
To: Sandra Matthews, Department of Ecology
From: Abhijit Joshi and Iain Wingard, GeoEngineers, Inc.
Date: October 20, 2020
Subject: Everett Smelter Site Lowland Area Monitoring Well Inventory

Introduction

This memorandum presents the results of the monitoring well inventory completed at Everett Smelter Site Lowland Area. The Lowland Area is generally situated between Marine View Drive and the Snohomish River in Everett, Washington as shown on Figure 1 – Vicinity Map. The well inventory was completed at the request of the Washington State Department of Ecology (Ecology).

A total of 101 monitoring wells have been used for the purposes of Lowland Area investigation in the past. The locations of these monitoring wells are shown on Figure 2 – Monitoring Well Inventory. Two of the wells, EV-13 and EV-19B, were decommissioned in September 2018 during the Area A1 Remedial Action. The decommissioning reports for EV-13 and EV-19B were provided to Ecology as part of Area A1 Remedial Action Completion Report (GeoEngineers 2019) and are also included in Appendix A.

A well inventory was completed for the remaining 99 wells in August 2020 to:

- Document the presence or absence of the well.
- Document any issues related to well access and condition.
- If the well is present, measure the depth to groundwater (DTW) and the total depth of the well.
- Remove existing well casing J-plugs and replace them with lockable J-plugs and provide keys to lockable J-plugs to Ecology.

Well Inventory Field Work

Well inventory field work was completed by a GeoEngineers' field representative between August 3 and 12, 2020. Prior to performing the field work, the GeoEngineers' field representative obtained the keys to the existing well monument locks from Ecology. The keys were returned to Ecology following the completion of the field work.

The known location of each well was visited to document the presence or absence of the well. A global positioning system (GPS) device, loaded with well location coordinates, was used in the field to help locate wells, as necessary. For the wells that were present and accessible, DTW and the total depth of the well were measured by lowering a decontaminated e-tape into the well casing. Following the DTW measurement, the e-tape was lowered until it reached the bottom of the well to obtain the total depth. Both the DTW and total depth were measured from the north side of the top of the well casing. The e-tape was decontaminated after collecting measurements at each monitoring well location using the following procedure:

1. Washing the e-tape with a brush and non-phosphate detergent solution (e.g., Liqui-Nox and distilled water), and
2. Rinsing with distilled water.

Additionally, a new pair of gloves was used at each monitoring well location to limit cross-contamination between well locations.



Photographs were collected of the wells that were observed during the well inventory. Representative photographs of the observed wells are included in Appendix B.

Results of Well Inventory

The results of the well inventory are presented in Table 1 – Monitoring Well Inventory and on Figure 2 – Monitoring Well Inventory. The following is a summary of the results:

- Eighty-four wells were observed to be present as identified in Table 1 and on Figure 2.
- Of the 84 wells that were present, 83 were accessible. DTW and total well depth measurements were obtained for the 83 wells and are provided in Table 1. One well, BP-10D, was inaccessible because an ecology block was in contact with the cap on the stick-up well monument preventing the opening of the well monument cap and access to the well casing inside the monument (refer to the photo of this well presented in Appendix B). Therefore, DTW and total well depth measurements for BP-10D could not be obtained.
- Of the 83 wells that were present and accessible, new lockable J-plugs were installed on 64 wells as identified in Table 1. New lockable J-plugs were not required to be installed on the remaining 19 wells (identified in Table 1) as the wells were already equipped with grip-n-lock locking well caps. The keys to the newly installed lockable J-plugs were provided to Ecology.
- Of the 83 wells that were present and accessible, new locks were installed on the stick-up well monuments of 24 wells as identified in Table 1. New locks were installed either because these wells did not have existing locks or keys were not available to open the existing locks. Well monument locks for which there were no keys were cut to access the well. The keys to the newly installed well monument locks were provided to Ecology.
- Fifteen wells either appeared to be decommissioned or could not be located that included the following:
 - Two wells LLMW-9S/D appeared to have been decommissioned. Concrete was observed in the well casing within the flush mount well monument.
 - Thirteen wells LLMW-13S/D, LLMW-16S/D, LLMW-22S/D, EV-7B, MW-1202R, MW-1203R, MW-1301R, MW-1501R, MW-1701, and UNK could not be located due to variety of reasons as described in Table 1.

References

GeoEngineers, 2019. Construction Completion Report, Remedial Action Area A1, Everett Smelter Site, Lowland Area, Everett, Washington. Prepared for Washington State Department of Ecology. September 30, 2019.

Attachments:

Table 1. Monitoring Well Inventory
Figure 1. Vicinity Map
Figure 2. Monitoring Well Inventory
Appendix A. Wells EV-13 and EV-19B Decommissioning Reports
Appendix B. Well Photographs

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.



Table 1
Monitoring Well Inventory
Everett Smelter Lowland Area
Everett, Washington

