



September 8, 2022

Project No. M0747.01.013

Michael R. Warfel, LG, LHG, RG
Washington State Department of Ecology
15700 Dayton Avenue N
Shoreline, Washington 98133

Re: Eighth Quarterly Compliance Groundwater Monitoring Event
North Cascade Ford Property, Sedro-Woolley, Washington
VCP Number: NW3031; CSID: 12075; FSID: 58313566

Dear Michael Warfel:

In June 2022, on behalf of VSF Properties, LLC, Maul Foster & Alongi, Inc. (MFA), conducted the eighth quarterly monitoring well sampling activities at the North Cascade Ford property, located at 116 W Ferry Street in Sedro-Woolley, Washington (the Property) (see Figure 1). The North Cascade Ford Site (the Site) includes the Property and a portion of the adjacent property to the north, owned by the BNSF Railway (see Figures 1 and 2).

Activities were conducted consistent with the groundwater compliance monitoring plan (CMP) (MFA 2020a), the addendum to the groundwater CMP (MFA 2020c), and the Washington State Model Toxics Control Act (MTCA; Washington Administrative Code 173-340-410(b)) requirements for performance monitoring.

BACKGROUND

Previous investigations identified environmental impacts in three areas of the Site, referred to as areas of concern (AOCs) 1 through 3 (MFA 2020b). In March 2020, a remedial action was completed in AOCs 1 through 3 (MFA 2020b). In the summer of that year, the groundwater CMP and the associated addendum were developed in coordination with the Washington State Department of Ecology (Ecology) to guide performance groundwater monitoring at the Site (MFA 2020a,c). Per Washington Administrative Code 173-340(b), the purpose of performance monitoring is to confirm that a remedial action has attained cleanup levels (CULs). Seven previous quarterly compliance groundwater monitoring events related to the March 2020 remedial action were conducted between September 2020 and March 2022 (MFA 2020d; 2021a,b,c,d; 2022a,b).

Chemicals of concern in AOCs 1 through 3 include diesel-range organics (DRO), lube-oil-range organics (ORO), gasoline-range organics, BTEX constituents (benzene, toluene, ethylbenzene, and total xylenes), and/or total naphthalenes. Groundwater compliance

monitoring is limited to DRO and ORO following Ecology approval on September 9, 2021 (Ecology 2021a). Table 1 shows historical groundwater analytical results associated with monitoring wells in AOCs 1 and 2 and reconnaissance groundwater samples collected in AOC 3 prior to initiating compliance monitoring in September 2020.

On September 9, 2021, Ecology approved the reduction of monitoring for constituents at the Site (i.e., limiting monitoring to DRO and ORO), as well as the removal of monitoring wells MW06 and MW12 from the compliance monitoring network (Ecology 2021a).

On December 10, 2021, Ecology requested additional analysis for two monitoring wells—1,4-dichlorobenzene for MW09 and naphthalenes for MW10—due to previous detections in those areas of the Site above the vapor intrusion screening level (Ecology 2021b). These additional constituents were not detected in groundwater analyses conducted during the December 2021 monitoring event at MW09 and MW10. On March 15, 2022, Ecology concurred with eliminating sampling for naphthalenes and 1,4-dichlorobenzene for future groundwater monitoring events (Ecology 2022a).

On April 6, 2022, Ecology approved the removal of monitoring well MW11 from the compliance monitoring network (Ecology 2022b).

FIELD AND ANALYTICAL METHODS

All June 2022 groundwater monitoring activities were conducted consistent with the groundwater CMP (MFA 2020a), the addendum to the groundwater CMP (MFA 2020c), and Ecology-approved modifications to the CMP provided via email (Ecology 2021a,b; 2022a,b). Compliance monitoring well locations are shown on Figure 2.

Potentiometric Surface Evaluation

On June 6, 2022, MFA measured static water levels in the compliance monitoring wells (see Table 2). A potentiometric surface map is provided as Figure 3. The estimated potentiometric surface contours indicate that shallow groundwater at the Site is relatively hydraulically discontinuous and show groundwater migration to the south and southwest with some localized variations, consistent with previous observations. Water levels measured during this event were generally 0.45 feet lower than levels in the March 2022 monitoring event. The average height of the water table in June 2022 was approximately two feet higher than in June 2021.

Monitoring Well Sampling

On June 6, 2022, MFA collected seven groundwater samples from six compliance monitoring wells on the Property (MW01R, MW02R, MW04, MW07, MW09, and MW10), including a field duplicate sample from monitoring well MW02R. Water quality field parameters (temperature,

specific conductance, pH, dissolved oxygen, oxygen reduction potential, and turbidity) were stabilized before sample collection. During purging, the flow rates, water levels, and water quality parameters were recorded on field sampling data sheets (see Attachment A). Under standard chain-of-custody procedures, groundwater samples were submitted to Friedman & Bruya, Inc., of Seattle, Washington, for laboratory analysis.

RESULTS

The laboratory analytical report is provided as Attachment B, and analytical data are presented in Table 3. Exceedances of the MTCA Method A CUL for heavy oils (the sum of DRO and ORO) are shown on Figure 4, and site trends for DRO, ORO, and heavy oils are presented in Figures 5, 6, and 7, respectively. Figure 8 shows the site trends for heavy oils from 2019 to 2022 to more clearly depict concentration trends that have occurred since the 2020 remedial action. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they met project-specific data quality objectives. A data validation memorandum summarizing data evaluation procedures, data usability, and deviations from specific field and/or laboratory methods is included as Attachment C. The data, with the appropriate data qualifiers assigned, are considered acceptable for their intended use.

All groundwater samples were analyzed for DRO and ORO, and heavy oils were calculated by summing DRO and ORO concentrations (one-half the method reporting limit is used for non-detect values) for comparison to the DRO MTCA Method A CUL.

AOC 1: Former Auto Repair Shop

Three groundwater samples were collected from AOC 1 monitoring wells: one each from MW01R, MW07, and MW09.

All detections of DRO and ORO, as well as the sum of heavy oils in AOC 1, were below their respective MTCA Method A CULs.

AOC 2: Former Underground Storage Tanks

Four groundwater samples, including one field duplicate at MW02R, were collected from AOC 2 monitoring wells MW02R, MW04, and MW10.

Detections of DRO and ORO in groundwater samples at MW02R, MW04, and MW10 were all below their respective MTCA Method A CULs. Two samples, including a field duplicate, were collected at MW02R with an average sum of heavy oils concentration at 495 micrograms per liter (ug/L), slightly below the MTCA Method A CUL of 500 ug/L. The sum of heavy oils in MW10 slightly exceeded the MTCA Method A CUL at 730 ug/L.

AOC 3: Former Coal Storage Sheds/Possible Buried Object

Ecology approved the removal of MW11 from the compliance monitoring network (Ecology 2022b). Therefore, no groundwater samples were collected from AOC 3.

SUMMARY

Results from the groundwater monitoring indicate the following:

- **AOC 1**
 - No detections of DRO, ORO, or heavy oils exceeded their respective MTCA Method A CULs.
- **AOC 2**
 - No detections of DRO or ORO exceeded their respective MTCA Method A CULs.
 - The sum of heavy oils (DRO and ORO) slightly exceeded the MTCA Method A CUL for DRO in MW10.
- **AOC 3**
 - Compliance monitoring has been discontinued in this AOC.

Recommendations and Request for Opinion

Eight compliance monitoring events have been completed at the Property since the remedial action in spring 2020 in accordance with the CMP and subsequent revisions approved by Ecology (MFA 2020a,b) (Ecology 2021a,b; 2022a,b). Trend plots show heavy-oils concentrations are generally decreasing in monitoring wells during the compliance monitoring period and suggest that continual decreases in heavy-oils concentrations in groundwater likely will be observed during future quarterly monitoring events (see Figures 5 through 8). Additionally, free product has not been observed since quarterly compliance groundwater monitoring began in September 2020.

The trend plots developed for the last eight quarters of groundwater sampling clearly identify that the plume at the Property is decreasing. However, CULs have not been met at all monitoring network wells; therefore, the following modification is proposed for subsequent groundwater monitoring events at the Property, consistent with recommendations provided by Ecology following the seven quarterly groundwater monitoring reports (Ecology 2022b):

- Reduction in monitoring frequency to 15-month intervals for a span of five years, until the time of the first periodic review by Ecology in 2027, as follows:

- September 2022
- December 2023
- March 2025
- June 2026

This reduction in sampling frequency will continue to allow assessment of seasonal trends at the Property and monitor concentrations until compliance with CULs is achieved. It is anticipated that additional modifications to the groundwater CMP would be assessed during the first periodic review in 2027. An environmental covenant is currently being executed for the Property that is consistent with this proposed sampling modification.

In accordance with this proposed sampling modification, the next groundwater monitoring event would be conducted in September 2022.

If you have any questions, please feel free to contact us.

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Sincerely,

Maul Foster & Alongi, Inc.

Carolyn R. Wise, LHG
Project Hydrogeologist

09-08-2022



Christian Sifford, GIT
Staff Geologist

Attachments: Limitations
References
Tables
Figures
A—Water Field Sampling Data Sheets
B—Analytical Laboratory Report
C—Data Validation Memorandum

cc: Larry Setchell, Setchell NW Legal Services, P.S.
Holly Stafford, Chmelik, Sitkin & Davis, P.S.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Ecology. 2021a. M. Warfel, Washington State Department of Ecology. *VCP NW3031 North Cascade Ford, Sedro-Woolley, WA*. Email to C. Wise, Maul Foster & Alongi, Inc. September 9.

Ecology. 2021b. M. Warfel, Washington State Department of Ecology. *VSF Sedro-Woolley—fifth quarterly GW Report (VCP: NW3031)*. Email to C. Wise, Maul Foster & Alongi, Inc. December 10.

Ecology. 2022a. M. Warfel, Washington State Department of Ecology. *VCP NW3031 North Cascade Ford, Sedro-Woolley, WA*. Email to C. Wise, Maul Foster & Alongi, Inc. March 15.

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MFA. 2016. *Interim remedial action completion report, North Cascade Ford property, Sedro-Woolley, Washington*. Maul Foster & Alongi, Inc., Bellingham, Washington. November 8.

MFA. 2020a. *Groundwater Compliance Monitoring Plan, North Cascade Ford Property, Sedro-Woolley, Washington*. Prepared for VSF Properties, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. July 8.

