MAUL FOSTER ALONGI
1329 North State Street, Suite 301 | Bellingham, WA 98225 | 360 594 6262 | www.maulfoster.com

January 25, 2022
Project No. 0747.01.13

Michael R. Warfel, LG, LHG, RG
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, Washington 98008

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

Dear Michael Warfel:

In December 2021, on behalf of VSF Properties, LLC, Maul Foster & Alongi, Inc. (MFA) conducted the sixth 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 Burlington Northern Santa Fe Railway Company (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 [WAC] 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, 2015, 2017a,b, 2020b,c). AOC excavation areas are shown on Figure 2.

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.

Table 1 shows historical groundwater analytical results associated with monitoring wells in AOCs 1 and 2 and reconnaissance groundwater samples collected in AOC 3.

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 WAC 173-340(b), the

purpose of performance monitoring is to confirm that a remedial action has attained cleanup levels (CULs). Previous quarterly compliance groundwater monitoring events were conducted between September 2020 and June 2021 (MFA, 2020d, 2021a,b,c,d).

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). The September 2021 monitoring event was completed with these Ecology-approved modifications.

On December 10, 2021, Ecology requested additional analysis at two monitoring wells—1,4-dichlorobenzene at MW09 and naphthalenes at MW10—due to previous detections in those areas of the Site above the vapor intrusion screening level (Ecology, 2021b). Analyses for these additional constituents were conducted during the December 2021 monitoring event at locations with historical detections above their respective vapor intrusion screening levels, as described below. This request was also included in an opinion letter prepared by Ecology on the cleanup of the Site (Ecology, 2022).

FIELD AND ANALYTICAL METHODS

All December 2021 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). Compliance monitoring well locations are shown on Figure 2.

Potentiometric Surface Evaluation

On December 16, 2021, 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 hydraulically discontinuous and show varied, localized groundwater migration at the Property. Water levels measured during this event were approximately 3.6 to 5.2 feet higher than in the September 2021 monitoring event. In December 2021, groundwater generally flowed north to south, with components of flow west-southwest in the southern portion of the Site. The average height of the water table in December 2021 was 2.3 feet higher than the water table in December 2020 and overall had the highest recorded water levels on the Site. This high water table is consistent with the significant precipitation events observed in the region between October and November 2021.

Monitoring Well Sampling

MFA collected eight groundwater samples from seven compliance monitoring wells on the Property (MW01R, MW02R, MW04, MW07, and MW09 through MW11) on December 16, 2021, including a field duplicate sample from monitoring well MW02R. Water quality field

parameters (e.g., temperature, specific conductance, pH, turbidity) were allowed to stabilize 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 (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. 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 are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

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. Additional analyses included 1,4-dichlorobenzene at MW09 and naphthalenes at MW10 for comparison to their respective MTCA Method A CULs and vapor intrusion screening levels.

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.

A previous detection of 1,4-dichlorobenzene from a reconnaissance groundwater sample in 2012 was above the MTCA Method B groundwater screening level of 4.9 micrograms per liter (ug/L) for protection against vapor intrusion. At Ecology's request, analysis was conducted for 1,4-dichlorobenzene in groundwater collected at MW09, located near the historical reconnaissance groundwater exceedance (MFA, 2021b; Ecology, 2022). 1,4-dichlorobenzene was not detected above the method reporting limit of 1 ug/L at MW09 (see Table 3).

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.

DRO were detected in groundwater samples at MW02R, MW04, and MW10. Only one monitoring well, MW02R, showed a concentration of DRO above the MTCA Method A CUL of 500 ug/L, at 580 ug/L. The sum of heavy oils, at 910 ug/L, also exceeded the MTCA Method A CUL in MW02R.

A previous detection of naphthalene from a 2016 reconnaissance groundwater sample was above the MTCA Method B groundwater screening level of 8.9 ug/L for protection against vapor intrusion. At Ecology's request, analysis for naphthalene was conducted on groundwater collected at MW10, located near the historical reconnaissance groundwater exceedance (MFA, 2021b; Ecology, 2022). Naphthalene was not detected above the method reporting limit of 0.4 ug/L at MW10 (see Table 3).

AOC 3: Former Coal Storage Sheds/Possible Buried Object

One groundwater sample was collected from AOC 3 monitoring well MW11. DRO, ORO, and heavy oils were not detected in MW11 above method reporting limits.

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.
  - 1,4-Dichlorobenzene was not detected above the MTCA Method B groundwater screening level for protection against vapor intrusion.
- **AOC 2**
  - The DRO concentration at one monitoring well, MW02R, were above the MTCA Method A CUL.
  - The sum of heavy oils (DRO and ORO) exceeded the MTCA Method A CUL for DRO in one monitoring well, MW02R.
- **AOC 3**
  - No detections of DRO, ORO, or heavy oils exceeded their respective MTCA Method A CULs.

Overall, the remedial action conducted in spring 2020 has significantly reduced the concentrations of heavy oils in groundwater at the Site as observed throughout quarterly compliance monitoring (see Figure 7). Additionally, free product has not been observed since

quarterly compliance groundwater monitoring began in September 2020. Trend plots show significant decreases in heavy-oils concentrations in monitoring wells during the compliance monitoring period and suggest that continual decreases in heavy-oils concentrations in groundwater will likely be observed during future quarterly monitoring events (see Figures 5 through 7).

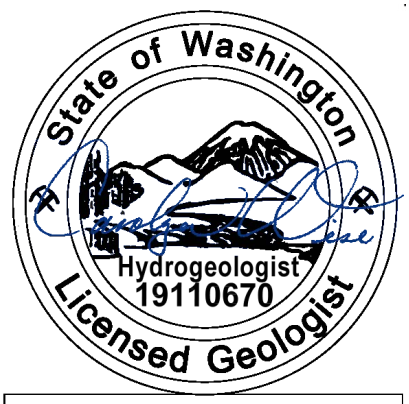
Consistent with a request by Ecology, naphthalenes and 1,4-dichlorobenzene were analyzed in groundwater at locations where these chemicals were previously detected above their respective MTCA Method B groundwater screening levels for protection against vapor intrusion and were not detected (Ecology, 2022). Future monitoring events are not anticipated to include these analytes as they were not detected during this monitoring event.

In accordance with the groundwater CMP, the next quarterly groundwater monitoring event is scheduled for March 2022.

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

Sincerely,

Maul Foster & Alongi, Inc.



Carolyn R. Wise, LHG
Project Hydrogeologist

Amanda Bixby, 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.

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

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

Ecology. 2022. Letter (re: option on proposed cleanup of a property associated with a site: Site Name: North Cascade Ford, Property Address: 116 West Ferry Street, Sedro Woolley, WA 98284, Facility/Site No.: 58313566, Cleanup Site No.: 12075, VCP Project No.: NW3031) to D. Sims, VSF Properties, LLC, Mount Vernon, WA, from M. Warfel, Washington State Department of Ecology. January 6.

MFA. 2015. Preliminary remedial investigation and feasibility study, North Cascade Ford property, Sedro-Woolley, Washington. Prepared for VSF Properties, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. December 9.