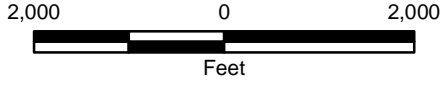
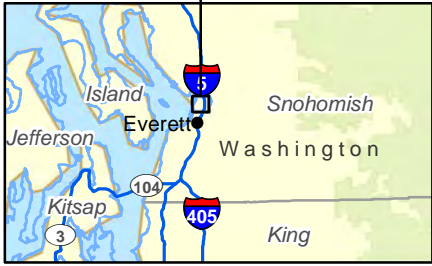
No.	Monitoring Well Identification	Well Completion Type	Date Observed	Well Present? (Yes/No)	Depth to Water (feet below top of casing)	Total Well Depth (feet below top of casing)	New Lockable J-Plug Installed?	New Lock Installed	Photograph Numbers	Notes
1	BP-01S	Stick Up	8/12/2020	Yes	6.18	12.3	No	Yes	BP-01S Well BP-01S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
2	BP-01D	Stick Up	8/12/2020	Yes	11.5	36.65	No	Yes	BP-01D Well BP-01D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
3	BP-02S	Stick Up	8/11/2020	Yes	6.3	11.22	No	No	BP-02S Well BP-02S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
4	BP-02D	Stick Up	8/11/2020	Yes	11.36	35.84	No	No	BP-02D Well BP-02D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
5	BP-03S	Stick Up	8/11/2020	Yes	5.32	11.64	No	No	BP-03S Well BP-03S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
6	BP-03D	Stick Up	8/11/2020	Yes	11.22	33.35	No	No	BP-03D Well BP-03D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
7	BP-04S	Stick Up	8/11/2020	Yes	5.51	10.74	No	No	BP-04S Well BP-04S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
8	BP-04D	Stick Up	8/11/2020	Yes	11.14	34.8	No	No	BP-04D Well BP-04D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
9	BP-04D2	Stick Up	8/12/2020	Yes	12.21	68.32	Yes	Yes	BP-04D2 Well BP-04D2 Location	--
10	BP-05S	Stick Up	8/11/2020	Yes	5.36	12.73	No	No	BP-05S Well BP-05S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
11	BP-05D	Stick Up	8/11/2020	Yes	11.42	37.42	No	No	BP-05D Well BP-05D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
12	BP-05D2	Stick Up	8/11/2020	Yes	7.68	74.98	Yes	No	BP-05D2 Well BP-05D2 Location	--
13	BP-06S	stick Up	8/11/2020	Yes	5.22	11.61	No	No	BP-06S Well BP-06S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
14	BP-06D	Stick Up	8/11/2020	Yes	11.14	37.59	No	No	BP-06D Well BP-06D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
15	BP-07S	Stick Up	8/11/2020	Yes	3.98	14.12	No	Yes	BP-07S Well BP-07S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
16	BP-07D	Stick Up	8/11/2020	Yes	11.32	38.94	No	Yes	BP-07D Well BP-07D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
17	BP-07D2	Stick Up	8/12/2020	Yes	7.2	82.04	Yes	No	BP-07D2 Well BP-07D2 Location	--
18	BP-08S	Stick Up	8/11/2020	Yes	3.36	10.81	No	Yes	BP-08S Well BP-08S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
19	BP-08D	Stick Up	8/12/2020	Yes	12.42	35.09	No	Yes	BP-08D Well BP-08D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
20	BP-09S	Stick Up	8/11/2020	Yes	3.41	17.7	No	No	BP-09S Well BP-09S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
21	BP-09D	Stick Up	8/11/2020	Yes	12.41	31.61	No	No	BP-09D Well BP-09D Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
22	BP-10S	Stick Up	8/11/2020	Yes	3.57	4.34	No	No	BP-10S Well BP-10S Location	Grip-N-Lock locking well cap present on well. Therefore, new J-plug not required.
23	BP-10D	Stick Up	8/11/2020	Yes	--	--	No	No	BP-10D Well BP-10D Location	Well has ecology block against the cap of stick-up well monument. Well could not be accessed.
24	LLMW-01D	Flush Mount	8/6/2020	Yes	12.01	37.14	Yes	No	LLMW-01D Well LLMW-01D Location	--
25	LLMW-02D	Flush Mount	8/6/2020	Yes	8.73	31.98	Yes	No	LLMW-02D Well LLMW-02D Location	--
26	LLMW-03S	Stick Up	8/6/2020	Yes	7.54	11.76	Yes	Yes	LLMW-03S Well LLMW-03S Location	No lock was present on stick up protective well casing.
27	LLMW-03D	Stick Up	8/6/2020	Yes	12.35	34.08	Yes	Yes	LLMW-03D Well LLMW-03D Location	No lock was present on stick up protective well casing.
28	LLMW-04S	Stick Up	8/11/2020	Yes	9.91	17.53	Yes	Yes	LLMW-04S Well LLMW-04S Location	--
29	LLMW-04D	Stick Up	8/11/2020	Yes	15.71	34.73	Yes	Yes	LLMW-04D Well LLMW-04D Location	--
30	LLMW-05S	Flush Mount	8/3/2020	Yes	6.11	9.16	Yes	No	LLMW-05S Well LLMW-05S Location	--
31	LLMW-05D	Flush Mount	8/3/2020	Yes	13.8	24.13	Yes	No	LLMW-05D Well LLMW-05D Location	--
32	LLMW-06S	Flush Mount	8/3/2020	Yes	5.71	6.79	Yes	No	LLMW-06S Well LLMW-06S Location	Top of existing well casing was observed to be uneven.
33	LLMW-06D	Flush Mount	8/3/2020	Yes	9.01	27.7	Yes	No	LLMW-06D Well LLMW-06D Location	Top of existing well casing was observed to be uneven.
34	LLMW-07S	Flush Mount	8/3/2020	Yes	5.77	8.97	Yes	No	LLMW-07S Well LLMW-07S Location	--
35	LLMW-07D	Flush Mount	8/3/2020	Yes	11.19	24.33	Yes	No	LLMW-07D Well LLMW-07D Location	--
36	LLMW-08S	Stick Up	8/10/2020	Yes	10.48	13.16	Yes	No	LLMW-08S Well LLMW-08S Location	--
37	LLMW-08D	Stick Up	8/10/2020	Yes	10.51	27.81	Yes	No	LLMW-08D Well LLMW-08D Location	--
38	LLMW-09S	Flush Mount	8/3/2020	No	--	--	No	No	LLMW-09S Well LLMW-09S Location	Well appears to have been decommissioned. Flush mount well monument filled with concrete.
39	LLMW-09D	Flush Mount	8/3/2020	No	--	--	No	No	LLMW-09D Well LLMW-09D Location	Well appears to have been decommissioned. Flush mount well monument filled with concrete.
40	LLMW-10S	Stick Up	8/10/2020	Yes	8.29	9.18	Yes	Yes	LLMW-10S Well LLMW-10S Location	--
41	LLMW-10D	Stick Up	8/10/2020	Yes	10.58	33.85	Yes	Yes	LLMW-10D Well LLMW-10D Location	--
42	LLMW-11S	Flush Mount	8/10/2020	Yes	DRY	8.31	Yes	No	LLMW-11S Well LLMW-11S Location	--
43	LLMW-11D	Flush Mount	8/10/2020	Yes	10.64	22.1	Yes	No	LLMW-11D Well LLMW-11D Location	--