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MFA. 2020c. J. Maul, Maul Foster & Alongi, Inc. *Addendum to Groundwater Compliance Monitoring Plan, North Cascade Ford Property, 116 W. Ferry Street, Sedro-Woolley, Washington, Facility Site ID: 58313566; Cleanup Site ID: 12075*. Memorandum to M. Warfel, Washington State Department of Ecology. August 10.

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MFA. 2021b. M. Murray and C. Wise, Maul Foster & Alongi, Inc. *Third Quarterly Compliance Groundwater Monitoring Event, North Cascade Ford Property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566*. Letter to M. Warfel, Washington State Department of Ecology. April 8.

MFA. 2021c. M. Murray and C. Wise, Maul Foster & Alongi, Inc. *Fourth Quarterly Compliance Groundwater Monitoring Event, North Cascade Ford Property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566*. Letter to M. Warfel, Washington State Department of Ecology. August 9.

MFA. 2021d. C. Wise and A. Bixby, Maul Foster & Alongi, Inc. *Fifth Quarterly Compliance Groundwater Monitoring Event, North Cascade Ford Property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566*. Letter to M. Warfel, Washington State Department of Ecology. November 11.

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MFA. 2022b. C. Wise and C. Sifford, Maul Foster & Alongi, Inc. *Seventh Quarterly Compliance Groundwater Monitoring Event, North Cascade Ford Property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566*. Letter to M. Warfel, Washington State Department of Ecology. April 4.

ZGA. 2017. *Draft remedial action report, North Cascade Ford, 116 West Ferry Street, Sedro-Woolley, Skagit County, Washington*. Prepared for 116 West Ferry Street, LLC, and Lane Properties. Zipper Geo Associates, LLC, Lynnwood, Washington. September 1.

TABLES



Table 1
Historical Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Sample Name	Collection Date	Collection Depth (ft bgs) ^(a)	Benzene	Ethylbenzene	Toluene	Xylenes ^(b)	Gasoline-Range Organics	Diesel-Range Organics	Lube-Oil-Range Organics	Total Naphthalenes
MTCA Method A CUL:					5	700	1,000	1,000	800	500	500	160
1	MW01	MW1-W-8.5	05/15/2012	5.61-13.44	0.3	0.2 U	0.2 U	0.4 U	400	1,300	240	10.53
		FIELD DUPLICATE			0.3	0.2 U	0.2 U	0.4 U	380	1,200	220	11.36
		MW01-GW-20121019	10/09/2012	9.87-13.44	--	--	--	--	--	1,800	490	11.18
		MW01	04/10/2014	NM	0.2 U	0.2 U	0.2 U	0.4 U	250 U	1,700	870	--
		MWDUP			0.2 U	0.2 U	0.2 U	0.4 U	250 U	1,600	930	--
		MW01-GW-140618	06/18/2014	6.09-13.45	--	--	--	--	--	1,400	310	--
		FD-GW-140618			--	--	--	--	--	1,700	350	--
		MW01-GW-091014	09/10/2014	7.74-13.44	--	--	--	--	--	1,300	300	--
		FD-091014			--	--	--	--	--	1,400	390	--
		MW01-GW-121014	12/10/2014	6.08-13.46	--	--	--	--	--	2,400	1,400	--
		FD-121014			--	--	--	--	--	1,900	1,200	--
		MW01-GW-112816	11/28/2016	6.12-13.43	--	--	--	--	--	1,300	610 U	--
		MWDUP-GW-112816			--	--	--	--	--	1,300	590 U	--
		MW01-GW-042617	04/26/2017	5.35-13.40	--	--	--	--	100 U	620	510 J	--
		MWDUP-GW-042617			--	--	--	--	100 U	560	410 U	--
		MW01-GW-101718	10/17/2018	9.70-13.40	--	--	--	--	500 U	900	1,500	--
		MW01-GW-032819	03/28/2019	6.82-13.41	--	--	--	--	370 J	2,400	2,200	--
	MW05	MW05-GW-042617	04/26/2017	5.76-10.60	--	--	--	--	490	1,300	1,100	--
		MW05-GW-032819	03/28/2019	6.93-10.63	--	--	--	--	600 J	1,500	460	--
	MW07	MW07-GW-042617	04/26/2017	7.85-19.74	--	--	--	--	100 U	260 U	410 U	--
		MW07-GW-101718	10/17/2018	9.25-19.74	--	--	--	--	100 U	250 U	400 U	--
		MW07-GW-032819	03/28/2019	7.95-19.74	--	--	--	--	100 U	250 U	410 U	--
	MW08	MW08-GW-042617	04/26/2017	7.38-15.80	--	--	--	--	400 U	1,000	690	--
		MW08-GW-101718	10/17/2018	10.05-15.80	--	--	--	--	100 U	700	580	--
		MWDUP-GW-101718			--	--	--	--	500 U	780	970	--
		MW08-GW-032819	03/28/2019	6.85-15.82	--	--	--	--	100 U	950	460	--
		MWDUP-GW-032819			--	--	--	--	100 U	1,000	510	--
2	MW02 (decommissioned in September 2016)	MW2-W-9	05/16/2012	6.65-13.85	0.2 U	0.2 U	0.2 U	0.4 U	250 U	1,900	240	ND
		MW02-GW-20121019	10/09/2012	9.29-13.84	--	--	--	--	--	690	200 U	--
		MW02	04/10/2014	6.12-13.81	--	--	--	--	--	11,000	1,300	--
		MW02-GW-140618	06/18/2014	6.98-13.80	--	--	--	--	--	3,800	410	--
		MW02-GW-091014	09/10/2014	8.37-13.84	--	--	--	--	--	770	200 U	--
		MW02-GW-121014	12/10/2014	7.11-13.85	--	--	--	--	--	1,300	410	--
	MW02R (replacement well for MW02)	MW02R-GW-042617	04/26/2017	6.60-14.80	--	--	--	--	--	750	410 U	--
		MW02R-GW-101718	10/17/2018	9.90-14.80	--	--	--	--	--	480	450	--
		MW02R-GW-032819	03/28/2019	7.60-14.79	--	--	--	--	--	680	470	--

Table 1
Historical Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Sample Name	Collection Date	Collection Depth (ft bgs) ^(a)	Benzene	Ethylbenzene	Toluene	Xylenes ^(b)	Gasoline-Range Organics	Diesel-Range Organics	Lube-Oil-Range Organics	Total Naphthalenes
MTCA Method A CUL:					5	700	1,000	1,000	800	500	500	160
2	MW04	MW04-GW-042617	04/26/2017	6.39-13.60	--	--	--	--	--	260	450	--
		MW04-GW-101718	10/17/2018	10.23-13.60	--	--	--	--	--	250 U	420 U	--
		MW04-GW-032819	03/28/2019	7.40-13.58	--	--	--	--	--	260 U	410 U	--
	MW06	MW06-GW-042617	04/26/2017	7.66-19.74	--	--	--	--	--	260 U	410 U	--
		MW06-GW-101718	10/17/2018	10.6-19.74	--	--	--	--	100 U	250 U	400 U	--
		MW06-GW-032819	03/28/2019	5.73-13.88	--	--	--	--	100 U	260 U	410 U	--
3	GP51	GP51-W-11.0	11/16/2016	8.85-12.0	15 J	480 J	6.1 J	1000 J	7,400 J	--	--	--
	GP76	GP76-W-10.0	04/25/2017	6.0-15.0	5.8	230	10 U	8.4	6,900	2,800 J	420 U	428
<p>Notes</p> <p>Analytical results are shown in micrograms per liter (parts per billion).</p> <p>Bolding indicates a detection.</p> <p>Shading indicates a MTCA Method A CUL exceedance; non-detect results ("U") were not compared with screening criteria.</p> <p>-- = not analyzed.</p> <p>AOC = area of concern.</p> <p>CUL = cleanup level.</p> <p>ft bgs = feet below ground surface.</p> <p>J = result is estimated.</p> <p>MTCA = Model Toxics Control Act.</p> <p>MW = monitoring well.</p> <p>ND = not detected.</p> <p>NM = water level not measured because of unanticipated presence of free product.</p> <p>U = analyte not detected at or above method reporting limit.</p> <p>^(a)Sample collection depths are from top of water table or top of screened interval, whichever is deeper, to bottom of screened interval.</p> <p>^(b)Total xylenes are sum of m,p-xylene and o-xylene. When both results are non-detect, the higher reporting limit is used.</p>												

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW01 (decommissioned in February 2020)	56.09	05/15/2012	--	5.61	NA	50.48
		10/09/2012	--	9.87	NA	46.22
		12/03/2012	--	6.96	NA	49.13
		04/10/2014	NM ^(b)	NM ^(b)	NA	NM ^(b)
		06/17/2014	NM ^(c)	6.01	NA	50.16
		06/18/2014	--	6.09	NA	50.00
		09/10/2014	NM ^(c)	7.74	NA	48.43
		12/10/2014	0.01 ^(d)	6.09	6.08	50.09
		04/26/2017	--	5.35	NA	50.74
		05/31/2017	--	5.96	NA	50.13
		10/17/2018	0.02	9.70	9.69	46.40
		12/06/2018	NM ^(e)	NA ^(e)	NA ^(e)	NA ^(e)
		03/28/2019	NM ^(e)	NA ^(e)	NA ^(e)	NA ^(e)
MW01R	56.32	09/22/2020	--	9.94	NA	46.38
		10/14/2020	--	7.82	NA	48.50
		12/16/2020	--	5.84	NA	50.48
		03/17/2021	--	5.39	NA	50.93
		06/22/2021	--	7.27	NA	49.05
		09/27/2021	--	7.79	NA	48.53
		12/16/2021	--	4.19	NA	52.13
		03/15/2022	--	4.92	NA	51.40
		06/06/2022	--	5.20	NA	51.12