MFA. 2017a. Letter (re: 2016 data gap investigation results, North Cascade Ford property, Sedro-Woolley, Washington) to L. Setchell, Helsell Fetterman LLP, from H. Good and J. Clary, Maul Foster & Alongi, Inc., Bellingham, Washington. January 24.

MFA. 2017b. Supplemental data gap investigation report, North Cascade Ford property, Sedro-Woolley, Washington. Prepared for VSF Properties, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. August 18.

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.

MFA. 2020b. Remedial action completion report, North Cascade Ford property, Sedro-Woolley, Washington. Prepared for VSF Properties, LLC. Maul Foster & Alongi, Inc., Bellingham, Washington. July 13.

MFA. 2020c. Memorandum (re: 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) to M. Warfel, Washington State Department of Ecology, from J. Maul, Maul Foster & Alongi, Inc., Bellingham, Washington. August 10.

MFA. 2020d. Letter (re: monitoring well installation and first quarterly compliance groundwater monitoring event, North Cascade Ford property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566) to M. Warfel, Washington State Department of Ecology, from J. Maul and C. Wise, Maul Foster & Alongi, Inc., Bellingham, Washington. November 24.

MFA. 2021a. Letter (re: second quarterly compliance groundwater monitoring event, North Cascade Ford property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566) to M. Warfel, Washington State Department of Ecology, from J. Maul and C. Wise, Maul Foster & Alongi, Inc., Bellingham, Washington. January 26.

MFA. 2021b. Letter (re: third quarterly compliance groundwater monitoring event, North Cascade Ford property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566) to M. Warfel, Washington State Department of Ecology, from M. Murray and C. Wise, Maul Foster & Alongi, Inc., Bellingham, Washington. April 8.

MFA. 2021c. Letter (re: fourth quarterly compliance groundwater monitoring event, North Cascade Ford property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566) to M. Warfel, Washington State Department of Ecology, from M. Murray and C. Wise, Maul Foster & Alongi, Inc., Bellingham, Washington. August 9.

MFA. 2021d. Letter (re: fifth quarterly compliance groundwater monitoring event, North Cascade Ford property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566) to M. Warfel, Washington State Department of Ecology, from C. Wise and A. Bixby, Maul Foster & Alongi, Inc., Bellingham, Washington. November 11.

TABLES

MAUL FOSTER ALONGI

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 Cleanup Level:					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**	--

MAUL FOSTER ALONGI

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 Cleanup Level:					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**

NOTES:

Analytical results are shown in micrograms per liter (parts per billion).

Bolding indicates a detection.

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.

ft bgs = feet below ground surface.

J = result is an estimated value.

MTCA = Model Toxics Control Act.

MW = monitoring well.

ND = not detected.

NM = water level not measured because of unanticipated presence of free product.

U = analyte not detected at or above method reporting limit.

[a]Sample collection depths are from top of water table or top of screened interval, whichever is deeper, to bottom of screened interval.

[b]Total xylenes are sum of m,p-xylene and o-xylene. When both results are non-detect, the higher reporting limit is used.

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

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

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)
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

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
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

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)
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
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
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

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)
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

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 was not collected at this time. 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	4.9[2]	160/8.9[2]
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**	--	--
	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**	--	--
	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	--

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	4.9[2]	160/8.9[2]
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**	--	--
		09/27/2021	--	--	--	--	--	**440**	250 U	**565**	--	--
		12/16/2021	--	--	--	--	--	**580**	**330**	**910**	--	--
		12/16/2021	--	--	--	--	--	**390**	250 U	**515**	--	--
	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**	--	--
	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	--	--

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	4.9[2]	160/8.9[2]
2 (cont.)	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
	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	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
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	--	--

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

NOTES:

Bolding indicates a detection.

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

-- = not analyzed.

AOC = area of concern.

cont. = continued.

CUL = cleanup level.

DRO = diesel-range organics.

GRO = gasoline-range organics.

MTCA = Model Toxics Control Act.

Naphth. = naphthalenes.

ORO = lube-oil-range organics.

U = analyte not detected at or above method 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.

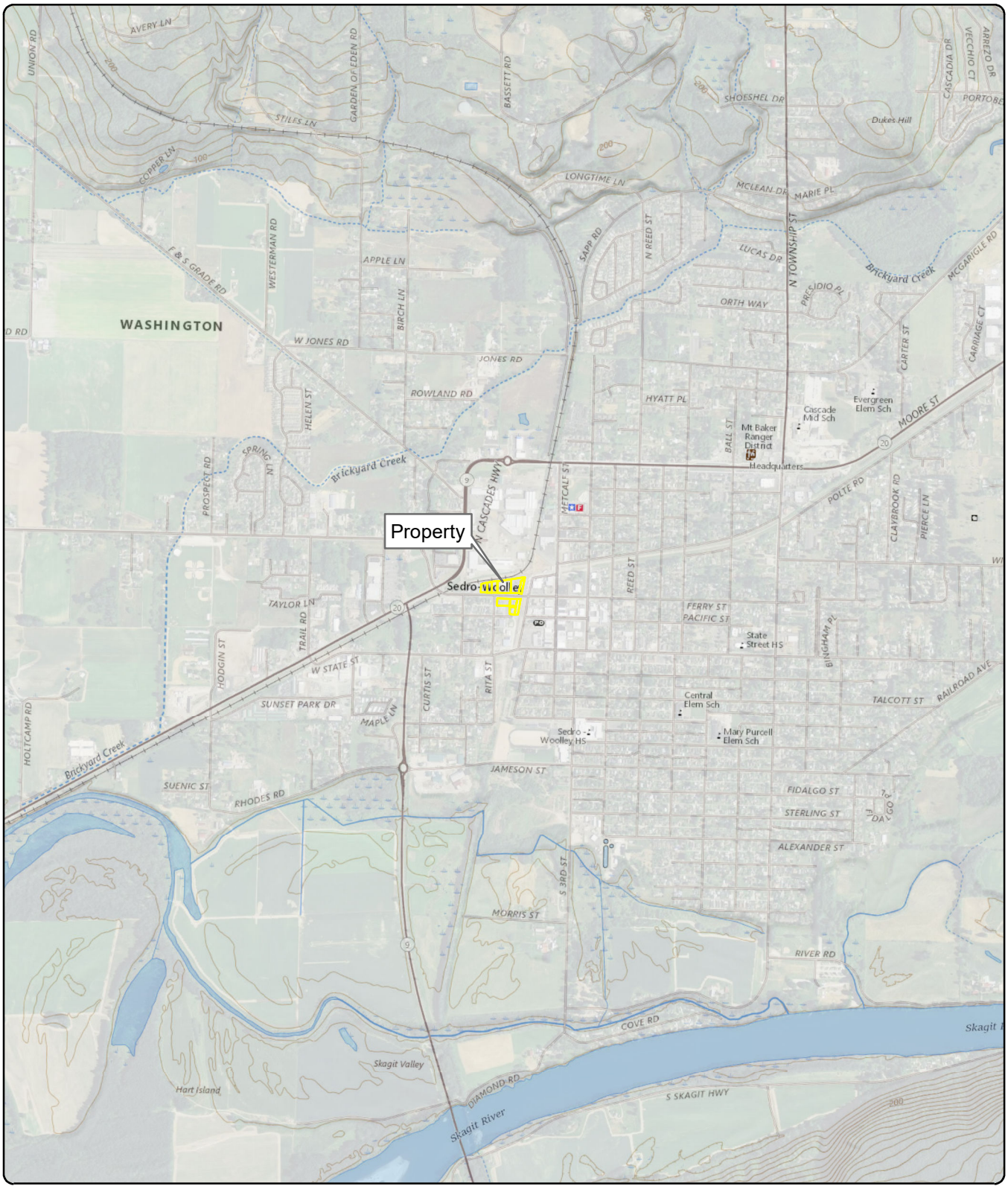
[c]MTCA Method A CUL with no detectable benzene.

