



Remediation Management Services Company

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August 4, 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 – First Half of 2021, that documents the results at Olympic Pipe Line Company LLC, Tacoma Junction located at 2660 Frank Albert Road East, Fife, Washington.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Wade Melton', with a stylized flourish at the end.

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

cc: File, Antea Group



Semi-Annual Status Report First Half of 2021

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
August 4, 2021
Project # WATJUAA211

us.anteagroup.com

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Semi-Annual Status Report

First Half of 2021

OPLC Tacoma Junction

2660 Frank Albert Road East, Fife, Washington

Reporting Period	January 2021 – June 2021
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 February 10, 2021 and May 6, 2021. 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 first and second 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 first and second quarter sampling events.
- Groundwater gauging data and analytical data are presented in Tables 1 and 2, respectively. The first and second 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 August 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.



Katelyn Younger
Staff Professional

Date: August 4, 2021

Reviewed by:



Megan Richard, LG
Senior Project Manager



Date: August 4, 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 Elevation Data

Table 2 - Groundwater Analytical Data

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-1	2/10/2021	100.00	1.10	NP	--	98.90	--
MW-1	5/6/2021	100.00	1.50	NP	--	98.50	--
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	--

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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	5/2/2018	99.59	1.83	NP	--	97.76	--
MW-2	8/8/2018	99.59	3.35	NP	--	96.24	--
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-2	2/10/2021	99.59	1.08	NP	--	98.51	--
MW-2	5/6/2021	99.59	1.58	NP	--	98.01	--
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	--

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-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	--
MW-3	2/10/2021	99.91	1.17	NP	--	98.74	--
MW-3	5/6/2021	99.91	1.34	NP	--	98.57	--
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	--	98.59	--
MW-4	2/10/2021	99.70	1.07	NP	--	98.63	--
MW-4	5/6/2021	99.70	1.47	NP	--	98.23	--
MW-5	6/29/2016	99.60	1.49	NP	--	98.11	--
MW-5	9/8/2016	99.60	1.57	NP	--	98.03	--

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-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	--
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	--
MW-5	2/10/2021	99.60	0.82	NP	--	98.78	--
MW-5	5/6/2021	99.60	1.22	NP	--	98.38	--

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 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	800	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	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-1	2/10/2021	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 360
MW-1	5/6/2021	< 1.0	< 1.0	< 1.0	< 2.0	< 250	270	< 340
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	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 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	800	500	500
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-2	2/10/2021	47	3.5	33	17	1,700	670	< 350
MW-2	5/6/2021	35	3.0	17	12	1,700	670	< 360
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	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-3	2/10/2021	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-3	5/6/2021	< 1.0	< 1.0	< 1.0	< 2.0	< 250	< 110	< 360

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	800	500	500
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
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	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-4	2/10/2021	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350
MW-4	5/6/2021	< 1.0	< 1.0	< 1.0	< 2.0	< 250	< 110	< 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

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	800	500	500
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
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
MW-5	2/10/2021	3.4	< 2.0	< 3.0	< 3.0	260	150	< 360
MW-5	5/6/2021	< 1.0	< 1.0	< 1.0	< 2.0	< 250	150	< 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

1,000/800¹ 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

Figure 1 - Site Location Map

Figure 2 - Site Map

Figure 3 - Groundwater Elevation Contour Map – February 10, 2021

Figure 4 - Groundwater Elevation Contour Map – May 6, 2021

Figure 5 - Groundwater Analytical Data Map – February 10, 2021 and May 6, 2021

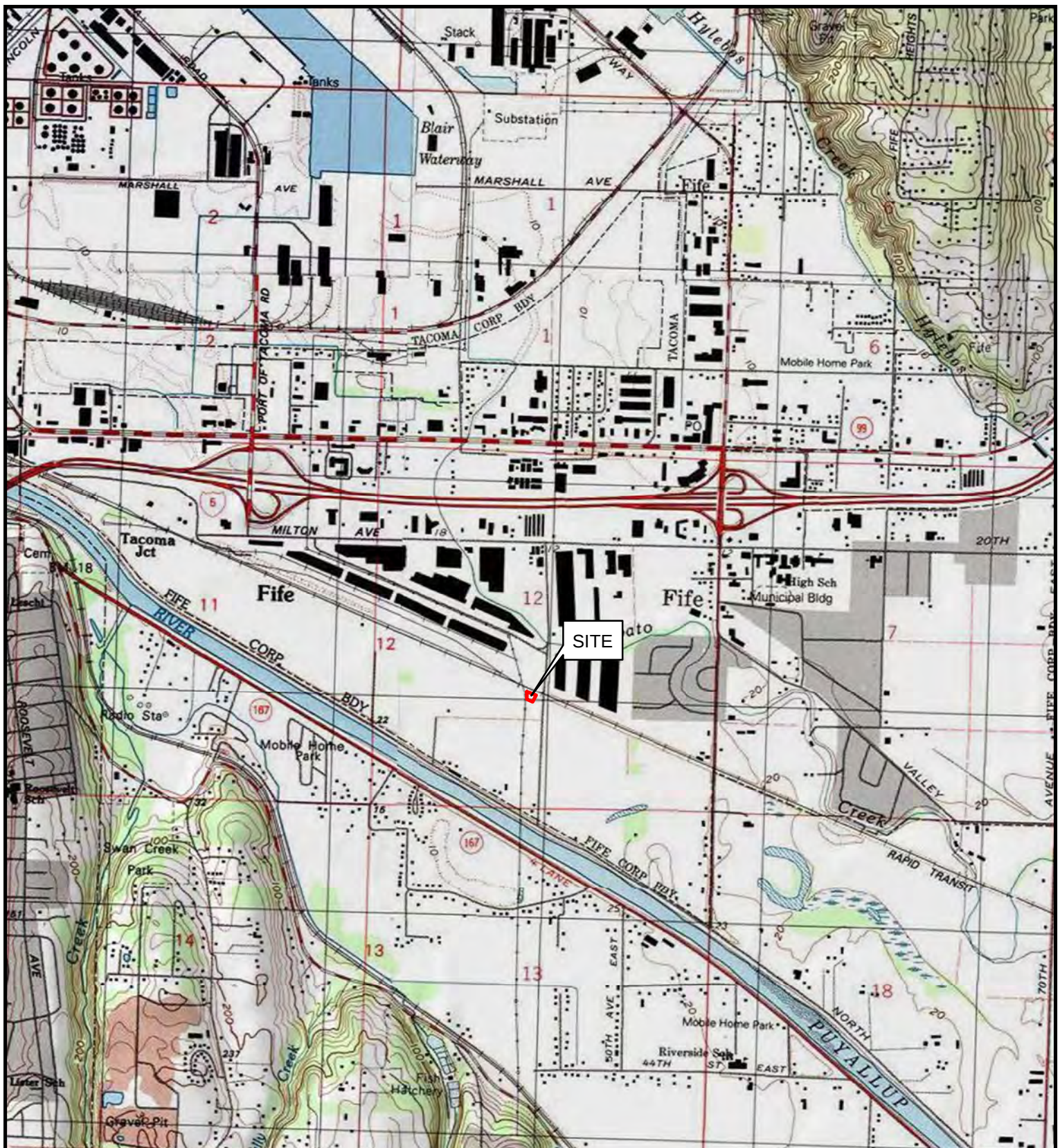


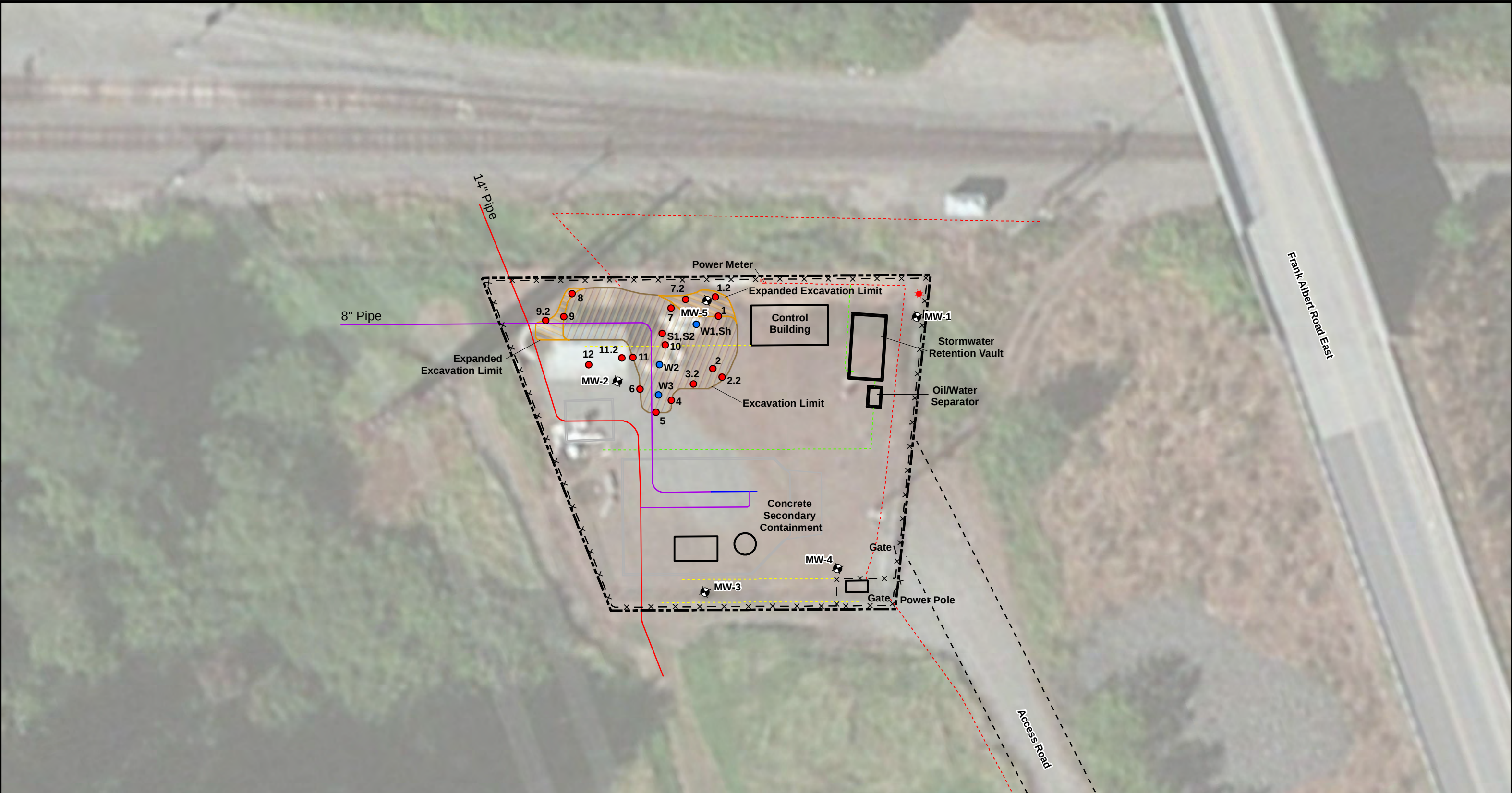
FIGURE 1
 SITE LOCATION MAP
 OLYMPIC PIPE LINE COMPANY - TACOMA JUNCTION
 2660 FRANK ALBERT ROAD EAST
 FIFE, WA