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW02 (decommissioned in September 2016)	56.73	05/15/2012	--	6.65	NA	50.08
		10/09/2012	--	9.29	NA	47.44
		12/03/2012	--	8.45	NA	48.28
		04/10/2014	--	6.12	NA	50.61
		06/17/2014	--	6.96	NA	49.77
		06/18/2014	--	6.98	NA	49.75
		09/10/2014	--	8.37	NA	48.36
		12/10/2014	--	7.11	NA	49.62
MW02R	56.59	04/26/2017	--	6.60	NA	49.99
		05/31/2017	--	7.07	NA	49.52
		10/17/2018	--	9.90	NA	46.69
		12/06/2018	--	8.80	NA	47.79
		03/28/2019	--	7.60	NA	48.99
		09/22/2020	--	9.28	NA	47.31
		10/14/2020	--	9.41	NA	47.18
		12/16/2020	--	7.79	NA	48.80
		03/17/2021	--	6.23	NA	50.36
		06/22/2021	--	8.12	NA	48.47
		09/27/2021	--	10.04	NA	46.55
		12/16/2021	--	5.31	NA	51.28
		03/15/2022	--	5.88	NA	50.71
		06/06/2022	--	6.24	NA	50.35

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VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW03	55.08	05/15/2012	--	5.40	NA	49.68
		10/09/2012	--	8.11	NA	46.97
		12/03/2012	--	5.28	NA	49.80
		04/10/2014	--	5.00	NA	50.08
		06/17/2014	--	5.66	NA	49.42
		06/18/2014	--	5.87	NA	49.21
		09/10/2014	--	6.94	NA	48.14
		12/10/2014	--	5.10	NA	49.98
		05/31/2017	--	5.75	NA	49.33
		10/17/2018	--	7.72	NA	47.36
		12/06/2018	--	5.92	NA	49.16
		03/28/2019	--	5.73	NA	49.35
MW04	56.32	04/26/2017	--	6.39	NA	49.93
		05/31/2017	--	6.88	NA	49.44
		10/17/2018	--	10.23	NA	46.09
		12/06/2018	--	8.62	NA	47.70
		03/28/2019	--	7.40	NA	48.92
		09/22/2020	--	9.06	NA	47.26
		12/16/2020	--	7.71	NA	48.61
		03/17/2021	--	6.04	NA	50.28
		06/22/2021	--	7.96	NA	48.36
		09/27/2021	--	10.31	NA	46.01
		12/16/2021	--	5.12	NA	51.20
		03/15/2022	--	5.69	NA	50.63
		06/06/2022	--	6.35	NA	49.97

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW05 (decommissioned in February 2020)	56.25	04/26/2017	--	5.76	NA	50.49
		05/31/2017	--	6.35	NA	49.90
		10/17/2018	--	NA ^(f)	NA ^(f)	NA ^(f)
		12/06/2018	--	8.05	NA	48.20
		03/28/2019	--	6.93	NA	49.32
MW06	56.58	04/26/2017	--	7.66	NA	48.92
		05/31/2017	--	8.06	NA	48.52
		10/17/2018	--	10.60	NA	45.98
		12/06/2018	--	9.10	NA	47.48
		03/28/2019	--	5.73	NA	50.85
		09/22/2020	--	10.84	NA	45.74
		12/16/2020	--	8.25	NA	48.33
		03/17/2021	--	7.11	NA	49.47
		06/22/2021	--	8.72	NA	47.86
		09/27/2021	--	10.83	NA	45.75
		12/16/2021	--	5.60	NA	50.98
		03/15/2022	--	6.12	NA	50.46
		06/06/2022	--	6.40	NA	50.18

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW07	56.46	04/26/2017	--	7.85	NA	48.61
		05/31/2017	--	8.02	NA	48.44
		10/17/2018	--	9.25	NA	47.21
		12/06/2018	--	9.15	NA	47.31
		03/28/2019	--	7.95	NA	48.51
	NA ^(g)	09/22/2020	--	10.42 ^(g)	NA ^(g)	NA ^(g)
	56.30	12/16/2020	--	8.24	NA	48.06
		03/17/2021	--	6.92	NA	49.38
		06/22/2021	--	8.80	NA	47.50
		09/27/2021	--	10.21	NA	46.09
		12/16/2021	--	5.17	NA	51.13
		03/05/2022	--	4.51	NA	51.79
		06/06/2022	--	5.13	NA	51.17
MW08 (decommissioned in February 2020)	56.48	04/26/2017	--	7.38	NA	49.10
		05/31/2017	--	8.01	NA	48.47
		10/17/2018	--	10.05	NA	46.43
		12/06/2018	--	9.02	NA	47.46
		03/28/2019	--	6.85	NA	49.63
MW09	56.66	09/22/2020	--	9.26	NA	47.40
		10/14/2020	--	8.46	NA	48.20
		12/16/2020	--	6.17	NA	50.49
		03/17/2021	--	5.70	NA	50.96
		06/22/2021	--	7.57	NA	49.09
		09/27/2021	--	8.74	NA	47.92
		12/16/2021	--	4.51	NA	52.15
		03/15/2022	--	5.23	NA	51.43
		06/06/2022	--	5.53	NA	51.13

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs) ^(a)	Groundwater Elevation (feet, NAVD 88)
MW10	56.26	09/22/2020	--	9.71	NA	46.55
		10/14/2020	--	9.21	NA	47.05
		12/16/2020	--	7.13	NA	49.13
		03/17/2021	--	5.80	NA	50.46
		06/22/2021	--	7.62	NA	48.64
		09/27/2021	--	9.42	NA	46.84
		12/16/2021	--	4.78	NA	51.48
		03/15/2022	--	5.44	NA	50.82
		06/06/2022	--	5.99	NA	50.27
MW11	56.2	09/22/2020	--	10.48	NA	45.72
		12/16/2020	--	6.51	NA	49.69
		03/17/2021	--	5.46	NA	50.74
		06/22/2021	--	7.72	NA	48.48
		09/27/2021	--	9.21	NA	46.99
		12/16/2021	--	4.28	NA	51.92
		03/15/2022	--	5.03	NA	51.17
		06/06/2022	--	5.45	NA	50.75
MW12	56.39	09/22/2020	--	10.24	NA	46.15
		12/16/2020	--	7.85	NA	48.54
		03/17/2021	--	6.67	NA	49.72
		06/22/2021	--	8.69	NA	47.70
		09/27/2021	--	10.59	NA	45.80
		12/16/2021	--	5.79	NA	50.60
		03/15/2022	--	6.33	NA	50.06
		06/06/2022	--	6.93	NA	49.46

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



Notes

-- = NAPL not observed.

bgs = below ground surface.

MP = measuring point.

MW = monitoring well.

NA = not applicable.

NAPL = nonaqueous-phase liquid.

NAVD 88 = North American Vertical Datum of 1988.

NM = not measured.

^(a)Water level corrected for presence of NAPL, using assumed product density of 0.8 grams per cubic centimeter.

^(b)NAPL was observed, but interface probe was not available to measure NAPL thickness and water level.

^(c)NAPL was observed on probe and tubing, but measurable and extractable quantity was not present.

^(d)NAPL thickness was measured, but extractable quantity was not present.

^(e)NAPL was present, coating entire probe tip and tubing; coated probe tip prevented measurement of thickness or water level.

^(f)Water level may not be representative of groundwater elevation because screened interval was above low water table.

^(g)Well monument was compressed during implementation of remedial action, and casing had to be cut down to properly secure monument. Water level measurement not collected. New well monument installed on 10/01/2020.

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils ^(a)	1,4-Dichloro-benzene	Total Naphth. ^(b)
Units:			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A CUL: ⁽¹⁾			5	700	1,000	1,000	1,000 ^(c)	500	500	500	NV	160
1	MW01R	09/22/2020	1 U	1 U	1 U	3.7	160	1,900	610	2,510	--	--
		10/14/2020	20 U	20 U	20 U	60 U	100 U	200	260 U	330	--	20 U
		12/16/2020	1 U	1 U	1 U	3 U	100 U	250	250 U	375	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	120	250 U	245	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	370	250 U	495	--	--
		09/27/2021	--	--	--	--	--	93	250 U	218	--	--
		12/16/2021	--	--	--	--	--	70	250 U	195	--	--
		03/15/2022	--	--	--	--	--	79	250 U	204	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
	MW07	09/22/2020	1 U	1 U	1 U	3 U	100 U	130	250 U	255	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	89	250 U	214	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	96	250 U	221	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	360	290	650	--	--
		09/27/2021	--	--	--	--	--	160	250 U	285	--	--
		12/16/2021	--	--	--	--	--	59	250 U	184	--	--
		03/15/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
	MW09	09/22/2020	1 U	1 U	1 U	3 U	100 U	640	620	1,260	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	230	300	530	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	210	390	600	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	120	250 U	245	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	150	250 U	275	--	--
		09/27/2021	--	--	--	--	--	270	290	560	--	--
		12/16/2021	--	--	--	--	--	91	300 U	241	1 U	--
		03/15/2022	--	--	--	--	--	69	250 U	194	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
2	MW02R	09/22/2020	1 U	1 U	1 U	3 U	100 U	780	450	1,230	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	600	390	990	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	680	310	990	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	580	270	850	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	560	250 U	685	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	530	250 U	655	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils ^(a)	1,4-Dichloro-benzene	Total Naphth. ^(b)
Units:			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A CUL: ⁽¹⁾			5	700	1,000	1,000	1,000 ^(c)	500	500	500	NV	160
2	MW02R	09/27/2021	--	--	--	--	--	440	250 U	565	--	--
		12/16/2021	--	--	--	--	--	580	330	910	--	--
		12/16/2021	--	--	--	--	--	390	250 U	515	--	--
		03/15/2022	--	--	--	--	--	400	250 U	525	--	--
		06/06/2022	--	--	--	--	--	340	250 U	465	--	--
		06/06/2022	--	--	--	--	--	400	250 U	525	--	--
	MW04	09/22/2020	1 U	1 U	1 U	3 U	100 U	260	250 U	385	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	220	280	500	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	220	250 U	345	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	300	250 U	425	--	--
		09/27/2021	--	--	--	--	--	290	250 U	415	--	--
		09/27/2021	--	--	--	--	--	180	250 U	305	--	--
		12/16/2021	--	--	--	--	--	150	250 U	275	--	--
		03/15/2022	--	--	--	--	--	190	250 U	315	--	--
		06/06/2022	--	--	--	--	--	260	300 U	410	--	--
	MW06	09/22/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
	MW10	09/22/2020	1 U	1 U	1 U	3 U	370	1,900	250 U	2,025	--	--
		10/14/2020	20 U	20 U	20 U	60 U	550	2,000	400	2,400	--	65.1
		12/16/2020	1 U	1 U	1 U	3 U	100 U	160	250 U	285	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	140	250 U	265	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	100	250 U	225	--	--
		09/27/2021	--	--	--	--	--	2,200	280	2,480	--	--
		12/16/2021	--	--	--	--	--	110	250 U	235	--	0.4 U
		03/15/2022	--	--	--	--	--	200	250 U	325	--	--
		03/15/2022	--	--	--	--	--	230	280	510	--	--
		06/06/2022	--	--	--	--	--	260	470	730	--	--
	MW12	09/22/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
	MW12	06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils ^(a)	1,4-Dichloro-benzene	Total Naphth. ^(b)
Units:			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A CUL. ⁽¹⁾			5	700	1,000	1,000	1,000 ^(c)	500	500	500	NV	160
3	MW11	09/22/2020	1 U	30	1 U	16	390	350	300 U	500	--	18.8
		09/22/2020	1 U	30	1 U	17	380	200	250 U	325	--	21.7
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		09/27/2021	--	--	--	--	--	230	250 U	355	--	--
		12/16/2021	--	--	--	--	--	50 U	250 U	250 U	--	--
		03/16/2022	--	--	--	--	--	50 U	250 U	250 U	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington



Notes

Detected values are shown in bold font.