No.	Monitoring Well Identification	Well Completion Type	Date Observed	Well Present? (Yes/No)	Depth to Water (feet below top of casing)	Total Well Depth (feet below top of casing)	New Lockable J-Plug Installed?	New Lock Installed	Photograph Numbers	Notes
44	LLMW-12S	Flush Mount	8/11/2020	Yes	5.31	6.11	Yes	No	LLMW-12S Well LLMW-12S Location	
45	LLMW-12D	Flush Mount	8/11/2020	Yes	5.35	27.19	Yes	No	LLMW-12D Well LLMW-12D Location	
46	LLMW-13S	--	8/10/2020	No	--	--	--	No	--	New Building on GPS coordinates of well location. Well could not be located. Ecology to confirm if this well got decommissioned.
47	LLMW-13D	--	8/10/2020	No	--	--	--	No	--	New Building on GPS coordinates of well location. Well could not be located. Ecology to confirm if this well got decommissioned.
48	LLMW-14S	Stick Up	8/10/2020	Yes	Dry	7.18	Yes	Yes	LLMW-14S Well LLMW-14S Location	
49	LLMW-14D	Stick Up	8/11/2020	Yes	8.97	32.02	Yes	Yes	LLMW-14D Well LLMW-14D Location	
50	LLMW-15S	Flush Mount	8/3/2020	Yes	10.97	13.91	Yes	No	LLMW-15S Well LLMW-15S Location	
51	LLMW-15D	Flush Mount	8/3/2020	Yes	15.01	35.02	Yes	No	LLMW-15D Well LLMW-15D Location	
52	LLMW-16S	--	8/11/2020	No	--	--	No	No	--	New Building on GPS coordinates of well location. Well could not be located. Ecology to confirm if this well got decommissioned.
53	LLMW-16D	--	8/11/2020	No	--	--	No	No	--	New Building on GPS coordinates of well location. Well could not be located. Ecology to confirm if this well got decommissioned.
54	LLMW-17S	Flush Mount	8/4/2020	Yes	Dry	7.82	Yes	No	LLMW-17S/D Well LLMW-17S/D Location	
55	LLMW-17D	Flush Mount	8/4/2020	Yes	14.02	24.5	Yes	No	LLMW-17S/D Well LLMW-17S/D Location	
56	LLMW-18S	Flush Mount	8/3/2020	Yes	10.94	15.81	Yes	No	LLMW-18S Well LLMW-18S Location	Missing 2 of 3 well monument bolts.
57	LLMW-18D	Flush Mount	8/3/2020	Yes	14.98	39.81	Yes	No	LLMW-18D Well LLMW-18D Location	Missing 2 of 3 well monument bolts.
58	LLMW-19D	Stick Up	8/10/2020	Yes	8.79	29.6	Yes	Yes	LLMW-19D Well LLMW-19D Location	Located adjacent to PZ-1B.
59	LLMW-20D	Stick Up	8/10/2020	Yes	9.54	24.09	Yes	Yes	LLMW-20D Well LLMW-20D Location	Located adjacent to PZ-3B.
60	LLMW-21S	Stick Up	8/11/2020	Yes	9.54	9.57	Yes	Yes	LLMW-21S Well LLMW-21S Location	
61	LLMW-21D	Stick Up	8/11/2020	Yes	10.84	36.15	Yes	Yes	LLMW-21D Well LLMW-21D Location	
62	LLMW-22S	Flush Mount	8/4/2020	No	--	--	No	No	--	New Gravel for access road at the location of well. Well could not be located. Ecology to confirm if this well got decommissioned.
63	LLMW-22D	Flush Mount	8/4/2020	No	--	--	No	No	--	New Gravel for access road at the location of well. Well could not be located. Ecology to confirm if this well got decommissioned.
64	LLMW-23S	Flush Mount	8/4/2020	Yes	15.4	24.14	Yes	No	LLMW-23S Well LLMW-23S Location	
65	LLMW-23D	Flush Mount	8/4/2020	Yes	24.14	37.87	Yes	No	LLMW-23D Well LLMW-23D Location	
66	LLMW-24D	Flush Mount	8/5/2020	Yes	44.52	52.59	Yes	No	LLMW-24D Well LLMW-24D Location	The flush mount well monument appears to be raised up and cracked. Concrete appears to have been placed inside the well monument and around the top of the well casing. The concrete surface is 1 to 2 inches above the top of the well casing.
67	LLMW-25D	Flush Mount	8/5/2020	Yes	59.06	61.81	Yes	No	LLMW-25D Well LLMW-25D Location	
68	LLMW-27S	Flush Mount	8/5/2020	Yes	Dry	34.95	Yes	No	LLMW-27S Well LLMW-27S Location	
69	LLMW-27D	Flush Mount	8/5/2020	Yes	48.46	59.02	Yes	No	LLMW-27D Well LLMW-27D Location	
70	LLMW-29S	Flush Mount	8/5/2020	Yes	Dry	15.13	Yes	No	LLMW-29S Well LLMW-29S Location	
71	LLMW-29D	Flush Mount	8/5/2020	Yes	43.33	59.03	Yes	No	LLMW-29D Well LLMW-29D Location	
72	LLMW-31D	Flush Mount	8/5/2020	Yes	45.02	65.01	Yes	No	LLMW-31D Well LLMW-31D Location	
73	LLMW-33S	Flush Mount	8/4/2020	Yes	Dry	10.11	Yes	No	LLMW-33S Well LLMW-33S Location	
74	LLMW-33D	Flush Mount	8/4/2020	Yes	28.26	45.02	Yes	No	LLMW-33D Well LLMW-33D Location	
75	LLMW-34S	Flush Mount	8/4/2020	Yes	8.96	12.2	Yes	No	LLMW-34S Well LLMW-34S Location	
76	LLMW-34D	Flush Mount	8/5/2020	Yes	77.56	91.22	Yes	No	LLMW-34D Well LLMW-34D Location	
77	LLMW-35D	Flush Mount	8/5/2020	Yes	77.56	91.22	Yes	No	LLMW-35D Well LLMW-35D Location	
78	LLMW-36D	Stick Up	8/12/2020	Yes	8.88	33.1	Yes	Yes	LLMW-36D Well LLMW-36D Location	
79	LLMW-37S	Flush Mount	8/4/2020	Yes	6.99	10.61	Yes	No	LLMW-37S Well LLMW-37S Location	
80	LLMW-38S	Flush Mount	8/4/2020	Yes	6.06	11.01	Yes	No	LLMW-38S Well LLMW-38S Location	
81	LLMW-39S	Flush Mount	8/4/2020	Yes	4.9	5.3	Yes	No	LLMW-39S Well LLMW-39S Location	
82	LLMW-40S	Flush Mount	8/4/2020	Yes	5.52	11.19	Yes	No	LLMW-40S Well LLMW-40S Location	