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



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

PROJECT NO. WATJUA211	PREPARED BY MB	REF SCALE 1:24,000	
DATE 7/30/2021	REVIEWED BY FS	MAP SCALE 1 INCH = 2,000 FEET	



Legend

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

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

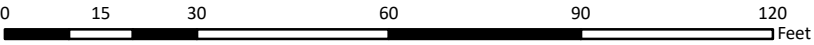
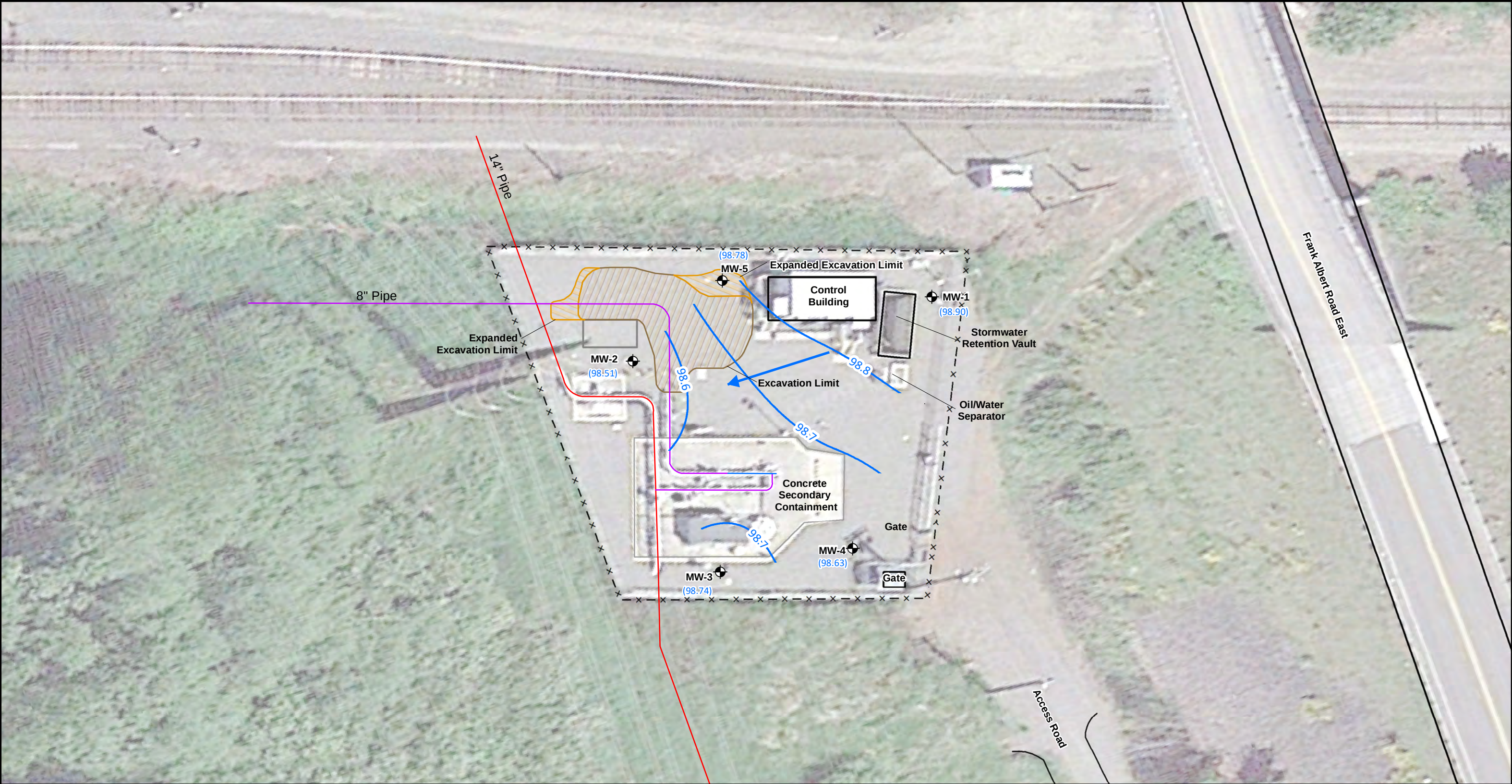


FIGURE 2

SITE MAP

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

PROJECT NO. WAT/UAA211	PREPARED BY MB	REF SCALE 1:360	
DATE 7/31/2021	REVIEWED BY FS	MAP SCALE 1 INCH = 30 FEET	



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

(98.51)

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

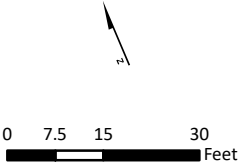


FIGURE 3

GROUNDWATER ELEVATION CONTOUR MAP

FEBRUARY 10, 2021

OLYMPIC PIPELINE COMPANY

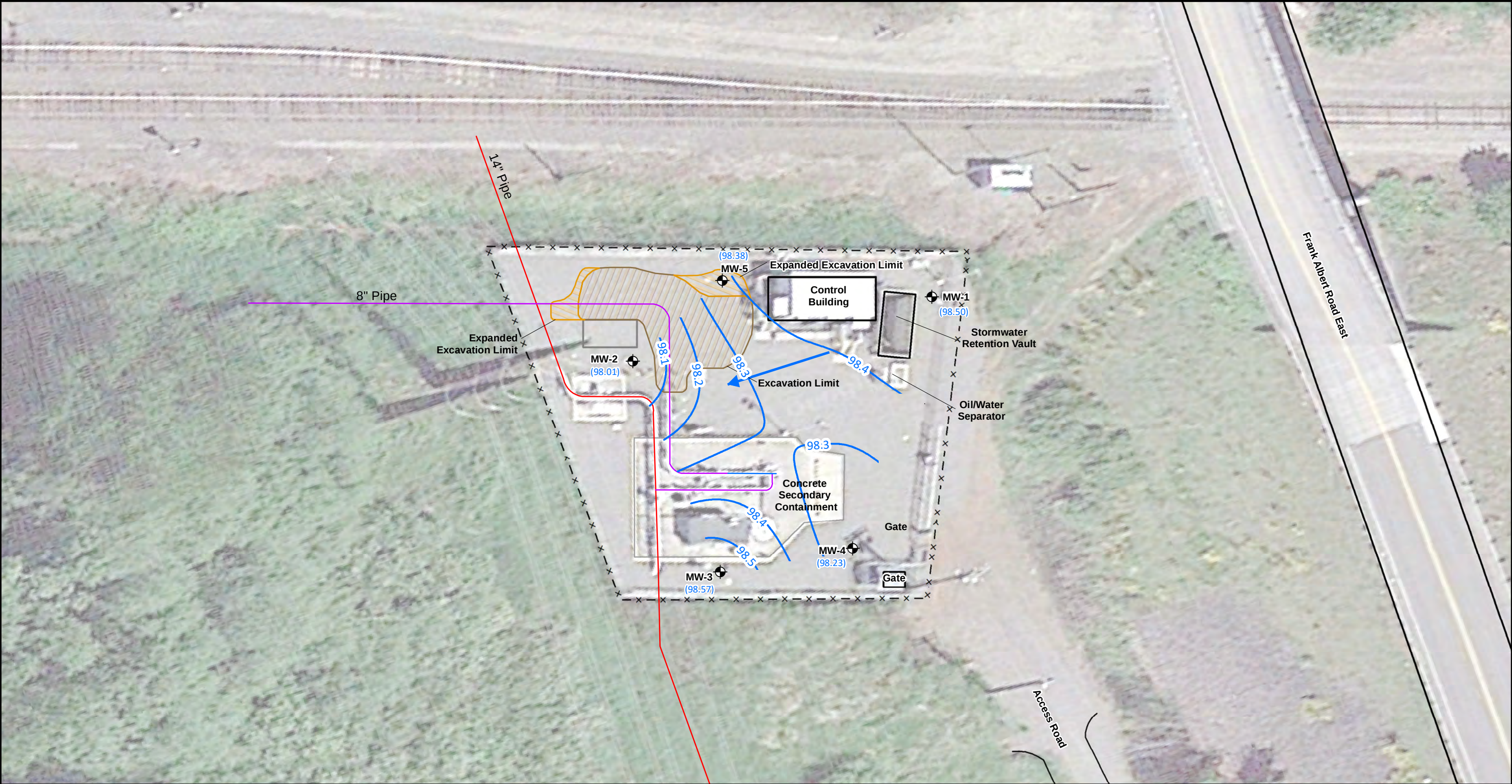
TACOMA JUNCTION

2660 FRANK ALBERT ROAD EAST

FIFE, WASHINGTON

PROJECT NO. WAT/UAA211	PREPARED BY MB	REF SCALE 1:360
DATE 7/14/2021	REVIEWED BY KY	MAP SCALE 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

(98.01)