Shading indicates a MTCA Method A CUL exceedance; non-detect results (U) were not compared with screening criteria.

-- = not analyzed.

AOC = area of concern.

CUL = cleanup level.

DRO = diesel-range organics.

GRO = gasoline-range organics.

MTCA = Model Toxics Control Act.

Naphth. = naphthalenes.

NV = no value.

ORO = lube-oil-range organics.

U = result is non-detect at the reporting limit.

ug/L = micrograms per liter (parts per billion).

^(a)Heavy oils are the sum of DRO and ORO. When results are non-detect, half the reporting limit is used. When all results are non-detect, the highest reporting limit is shown.

^(b)Total naphthalenes are the sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. Where 1- and 2-methylnaphthalene are not analyzed, total naphthalene is represented by the naphthalene result. When all results are non-detect, the highest reporting limit is shown.

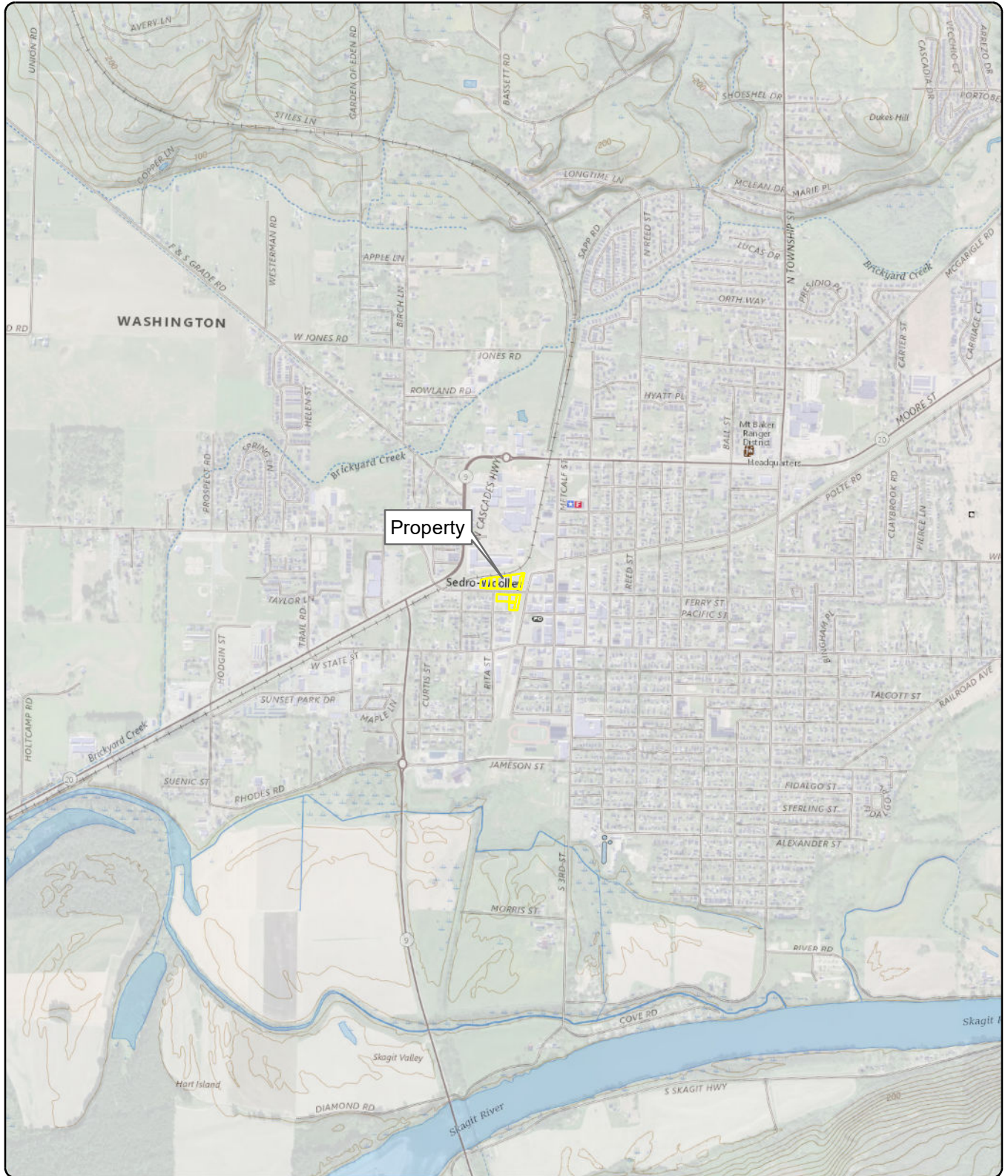
^(c)MTCA Method A CUL with no detectable benzene.

Reference

⁽¹⁾Washington State Department of Ecology. 2021. *Cleanup Levels and Risk Calculation (CLARC) table*. Washington State Department of Ecology - Toxics Cleanup Program. July.

FIGURES





Property Address: 116 W Ferry Street, Sedro-Woolley, Washington
 Source: US Geological Survey (1990) 7.5-minute
 topographic quadrangle: Sedro-Woolley North
 Section 24, Township 35 North, Range 4 East

Legend

 Property Parcel

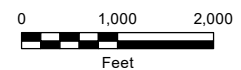
Figure 1 Property Location

North Cascade Ford Property
 Sedro-Woolley, Washington



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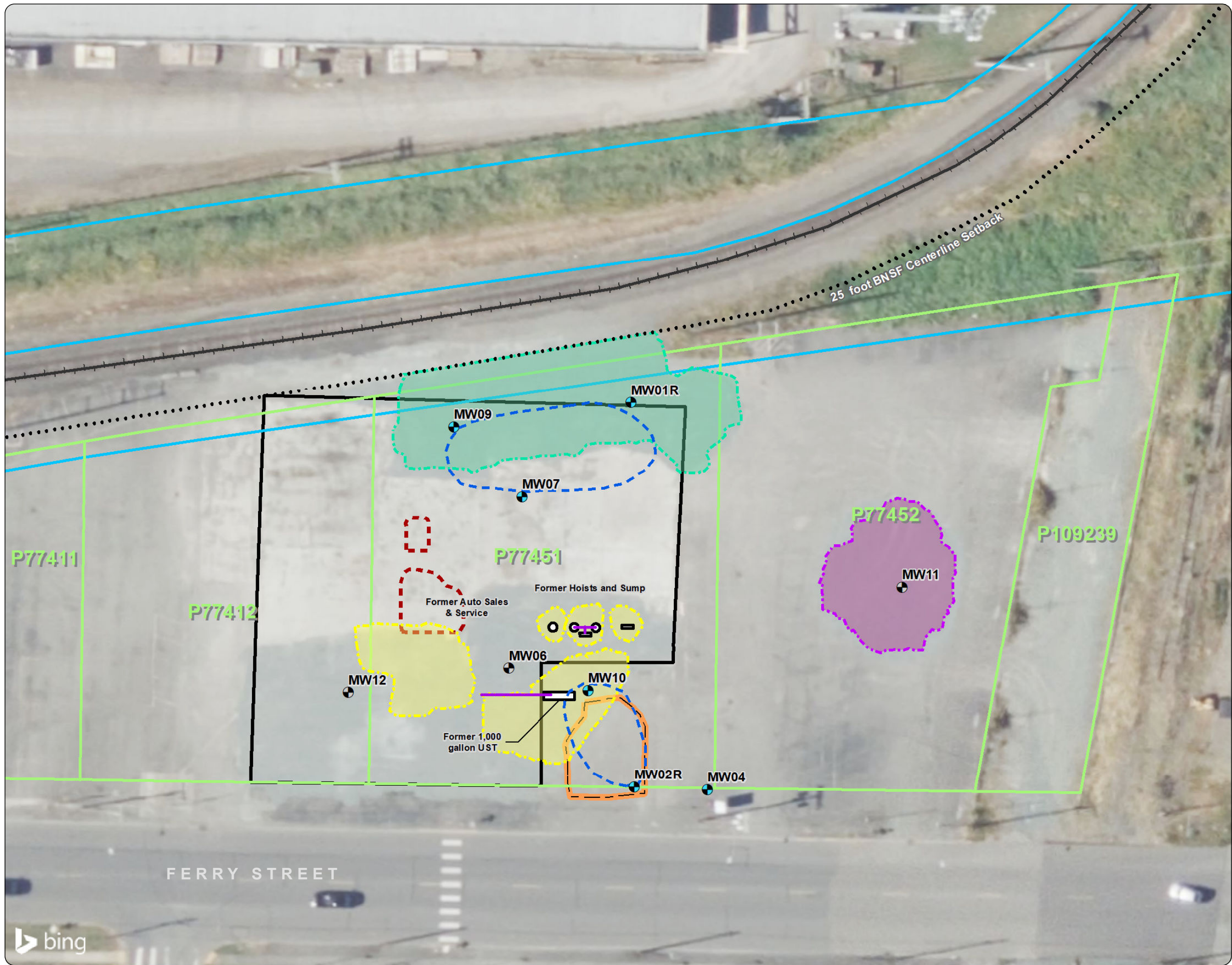


Figure 2
Compliance Monitoring
Well Network

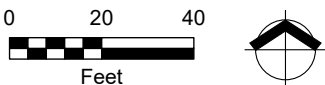
North Cascade Ford Property
Sedro-Woolley, Washington

Legend

- Compliance Monitoring Well
- Other Monitoring Well
- Product Line
- AOC 1 Excavation (MFA 2020b)
- AOC 2 Excavation (MFA 2020b)
- AOC 3 Excavation (MFA 2020b)
- Estimated Extent of Petroleum Impacts in Groundwater
- UST Interim Action (MFA 2016)
- Hoist Removal Excavation (ZGA 2017)
- Former Building Footprint
- Property Parcel
- BNSF-Owned Parcel

Notes:
All features are approximate.
All structures on the property were removed prior to remedial action.
The excavations areas are set back from the BNSF railroad centerline by 25 feet.
The surveyed Property parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the Property and BNSF parcels.
AOC = area of concern.
BNSF = BNSF Railway.
Property = North Cascade Ford Property.
UST = underground storage tank.
ZGA = Zipper Geo Associates.