No.	Monitoring Well Identification	Well Completion Type	Date Observed	Well Present? (Yes/No)	Depth to Water (feet below top of casing)	Total Well Depth (feet below top of casing)	New Lockable J-Plug Installed?	New Lock Installed	Photograph Numbers	Notes
83	LLMW-41S	Flush Mount	8/4/2020	Yes	8.55	10.59	Yes	No	LLMW-41S Well LLMW-41S Location	
84	LLMW-42S	Flush Mount	8/4/2020	Yes	8.22	11.03	Yes	No	LLMW-42S Well LLMW-42S Location	
85	EV-6A	Flush Mount	8/5/2020	Yes	48.09	54.64	Yes	No	EV-6A Well EV-6A Location	
86	EV-6B	Flush Mount	8/5/2020	Yes	51.22	66.53	Yes	No	EV-6B Well EV-6B Location	Well Cap not secured to the casing when the well was accessed. Well cap was on the side inside the monument. New J-plug installed.
87	EV-7B	Flush Mount	8/11/2020	No	--	--	No	No	NA	Gravel surface observed at the well location. Well could not be located. Ecology to confirm if this well got decommissioned.
88	EV-13	NA	NA	NA	NA	NA	NA	No	NA	Well decommissioned as part of Area A1 remedial action construction.
89	EV-19B	NA	NA	NA	NA	NA	NA	No	NA	Well decommissioned as part of Area A1 remedial action construction.
90	EV-20B	Stick Up	8/10/2020	Yes	51.06	57.87	Yes	Yes	EV-20B Well EV-20B Location	
91	EV-22A	Stick Up	8/10/2020	Yes	15.97	22.3	Yes	Yes	EV-22A Well EV-22A Location	
92	EV-22B	Stick Up	8/10/2020	Yes	19.79	37.76	Yes	Yes	EV-22B Well EV-22B Location	
93	MW-1202R	--	8/6/2020	No	--	--	No	No	--	New landscape in area of monitoring well location. Well could not be located. Ecology to confirm if this well got decommissioned.
94	MW-1203R	--	8/6/2020	No	--	--	No	No	--	Well could not be located. Ecology to confirm if this well got decommissioned.
95	MW-1301R	--	8/6/2020	No	--	--	No	No	--	Pile of concrete in area of well location. Equipment also in area of well location and well may be under equipment. Well could not be located. Ecology to confirm if this well got decommissioned.
96	MW-1501R	--	8/6/2020	No	--	--	No	No	--	Possible that well is in overgrown vegetation along shoreline. Well could not be located. Ecology to confirm if this well got decommissioned.
97	MW-1701	--	8/6/2020	No	--	--	No	No	--	RV parked over the well location. Unable to see if well present under RV. Well could not be located. Ecology to confirm if this well got decommissioned.
98	PZ-1B	Flush Mount (Utility Hatch)	8/3/2020	Yes	6.62	7.74	Yes	No	PZ-1B Well PZ-1B Location	Well located in square utility hatch.
99	PZ-2B	Flush Mount (Covered Vault)	8/3/2020	Yes	5.63	9.41	Yes	No	PZ-2B Well PZ-2B Location	Well located under a square metal plate covering shallow vault.
100	PZ-3B	Stick Up	8/10/2020	Yes	8.22	8.81	Yes	Yes	PZ-3B Well PZ-3B Location	
101	UNK	--	8/3/2020	No	--	--	No		--	Piles of dirt in area of well location. Well could not be located. Ecology to confirm if this well got decommissioned.



Path: \\sealprojects\0\0504068\GIS\MXDs\Report\FS\050406801_Figure1_VM.mxd Map Revised: 03 June 2015 cgonzales