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

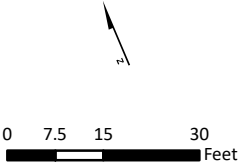


FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP

MAY 6, 2021

OLYMPIC PIPELINE COMPANY

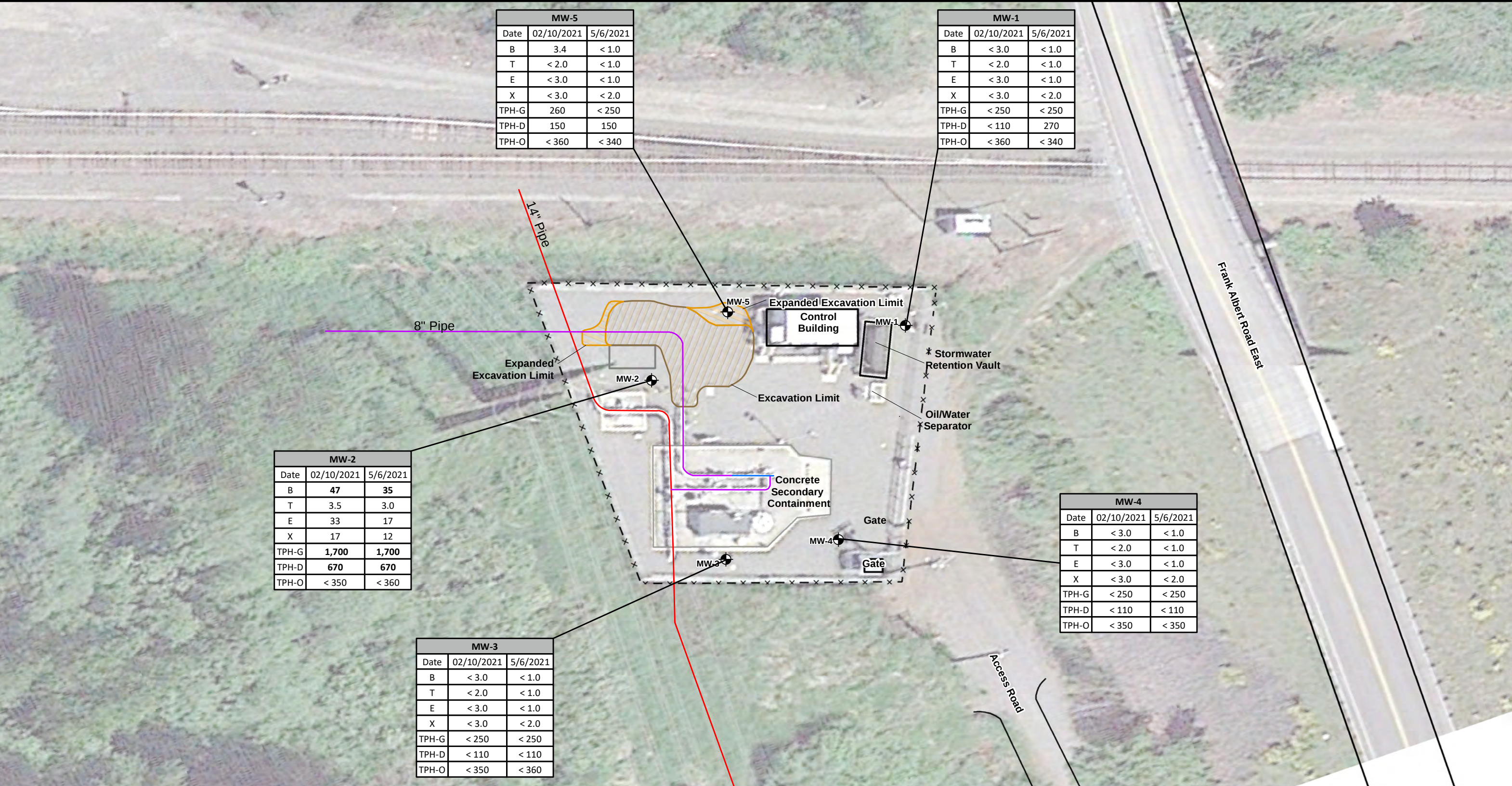
TACOMA JUNCTION

2660 FRANK ALBERT ROAD EAST

FIFE, WASHINGTON

PROJECT NO. WAT/UAA211	PREPARED BY MB	REF SCALE 1:360	
DATE 7/14/2021	REVIEWED BY KY	MAP SCALE 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

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
Bold - Concentration above MTCA Method A Cleanup Levels
< - 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

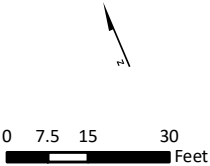


FIGURE 5
GROUNDWATER ANALYTICAL DATA MAP
FEBRUARY 10, 2021 AND MAY 6, 2021
OLYMPIC PIPELINE COMPANY
TACOMA JUNCTION
2660 FRANK ALBERT ROAD EAST
FIFE, WASHINGTON

PROJECT NO. WATJ/UA211	PREPARED BY JLH	REF SCALE 1:426	
DATE 7/27/2021	REVIEWED BY KY/MG	MAP SCALE 1 INCH = 35 FEET	

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

ANALYTICAL REPORT

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

Laboratory Job ID: 580-101023-1
Client Project/Site: 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:
2/25/2021 2:49:36 PM

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

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

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

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

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Definitions/Glossary

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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: Tacoma Junction

Job ID: 580-101023-1

Job ID: 580-101023-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-101023-1

Receipt

Six samples were received on 2/10/2021 1:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 10.8° 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: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 580-350256 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-2_20210210 (580-101023-2). 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: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-1_20210210

Lab Sample ID: 580-101023-1

No Detections.

Client Sample ID: MW-2_20210210

Lab Sample ID: 580-101023-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	47		3.0		ug/L	1		8260D	Total/NA
Ethylbenzene	33		3.0		ug/L	1		8260D	Total/NA
m-Xylene & p-Xylene	17		3.0		ug/L	1		8260D	Total/NA
Toluene	3.5		2.0		ug/L	1		8260D	Total/NA
Xylenes, Total	17		3.0		ug/L	1		8260D	Total/NA
Gasoline	1700		250		ug/L	1		NWTPH-Gx	Total/NA
#2 Diesel (C10-C24)	670		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-3_20210210

Lab Sample ID: 580-101023-3

No Detections.

Client Sample ID: MW-4_20210210

Lab Sample ID: 580-101023-4

No Detections.

Client Sample ID: MW-5_20210210

Lab Sample ID: 580-101023-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.4		3.0		ug/L	1		8260D	Total/NA
Gasoline	260		250		ug/L	1		NWTPH-Gx	Total/NA
#2 Diesel (C10-C24)	150		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: Trip Blank_20210210

Lab Sample ID: 580-101023-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-1_20210210

Lab Sample ID: 580-101023-1

Date Collected: 02/10/21 12:30

Matrix: Water

Date Received: 02/10/21 13:45

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			02/13/21 03:37	1
Ethylbenzene	ND		3.0		ug/L			02/13/21 03:37	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/13/21 03:37	1
o-Xylene	ND		2.0		ug/L			02/13/21 03:37	1
Toluene	ND		2.0		ug/L			02/13/21 03:37	1
Xylenes, Total	ND		3.0		ug/L			02/13/21 03:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		02/13/21 03:37	1
4-Bromofluorobenzene (Surr)	85		80 - 120		02/13/21 03:37	1
Dibromofluoromethane (Surr)	103		80 - 120		02/13/21 03:37	1
Toluene-d8 (Surr)	98		80 - 120		02/13/21 03:37	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			02/20/21 03:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		02/20/21 03:04	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)	ND		110		ug/L		02/22/21 11:40	02/23/21 21:54	1
Motor Oil (>C24-C36)	ND		360		ug/L		02/22/21 11:40	02/23/21 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150	02/22/21 11:40	02/23/21 21:54	1

Client Sample ID: MW-2_20210210

Lab Sample ID: 580-101023-2

Date Collected: 02/10/21 11:20

Matrix: Water

Date Received: 02/10/21 13:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	47		3.0		ug/L			02/13/21 04:03	1
Ethylbenzene	33		3.0		ug/L			02/13/21 04:03	1
m-Xylene & p-Xylene	17		3.0		ug/L			02/13/21 04:03	1
o-Xylene	ND		2.0		ug/L			02/13/21 04:03	1
Toluene	3.5		2.0		ug/L			02/13/21 04:03	1
Xylenes, Total	17		3.0		ug/L			02/13/21 04:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		02/13/21 04:03	1
4-Bromofluorobenzene (Surr)	105		80 - 120		02/13/21 04:03	1
Dibromofluoromethane (Surr)	97		80 - 120		02/13/21 04:03	1
Toluene-d8 (Surr)	108		80 - 120		02/13/21 04:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1700		250		ug/L			02/20/21 03:29	1

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-2_20210210

Date Collected: 02/10/21 11:20

Date Received: 02/10/21 13:45

Lab Sample ID: 580-101023-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	158	S1+	50 - 150				02/20/21 03:29	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)	670		110		ug/L		02/22/21 11:40	02/23/21 22:14	1
Motor Oil (>C24-C36)	ND		350		ug/L		02/22/21 11:40	02/23/21 22:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	68		50 - 150			02/22/21 11:40	02/23/21 22:14	1	

Client Sample ID: MW-3_20210210

Date Collected: 02/10/21 10:55

Date Received: 02/10/21 13:45

Lab Sample ID: 580-101023-3

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			02/13/21 04:28	1
Ethylbenzene	ND		3.0		ug/L			02/13/21 04:28	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/13/21 04:28	1
o-Xylene	ND		2.0		ug/L			02/13/21 04:28	1
Toluene	ND		2.0		ug/L			02/13/21 04:28	1
Xylenes, Total	ND		3.0		ug/L			02/13/21 04:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 126					02/13/21 04:28	1
4-Bromofluorobenzene (Surr)	103		80 - 120					02/13/21 04:28	1
Dibromofluoromethane (Surr)	100		80 - 120					02/13/21 04:28	1
Toluene-d8 (Surr)	107		80 - 120					02/13/21 04:28	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			02/20/21 06:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150					02/20/21 06:46	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		02/22/21 11:40	02/23/21 22:33	1
Motor Oil (>C24-C36)	ND		350		ug/L		02/22/21 11:40	02/23/21 22:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				02/22/21 11:40	02/23/21 22:33	1