Sources:
Adjacent parcel boundaries obtained from Skagit County.
Aerial photograph obtained from Microsoft Bing.
Excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020.
Property parcel boundaries surveyed by Wilson Engineering, LLC.



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Reviewed By: sturner
Produced By: sturner
Project: M0747.01.013

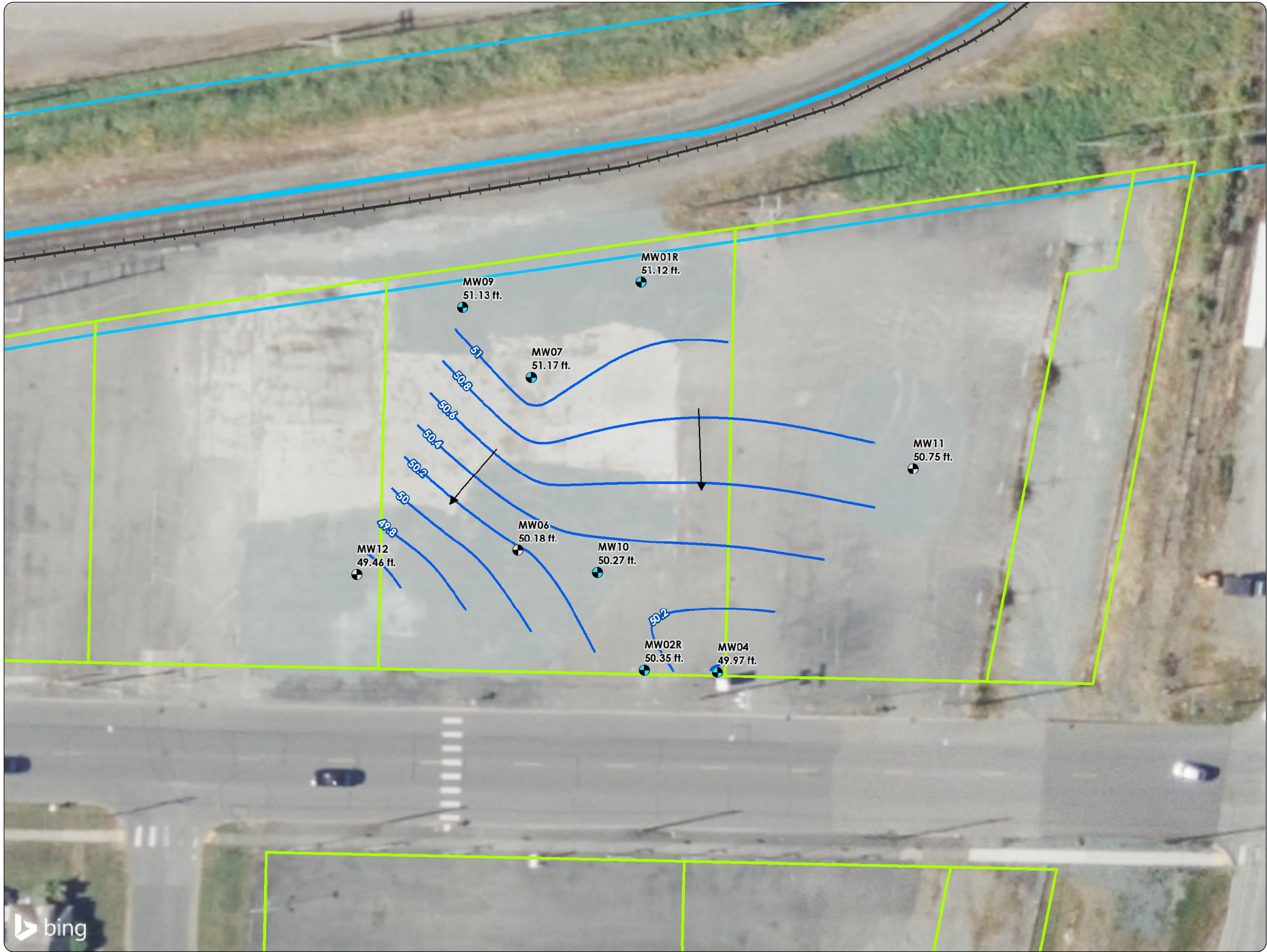
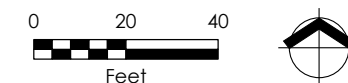


Figure 3
Groundwater Elevation
Contours - June 2022
North Cascade Ford Property
Sedro-Woolley, Washington

Legend

- Compliance Monitoring Well
- Other Monitoring Well
- Groundwater Elevation Contour (feet NAVD 88; 0.2-ft. interval)
- Approximate Groundwater Flow Direction
- BNSF Railroad Centerline
- Property Parcel

Notes:
The surveyed Property parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the Property and BNSF parcels.
Water levels measured on June 6, 2022.
BNSF = BNSF Railway.
ft. = feet.
NAVD 88 = North American Vertical Datum of 1988.



Data Sources:
Adjacent parcel boundaries obtained from Skagit County.
Aerial photograph obtained from Microsoft Bing.
Property parcel boundaries surveyed by Wilson Engineering, LLC.

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Print Date: 9/26/2022
Approved By: slumer
Produced By: slumer
Project: M0747.01.013

Figure 4
Groundwater Exceedances -
June 2022

North Cascade Ford Property
Sedro-Woolley, Washington

Legend

- Compliance Monitoring Well
- Other Monitoring Well
- Heavy Oils Exceedance
- Product Line
- AOC 1 Excavation (MFA 2020b)
- AOC 2 Excavation (MFA 2020b)
- AOC 3 Excavation (MFA 2020b)
- Estimated Extent of Petroleum Impacts in Groundwater
- UST Interim Action (MFA 2016)
- Hoist Removal Excavation (ZGA 2017)
- Former Building Footprint
- Property Parcel
- BNSF-Owned Parcel

Notes:
All features are approximate.
All results were compared to the MTCA Method A DRO cleanup level of 500 ug/L.
Analytical results are shown in ug/L.
Bolding indicates a detection.
Shading indicates a cleanup level exceedance.
The surveyed Property parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the Property and BNSF parcels.
AOC = area of concern.
BNSF = BNSF Railway.
DRO = diesel-range organics.
heavy oils = sum of DRO and ORO.
MTCA = Model Toxics Control Act.
ORO = oil-range organics.
Property = North Cascade Ford Property.
U = result is not detected.
ug/L = micrograms per liter.
UST = underground storage tank.
ZGA = Zipper Geo Associates.

Data Sources:
Adjacent parcel boundaries obtained from Skagit County.
Aerial photograph obtained from Microsoft Bing.
Excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020.
Property parcel boundaries surveyed by Wilson Engineering, LLC.

02040
Feet





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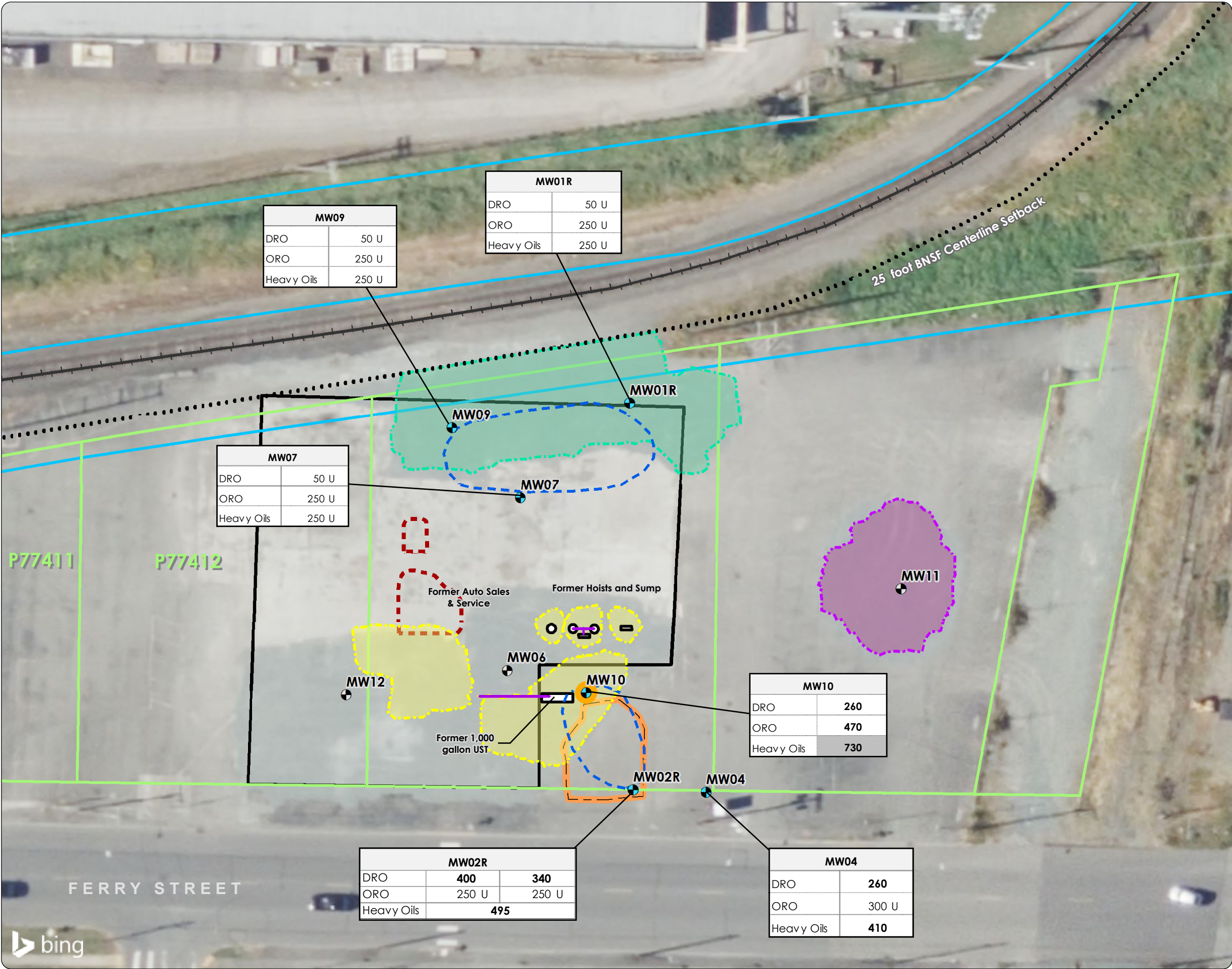