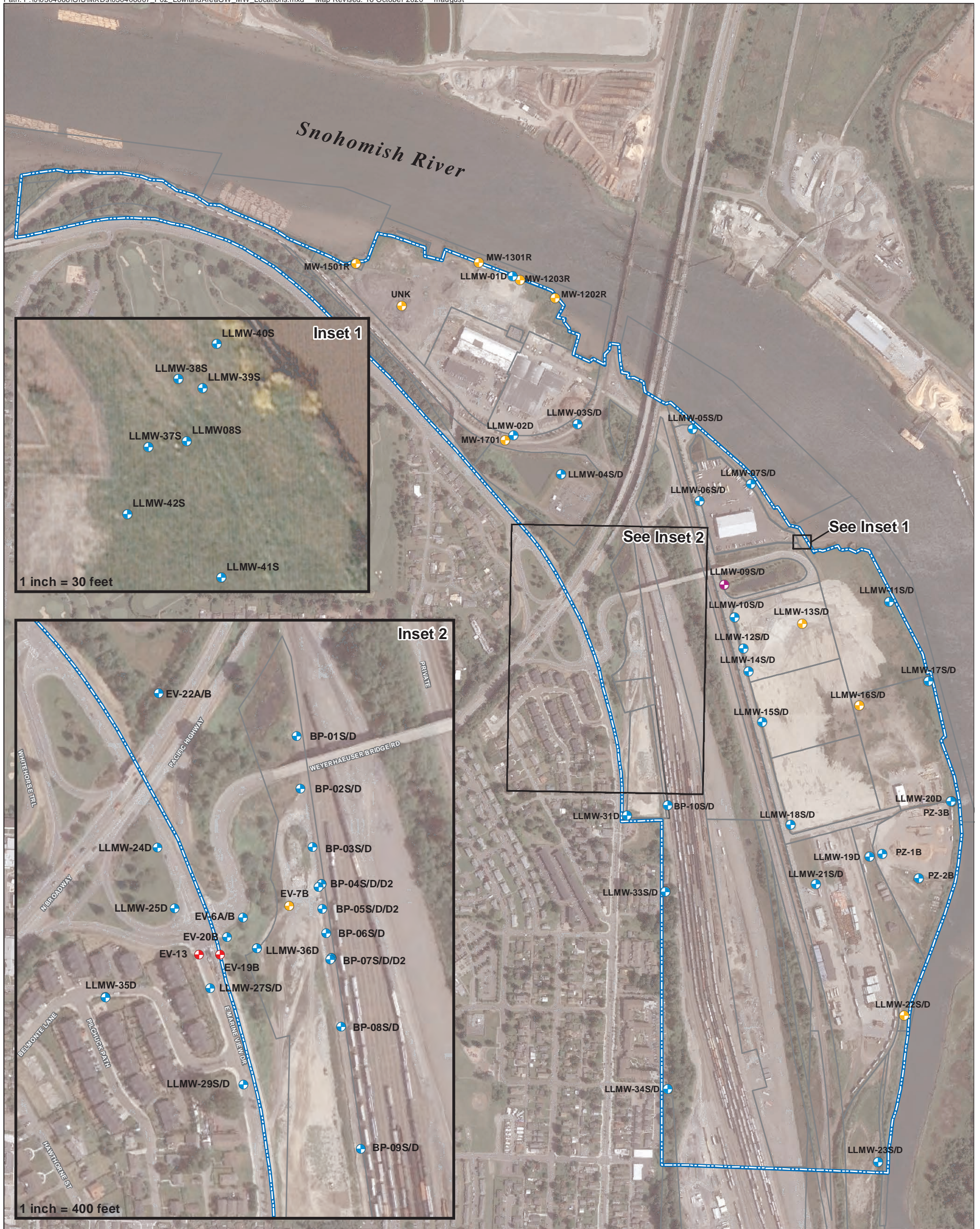


Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Data Sources: ESRI Data & Maps
 Projection: NAD 1983 UTM Zone 10N

Vicinity Map	
Everett Smelter - Lowland Area	
	Figure 1

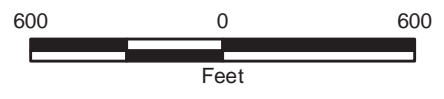


Legend

- Lowland
- Snohomish County Parcel Boundary
- BP-05S/D/D2 Monitoring Well Located During August 2020 Well Inventory Site Visit
- LLMW-13 S/D Monitoring Well Could Not Be Located During August 2020 Well Inventory Site Visit
- LLMW-09 S/D Monitoring Well Appeared to be Decommissioned During August 2020 Well Inventory Site Visit
- EV-13 Monitoring Well Decommissioned in September 2018 During Area A1 Remedial Action

Notes:
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 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Note: See Table 1 for additional observations made during August 2020 well inventory site visit



Monitoring Well Inventory	
Everett Smelter - Lowland Area	
GEOENGINEERS	Figure 2

APPENDIX A
Wells EV-13 and EV-19B Decommissioning Reports



RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE51071

Construction/Decommission

Construction

Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Titan Earthworks

Property Owner Benson & Wolken Properties

Site Address East Marine View Drive

City Everett County Snohomish

EWM

Unique Ecology Well ID

Tag No. _____

Location 1/4 SW 1/4 SE Sec 8 TWN 29N R 5E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r Lat Deg n/a Lat Min/Sec n/a
still Required) Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 29050800401900

Driller Trainee Name (Print) Tim Watson

Driller/Trainee Signature *Tim Watson*

Cased or Uncased Diameter 2" Static Level _____

Driller/Trainee License No. 3203

Work/Decommission Start Date 9-18-18

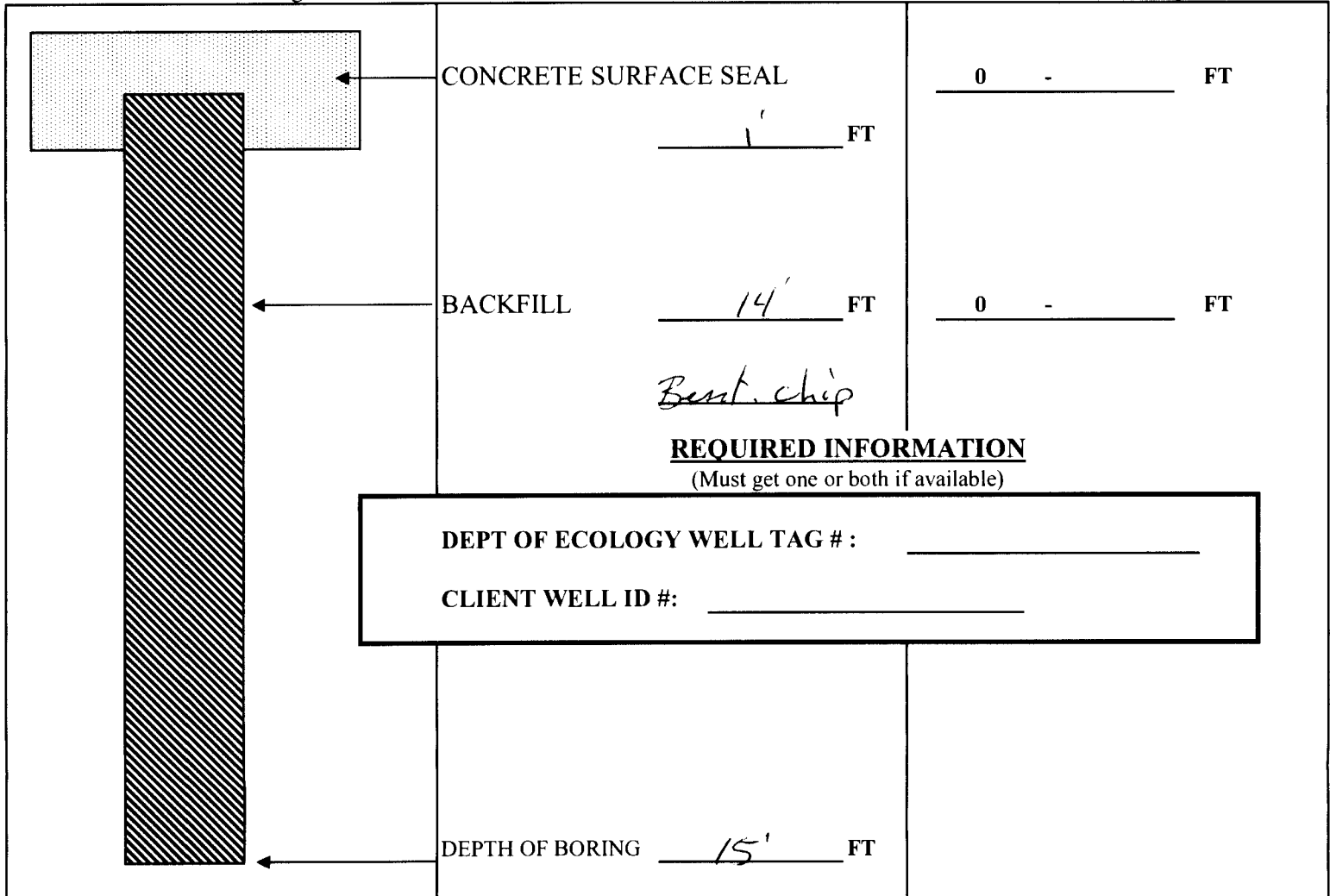
If trainee, licensed drillers' _____
Signature and License No. _____