Client Sample ID: MW-4_20210210

Date Collected: 02/10/21 10:35

Date Received: 02/10/21 13:45

Lab Sample ID: 580-101023-4

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			02/13/21 04:54	1
Ethylbenzene	ND		3.0		ug/L			02/13/21 04:54	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/13/21 04:54	1

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-4_20210210

Lab Sample ID: 580-101023-4

Date Collected: 02/10/21 10:35

Matrix: Water

Date Received: 02/10/21 13:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		2.0		ug/L			02/13/21 04:54	1
Toluene	ND		2.0		ug/L			02/13/21 04:54	1
Xylenes, Total	ND		3.0		ug/L			02/13/21 04:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 126					02/13/21 04:54	1
4-Bromofluorobenzene (Surr)	93		80 - 120					02/13/21 04:54	1
Dibromofluoromethane (Surr)	104		80 - 120					02/13/21 04:54	1
Toluene-d8 (Surr)	99		80 - 120					02/13/21 04:54	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			02/20/21 07:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150					02/20/21 07:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		02/22/21 11:40	02/23/21 23:13	1
Motor Oil (>C24-C36)	ND		350		ug/L		02/22/21 11:40	02/23/21 23:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	64		50 - 150				02/22/21 11:40	02/23/21 23:13	1

Client Sample ID: MW-5_20210210

Lab Sample ID: 580-101023-5

Date Collected: 02/10/21 12:00

Matrix: Water

Date Received: 02/10/21 13:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.4		3.0		ug/L			02/13/21 05:20	1
Ethylbenzene	ND		3.0		ug/L			02/13/21 05:20	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/13/21 05:20	1
o-Xylene	ND		2.0		ug/L			02/13/21 05:20	1
Toluene	ND		2.0		ug/L			02/13/21 05:20	1
Xylenes, Total	ND		3.0		ug/L			02/13/21 05:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 126					02/13/21 05:20	1
4-Bromofluorobenzene (Surr)	98		80 - 120					02/13/21 05:20	1
Dibromofluoromethane (Surr)	102		80 - 120					02/13/21 05:20	1
Toluene-d8 (Surr)	100		80 - 120					02/13/21 05:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	260		250		ug/L			02/20/21 07:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150					02/20/21 07:34	1

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-5_20210210

Lab Sample ID: 580-101023-5

Date Collected: 02/10/21 12:00

Matrix: Water

Date Received: 02/10/21 13:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	150		110		ug/L		02/22/21 11:40	02/23/21 23:32	1
Motor Oil (>C24-C36)	ND		360		ug/L		02/22/21 11:40	02/23/21 23:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				02/22/21 11:40	02/23/21 23:32	1

Client Sample ID: Trip Blank_20210210

Lab Sample ID: 580-101023-6

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/10/21 13:45

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			02/13/21 00:43	1
Ethylbenzene	ND		3.0		ug/L			02/13/21 00:43	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/13/21 00:43	1
o-Xylene	ND		2.0		ug/L			02/13/21 00:43	1
Toluene	ND		2.0		ug/L			02/13/21 00:43	1
Xylenes, Total	ND		3.0		ug/L			02/13/21 00:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 126					02/13/21 00:43	1
4-Bromofluorobenzene (Surr)	92		80 - 120					02/13/21 00:43	1
Dibromofluoromethane (Surr)	102		80 - 120					02/13/21 00:43	1
Toluene-d8 (Surr)	103		80 - 120					02/13/21 00:43	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			02/20/21 06:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150					02/20/21 06:21	1

Surrogate Summary

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-126)	BFB (80-120)	DBFM (80-120)	TOL (80-120)
580-101023-1	MW-1_20210210	107	85	103	98
580-101023-2	MW-2_20210210	95	105	97	108
580-101023-3	MW-3_20210210	104	103	100	107
580-101023-4	MW-4_20210210	105	93	104	99
580-101023-5	MW-5_20210210	97	98	102	100
580-101023-6	Trip Blank_20210210	102	92	102	103
LCS 580-349818/4	Lab Control Sample	96	98	100	106
LCSD 580-349818/5	Lab Control Sample Dup	100	95	100	101
MB 580-349818/7	Method Blank	104	94	103	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB2 (50-150)			
580-101023-1	MW-1_20210210	92			
580-101023-2	MW-2_20210210	158 S1+			
580-101023-3	MW-3_20210210	91			
580-101023-4	MW-4_20210210	92			
580-101023-5	MW-5_20210210	105			
580-101023-6	Trip Blank_20210210	92			
LCS 580-350256/31	Lab Control Sample	99			
LCS 580-350256/5	Lab Control Sample	102			
LCSD 580-350256/32	Lab Control Sample Dup	100			
LCSD 580-350256/6	Lab Control Sample Dup	101			
MB 580-350256/30	Method Blank	95			
MB 580-350256/4	Method Blank	94			

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		OTPH (50-150)			
580-101023-1	MW-1_20210210	70			
580-101023-2	MW-2_20210210	68			
580-101023-3	MW-3_20210210	63			
580-101023-4	MW-4_20210210	64			
580-101023-5	MW-5_20210210	67			
LCS 580-350303/2-A	Lab Control Sample	87			
LCSD 580-350303/3-A	Lab Control Sample Dup	90			

Eurofins TestAmerica, Seattle

Surrogate Summary

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	OTPH (50-150)
MB 580-350303/1-A	Method Blank	67
Surrogate Legend		
OTPH = o-Terphenyl		

QC Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Lab Sample ID: MB 580-349818/7

Matrix: Water

Analysis Batch: 349818

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			02/12/21 23:53	1
Ethylbenzene	ND		3.0		ug/L			02/12/21 23:53	1
m-Xylene & p-Xylene	ND		3.0		ug/L			02/12/21 23:53	1
o-Xylene	ND		2.0		ug/L			02/12/21 23:53	1
Toluene	ND		2.0		ug/L			02/12/21 23:53	1
Xylenes, Total	ND		3.0		ug/L			02/12/21 23:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		02/12/21 23:53	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/12/21 23:53	1
Dibromofluoromethane (Surr)	103		80 - 120		02/12/21 23:53	1
Toluene-d8 (Surr)	100		80 - 120		02/12/21 23:53	1

Lab Sample ID: LCS 580-349818/4

Matrix: Water

Analysis Batch: 349818

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	10.3		ug/L		103	82 - 122
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 125
Toluene	10.0	10.4		ug/L		104	80 - 120
Xylenes, Total	20.0	20.5		ug/L		103	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 126
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	106		80 - 120

Lab Sample ID: LCSD 580-349818/5

Matrix: Water

Analysis Batch: 349818

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	9.26		ug/L		93	82 - 122	10	14
Ethylbenzene	10.0	9.57		ug/L		96	80 - 120	8	14
m-Xylene & p-Xylene	10.0	9.48		ug/L		95	80 - 120	10	14
o-Xylene	10.0	9.39		ug/L		94	80 - 125	7	16
Toluene	10.0	9.52		ug/L		95	80 - 120	9	13
Xylenes, Total	20.0	18.9		ug/L		94	80 - 120	8	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 126
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

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QC Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Lab Sample ID: LCSD 580-349818/5

Matrix: Water

Analysis Batch: 349818

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120

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

Lab Sample ID: MB 580-350256/30

Matrix: Water

Analysis Batch: 350256

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			02/20/21 04:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150					02/20/21 04:18	1

Lab Sample ID: MB 580-350256/4

Matrix: Water

Analysis Batch: 350256

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			02/19/21 16:50	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150					02/19/21 16:50	1

Lab Sample ID: LCS 580-350256/31

Matrix: Water

Analysis Batch: 350256

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	912		ug/L		91	79 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	99		50 - 150				

Lab Sample ID: LCS 580-350256/5

Matrix: Water

Analysis Batch: 350256

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	974		ug/L		97	79 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	102		50 - 150				

QC Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Lab Sample ID: LCSD 580-350256/32

Matrix: Water

Analysis Batch: 350256

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	908		ug/L		91	79 - 120	1	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	100		50 - 150						

Lab Sample ID: LCSD 580-350256/6

Matrix: Water

Analysis Batch: 350256

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	976		ug/L		98	79 - 120	0	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	101		50 - 150						

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

Lab Sample ID: MB 580-350303/1-A

Matrix: Water

Analysis Batch: 350365

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 350303

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		02/22/21 11:40	02/23/21 20:56	1
Motor Oil (>C24-C36)	ND		350		ug/L		02/22/21 11:40	02/23/21 20:56	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	67		50 - 150			02/22/21 11:40	02/23/21 20:56	1	

Lab Sample ID: LCS 580-350303/2-A

Matrix: Water

Analysis Batch: 350365

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 350303

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2000	1720		ug/L		86	50 - 120		
Motor Oil (>C24-C36)	2000	2050		ug/L		103	64 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
o-Terphenyl	87		50 - 150						

Lab Sample ID: LCSD 580-350303/3-A

Matrix: Water

Analysis Batch: 350365

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 350303

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2000	1710		ug/L		85	50 - 120	1	26
Motor Oil (>C24-C36)	2000	2100		ug/L		105	64 - 120	2	24

Eurofins TestAmerica, Seattle

QC Sample Results

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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