REFERENCE:

[1]Ecology. Cleanup Levels, and Risk Calculation table. Washington State Department of Ecology. July 2021.

[2]Ecology. Implementation Memorandum No. 18: Petroleum Vapor Intrusion: Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings. August 2017 (revised January 2018).

FIGURES



Property Address: 116 W Ferry Street, Sedro-Woolley, Washington
Source: U.S. 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

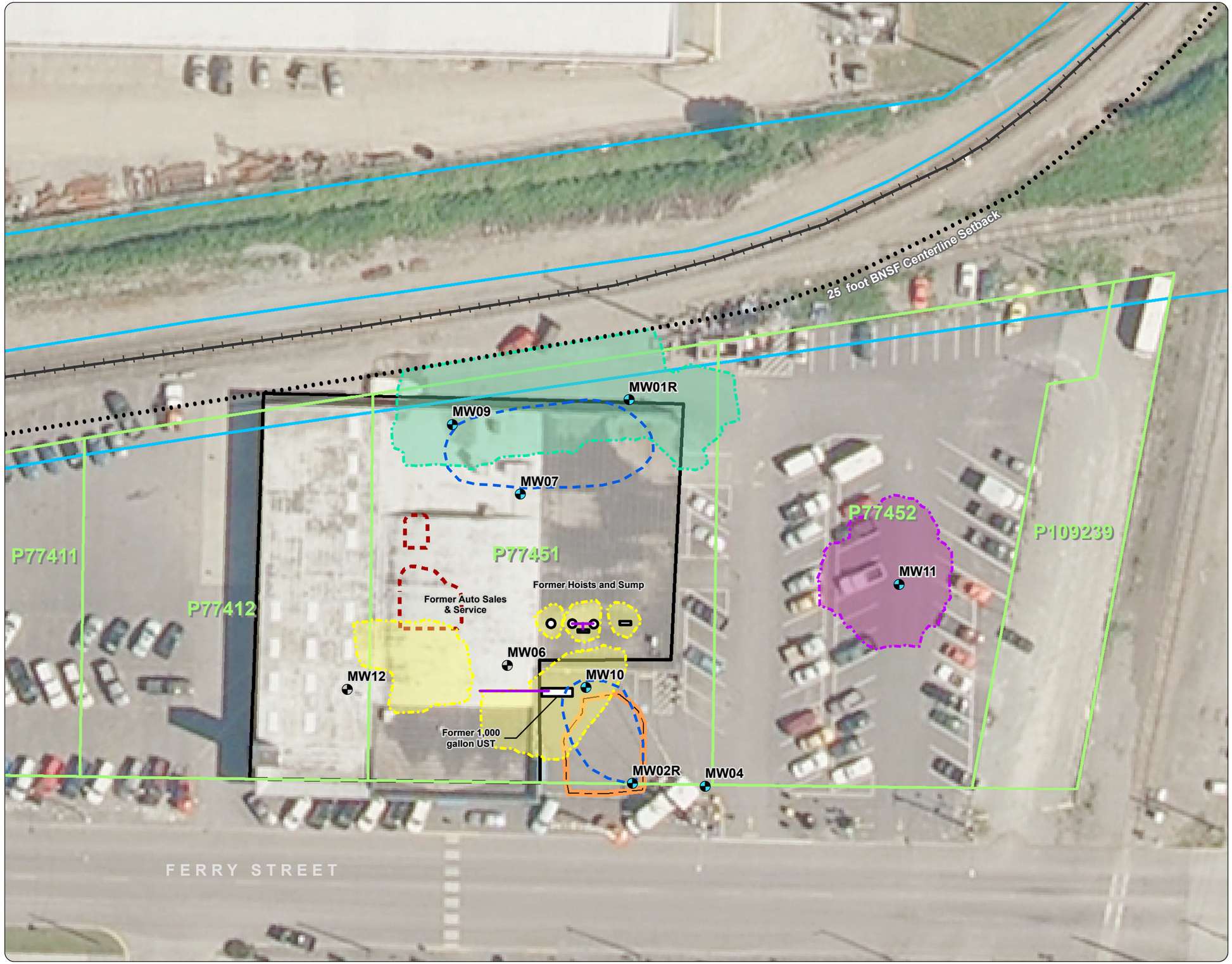
0 1,000 2,000
Feet

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0747.01\12\Projects\Fig_PropertyLocation.mxd Print Date: 9/30/2020 Approved By: C. Wise Produced By: abixby Project: 0747.01.12

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, 2020)
- AOC 2 Excavation (MFA, 2020)
- AOC 3 Excavation (MFA, 2020)
- Estimated Extent of Petroleum Impacts in Groundwater
- UST Interim Action (MFA,
- 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 = Burlington Northern Santa Fe 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 ArcGIS Online.
Excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020.
Property parcel boundaries surveyed by Wilson Engineering, LLC.