Work/Decommission Completed Date 9-18-18

Construction/Design

Well Data 103-18-1471

Formation Description



REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: _____

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE51071

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Titan Earthworks

Unique Ecology Well ID

Tag No. _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Materials used and the information reported above are true to my best knowledge and belief

Driller Trainee Name (Print) Tim Watson

Driller/Trainee Signature *Tim Watson*

Driller/Trainee License No. 3203

If trainee, licensed drillers' _____

Signature and License No. _____

Property Owner Benson & Wolken Properties

Site Address East Marine View Drive

City Everett

County Snohomish

EWM

Location 1/4 SW 1/4 SE Sec 8 TWN 29N R 5E or
WWM

Lat/Long (s,t,r still Required) Lat Deg n/a Lat Min/Sec n/a
Long Deg n/a Long Min/Sec n/a

Tax Parcel No. 29050800401900

Cased or Uncased Diameter 2" Static Level _____

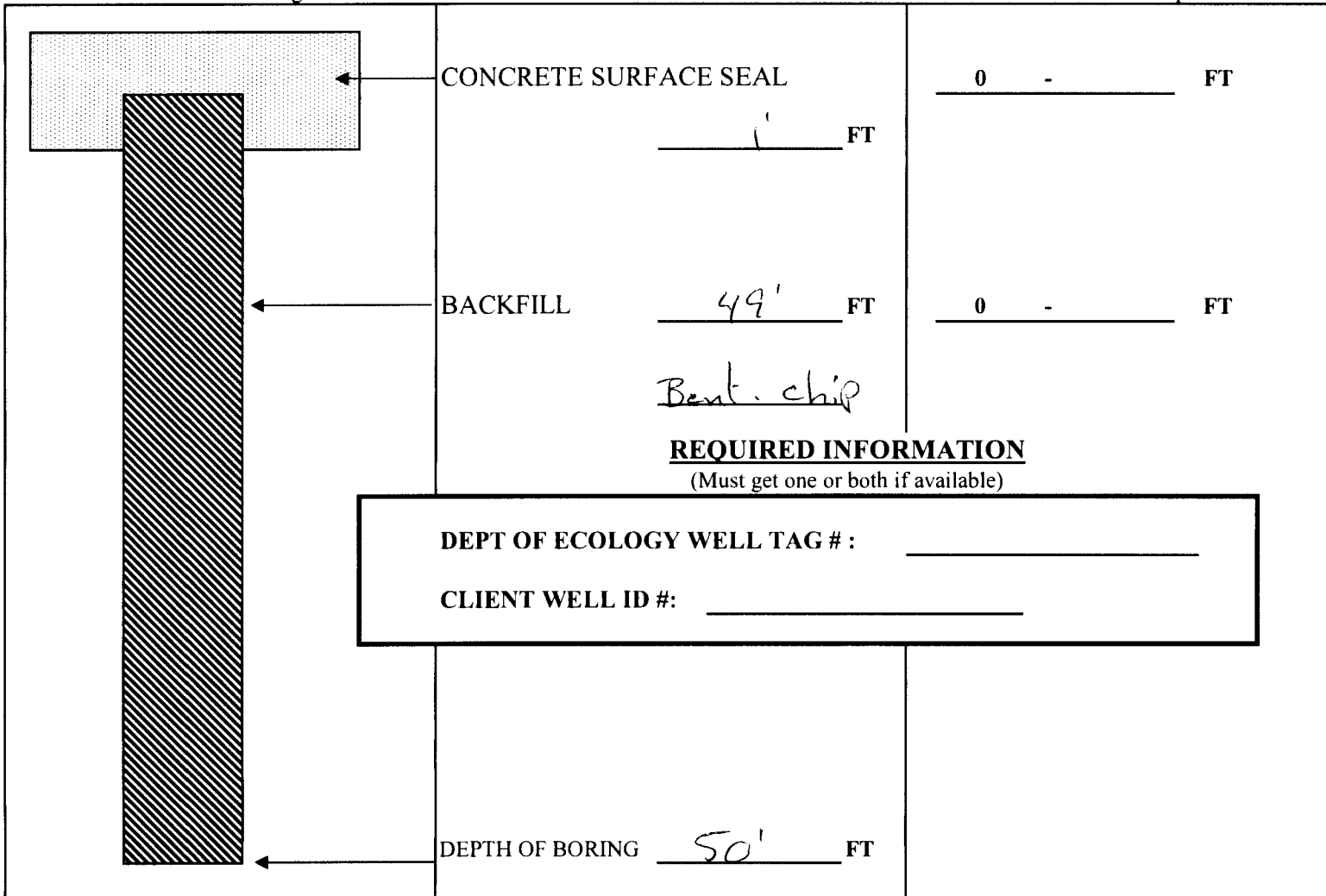
Work/Decommission Start Date 9-18-18

Work/Decommission Completed Date 9-18-18

Construction/Design

Well Data 103-18-1471

Formation Description



REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: _____

Scale 1" = _____

Page _____ of _____

APPENDIX B

Well Photographs






Photograph 1. Well BP-01S



Photograph 2. Well BP-01S location

Date: 09/2/2020
0504-068-07

BP-01S	
Everett Smelter Everett, Washington	
	Figure B-1




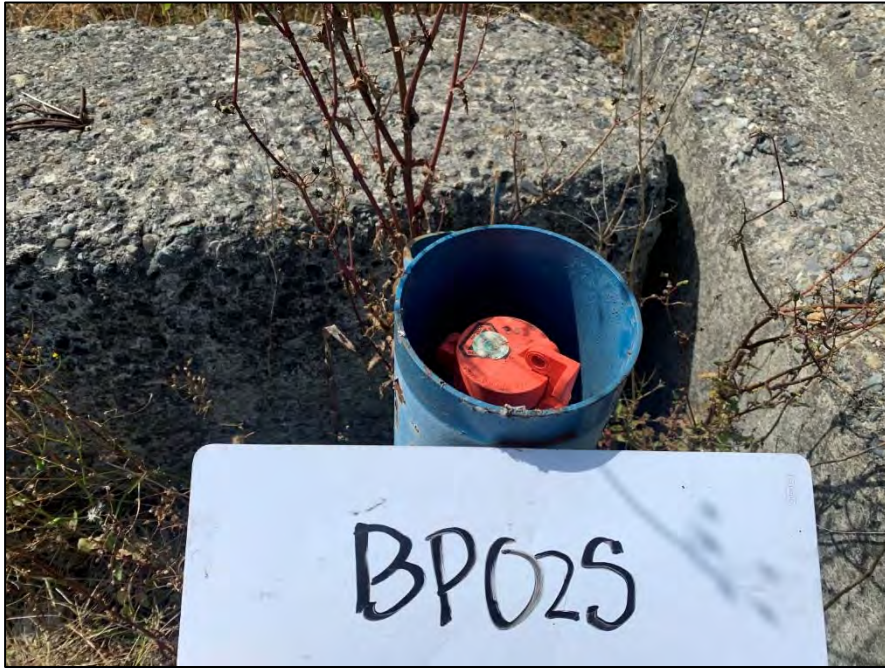
Photograph 1. Well BP-01D



Photograph 2. Well BP-01D location

Date: 09/2/2020
0504-068-07

BP-01D	
Everett Smelter Everett, Washington	
	Figure B-2




Photograph 1. Well BP-02S



Photograph 2. Well BP-02S location

0504-068-07 Date: 09/2/2020

BP-02S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-3




Photograph 1. Well BP-02D



Photograph 2. Well BP-02D location

Date: 09/2/2020
0504-068-07

BP-02D	
Everett Smelter Everett, Washington	
	Figure B-4




Photograph 1. Well BP-03S



Photograph 2. Well BP-03S location

0504-068-07 Date: 09/2/2020

BP-03S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-5




Photograph 1. Well BP-03D



Photograph 2. Well BP-03D location

Date: 09/2/2020
0504-068-07

BP-03D	
Everett Smelter Everett, Washington	
	Figure B-6



Photograph 1. Well BP-04S



Photograph 2. Well BP-04S location

BP-04S

Everett Smelter
Everett, Washington

GEOENGINEERS 

Figure B-7




Photograph 1. Well BP-04D



Photograph 2. Well BP-04D location

Date: 09/2/2020
0504-068-07

BP-04D	
Everett Smelter Everett, Washington	
	Figure B-8




Photograph 1. Well BP-04D2



Photograph 2. Well BP-04D2 location

Date: 09/2/2020
0504-068-07

BP-04D2	
Everett Smelter Everett, Washington	
	Figure B-9




Photograph 1. Well BP-05S



Photograph 2. Well BP-05S location

Date: 09/2/2020
0504-068-07

BP-05S	
Everett Smelter Everett, Washington	
	Figure B-10




Photograph 1. Well BP-05D



Photograph 2. Well BP-05D location

Date: 09/2/2020
0504-068-07

BP-05D	
Everett Smelter Everett, Washington	
	Figure B-11




Photograph 1. Well BP-05D2



Photograph 2. Well BP-05D2 location