Lab Sample ID: LCSD 580-350303/3-A

Matrix: Water

Analysis Batch: 350365

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 350303

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150

QC Association Summary

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

GC/MS VOA

Analysis Batch: 349818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-101023-1	MW-1_20210210	Total/NA	Water	8260D	
580-101023-2	MW-2_20210210	Total/NA	Water	8260D	
580-101023-3	MW-3_20210210	Total/NA	Water	8260D	
580-101023-4	MW-4_20210210	Total/NA	Water	8260D	
580-101023-5	MW-5_20210210	Total/NA	Water	8260D	
580-101023-6	Trip Blank_20210210	Total/NA	Water	8260D	
MB 580-349818/7	Method Blank	Total/NA	Water	8260D	
LCS 580-349818/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 580-349818/5	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 350256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-101023-1	MW-1_20210210	Total/NA	Water	NWTPH-Gx	
580-101023-2	MW-2_20210210	Total/NA	Water	NWTPH-Gx	
580-101023-3	MW-3_20210210	Total/NA	Water	NWTPH-Gx	
580-101023-4	MW-4_20210210	Total/NA	Water	NWTPH-Gx	
580-101023-5	MW-5_20210210	Total/NA	Water	NWTPH-Gx	
580-101023-6	Trip Blank_20210210	Total/NA	Water	NWTPH-Gx	
MB 580-350256/30	Method Blank	Total/NA	Water	NWTPH-Gx	
MB 580-350256/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 580-350256/31	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCS 580-350256/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 580-350256/32	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
LCSD 580-350256/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 350303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-101023-1	MW-1_20210210	Total/NA	Water	3510C	
580-101023-2	MW-2_20210210	Total/NA	Water	3510C	
580-101023-3	MW-3_20210210	Total/NA	Water	3510C	
580-101023-4	MW-4_20210210	Total/NA	Water	3510C	
580-101023-5	MW-5_20210210	Total/NA	Water	3510C	
MB 580-350303/1-A	Method Blank	Total/NA	Water	3510C	
LCS 580-350303/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 580-350303/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 350365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-101023-1	MW-1_20210210	Total/NA	Water	NWTPH-Dx	350303
580-101023-2	MW-2_20210210	Total/NA	Water	NWTPH-Dx	350303
580-101023-3	MW-3_20210210	Total/NA	Water	NWTPH-Dx	350303
580-101023-4	MW-4_20210210	Total/NA	Water	NWTPH-Dx	350303
580-101023-5	MW-5_20210210	Total/NA	Water	NWTPH-Dx	350303
MB 580-350303/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	350303
LCS 580-350303/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	350303
LCSD 580-350303/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	350303

Eurofins TestAmerica, Seattle

Lab Chronicle

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: MW-1_20210210

Lab Sample ID: 580-101023-1

Date Collected: 02/10/21 12:30

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 03:37	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 03:04	W1T	TAL SEA
Total/NA	Prep	3510C			350303	02/22/21 11:40	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	350365	02/23/21 21:54	ADB	TAL SEA

Client Sample ID: MW-2_20210210

Lab Sample ID: 580-101023-2

Date Collected: 02/10/21 11:20

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 04:03	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 03:29	W1T	TAL SEA
Total/NA	Prep	3510C			350303	02/22/21 11:40	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	350365	02/23/21 22:14	ADB	TAL SEA

Client Sample ID: MW-3_20210210

Lab Sample ID: 580-101023-3

Date Collected: 02/10/21 10:55

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 04:28	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 06:46	W1T	TAL SEA
Total/NA	Prep	3510C			350303	02/22/21 11:40	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	350365	02/23/21 22:33	ADB	TAL SEA

Client Sample ID: MW-4_20210210

Lab Sample ID: 580-101023-4

Date Collected: 02/10/21 10:35

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 04:54	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 07:10	W1T	TAL SEA
Total/NA	Prep	3510C			350303	02/22/21 11:40	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	350365	02/23/21 23:13	ADB	TAL SEA

Client Sample ID: MW-5_20210210

Lab Sample ID: 580-101023-5

Date Collected: 02/10/21 12:00

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 05:20	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 07:34	W1T	TAL SEA
Total/NA	Prep	3510C			350303	02/22/21 11:40	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	350365	02/23/21 23:32	ADB	TAL SEA

Eurofins TestAmerica, Seattle

Lab Chronicle

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Client Sample ID: Trip Blank_20210210

Lab Sample ID: 580-101023-6

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/10/21 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	349818	02/13/21 00:43	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	350256	02/20/21 06:21	W1T	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.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	02-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-21
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-20-00031	02-10-23

Method Summary

Client: Antea USA Inc.
Project/Site: Tacoma Junction

Job ID: 580-101023-1

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: Tacoma Junction

Job ID: 580-101023-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-101023-1	MW-1_20210210	Water	02/10/21 12:30	02/10/21 13:45	
580-101023-2	MW-2_20210210	Water	02/10/21 11:20	02/10/21 13:45	
580-101023-3	MW-3_20210210	Water	02/10/21 10:55	02/10/21 13:45	
580-101023-4	MW-4_20210210	Water	02/10/21 10:35	02/10/21 13:45	
580-101023-5	MW-5_20210210	Water	02/10/21 12:00	02/10/21 13:45	
580-101023-6	Trip Blank_20210210	Water	02/10/21 00:00	02/10/21 13:45	

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

Rush TAT Yes 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: WATJUA201.10123
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 Acct: NA	Enfos Proposal No: WR849990/00BPT-0009	Phone: 425-498-7711 Email: Megan.Richard@anteagroup.com
Lab Bottle Order No: NA	Accounting Mode: Provision ☒ 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 ☒

LOC: 580

10102

BP/RM PM: Wade Melton				Sample Details						Requested Analyses										Report Type & QC Level							
																				Limited (Standard) Package _____							
PM Phone: 360-594-7978																				Limited Plus Package _____							
PM Email: wade.melton@bp.com																				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	Analysis	Filt	Pres															S
	MW-1_20210210	2/10/21	1230	W				G		B260BTEX	X	X	X														 580-101023 Chain of Custody
	MW-2_20210210	2/10/21	1120	W				G		NWTPH-Gx	X	X	X														
	MW-3_20210210	2/10/21	1055	W				G		NWTPH-DX	X	X	X														
	MW-4_20210210	2/10/21	1035	W				G			X	X	X														
	MW-5_20210210	2/10/21	1200	W				G			X	X	X														
	Trip Blank_20210210	2/10/21	0000	W				G			X	X															

Therm ID: 1R6 Cor: 10.5 ° Unc:
 Cooler Dsc: Lg Blue
 Packing: bub FedEx:
 Cust. Seal: Yes X No UPS:
 Blue Ice: Wet, Dry, None Lab Cour:
 Other: C

Sampler's Name: Katelyn Younger	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group	Katelyn Y - Antea	2/10/11	1345	Tom Slattery / ETA-Sea	2/10/21	1345
Ship Method: Freeport 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

Temperature readings:

labeled in well in

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> pH	<u>Preservative</u> Temp	<u>Added (mls)</u>	<u>Lot #</u>
MW-1_20210210	580-101023-A-1	Amber Glass 250mL - hydrochloric acid	2			0308501F-590
MW-1_20210210	580-101023-B-1	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-2_20210210	580-101023-A-2	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-2_20210210	580-101023-B-2	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-3_20210210	580-101023-A-3	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-3_20210210	580-101023-B-3	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-4_20210210	580-101023-A-4	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-4_20210210	580-101023-B-4	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-5_20210210	580-101023-A-5	Amber Glass 250mL - hydrochloric acid				0308501F-590
MW-5_20210210	580-101023-B-5	Amber Glass 250mL - hydrochloric acid				0308501F-590

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 580-101023-1

Login Number: 101023

List Source: Eurofins TestAmerica, Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-101023-1

SDG No.: _____

Batch Number: 349818 Batch Start Date: 02/12/21 21:47 Batch Analyst: Jantanu, CharinpornBatch Method: 8260D Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	5X SUR/IS 00002	VOAMasterMix 00063	
LCS 580-349818/4		8260D		5 mL	5 mL		1 uL	10 uL	
LCSD 580-349818/5		8260D		5 mL	5 mL		1 uL	10 uL	
MB 580-349818/7		8260D		5 mL	5 mL		1 uL		
580-101023-C-6	Trip Blank 20210210	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-G-1	MW-1_20210210	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-G-2	MW-2_20210210	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-G-3	MW-3_20210210	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-G-4	MW-4_20210210	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-F-5	MW-5_20210210	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.

8260D

Page 1 of 1

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-101023-1

SDG No.: _____

Batch Number: 350256 Batch Start Date: 02/19/21 16:01 Batch Analyst: Thaneerat, Wijittra 1Batch Method: NWTPH-Gx Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	BFBGRO ARCHON 00045	GRO_LCS 00065	
MB 580-350256/4		NWTPH-Gx		5 mL	5 mL		1 uL		
LCS 580-350256/5		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	
LCS 580-350256/6		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	
MB 580-350256/30		NWTPH-Gx		5 mL	5 mL	<2 SU	1 uL		
LCS 580-350256/31		NWTPH-Gx		5 mL	5 mL	<2 SU	1 uL	25 uL	
LCS 580-350256/32		NWTPH-Gx		5 mL	5 mL	<2 SU	1 uL	25 uL	
580-101023-D-6	Trip Blank 20210210	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-H-3	MW-3_20210210	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-H-4	MW-4_20210210	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-H-5	MW-5_20210210	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-H-1	MW-1_20210210	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-101023-H-2	MW-2_20210210	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.

NWTPH-Gx

Page 1 of 1

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-101023-1

SDG No.: _____

Batch Number: 350303 Batch Start Date: 02/22/21 11:40 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 02/22/21 18:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 580-350303/1		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCS 580-350303/2		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCS 580-350303/3		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
580-101023-A-1	MW-1_20210210	3510C, NWTPH-Dx	T	00415.39 g	00169.54 g	245.9 mL	1 mL	2 SU	2 SU
580-101023-B-2	MW-2_20210210	3510C, NWTPH-Dx	T	00414.31 g	00167.48 g	246.8 mL	1 mL	2 SU	2 SU
580-101023-B-3	MW-3_20210210	3510C, NWTPH-Dx	T	00415.92 g	00169.37 g	246.6 mL	1 mL	2 SU	2 SU
580-101023-B-4	MW-4_20210210	3510C, NWTPH-Dx	T	00415.17 g	00167.62 g	247.6 mL	1 mL	2 SU	2 SU
580-101023-A-5	MW-5_20210210	3510C, NWTPH-Dx	T	00413.71 g	00167.91 g	245.8 mL	1 mL	2 SU	2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	TPH_Water_Spk 00027	TPH_WaterSurr 00063			
MB 580-350303/1		3510C, NWTPH-Dx		n/a SU		100 uL			
LCS 580-350303/2		3510C, NWTPH-Dx		n/a SU	100 uL	100 uL			
LCS 580-350303/3		3510C, NWTPH-Dx		n/a SU	100 uL	100 uL			
580-101023-A-1	MW-1_20210210	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-101023-B-2	MW-2_20210210	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-101023-B-3	MW-3_20210210	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-101023-B-4	MW-4_20210210	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-101023-A-5	MW-5_20210210	3510C, NWTPH-Dx	T	n/a SU		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.

