, Wet, Dry, None Other: CD

BP LaMP Soil/H2O COC July 2018

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 580-98956-1

Login Number: 98956
List Number: 1
Creator: Hobbs, Kenneth F

List Source: Eurofins 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	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-98956-1

SDG No.:

Batch Number: 343728 Batch Start Date: 11/20/20 23:30 Batch Analyst: Jantanu, Charinporn

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	5X SUR/IS 00002	VOAMasterMix 00062	
MB 580-343728/5		8260D		5 mL	5 mL		1 uL		
LCS 580-343728/6		8260D		5 mL	5 mL		1 uL	10 uL	
LCSD 580-343728/7		8260D		5 mL	5 mL		1 uL	10 uL	
580-98956-A-6	Trip Blank	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-C-1	MW-1_20201111	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-F-2	MW-2_20201111	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-C-3	MW-3_20201111	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-C-4	MW-4_20201111	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-C-5	MW-5_20201111	8260D	T	5 mL	5 mL	<2 SU	1 uL		

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-98956-1

SDG No.:

Batch Number: 343732 Batch Start Date: 11/20/20 18:14 Batch Analyst: Jantanu, Charinporn

Batch Method: NWTPH-Gx Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	BFBGRO ARCHON 00044	GRO_LCS 00064	V2.4TFT-EX 00062
MB 580-343732/4		NWTPH-Gx		5 mL	5 mL		1 uL		
LCS 580-343732/5		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	1250 uL
LCSD 580-343732/6		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	1250 uL
580-98956-D-6	Trip Blank	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-E-1	MW-1_20201111	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-G-2	MW-2_20201111	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-E-3	MW-3_20201111	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-D-4	MW-4_20201111	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-98956-E-5	MW-5_20201111	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-98956-1

SDG No.:

Batch Number: 343686 Batch Start Date: 11/20/20 10:31 Batch Analyst: Tucker, Jonathon B

Batch Method: 3510C Batch End Date: 11/20/20 18:17

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 580-343686/1		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCS 580-343686/2		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCSD 580-343686/3		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
580-98956-B-1	MW-1_20201111	3510C, NWTPH-Dx	T	00437.65 g	00176.40 g	261.3 mL	1 mL	2 SU	2 SU
580-98956-B-2	MW-2_20201111	3510C, NWTPH-Dx	T	00431.60 g	00175.02 g	256.6 mL	1 mL	2 SU	2 SU
580-98956-A-3	MW-3_20201111	3510C, NWTPH-Dx	T	00430.06 g	00176.56 g	253.5 mL	1 mL	2 SU	2 SU
580-98956-A-5	MW-5_20201111	3510C, NWTPH-Dx	T	00434.07 g	00174.58 g	259.5 mL	1 mL	2 SU	2 SU
580-98956-B-4	MW-4_20201111	3510C, NWTPH-Dx	T	00427.39 g	00175.39 g	252 mL	1 mL	2 SU	2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	TPH_Water_Spk 00026	TPH_WaterSurr 00062				
MB 580-343686/1		3510C, NWTPH-Dx			100 uL				
LCS 580-343686/2		3510C, NWTPH-Dx		100 uL	100 uL				
LCSD 580-343686/3		3510C, NWTPH-Dx		100 uL	100 uL				
580-98956-B-1	MW-1_20201111	3510C, NWTPH-Dx	T		100 uL				
580-98956-B-2	MW-2_20201111	3510C, NWTPH-Dx	T		100 uL				
580-98956-A-3	MW-3_20201111	3510C, NWTPH-Dx	T		100 uL				
580-98956-A-5	MW-5_20201111	3510C, NWTPH-Dx	T		100 uL				
580-98956-B-4	MW-4_20201111	3510C, NWTPH-Dx	T		100 uL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-98956-1

SDG No.:

Batch Number: 343686 Batch Start Date: 11/20/20 10:31 Batch Analyst: Tucker, Jonathon B

Batch Method: 3510C Batch End Date: 11/20/20 18:17

Batch Notes	
Acid Used for pH Adjustment ID	2750833
Balance ID	sea225
Batch Comment	vialed by JBT
Analyst ID - Concentration	JBT
Concentration 1 Corrected Temperature	69.2-74.2 Degrees C
Concentration 2 Corrected Temperature	19.4 Degrees C
Equipment ID - Concentration 1	steambath 1
Equipment ID - Concentration 2	turbovap 5
Analyst ID - Extraction	JBT/RJL
Filter ID	707788
Method/Fraction	3510C/Dx
Na2SO4 ID	2744776
Sodium Bicarbonate ID	n /a
pH Indicator ID	6003004
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2749437
Prep Solvent Volume Used	100 mL
Analyst ID - Spike Analyst	JBT
Analyst ID - Spike Witness Analyst	RJL
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	61013-040-1
Thermometer ID - Concentration 2	DIGITALREADOUT
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Concentration 2 Uncorrected Temperature	20 Degrees C
Vial Lot Number	24159736
Reagent Water ID	di

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.