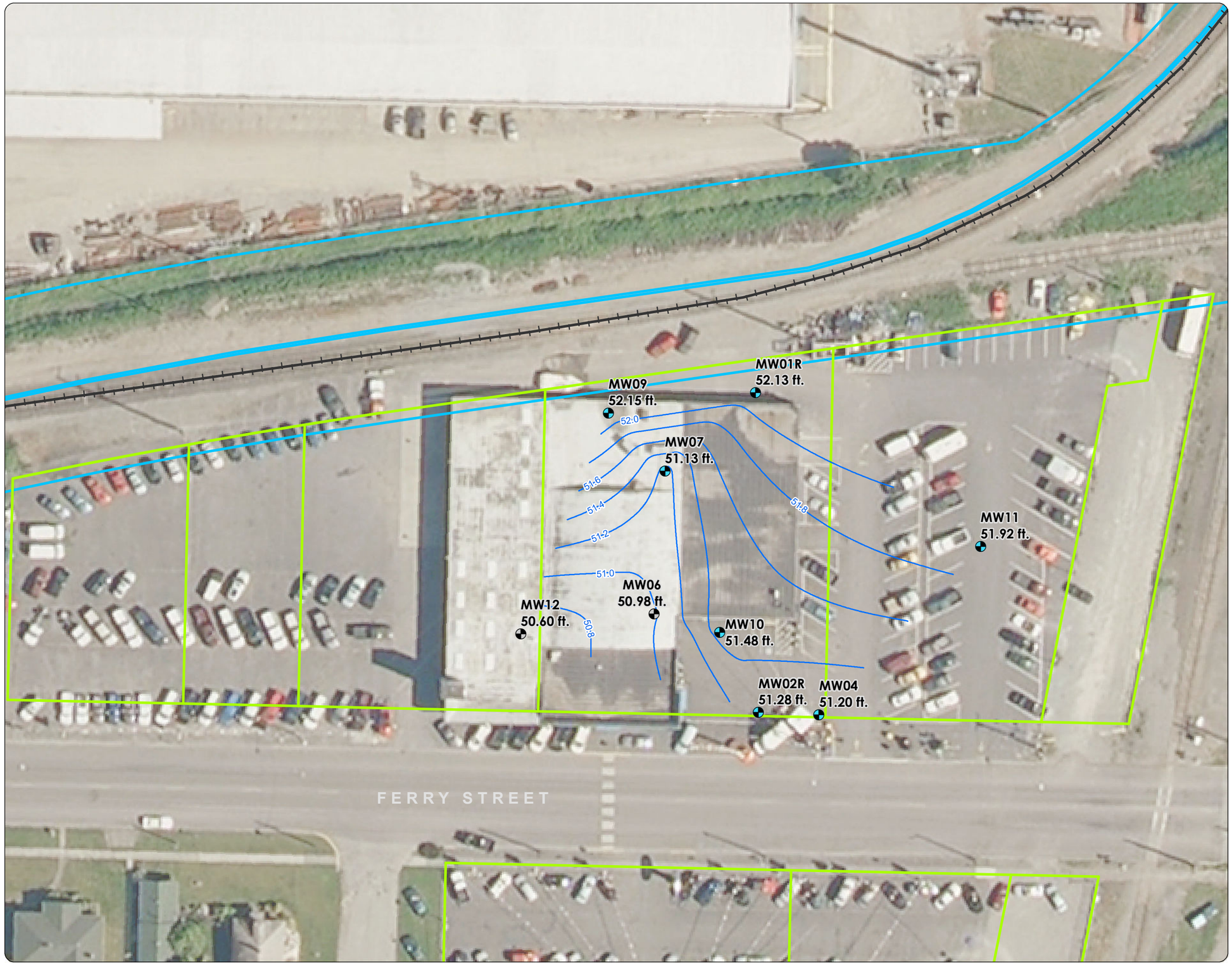
0 20 40
Feet

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0747.01\12\Projects\Fig_ComplianceMWNetwork.mxd
Print Date: 10/22/2021
Approved By: cwise
Produced By: agase
Project: 0747.01.11

Figure 3
Groundwater Elevation Contours - December 2021

North Cascade Ford Property
Sedro-Woolley, Washington



Legend

- Compliance Monitoring Well
- Other Monitoring Well
- Groundwater Elevation Contour (feet NAVD 88; 0.2-ft. interval)
- Property Parcel
- BNSF-Owned 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 December 16, 2021.
BNSF = Burlington Northern Santa Fe Railway.
ft. = feet.
NAVD 88 = North American Vertical Datum of 1988.

0 25 50
Feet

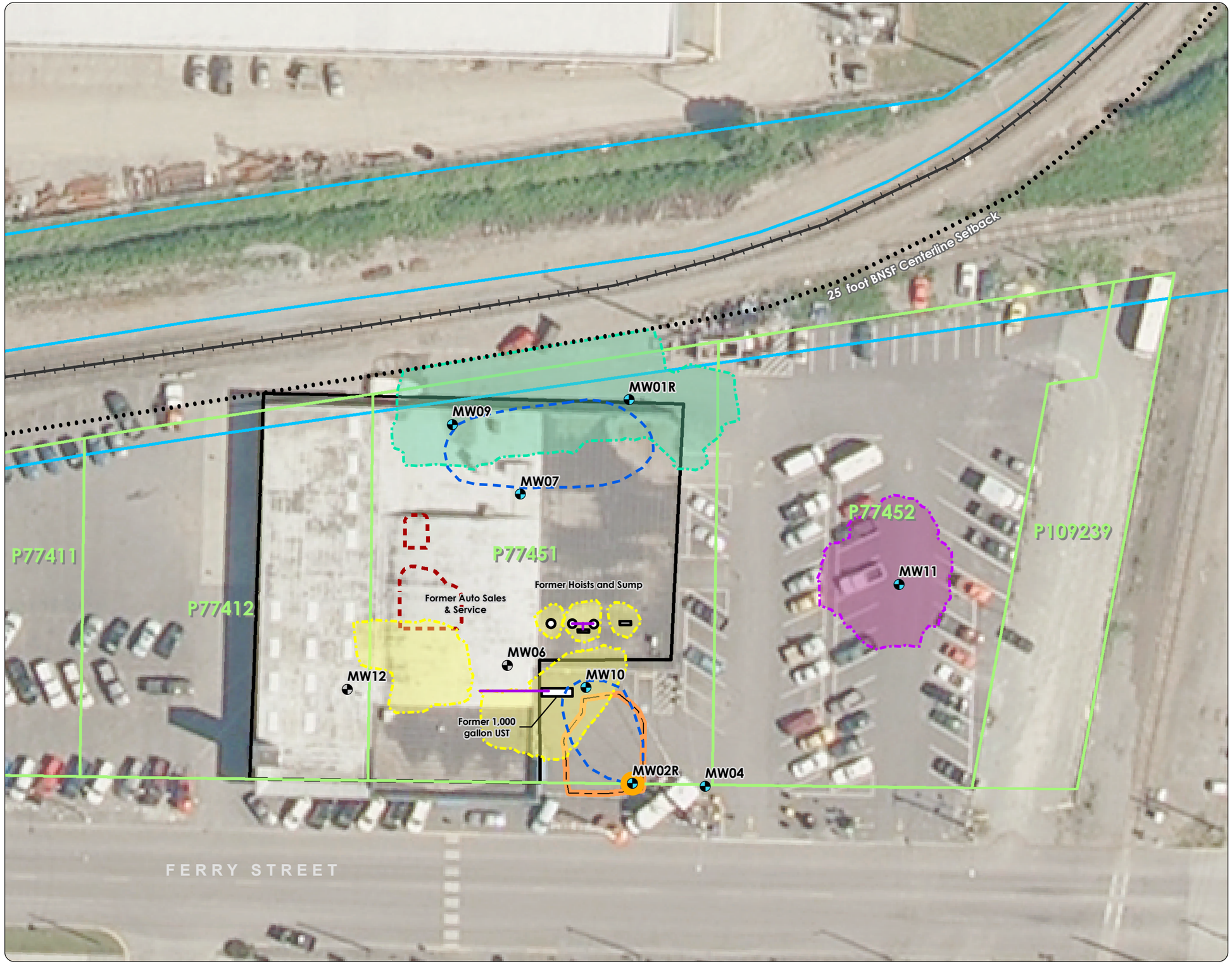
Sources:
Adjacent parcel boundaries obtained from Skagit County.
Aerial photograph obtained from Mapbox.
Property parcel boundaries surveyed by Wilson Engineering, LLC.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0747.01\12\Projects\Fig_GWContours_Dec2021.mxd
Print Date: 12/23/2021
Approved By: C. Wise
Produced By: abixby
Project: 0747.01.12

Figure 4
Groundwater Exceedances - December 2021

North Cascade Ford Property
Sedro-Woolley, Washington



Legend

- Compliance Monitoring Well
- Other Monitoring Well
- Heavy Oils Exceedance
- Product Line
- AOC 1 Excavation (MFA, 2020)
- AOC 2 Excavation (MFA, 2020)
- AOC 3 Excavation (MFA, 2020)
- 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.
Heavy oils were compared to the DRO cleanup level.
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 = Burlington Northern Santa Fe Railway.
DRO = diesel-range organics.
heavy oils = sum of DRO and ORO.
ORO = oil-range organics.
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 ArcGIS Online.
Excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020.
Property parcel boundaries surveyed by Wilson Engineering, LLC.