NWTPH-Dx

Page 1 of 2

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-101023-1

SDG No.: _____

Batch Number: 350303 Batch Start Date: 02/22/21 11:40 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 02/22/21 18:04

Batch Notes	
Acid Used for pH Adjustment ID	2698580
Balance ID	sea 225
Batch Comment	viald by JBT
Analyst ID - Concentration	JBT
Concentration 1 Corrected Temperature	69.7-74.7 Degrees C
Concentration 2 Corrected Temperature	19.6 Degrees C
Analyst ID - Clean Up	JBT
Equipment ID - Concentration 1	steambath 2
Equipment ID - Concentration 2	turbovap 5
Analyst ID - Extraction	JBT
Filter ID	2707788
Method/Fraction	3510C_LVI/TPH
Na2SO4 ID	2796911
pH Indicator ID	6003004
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2796628
Prep Solvent Volume Used	100 mL
Silica Gel ID	2787666
Analyst ID - Spike Analyst	JBT
Analyst ID - Spike Witness Analyst	SS
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	661200
Thermometer ID - Concentration 2	digital readout
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Concentration 2 Uncorrected Temperature	20 Degrees C
Vial Lot Number	24162054
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.

NWTPH-Dx

Page 2 of 2

ANALYTICAL REPORT

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

Laboratory Job ID: 580-102909-1

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



Authorized for release by:
5/20/2021 12:47:28 PM

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

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

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

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Definitions/Glossary

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

Job ID: 580-102909-1

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: 580-102909-1

Job ID: 580-102909-1

Laboratory: Eurofins FGS, Seattle

Narrative

Job Narrative 580-102909-1

Receipt

Six samples were received on 5/6/2021 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 15.8° C.

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

Method NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: MW-2_20210506 (580-102909-2).

No additional 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: 580-102909-1

Client Sample ID: MW-1_20210506

Lab Sample ID: 580-102909-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	270		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-2_20210506

Lab Sample ID: 580-102909-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	35		1.0		ug/L	1		8260D	Total/NA
Ethylbenzene	17		1.0		ug/L	1		8260D	Total/NA
m-Xylene & p-Xylene	12		2.0		ug/L	1		8260D	Total/NA
Toluene	3.0		1.0		ug/L	1		8260D	Total/NA
Xylenes, Total	12		2.0		ug/L	1		8260D	Total/NA
Gasoline	1700		250		ug/L	1		NWTPH-Gx	Total/NA
#2 Diesel (C10-C24)	670		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-3_20210506

Lab Sample ID: 580-102909-3

No Detections.

Client Sample ID: MW-4_20210506

Lab Sample ID: 580-102909-4

No Detections.

Client Sample ID: MW-5_20210506

Lab Sample ID: 580-102909-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
#2 Diesel (C10-C24)	150		110		ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: Trip Blank_20210506

Lab Sample ID: 580-102909-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins FGS, Seattle

Client Sample Results

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

Job ID: 580-102909-1

Client Sample ID: MW-1_20210506

Lab Sample ID: 580-102909-1

Date Collected: 05/06/21 12:40

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/17/21 22:51	1
Ethylbenzene	ND		1.0		ug/L			05/17/21 22:51	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/17/21 22:51	1
o-Xylene	ND		1.0		ug/L			05/17/21 22:51	1
Toluene	ND		1.0		ug/L			05/17/21 22:51	1
Xylenes, Total	ND		2.0		ug/L			05/17/21 22:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		05/17/21 22:51	1
4-Bromofluorobenzene (Surr)	99		80 - 120		05/17/21 22:51	1
Dibromofluoromethane (Surr)	103		80 - 120		05/17/21 22:51	1
Toluene-d8 (Surr)	103		80 - 120		05/17/21 22:51	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			05/13/21 22:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		05/13/21 22:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	270		110		ug/L		05/11/21 11:07	05/13/21 22:09	1
Motor Oil (>C24-C36)	ND		340		ug/L		05/11/21 11:07	05/13/21 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150	05/11/21 11:07	05/13/21 22:09	1

Client Sample ID: MW-2_20210506

Lab Sample ID: 580-102909-2

Date Collected: 05/06/21 11:35

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	35		1.0		ug/L			05/17/21 23:17	1
Ethylbenzene	17		1.0		ug/L			05/17/21 23:17	1
m-Xylene & p-Xylene	12		2.0		ug/L			05/17/21 23:17	1
o-Xylene	ND		1.0		ug/L			05/17/21 23:17	1
Toluene	3.0		1.0		ug/L			05/17/21 23:17	1
Xylenes, Total	12		2.0		ug/L			05/17/21 23:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		05/17/21 23:17	1
4-Bromofluorobenzene (Surr)	105		80 - 120		05/17/21 23:17	1
Dibromofluoromethane (Surr)	89		80 - 120		05/17/21 23:17	1
Toluene-d8 (Surr)	110		80 - 120		05/17/21 23:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1700		250		ug/L			05/13/21 22:36	1

Eurofins FGS, Seattle

Client Sample Results

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

Job ID: 580-102909-1

Client Sample ID: MW-2_20210506

Lab Sample ID: 580-102909-2

Date Collected: 05/06/21 11:35

Matrix: Water

Date Received: 05/06/21 13:30

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	150		50 - 150				05/13/21 22:36	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)	670		110		ug/L		05/11/21 11:07	05/13/21 22:28	1
Motor Oil (>C24-C36)	ND		360		ug/L		05/11/21 11:07	05/13/21 22:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	70		50 - 150			05/11/21 11:07	05/13/21 22:28	1	

Client Sample ID: MW-3_20210506

Lab Sample ID: 580-102909-3

Date Collected: 05/06/21 11:00

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/17/21 23:41	1
Ethylbenzene	ND		1.0		ug/L			05/17/21 23:41	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/17/21 23:41	1
o-Xylene	ND		1.0		ug/L			05/17/21 23:41	1
Toluene	ND		1.0		ug/L			05/17/21 23:41	1
Xylenes, Total	ND		2.0		ug/L			05/17/21 23:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 126					05/17/21 23:41	1
4-Bromofluorobenzene (Surr)	97		80 - 120					05/17/21 23:41	1
Dibromofluoromethane (Surr)	102		80 - 120					05/17/21 23:41	1
Toluene-d8 (Surr)	106		80 - 120					05/17/21 23:41	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			05/13/21 23:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150					05/13/21 23:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		05/11/21 11:07	05/13/21 22:48	1
Motor Oil (>C24-C36)	ND		360		ug/L		05/11/21 11:07	05/13/21 22:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				05/11/21 11:07	05/13/21 22:48	1

Client Sample ID: MW-4_20210506

Lab Sample ID: 580-102909-4

Date Collected: 05/06/21 10:30

Matrix: Water

Date Received: 05/06/21 13:30

Method: 8260D - Volatile Organic Compounds by GC/MS									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/18/21 00:07	1
Ethylbenzene	ND		1.0		ug/L			05/18/21 00:07	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/18/21 00:07	1

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Client Sample Results

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

Job ID: 580-102909-1

Client Sample ID: MW-4_20210506

Lab Sample ID: 580-102909-4

Date Collected: 05/06/21 10:30

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0		ug/L			05/18/21 00:07	1
Toluene	ND		1.0		ug/L			05/18/21 00:07	1
Xylenes, Total	ND		2.0		ug/L			05/18/21 00:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 126					05/18/21 00:07	1
4-Bromofluorobenzene (Surr)	98		80 - 120					05/18/21 00:07	1
Dibromofluoromethane (Surr)	103		80 - 120					05/18/21 00:07	1
Toluene-d8 (Surr)	107		80 - 120					05/18/21 00:07	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			05/13/21 23:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150					05/13/21 23:24	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		05/11/21 11:07	05/13/21 23:08	1
Motor Oil (>C24-C36)	ND		350		ug/L		05/11/21 11:07	05/13/21 23:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150				05/11/21 11:07	05/13/21 23:08	1

Client Sample ID: MW-5_20210506

Lab Sample ID: 580-102909-5

Date Collected: 05/06/21 12:05

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/18/21 00:32	1
Ethylbenzene	ND		1.0		ug/L			05/18/21 00:32	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/18/21 00:32	1
o-Xylene	ND		1.0		ug/L			05/18/21 00:32	1
Toluene	ND		1.0		ug/L			05/18/21 00:32	1
Xylenes, Total	ND		2.0		ug/L			05/18/21 00:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 126					05/18/21 00:32	1
4-Bromofluorobenzene (Surr)	97		80 - 120					05/18/21 00:32	1
Dibromofluoromethane (Surr)	96		80 - 120					05/18/21 00:32	1
Toluene-d8 (Surr)	105		80 - 120					05/18/21 00:32	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			05/13/21 23:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		50 - 150					05/13/21 23:49	1

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Client Sample Results

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

Job ID: 580-102909-1

Client Sample ID: MW-5_20210506

Lab Sample ID: 580-102909-5

Date Collected: 05/06/21 12:05

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	150		110		ug/L		05/11/21 11:07	05/13/21 23:27	1
Motor Oil (>C24-C36)	ND		340		ug/L		05/11/21 11:07	05/13/21 23:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				05/11/21 11:07	05/13/21 23:27	1

Client Sample ID: Trip Blank_20210506

Lab Sample ID: 580-102909-6

Date Collected: 05/06/21 00:01

Matrix: Water

Date Received: 05/06/21 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/17/21 19:30	1
Ethylbenzene	ND		1.0		ug/L			05/17/21 19:30	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/17/21 19:30	1
o-Xylene	ND		1.0		ug/L			05/17/21 19:30	1
Toluene	ND		1.0		ug/L			05/17/21 19:30	1
Xylenes, Total	ND		2.0		ug/L			05/17/21 19:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 126					05/17/21 19:30	1
4-Bromofluorobenzene (Surr)	92		80 - 120					05/17/21 19:30	1
Dibromofluoromethane (Surr)	104		80 - 120					05/17/21 19:30	1
Toluene-d8 (Surr)	103		80 - 120					05/17/21 19:30	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			05/13/21 19:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150					05/13/21 19:45	1