0504-068-07 Date: 09/2/2020

BP-05D2	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-12




Photograph 1. Well BP-06S



Photograph 2. Well BP-06S location

Date: 09/2/2020
0504-068-07

BP-06S	
Everett Smelter Everett, Washington	
	Figure B-13




Photograph 1. Well BP-06D



Photograph 2. Well BP-06D location

Date: 09/2/2020
0504-068-07

BP-06D	
Everett Smelter Everett, Washington	
	Figure B-14




Photograph 1. Well BP-07S



Photograph 2. Well BP-07S location

Date: 09/2/2020
0504-068-07

BP-07S	
Everett Smelter Everett, Washington	
	Figure B-15




Photograph 1. Well BP-07D



Photograph 2. Well BP-07D location

Date: 09/2/2020
0504-068-07

BP-07D	
Everett Smelter Everett, Washington	
	Figure B-16




Photograph 1. Well BP-07D2



Photograph 2. Well BP-07D2 location

Date: 09/2/2020
0504-068-07

BP-07D2	
Everett Smelter Everett, Washington	
	Figure B-17




Photograph 1. Well BP-08S



Photograph 2. Well BP-08S location

0504-068-07 Date: 09/2/2020

BP-08S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-18




Photograph 1. Well BP-08D



Photograph 2. Well BP-08D location

0504-068-07 Date: 09/2/2020

BP-08D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-19




Photograph 1. Well BP-09S



Photograph 2. Well BP-09S location

Date: 09/2/2020
0504-068-07

BP-09S	
Everett Smelter Everett, Washington	
	Figure B-20




Photograph 1. Well BP-09D



Photograph 2. Well BP-09D location

Date: 09/2/2020
0504-068-07

BP-09D	
Everett Smelter Everett, Washington	
	Figure B-21




Photograph 1. Well BP-10S



Photograph 2. Well BP-10S location

Date: 09/2/2020
0504-068-07

BP-10S	
Everett Smelter Everett, Washington	
	Figure B-22




Photograph 1. Well BP-10D



Photograph 2. Well BP-10D location

Date: 09/2/2020
0504-068-07

BP-10D	
Everett Smelter Everett, Washington	
	Figure B-23




Photograph 1. Well LLMW-01D



Photograph 2. Well LLMW-01D location

0504-068-07 Date: 09/2/2020

LLMW-01D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-24




Photograph 1. Well LLMW-02D



Photograph 2. Well LLMW-02D location

0504-068-07 Date: 09/2/2020

LLMW-02D	
Everett Smelter Everett, Washington	
	Figure B-25




Photograph 1. Well LLMW-03S



Photograph 2. Well LLMW-03S location

Date: 09/2/2020

0504-068-07

LLMW-03S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-26




Photograph 1. Well LLMW-03D



Photograph 2. Well LLMW-03D location

Date: 09/2/2020
0504-068-07

LLMW-03D	
Everett Smelter Everett, Washington	
	Figure B-27




Photograph 1. Well LLMW-04S



Photograph 2. Well LLMW-04S location

0504-068-07 Date: 09/2/2020

LLMW-04S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-28




Photograph 1. Well LLMW-04D



Photograph 2. Well LLMW-04D location

Date: 09/2/2020
0504-068-07

LLMW-04D	
Everett Smelter Everett, Washington	
	Figure B-29



Photograph 1. Well LLMW-05S



Photograph 2. Well LLMW-05S location

Date: 09/2/2020

0504-068-07

LLMW-05S

Everett Smelter
Everett, Washington

GEOENGINEERS 

Figure B-30




Photograph 1. Well LLMW-05D



Photograph 2. Well LLMW-05D location

Date: 09/2/2020
0504-068-07

LLMW-05D	
Everett Smelter Everett, Washington	