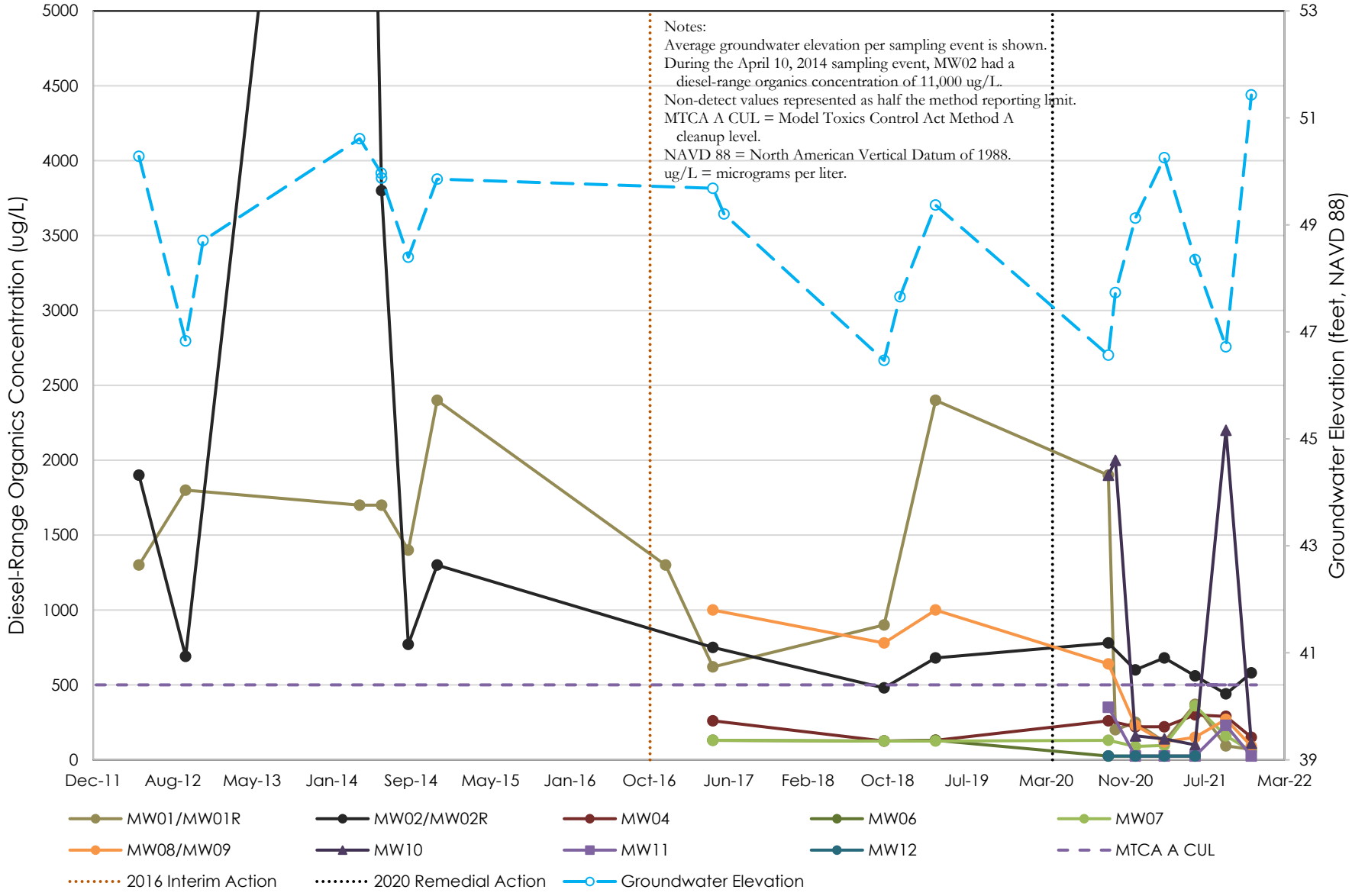
0 20 40
Feet

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0747.01\13\Fig4_GWExceedances_Dec2021.mxd
Print Date: 1/18/2022
Approved By: cwise
Produced By: agase
Project: 0747.01.11

MAUL FOSTER ALONGI

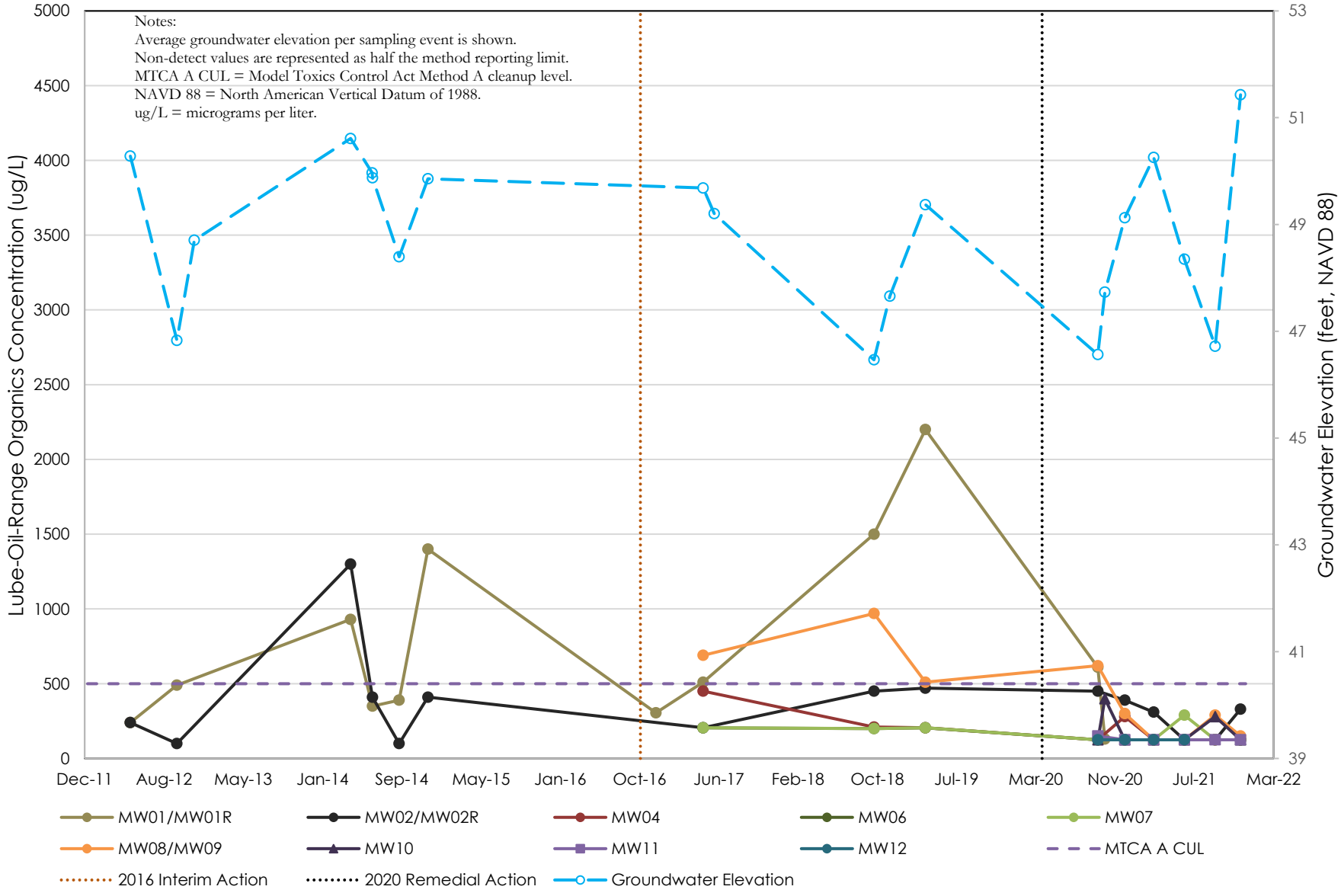
Figure 5
Diesel-Range Organics Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington



0747.01.13, 1/25/2022, DRO

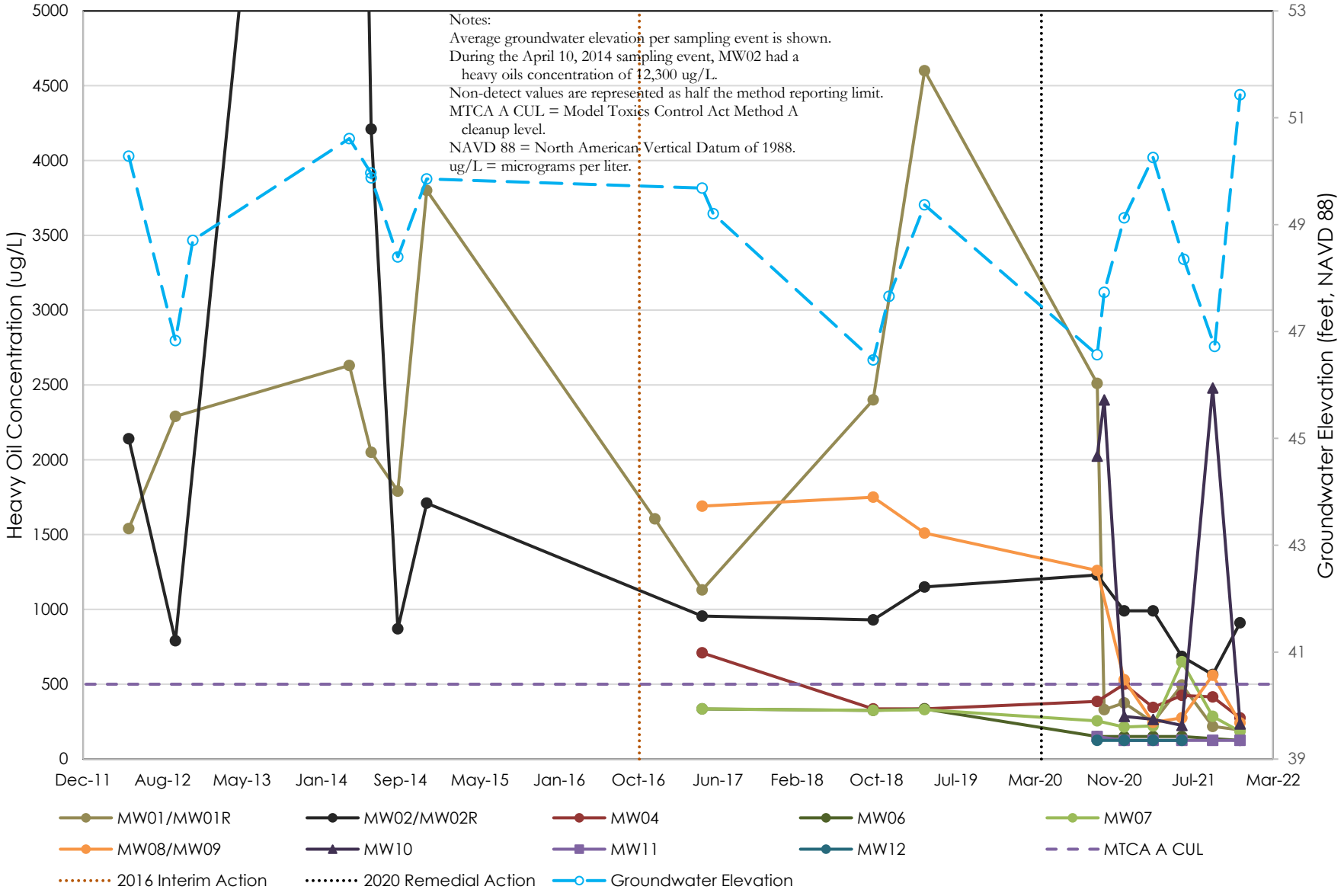
MAUL FOSTER ALONGI

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



MAUL FOSTER ALONGI

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



ATTACHMENT A

WATER FIELD SAMPLING DATA SHEETS

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW01R		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW01R-GW-121621		
Sub Area	AOC 1	**Sample Depth**	10		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	9:55	14.63		4.19		10.44	1.7

(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	12:07:00 PM	4	0.3	8.63	10.6	445.9	88.2	81.6	1.71
	12:13:00 PM	4.3	0.3	8.62	10.6	436.4	78	87.7	1.56
	12:17:00 PM	4.5	0.3	8.61	10.5	433.6	80.7	90.1	1.55
Final Field Parameters	12:21:00 PM	4.7	0.3	8.59	10.6	444	76.5	93.3	1.53

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	12:30:00 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

Began purge at 11:25.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW02R		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW02R-GW-121621		
Sub Area	AOC 2	**Sample Depth**	10		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	10:13	14.77		5.31		9.46	1.54

(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	3:27:00 PM	2.9	0.3	6.94	12	707	17.3	112.6	1.63
	3:31:00 PM	3.2	0.3	6.94	12.1	702	7.9	112.4	1.48
	3:34:00 PM	3.5	0.3	6.93	12.1	703	6.7	113	1.34
Final Field Parameters	3:38:00 PM	3.7	0.3	6.93	12.1	706	6.8	112.9	1.3

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; Green tint; No odor; No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:40:00 PM	VOA-Glass		
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	2	