Eurofins FGS, Seattle

Surrogate Summary

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

Job ID: 580-102909-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-126)	BFB (80-120)	DBFM (80-120)	TOL (80-120)
580-102909-1	MW-1_20210506	104	99	103	103
580-102909-2	MW-2_20210506	104	105	89	110
580-102909-3	MW-3_20210506	108	97	102	106
580-102909-4	MW-4_20210506	103	98	103	107
580-102909-5	MW-5_20210506	99	97	96	105
580-102909-6	Trip Blank_20210506	105	92	104	103
LCS 580-356748/4	Lab Control Sample	100	105	101	103
LCSD 580-356748/5	Lab Control Sample Dup	102	103	101	103
MB 580-356748/7	Method Blank	103	94	102	106

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB2 (50-150)			
580-102909-1	MW-1_20210506	95			
580-102909-2	MW-2_20210506	150			
580-102909-3	MW-3_20210506	93			
580-102909-4	MW-4_20210506	92			
580-102909-5	MW-5_20210506	97			
580-102909-6	Trip Blank_20210506	95			
LCS 580-356507/8	Lab Control Sample	98			
LCSD 580-356507/9	Lab Control Sample Dup	100			
MB 580-356507/7	Method Blank	91			

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		OTPH (50-150)			
580-102909-1	MW-1_20210506	67			
580-102909-2	MW-2_20210506	70			
580-102909-3	MW-3_20210506	63			
580-102909-4	MW-4_20210506	69			
580-102909-5	MW-5_20210506	70			
LCS 580-356269/2-B	Lab Control Sample	86			
LCSD 580-356269/3-B	Lab Control Sample Dup	81			
MB 580-356269/1-B	Method Blank	75			

Surrogate Legend

OTPH = o-Terphenyl

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QC Sample Results

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

Job ID: 580-102909-1

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

Lab Sample ID: MB 580-356748/7

Matrix: Water

Analysis Batch: 356748

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/17/21 18:16	1
Ethylbenzene	ND		1.0		ug/L			05/17/21 18:16	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/17/21 18:16	1
o-Xylene	ND		1.0		ug/L			05/17/21 18:16	1
Toluene	ND		1.0		ug/L			05/17/21 18:16	1
Xylenes, Total	ND		2.0		ug/L			05/17/21 18:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		05/17/21 18:16	1
4-Bromofluorobenzene (Surr)	94		80 - 120		05/17/21 18:16	1
Dibromofluoromethane (Surr)	102		80 - 120		05/17/21 18:16	1
Toluene-d8 (Surr)	106		80 - 120		05/17/21 18:16	1

Lab Sample ID: LCS 580-356748/4

Matrix: Water

Analysis Batch: 356748

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	10.4		ug/L		104	82 - 122
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120
o-Xylene	10.0	9.96		ug/L		100	80 - 125
Toluene	10.0	10.1		ug/L		101	80 - 120
Xylenes, Total	20.0	20.2		ug/L		101	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 126
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: LCSD 580-356748/5

Matrix: Water

Analysis Batch: 356748

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	9.81		ug/L		98	82 - 122	6	14
Ethylbenzene	10.0	9.73		ug/L		97	80 - 120	3	14
m-Xylene & p-Xylene	10.0	9.90		ug/L		99	80 - 120	3	14
o-Xylene	10.0	9.51		ug/L		95	80 - 125	5	16
Toluene	10.0	9.76		ug/L		98	80 - 120	4	13
Xylenes, Total	20.0	19.4		ug/L		97	80 - 120	4	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 126
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

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QC Sample Results

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

Job ID: 580-102909-1

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

Lab Sample ID: LCSD 580-356748/5

Matrix: Water

Analysis Batch: 356748

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120

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

Lab Sample ID: MB 580-356507/7

Matrix: Water

Analysis Batch: 356507

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			05/13/21 17:44	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150					05/13/21 17:44	1

Lab Sample ID: LCS 580-356507/8

Matrix: Water

Analysis Batch: 356507

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Gasoline	1000	787		ug/L		79	79 - 120	
Surrogate	%Recovery	LCS Qualifier	Limits					
4-Bromofluorobenzene (Surr)	98		50 - 150					

Lab Sample ID: LCSD 580-356507/9

Matrix: Water

Analysis Batch: 356507

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	814		ug/L		81	79 - 120	3	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	100		50 - 150						

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

Lab Sample ID: MB 580-356269/1-B

Matrix: Water

Analysis Batch: 356443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 356269

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		05/11/21 11:07	05/13/21 01:35	1
Motor Oil (>C24-C36)	ND		350		ug/L		05/11/21 11:07	05/13/21 01:35	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				05/11/21 11:07	05/13/21 01:35	1

Eurofins FGS, Seattle

QC Sample Results

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

Job ID: 580-102909-1

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

Lab Sample ID: LCS 580-356269/2-B

Matrix: Water

Analysis Batch: 356443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 356269

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)			2000	2040		ug/L		102	50 - 120		
Motor Oil (>C24-C36)			2000	2080		ug/L		104	64 - 120		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
<i>o</i> -Terphenyl	86		50 - 150								

Lab Sample ID: LCSD 580-356269/3-B

Matrix: Water

Analysis Batch: 356443

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 356269

			Spike	LCSD	LCSD				%Rec.	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			2000	1800		ug/L		90	50 - 120	13	26
Motor Oil (>C24-C36)			2000	1990		ug/L		100	64 - 120	4	24
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	81		50 - 150								

QC Association Summary

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

Job ID: 580-102909-1

GC/MS VOA

Analysis Batch: 356748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-102909-1	MW-1_20210506	Total/NA	Water	8260D	
580-102909-2	MW-2_20210506	Total/NA	Water	8260D	
580-102909-3	MW-3_20210506	Total/NA	Water	8260D	
580-102909-4	MW-4_20210506	Total/NA	Water	8260D	
580-102909-5	MW-5_20210506	Total/NA	Water	8260D	
580-102909-6	Trip Blank_20210506	Total/NA	Water	8260D	
MB 580-356748/7	Method Blank	Total/NA	Water	8260D	
LCS 580-356748/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 580-356748/5	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 356507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-102909-1	MW-1_20210506	Total/NA	Water	NWTPH-Gx	
580-102909-2	MW-2_20210506	Total/NA	Water	NWTPH-Gx	
580-102909-3	MW-3_20210506	Total/NA	Water	NWTPH-Gx	
580-102909-4	MW-4_20210506	Total/NA	Water	NWTPH-Gx	
580-102909-5	MW-5_20210506	Total/NA	Water	NWTPH-Gx	
580-102909-6	Trip Blank_20210506	Total/NA	Water	NWTPH-Gx	
MB 580-356507/7	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 580-356507/8	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 580-356507/9	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 356269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-102909-1	MW-1_20210506	Total/NA	Water	3510C	
580-102909-2	MW-2_20210506	Total/NA	Water	3510C	
580-102909-3	MW-3_20210506	Total/NA	Water	3510C	
580-102909-4	MW-4_20210506	Total/NA	Water	3510C	
580-102909-5	MW-5_20210506	Total/NA	Water	3510C	
MB 580-356269/1-B	Method Blank	Total/NA	Water	3510C	
LCS 580-356269/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 580-356269/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Cleanup Batch: 356323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-356269/1-B	Method Blank	Total/NA	Water	3630C	356269
LCS 580-356269/2-B	Lab Control Sample	Total/NA	Water	3630C	356269
LCSD 580-356269/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	356269

Analysis Batch: 356443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-356269/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	356323
LCS 580-356269/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	356323
LCSD 580-356269/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	356323

Analysis Batch: 356489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-102909-1	MW-1_20210506	Total/NA	Water	NWTPH-Dx	356269

Eurofins FGS, Seattle

QC Association Summary

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

Job ID: 580-102909-1

GC Semi VOA (Continued)

Analysis Batch: 356489 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-102909-2	MW-2_20210506	Total/NA	Water	NWTPH-Dx	356269
580-102909-3	MW-3_20210506	Total/NA	Water	NWTPH-Dx	356269
580-102909-4	MW-4_20210506	Total/NA	Water	NWTPH-Dx	356269
580-102909-5	MW-5_20210506	Total/NA	Water	NWTPH-Dx	356269

Lab Chronicle

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

Job ID: 580-102909-1

Client Sample ID: MW-1_20210506

Lab Sample ID: 580-102909-1

Date Collected: 05/06/21 12:40

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/17/21 22:51	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 22:12	CJ	FGS SEA
Total/NA	Prep	3510C			356269	05/11/21 11:07	JBT	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	356489	05/13/21 22:09	T1W	FGS SEA

Client Sample ID: MW-2_20210506

Lab Sample ID: 580-102909-2

Date Collected: 05/06/21 11:35

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/17/21 23:17	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 22:36	CJ	FGS SEA
Total/NA	Prep	3510C			356269	05/11/21 11:07	JBT	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	356489	05/13/21 22:28	T1W	FGS SEA

Client Sample ID: MW-3_20210506

Lab Sample ID: 580-102909-3

Date Collected: 05/06/21 11:00

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/17/21 23:41	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 23:00	CJ	FGS SEA
Total/NA	Prep	3510C			356269	05/11/21 11:07	JBT	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	356489	05/13/21 22:48	T1W	FGS SEA

Client Sample ID: MW-4_20210506

Lab Sample ID: 580-102909-4

Date Collected: 05/06/21 10:30

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/18/21 00:07	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 23:24	CJ	FGS SEA
Total/NA	Prep	3510C			356269	05/11/21 11:07	JBT	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	356489	05/13/21 23:08	T1W	FGS SEA

Client Sample ID: MW-5_20210506

Lab Sample ID: 580-102909-5

Date Collected: 05/06/21 12:05

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/18/21 00:32	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 23:49	CJ	FGS SEA
Total/NA	Prep	3510C			356269	05/11/21 11:07	JBT	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	356489	05/13/21 23:27	T1W	FGS SEA

Eurofins FGS, Seattle

Lab Chronicle

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

Job ID: 580-102909-1

Client Sample ID: Trip Blank_20210506

Lab Sample ID: 580-102909-6

Date Collected: 05/06/21 00:01

Matrix: Water

Date Received: 05/06/21 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	356748	05/17/21 19:30	CJB	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	356507	05/13/21 19:45	CJ	FGS SEA