Figure 5
Diesel-Range Organics Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington

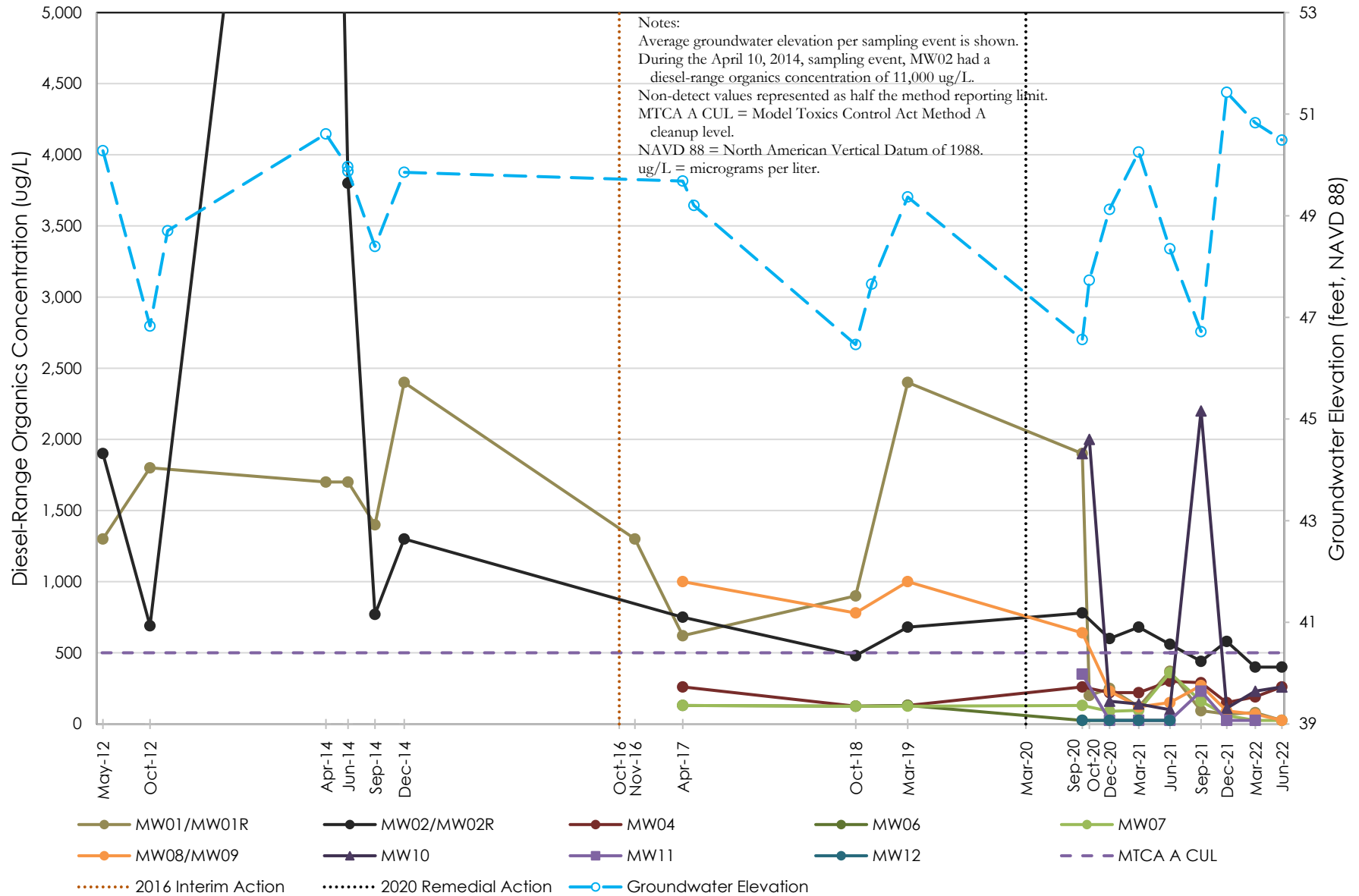


Figure 6
Lube-Oil-Range Organics Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington

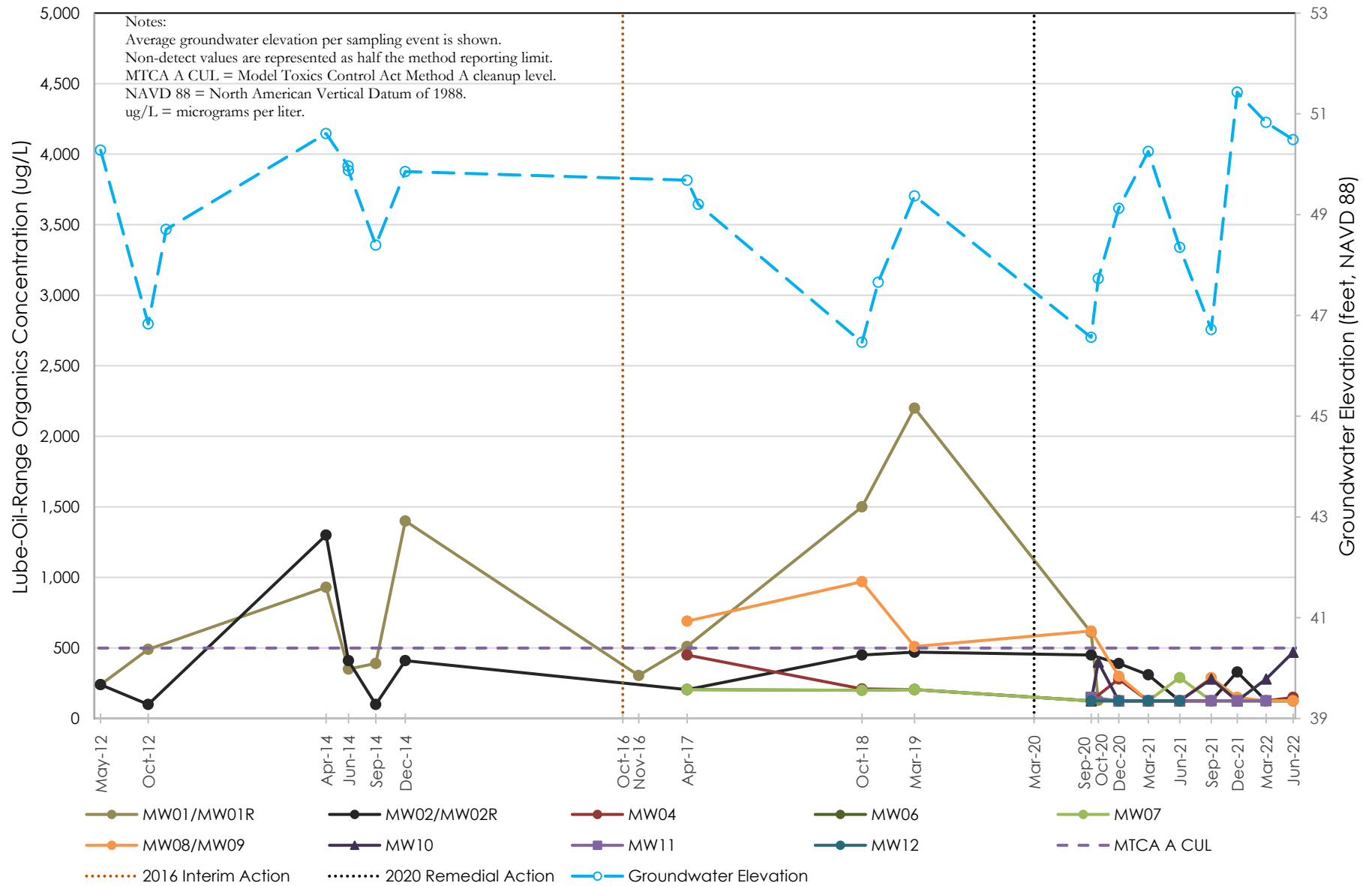


Figure 7
Heavy Oil Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington

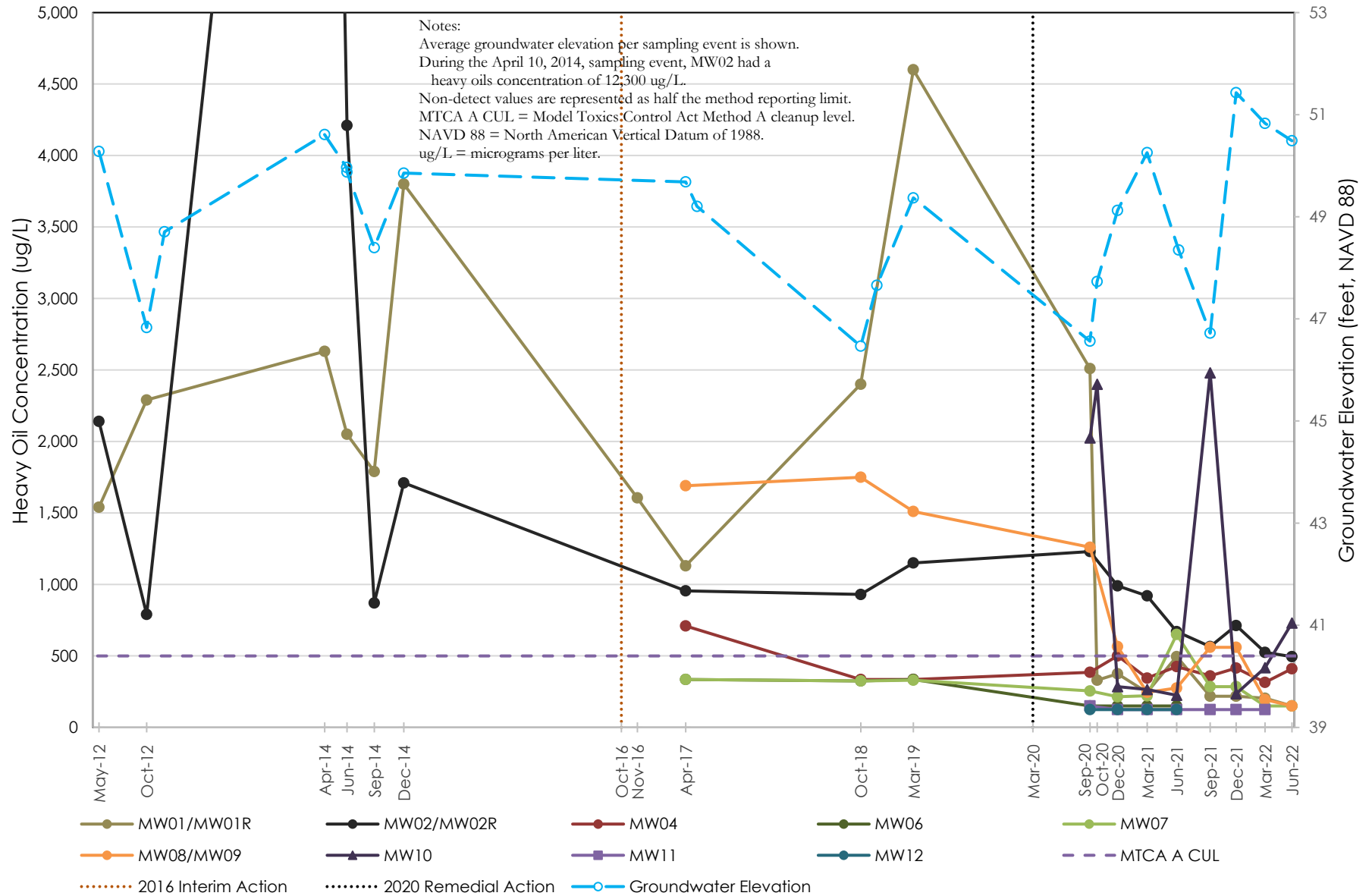
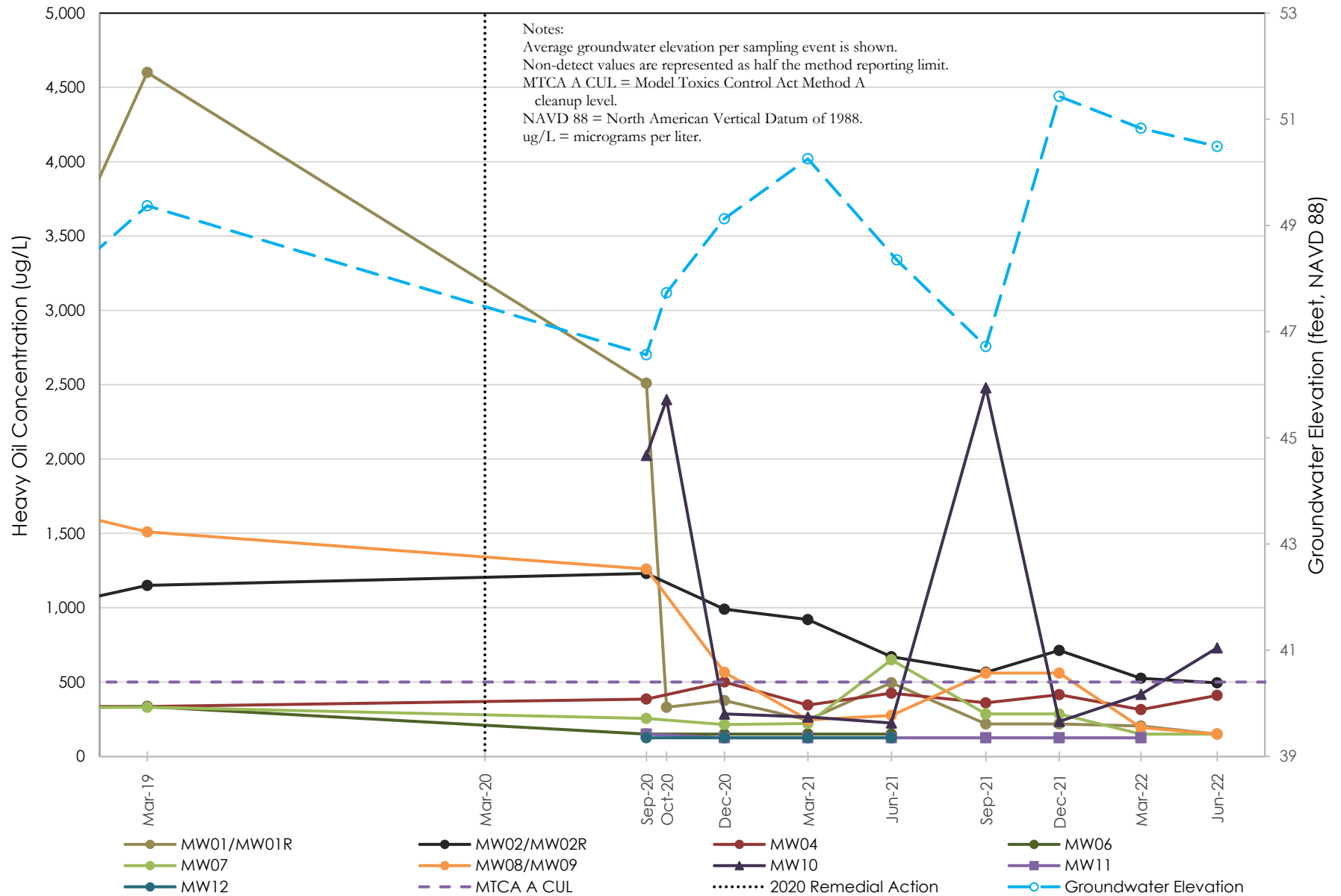


Figure 8
Heavy Oil Concentrations 2019 to 2022
North Cascade Ford Property
Sedro-Woolley, Washington



ATTACHMENT A

WATER FIELD SAMPLING DATA SHEETS



Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW01R				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW01R-GW-060622				
Sub Area	AOC 1	Sample Depth	10				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	9:40	14.54		5.2		9.34	1.52

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	11:41:00 AM	3.7	0.25	6.89	15	630	6.5	156.3	5.16
	11:47:00 AM	4	0.25	7.69	14.8	387.2	5.68	140.1	5.1
	11:55:00 AM	4.2	0.25	8.17	14.9	321.9	5.28	123.7	5.05
	11:58:00 AM	4.4	0.25	8.24	14.9	318	5.09	120.1	4.5
Final Field Parameters	12:01:00 PM	4.6	0.25	8.28	14.9	313.3	5.25	115.6	5.19

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	12:05:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 10:54.
DTW at start of purging was 5.19 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW02R				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW02R-GW-060622				
Sub Area	AOC 2	Sample Depth	12.5				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	10:30	14.78		6.24		8.54	1.39

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	2:28:00 PM	1.3	0.2	7.33	14.4	641	1.65	98.3	3.87
	2:31:00 PM	1.5	0.2	7.25	14.5	640	1.05	95.8	3.85
	2:34:00 PM	1.7	0.2	7.23	14.4	641	0.93	94.5	3.99
	2:37:00 PM	2.1	0.2	7.21	14.6	642	0.8	91.5	3.65
Final Field Parameters	2:40:00 PM	2.3	0.2	7.2	14.6	642	0.73	89.6	3.61

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	2:45:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 14:04.
MWDUP-GW-060622 collected here.
DTW at start of purging was 6.24 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW04				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW04-GW-060622				
Sub Area	AOC 2	Sample Depth	10				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	14:30	13.55		6.45		7.1	1.15

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	3:00:00 PM	1.15	0.145	7.42	16.2	636	10.16	90.4	3.61
	3:04:00 PM	1.25	0.145	7.02	15.9	634	1.63	91.3	3.8
	3:07:00 PM	1.3	0.145	6.95	15.8	638	1.21	90.6	3.49
	3:10:00 PM	1.4	0.145	6.9	15.8	640	0.95	89.4	3.53
	3:13:00 PM	1.5	0.145	6.87	15.8	642	0.85	87.7	3.58
Final Field Parameters	3:16:00 PM	1.6	0.145	6.85	15.7	643	0.8	86.9	3.05

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	3:21:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 14:30.
DTW at start of purging was 6.45 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW06				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date					
Sampling Event	Q8, June 2022	Sample Name					
Sub Area	AOC 2	Sample Depth					
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	10:14	19.72		6.4		13.32	2.17

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater		VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Well not included in compliance network for sampling.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW07				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW07-GW-060622				
Sub Area	AOC 1	Sample Depth	12				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	9:56	19.59		5.13		14.46	2.35

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	1:20:00 PM	2.3	0.25	7.83	16.7	117.3	7.78	82.1	33.1
	1:24:00 PM	2.6	0.25	7.42	16.4	115.4	5.38	84.6	25.3
	1:28:00 PM	2.8	0.25	7.2	16	113.7	4.98	86.2	24.3
	1:31:00 PM	3	0.25	7	16.2	113.2	5.04	84	23.3
Final Field Parameters	1:34:00 PM	3.2	0.25	6.94	16.3	112.9	4.97	83.1	22.9

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Cloudy; orange tint; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	1:45:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 12:28.
DTW at start of purging was 5.21 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW09				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW09-GW-060622				
Sub Area	AOC 1	Sample Depth	15				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	11:03	19.96		5.53		14.43	2.35

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	12:20:00 PM	2.5	0.15	7.96	15.2	368.1	4.46	109.2	4.34
	12:23:00 PM	2.6	0.15	7.91	15.4	370.9	3.69	105.7	4.56
	12:27:00 PM	2.8	0.15	7.9	15.6	368.2	3.54	101.4	4.77
	12:30:00 PM	2.9	0.15	7.89	15.5	367.4	3.49	100.5	4.61
Final Field Parameters	12:33:00 PM	3	0.15	7.89	15.7	365.7	3.31	97.5	4.64

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	12:39:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 11:10.
DTW at start of purging was 5.54 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW10				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date	6/6/2022				
Sampling Event	Q8, June 2022	Sample Name	MW10-GW-060622				
Sub Area	AOC 2	Sample Depth	15				
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	10:21	19.8		5.99		13.81	2.25

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	1:55:00 PM	2	0.12	7.74	14.9	763	3.5	103.9	5.39
	2:00:00 PM	2.1	0.12	7.8	14.9	764	3.22	102.5	4.17
	2:03:00 PM	2.2	0.12	7.87	15	765	3.08	100	4.22
	2:06:00 PM	2.3	0.12	7.9	14.8	766	2.94	98.8	4.24
Final Field Parameters	2:09:00 PM	2.5	0.12	7.94	14.9	766	2.93	96.6	3.61

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	2:15:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Begin purge at 13:04.
DTW at start of purging was 5.99 feet bgs.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW11				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date					
Sampling Event	Q8, June 2022	Sample Name					
Sub Area	AOC 3	Sample Depth					
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	9:31	19.66		5.45		14.21	2.37

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater		VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Well not included in compliance network for sampling.