General Sampling Comments

Began purge at 14:36.
Duplicate sample, MWDUP-GW-121621, was collected at this location.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW04		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW04-GW-121621		
Sub Area	AOC 2	**Sample Depth**	10		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	10:08	14.55		5.12		9.43	1.54

(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	4:02:00 PM	3.4	0.3	6.8	14.2	661	23.1	129.8	0.87
	4:06:00 PM	3.6	0.3	6.79	14.5	661	24.2	133.7	0.83
Final Field Parameters	4:10:00 PM	3.8	0.3	6.78	14.3	662	22.1	137.7	0.75

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	4:20:00 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

Began purge at 15:19.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW07		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW07-GW-121621		
Sub Area	AOC 1	**Sample Depth**	12.5		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	10:04	19.6		5.17		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	1:29:00 PM	3.2	0.3	7.41	11.6	214	38.2	64	77.2
	1:34:00 PM	3.5	0.3	6.6	11.6	211.2	32.9	68.9	58.5
	1:38:00 PM	3.7	0.3	6.57	11.2	211.6	33.6	70.9	42.6
	1:43:00 PM	4	0.3	6.52	11.5	210	31.2	71.6	27.8
	1:47:00 PM	4.2	0.3	6.54	11.4	21.6	33.1	71.8	23
	1:53:00 PM	4.5	0.3	6.5	11.3	209.5	32.4	74.4	14.3
Final Field Parameters	2:00:00 PM	4.8	0.3	6.48	11.4	210.1	31.6	74.2	11.7

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; Strong orange tint; No odor; No sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	2:10:00 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

Began purge at 12:37.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW09		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW09-GW-121621		
Sub Area	AOC 1	**Sample Depth**	12.5		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	10:00	19.89		4.51		15.38	2.51

(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	12:42:00 PM	2.7	0.3	8.61	10.5	371.4	33.5	94.6	2.37
	12:46:00 PM	2.9	0.3	8.63	10.3	375.6	29.4	90	1.82
	12:50:00 PM	3	0.3	8.63	10.2	378.9	25.6	87.3	1.97
Final Field Parameters	12:58:00 PM	3.4	0.3	8.62	10.2	376.2	25.6	85.6	

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; Slight green tint; No odor; No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:10:00 PM	VOA-Glass	3	No
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	4	

General Sampling Comments

Began purge at 12:06.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW10		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW10-GW-121621		
Sub Area	AOC 2	**Sample Depth**	12.5		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	10:18	19.73		4.78		14.95	2.44

(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	2:46:00 PM	5.1	0.3	7.71	10.6	694	28.4	85.5	2
	2:52:00 PM	5.3	0.3	7.72	10.5	699	26	89.7	0.92
Final Field Parameters	2:56:00 PM	5.5	0.3	7.73	10.7	702	25.6	91.7	0.81

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; Slight green tint; No odor; No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:10:00 PM	VOA-Glass		
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	2	

General Sampling Comments

Begin purge at 13:16.
Dissolved oxygen measured in percent (%).

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW11		
Project #	0747.01.13	**Sampler**	C. Sifford		
Project Name	North Cascade Ford	**Sampling Date**	12/16/2021		
Sampling Event	December 2021	**Sample Name**	MW11-GW-121621		
Sub Area	AOC 3	**Sample Depth**	12.5		
FSDS QA:	C. Wise 12/20/21	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/16/2021	9:50	19.57		4.28		15.29	2.49

(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	11:35:00 AM	2.8	0.3	11.19	10.8	357.1	102.7	-7.8	1.4
	11:39:00 AM	3	0.3	11.21	10.8	369.9	100.1	-6	1.43
Final Field Parameters	11:44:00 AM	3.3	0.3	11.18	10.8	365.9	95.4	-2.5	0.88

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	11:50:00 AM	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 10:59.
Dissolved oxygen measured in percent (%).

Signature _____

ATTACHMENT B

ANALYTICAL LABORATORY REPORT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 13, 2022

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

Dear Ms Wise:

Included is the amended report from the testing of material submitted on December 17, 2021 from the 0747.01.13, F&BI 112369 project. Per your request, the naphthalenes results for sample MWDUP-GW-121621 have been removed.

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
c: Fiona Bellows
MFA1228R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

December 28, 2021

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

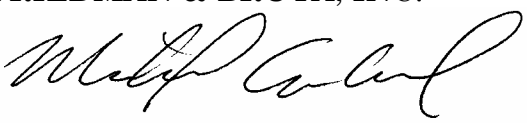
Dear Ms Wise:

Included are the results from the testing of material submitted on December 17, 2021 from the 0747.01.13, F&BI 112369 project. There are 11 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
MFA1228R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 17, 2021 by Friedman & Bruya, Inc. from the Maul Foster Alongi 0747.01.13, F&BI 112369 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Maul Foster Alongi
112369 -01	MW01R-GW-121621
112369 -02	MW07-GW-121621
112369 -03	MW09-GW-121621
112369 -04	MW02R-GW-121621
112369 -05	MW04-GW-121621
112369 -06	MW10-GW-121621
112369 -07	MW11-GW-121621
112369 -08	MWDUP-GW-121621
112369 -09	Trip Blank

All quality control requirements were acceptable.

Date of Report: 12/28/21
Date Received: 12/17/21
Project: 0747.01.13, F&BI 112369
Date Extracted: 12/22/21
Date Analyzed: 12/22/21

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW01R-GW-121621 112369-01	70 x	<250	110
MW07-GW-121621 112369-02	59 x	<250	128
MW09-GW-121621 112369-03 1/1.2	91 x	<300	137
MW02R-GW-121621 112369-04	580 x	330 x	143
MW04-GW-121621 112369-05	150 x	<250	143
MW10-GW-121621 112369-06	110 x	<250	123
MW11-GW-121621 112369-07	<50	<250	137
MWDUP-GW-121621 112369-08	390 x	<250	104
Method Blank 01-2912 MB2	<50	<250	108

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW09-GW-121621	Client:	Maul Foster Alongi
Date Received:	12/17/21	Project:	0747.01.13, F&BI 112369
Date Extracted:	12/22/21	Lab ID:	112369-03
Date Analyzed:	12/22/21	Data File:	122217.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	101	90	111

Compounds:	Concentration ug/L (ppb)
1,4-Dichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank	Client:	Maul Foster Alongi
Date Received:	12/17/21	Project:	0747.01.13, F&BI 112369
Date Extracted:	12/22/21	Lab ID:	112369-09
Date Analyzed:	12/22/21	Data File:	122216.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	104	90	111