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 580-102909-1

Laboratory: Eurofins FGS, Seattle

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-21

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	m-Xylene & p-Xylene
8260D		Water	o-Xylene
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: 580-102909-1

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

FGS SEA = Eurofins FGS, 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: 580-102909-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-102909-1	MW-1_20210506	Water	05/06/21 12:40	05/06/21 13:30	
580-102909-2	MW-2_20210506	Water	05/06/21 11:35	05/06/21 13:30	
580-102909-3	MW-3_20210506	Water	05/06/21 11:00	05/06/21 13:30	
580-102909-4	MW-4_20210506	Water	05/06/21 10:30	05/06/21 13:30	
580-102909-5	MW-5_20210506	Water	05/06/21 12:05	05/06/21 13:30	
580-102909-6	Trip Blank_20210506	Water	05/06/21 00:01	05/06/21 13:30	



Laboratory Management Program (LaMP) Chain of Custody Record

Soil, Sediment and Groundwater Samples

Page 1_ of 1_

BP Site Node Path: Olympic Pipeline Company
BP/RM Facility No: Tacoma Junction

Req Due Date (mm/dd/yy): Standard TAT Rush TAT Yes No X
Lab Work Order Number: 102909

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: WATJUA211.10123
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 Acct: NA	Enfos Proposal No: WR849990/00BPT-0009	Phone: 425-498-7711 Email: Megan.Richard@anteagroup.com
Lab Bottle Order No: NA	Accounting Mode: Provision <u>X</u> OOC-BU <u> </u> OOC-RM <u> </u>	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 <u> </u> BP/ARC <u>X</u>

BP/RM PM: Wade Melton	Sample Details	Requested Analyses	Report Type & QC Level
PM Phone: 360-594-7978			Limited (Standard) Package <u> </u>
PM Email: wade.melton@bp.com			Limited Plus Package <u> </u>
			Full Package <u> </u>

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Analysis	Pres	Filt	8260BTEX	NWTPH-GX	NWTPH-DX	Therm. ID:	Cor:	Unc:	Cooler Dsc:	Packing:	FedEx:	UPS:	Cust. Seal: Yes <u>X</u> No <u> </u>	Lab Cour:	Blue Ice: Wet, Dry, None <u>Wet</u>	Other: <u>cltdr</u>
	MW-1-20210506	5/6/21	1240	W				G					X	X	X											
	MW-2-20210506		1135	W				G					X	X	X											
	MW-3-20210506		1100	W				G					X	X	X											
	MW-4-20210506		1030	W				G					X	X	X											
	MW-5-20210506		1205	W				G					X	X	X											
	Trip Blank-20210506		0000	W				G					X	X												



580-102909 Chain of Custody

Sampler's Name: <u>Katelyn Younger</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group	<u>Katelyn Y - Antea</u>	<u>5/6/21</u>	<u>1330</u>	<u>[Signature]</u>	<u>EF&S</u>	<u>5/5x21</u>
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: 580-102909-1

Login Number: 102909

List Source: Eurofins FGS, Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	present
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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356748 Batch Start Date: 05/17/21 16:35 Batch Analyst: Bohn, Christina JBatch Method: 8260D Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	5X SUR/IS 00003	VOAMasterMix 00067	
LCS 580-356748/4		8260D		5 mL	5 mL		1 uL	10 uL	
LCSD 580-356748/5		8260D		5 mL	5 mL		1 uL	10 uL	
MB 580-356748/7		8260D		5 mL	5 mL		1 uL		
580-102909-B-6	Trip Blank 20210506	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-E-1	MW-1_20210506	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-C-2	MW-2_20210506	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-F-3	MW-3_20210506	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-E-4	MW-4_20210506	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-F-5	MW-5_20210506	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.

8260D

Page 1 of 1

GC VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356507 Batch Start Date: 05/13/21 15:42 Batch Analyst: Jantanu, CharinpornBatch Method: NWTPH-Gx Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	BFBGRO ARCHON 00045	GRO_LCS 00066	
MB 580-356507/7		NWTPH-Gx		5 mL	5 mL		1 uL		
LCS 580-356507/8		NWTPH-Gx		5 mL	5 mL		1 uL	50 uL	
LCSD 580-356507/9		NWTPH-Gx		5 mL	5 mL		1 uL	50 uL	
580-102909-A-6	Trip Blank 20210506	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-A-1	MW-1_20210506	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-A-2	MW-2_20210506	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-A-3	MW-3_20210506	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-A-4	MW-4_20210506	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-102909-A-5	MW-5_20210506	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.

NWTPH-Gx

Page 1 of 1

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356269 Batch Start Date: 05/11/21 11:07 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 05/11/21 16:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	TPH_Water_Spk _00027
MB 580-356269/1		3510C, 3630C, NWTPH-Dx		250 mL	1 mL	7 SU	2 SU	n/a SU	
LCS 580-356269/2		3510C, 3630C, NWTPH-Dx		250 mL	1 mL	7 SU	2 SU	n/a SU	100 uL
LCSD 580-356269/3		3510C, 3630C, NWTPH-Dx		250 mL	1 mL	7 SU	2 SU	n/a SU	100 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	TPH_WaterSurr _00064					
MB 580-356269/1		3510C, 3630C, NWTPH-Dx		100 uL					
LCS 580-356269/2		3510C, 3630C, NWTPH-Dx		100 uL					
LCSD 580-356269/3		3510C, 3630C, NWTPH-Dx		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.

NWTPH-Dx

Page 1 of 4

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356269 Batch Start Date: 05/11/21 11:07 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 05/11/21 16:00

Batch Notes	
Acid Used for pH Adjustment ID	2815022
Balance ID	SEA225
Batch Comment	Vialed by PS
Analyst ID - Concentration	NB
Concentration 1 Corrected Temperature	70.3-75.3 Degrees C
Concentration 2 Corrected Temperature	17.9 Degrees C
Analyst ID - Clean Up	PS
Equipment ID - Concentration 1	Steam Bath 1
Equipment ID - Concentration 2	TurboVap 5
Analyst ID - Extraction	JBT/NB
Filter ID	2815023
Method/Fraction	3510C_LVI?TPH
Na2SO4 ID	2854614
pH Indicator ID	6003004/6003005
Pipette/Syringe/Dispenser ID	MP4
Prep Solvent ID	2859507
Prep Solvent Volume Used	100 mL
Silica Gel ID	2835519
Analyst ID - Spike Analyst	NB
Analyst ID - Spike Witness Analyst	JBT
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	24162054
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.

NWTPH-Dx

Page 2 of 4

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356269 Batch Start Date: 05/11/21 11:07 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 05/11/21 16:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
580-102909-G-1	MW-1_20210506	3510C, NWTPH-Dx	T	00436.87 g	00179.80 g	257.1 mL	1 mL	2 SU	2 SU
580-102909-G-2	MW-2_20210506	3510C, NWTPH-Dx	T	00414.29 g	00168.70 g	245.6 mL	1 mL	2 SU	2 SU
580-102909-G-3	MW-3_20210506	3510C, NWTPH-Dx	T	00410.26 g	00168.07 g	242.2 mL	1 mL	2 SU	2 SU
580-102909-G-4	MW-4_20210506	3510C, NWTPH-Dx	T	00427.78 g	00174.74 g	253 mL	1 mL	2 SU	2 SU
580-102909-H-5	MW-5_20210506	3510C, NWTPH-Dx	T	00433.27 g	00173.16 g	260.1 mL	1 mL	2 SU	2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	TPH_WaterSurr 00064				
580-102909-G-1	MW-1_20210506	3510C, NWTPH-Dx	T	n/a SU	100 uL				
580-102909-G-2	MW-2_20210506	3510C, NWTPH-Dx	T	n/a SU	100 uL				
580-102909-G-3	MW-3_20210506	3510C, NWTPH-Dx	T	n/a SU	100 uL				
580-102909-G-4	MW-4_20210506	3510C, NWTPH-Dx	T	n/a SU	100 uL				
580-102909-H-5	MW-5_20210506	3510C, NWTPH-Dx	T	n/a SU	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.

NWTPH-Dx

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GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356269 Batch Start Date: 05/11/21 11:07 Batch Analyst: Tucker, Jonathon BBatch Method: 3510C Batch End Date: 05/11/21 16:00

Batch Notes	
Acid Used for pH Adjustment ID	2815022
Balance ID	SEA225
Batch Comment	Vialed by PS
Analyst ID - Concentration	NB
Concentration 1 Corrected Temperature	70.3-75.3 Degrees C
Concentration 2 Corrected Temperature	17.9 Degrees C
Analyst ID - Clean Up	PS
Equipment ID - Concentration 1	Steam Bath 1
Equipment ID - Concentration 2	TurboVap 5
Analyst ID - Extraction	JBT/NB
Filter ID	2815023
Method/Fraction	3510C_LVI?TPH
Na2SO4 ID	2854614
pH Indicator ID	6003004/6003005
Pipette/Syringe/Dispenser ID	MP4
Prep Solvent ID	2859507
Prep Solvent Volume Used	100 mL
Silica Gel ID	2835519
Analyst ID - Spike Analyst	NB
Analyst ID - Spike Witness Analyst	JBT
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	24162054
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.

NWTPH-Dx

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GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins FGS, Seattle Job No.: 580-102909-1

SDG No.: _____

Batch Number: 356323 Batch Start Date: 05/11/21 17:39 Batch Analyst: Tucker, Jonathon BBatch Method: 3630C Batch End Date: 05/11/21 18:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
MB 580-356269/1-A		3630C, NWTPH-Dx		1 mL	1 mL				
LCS 580-356269/2-A		3630C, NWTPH-Dx		1 mL	1 mL				
LCSD 580-356269/3-A		3630C, NWTPH-Dx		1 mL	1 mL				

Batch Notes	
Batch Comment	Vialed by PS
Analyst ID - Concentration	NB
Na2SO4 ID	2854614
Silica Gel ID	2835519
Analyst ID - Spike Analyst	NB

Basis	Basis Description

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.

NWTPH-Dx

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