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	Sample Location	MW12				
Project #	M0747.01.013	Sampler	C. Sifford				
Project Name	North Cascade Ford	Sampling Date					
Sampling Event	Q8, June 2022	Sample Name					
Sub Area	AOC 2	Sample Depth					
FSDS QA:	C. Wise 8/8/22	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
6/6/2022	10:04	14.58		6.93		7.65	1.24

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

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Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater		VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Well not included in compliance network for sampling.

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ATTACHMENT B

ANALYTICAL LABORATORY REPORTS



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 13, 2022

Carolyn Wise, Project Manager
Maul Foster Alongi
1329 N State St, Suite 301
Bellingham, WA 98225

Dear Ms Wise:

Included are the results from the testing of material submitted on June 7, 2022 from the North Cascade Ford M0747.01.013, F&BI 206116 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
MFA0613R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 7, 2022 by Friedman & Bruya, Inc. from the Maul Foster Alongi North Cascade Ford M0747.01.013, F&BI 206116 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Maul Foster Alongi</u>
206116 -01	MW01R-GW-060622
206116 -02	MW09-GW-060622
206116 -03	MW07-GW-060622
206116 -04	MW10-GW-060622
206116 -05	MW02R-GW-060622
206116 -06	MWDUP-GW-060622
206116 -07	MW04-GW-060622

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/22

Date Received: 06/07/22

Project: North Cascade Ford M0747.01.013, F&BI 206116

Date Extracted: 06/08/22

Date Analyzed: 06/08/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS**

**DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 41-152)
MW01R-GW-060622 206116-01	<50	<250	120
MW09-GW-060622 206116-02	<50	<250	107
MW07-GW-060622 206116-03	<50	<250	114
MW10-GW-060622 206116-04	260 x	470 x	116
MW02R-GW-060622 206116-05	340 x	<250	114
MWDUP-GW-060622 206116-06	400 x	<250	128
MW04-GW-060622 206116-07 1/1.2	260 x	<300	110
Method Blank 02-1370 MB	<50	<250	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/22

Date Received: 06/07/22

Project: North Cascade Ford M0747.01.013, F&BI 206116

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	116	63-142	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

206116

SAMPLE CHAIN OF CUSTODY 06-07-22

E03

Report To Carolyn Wise

Company Maul Foster & Alongi

Address 1329 N State St. Suite 301

City, State, ZIP Bellingham, WA, 98225

Phone 360-690-5988 Email cwise@maul-foster.com

SAMPLERS (signature)

PROJECT NAME

North Cascade Ford

PO #

M0747.01.013

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

Page # 1 of 1

TURNAROUND TIME

☒ Standard turnaround☐ RUSH

Rush charges authorized by:


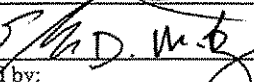
SAMPLE DISPOSAL

☐ Archive samples☐ Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						ORO + DRO NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				
MW01R-GW-060622	01	6/6/22	12:05	water	1	X										
MW09-GW-060622	02	6/6/22	12:39	water	1	X										
MW07-GW-060622	03	6/6/22	13:45	water	1	X										
MW10-GW-060622	04	6/6/22	14:15	water	1	X										
MW02R-GW-060622	05	6/6/22	14:45	water	1	X										
MW DUP-GW-060622	06	6/6/22	14:45	water	1	X										
MW04-GW-060622	04	6/6/22	15:21	water	1	X										

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Christian Sifford	MFA	6/6/22	17:04
Received by: 	Liz Webber-Bruya	F?B	6/7/22	1658
Relinquished by:				
Received by:		Samples received at 4 °C		

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 206116 CLIENT MFA INITIALS/ DATE: EMB 6/7

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature 4 °C

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?
☐ Over the Counter
☐ Picked up by F&BI
☒ FedEx/UPS/GSO

Number of days samples have been sitting prior to receipt at laboratory 1 days

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO
*or other representative documents, letters, and/or shipping memos

Are the samples clearly identified? (explain "no" answer below) ☒ YES ☐ NO

Is the following information provided on the COC* ? (explain "no" answer below)

Sample ID's	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	# of Containers	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Date Sampled	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Relinquished	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Time Sampled	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Requested analysis	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☒ NA ☐ YES ☐ NO

Air Samples: Were any additional canisters received? ☒ NA ☐ YES ☐ NO

If Yes, number of unused 1L canisters _____

number of unused 6L canisters _____

Explain "no" items from above (use the back if needed)

ATTACHMENT C

DATA VALIDATION MEMORANDUM



DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. M0747.01.013 | JUNE 15, 2022 | VSF PROPERTIES, LLC

Maul Foster & Alongi, Inc. (MFA), conducted an independent stage 2A review of the quality of analytical results for groundwater samples and associated quality control samples collected at the North Cascade Ford site at 116 W Ferry Street, Sedro-Woolley, Washington, on June 6, 2022.

Friedman & Bruya, Inc. (FBI), performed the analyses. FBI report number 206116 was reviewed. The analyses performed and samples analyzed are listed below.

Analysis	Reference
Diesel- and motor-oil-range hydrocarbons	NWTPH-Dx
Note NWTPH = Northwest Total Petroleum Hydrocarbons.	

Samples Analyzed
Report 206116
MW01R-GW-060622
MW09-GW-060622
MW07-GW-060622
MW10-GW-060622
MW02R-GW-060622
MWDUP-GW-060622
MW04-GW-060622

DATA QUALIFICATION

Analytical results were evaluated according to applicable sections of U.S. Environmental Protection Agency (EPA) guidelines for data review (EPA 2020) and appropriate laboratory- and method-specific guidelines (EPA 1986, FBI 2019).

Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods that EPA data review procedures do not specifically address (e.g., Northwest Total Petroleum Hydrocarbons [NWTPH]-Dx).

Based on the results of the data quality review procedures described below, the data are considered acceptable for their intended use, with the appropriate final data qualifiers assigned. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, as well as data qualifiers assigned by the reviewer during validation.

- Final data qualifier:
 - U = result is non-detect at the method reporting limit (MRL).

According to report 206116, FBI flagged all detected NWTPH-Dx diesel- and motor-oil-range hydrocarbons results for having chromatographic patterns that did not resemble the fuel standards used for quantitation. These results were reported as diesel- and oil-range hydrocarbons instead of specific fuel products; thus, qualification was not required.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blanks are used to assess whether laboratory contamination was introduced during sample preparation and analysis. Laboratory method blank analysis was performed at the required frequency. For purposes of data qualification, the laboratory method blank was associated with all samples prepared in the analytical batch.

All laboratory method blank results were non-detect to MRLs.

Equipment Rinse Blanks

Equipment rinse blanks are used to evaluate field equipment decontamination. These blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

Trip Blanks

Trip blanks are used to evaluate whether volatile organic compound contamination was introduced during sample storage and shipment between the sampling location and the laboratory.

Trip blank samples were not required for this sampling event because samples were not analyzed for volatile organic compounds.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

A laboratory control sample (LCS) and a laboratory control sample duplicate (LCSD) are spiked with target analytes to provide information about laboratory precision and accuracy. The LCS and LCSD were extracted and analyzed at the required frequency.

All LCS and LCSD results were within acceptance limits for percent recovery and relative percent difference (RPD).

LABORATORY DUPLICATE RESULTS

Laboratory duplicate results are used to evaluate laboratory precision.

FBI did not report laboratory duplicate results for method NWTPH-Dx. Laboratory precision was evaluated using LCS and LCSD results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Matrix spike (MS) and matrix spike duplicate (MSD) results are used to evaluate laboratory precision and accuracy as well as the effect of the sample matrix on sample preparation and analysis.

FBI did not report MS or MSD results for NWTPH-Dx, in accordance with the method.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance for individual samples.

All surrogate results were within percent recovery acceptance limits.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. The following field duplicate and parent sample pair was submitted for analysis:

Report	Parent Sample	Field Duplicate Sample
206116	MW02R-GW-060622	MWDUP-GW-060622

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL, or 50 percent RPD for results that are greater than five times the MRL. Non-detect data are not used in the evaluation of field duplicate results.

All field duplicate results met the RPD acceptance criteria.

REPORTING LIMITS

FBI used routine reporting limits for non-detect results, except for samples requiring dilutions because of high analyte concentrations and/or matrix interferences.

DATA PACKAGE

The data package was reviewed for transcription errors, omissions, and anomalies. None were found.

REFERENCES

EPA. 1986. *Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods*. EPA publication SW-846. 3rd ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), VI phase III (2019), VII phase I (2019), and VII phase II (2020).

EPA. 2020. *National Functional Guidelines for Organic Superfund Methods Data Review*. EPA 540-R-20-005. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.

FBI. 2019. *Quality Assurance Manual*. Rev. 17. Friedman & Bruya, Inc.: Seattle, WA. November 6.