Compounds:	Concentration ug/L (ppb)
1,4-Dichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Maul Foster Alongi
Date Received:	Not Applicable	Project:	0747.01.13, F&BI 112369
Date Extracted:	12/22/21	Lab ID:	01-2848 mb
Date Analyzed:	12/22/21	Data File:	122207.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	85	117
Toluene-d8	95	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)
1,4-Dichlorobenzene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW10-GW-121621	Client:	Maul Foster Alongi
Date Received:	12/17/21	Project:	0747.01.13, F&BI 112369
Date Extracted:	12/21/21	Lab ID:	112369-06 1/2
Date Analyzed:	12/21/21	Data File:	122115.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	8 ip	10	60
Phenol-d6	23	10	49
Nitrobenzene-d5	99	15	144
2-Fluorobiphenyl	92	25	128
2,4,6-Tribromophenol	8 ip	10	142
Terphenyl-d14	107	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Maul Foster Alongi
Date Received:	Not Applicable	Project:	0747.01.13, F&BI 112369
Date Extracted:	12/21/21	Lab ID:	01-2901 mb4
Date Analyzed:	12/21/21	Data File:	122106.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	10	60
Phenol-d6	16	10	49
Nitrobenzene-d5	95	15	144
2-Fluorobiphenyl	91	25	128
2,4,6-Tribromophenol	49	10	142
Terphenyl-d14	104	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2

Date of Report: 12/28/21
Date Received: 12/17/21
Project: 0747.01.13, F&BI 112369

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

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	104	63-142	4

Date of Report: 12/28/21
Date Received: 12/17/21
Project: 0747.01.13, F&BI 112369

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 112409-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	98	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,4-Dichlorobenzene	ug/L (ppb)	10	97	99	70-130	2

Date of Report: 12/28/21
Date Received: 12/17/21
Project: 0747.01.13, F&BI 112369

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	80	84	66-94	5
2-Methylnaphthalene	ug/L (ppb)	5	84	87	68-98	4
1-Methylnaphthalene	ug/L (ppb)	5	85	87	67-97	2

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.

112369

SAMPLE CHAIN OF CUSTODY 12-17-21

D03/VW2

Page # _____ of _____

Report To Carolyn Wise
Company Maul Foster & Alongi
Address 1329 N State St, Suite 301
City, State, ZIP Bellingham, WA 98225
Phone (360)690-5982 Email cwise@maulfoster.com

SAMPLERS (signature)

PROJECT NAME: North Cascade Ford
PO #: 0747.01.13

REMARKS
Project specific RLs? - Yes / No

INVOICE TO: accounting@maulfoster.com

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: DRO + ORO NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Naphthalenes EPA 8270 SIM				Notes
																	* remove per FB 1/12/22 ME
MW01R-GW-121621	01	12/16/21	12:30	Groundwater	1	X											
MW07-GW-121621	02	12/16/21	14:10	Groundwater	1	X											
MW09-GW-121621	03A-D	12/16/21	13:10	Groundwater	4	X				X							VOCs: Report only 1,4-dichlorobenzene
MW02R-GW-121621	04	12/16/21	15:40	Groundwater	1	X											
MW04-GW-121621	05	12/16/21	16:20	Groundwater	1	X											
MW10-GW-121621	06A-B	12/16/21	15:10	Groundwater	2	X							X				
MW11-GW-121621	07	12/16/21	11:50	Groundwater	1	X											
MWDUP-GW-121621	08	12/16/21	15:40	Groundwater	2	X							X				only 1/2L req'd
Trip Blank	09A-B			Water	2					X							VOCs: Report only 1,4-dichlorobenzene

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Christian Sifford	Maul Foster & Alongi	12/16/21	16:50
Received by:	Khoi Hoang	FBI	12/17/21	16:00
Relinquished by:				
Received by:		Samples received at 4 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

ATTACHMENT C

DATA VALIDATION MEMORANDUM

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 0747.01.13 | JANUARY 25, 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 property located at 116 W Ferry Street in Sedro-Woolley, Washington on December 16, 2021.

Friedman & Bruya, Inc. (FBI), performed the analyses. FBI report number 112369 was reviewed. The analyses performed and samples analyzed are listed below.

Analysis	Reference
Diesel- and motor-oil-range hydrocarbons	NWTPH-Dx
Semivolatile organic compounds	EPA 8270E
Volatile organic compounds	EPA 8260D
NOTES: EPA = U.S. Environmental Protection Agency. NWTPH = Northwest Total Petroleum Hydrocarbons.	

Samples Analyzed		
Report 112369		
MW01R-GW-121621	MW02R-GW-121621	MW11-GW-121621
MW07-GW-121621	MW04-GW-121621	MWDUP-GW-121621
MW09-GW-121621	MW10-GW-121621	Trip Blank

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] method 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. The final data qualifier assigned for this review is "U," result is non-detect at the method reporting limit (MRL).

According to report 112369, FBI noted that all detected NWTPH-Dx diesel- and motor-oil-range hydrocarbon results had chromatographic patterns that did not resemble the fuel standards used for quantitation. The results were reported as diesel- and motor-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 analyses were performed at the required frequencies. For purposes of data qualification, the laboratory method blanks were associated with all samples prepared in the analytical batch.

All laboratory method blank results were non-detect to MRLs for all target analytes.

Equipment Rinsate Blanks

Equipment rinsate 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.

A trip blank was submitted with the sample delivery group 112369 for 1,4-dichlorobenzene analysis by EPA Method 8260D.

The trip blank result was non-detect to the MRL.

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/LCSD samples were extracted and analyzed at the required frequency.

All LCS/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.

Laboratory duplicate results were not reported for any methods in report 112369. Laboratory precision was evaluated using LCS/LCSD results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

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

MSD results were not reported for any methods in report 112369. Laboratory precision was evaluated using LCS/LCSD results. MS results were not reported for NWTPH-Dx or EPA Method 8270E. Laboratory accuracy for these methods was evaluated using LCS/LCSD results.

The MS result was within the percent recovery acceptance limit.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance for individual samples. The laboratory appropriately documented and qualified surrogate outliers.

According to report 112369, the EPA Method 8270E 2-fluorophenol and 2,4,6-tribromophenol surrogate results for sample MW10-GW-121621 were below the lower percent recovery acceptance limit of 10 percent, at 8 percent each. The reviewer confirmed that this sample was analyzed at a 1:2 dilution, and that the remaining four surrogate results were within percent recovery acceptance limits; thus, qualification was not required.

All remaining surrogate results were within percent recovery acceptance limits.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. According to report 112369, the following field duplicate and parent sample pairs were submitted for analysis

(MW02R-GW-121621/MWDUP-GW-121621). 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. The reviewer confirmed with FBI that sample MW10-GW-121621 was analyzed at a 1:2 dilution for EPA Method 8270E due to a low sample volume submitted for analysis.

DATA PACKAGE

The data package was reviewed for transcription errors, omissions, and anomalies.

According to the chain of custody form accompanying report 112369, MFA requested EPA Method 8270E analysis for field duplicate sample MWDUP-GW-121621. The reviewer confirmed that the request for this analysis was made on the chain of custody in error. At MFA's request, FBI removed the EPA Method 8270E analysis for sample MWDUP-GW-121621 in a revision dated January 13, 2022. FBI noted the removal of the analysis in an additional case narrative in the revised report.

No other issues were found.

REFERENCES

EPA. 1986. Test methods for evaluating solid waste, physical/chemical methods. EPA publication SW-846. 3d 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).

EPA. 2020. EPA contract laboratory program, 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. November.

FBI. 2019. Quality assurance manual. Revision 17. Friedman & Bruya, Inc. Seattle, Washington. November 6.