	Figure B-31




Photograph 1. Well LLMW-06S



Photograph 2. Well LLMW-06S location

Date: 09/2/2020
0504-068-07

LLMW-06S	
Everett Smelter Everett, Washington	
	Figure B-32




Photograph 1. Well LLMW-06D



Photograph 2. Well LLMW-06D location

0504-068-07 Date: 09/2/2020

LLMW-06D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-33




Photograph 1. Well LLMW-07S



Photograph 2. Well LLMW-07S location

Date: 09/2/2020
0504-068-07

LLMW-07S	
Everett Smelter Everett, Washington	
	Figure B-34




Photograph 1. Well LLMW-07D



Photograph 2. Well LLMW-07D location

Date: 09/2/2020
0504-068-07

LLMW-07D	
Everett Smelter Everett, Washington	
	Figure B-35




Photograph 1. Well LLMW-08S



Photograph 2. Well LLMW-08S location

Date: 09/2/2020
0504-068-07

LLMW-08S	
Everett Smelter Everett, Washington	
	Figure B-36




Photograph 1. Well LLMW-08D



Photograph 2. Well LLMW-08D location

Date: 09/2/2020
0504-068-07

LLMW-08D	
Everett Smelter Everett, Washington	
	Figure B-37




Photograph 1. Well LLMW-09S



Photograph 2. Well LLMW-09S location

0504-068-07 Date: 09/2/2020

LLMW-09S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-38




Photograph 1. Well LLMW-09D



Photograph 2. Well LLMW-09D location

Date: 09/2/2020

0504-068-07

LLMW-09D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-39




Photograph 1. Well LLMW-10S



Photograph 2. Well LLMW-10S location

0504-068-07 Date: 09/2/2020

LLMW-10S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-40




Photograph 1. Well LLMW-10D



Photograph 2. Well LLMW-10D location

0504-068-07 Date: 09/2/2020

LLMW-10D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-41




Photograph 1. Well LLMW-11S



Photograph 2. Well LLMW-11S location

Date: 09/2/2020
0504-068-07

LLMW-11S	
Everett Smelter Everett, Washington	
	Figure B-42



Photograph 1. Well LLMW-11D



Photograph 2. Well LLMW-11D location

Date: 09/2/2020

0504-068-07

LLMW-11D

Everett Smelter
Everett, Washington

GEOENGINEERS 

Figure B-43




Photograph 1. Well LLMW-12S



Photograph 2. Well LLMW-12S location

0504-068-07 Date: 09/2/2020

LLMW-12S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-44




Photograph 1. Well LLMW-12D



Photograph 2. Well LLMW-12D location

Date: 09/2/2020

0504-068-07

LLMW-12D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-45




Photograph 1. Well LLMW-14S



Photograph 2. Well LLMW-14S location

Date: 09/2/2020
0504-068-07

LLMW-14S	
Everett Smelter Everett, Washington	
	Figure B-46




Photograph 1. Well LLMW-14D



Photograph 2. Well LLMW-14D location

0504-068-07 Date: 09/2/2020

LLMW-14D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-47




Photograph 1. Well LLMW-15S



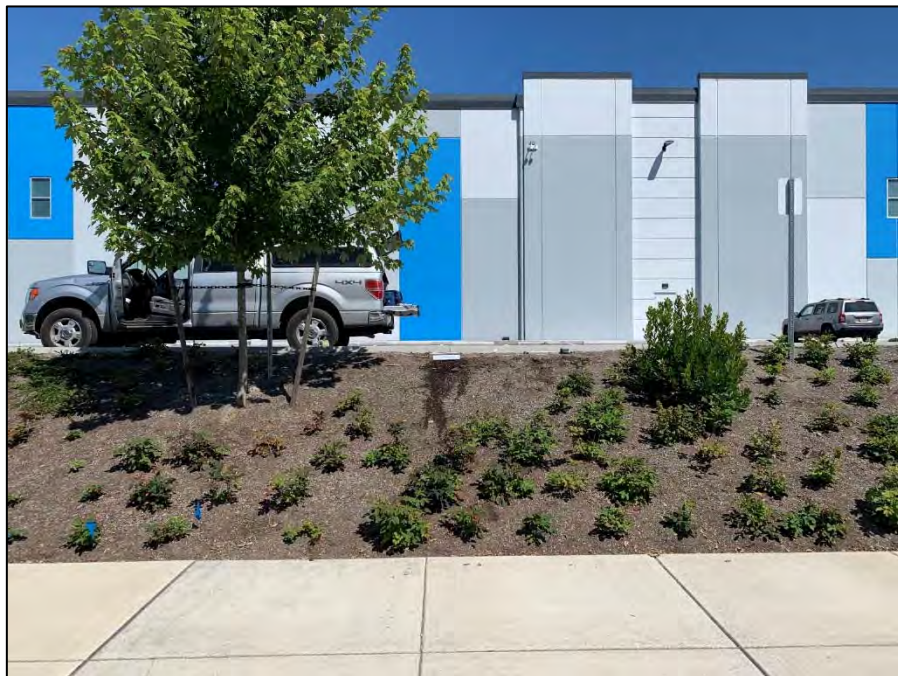
Photograph 2. Well LLMW-15S location

Date: 09/2/2020
0504-068-07

LLMW-15S	
Everett Smelter Everett, Washington	
	Figure B-48




Photograph 1. Well LLMW-15D



Photograph 2. Well LLMW-15D location

0504-068-07 Date: 09/2/2020

LLMW-15D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-49




Photograph 1. Wells LLMW-17S/D



Photograph 2. Wells LLMW-17S/D location

0504-068-07 Date: 09/2/2020

LLMW-17S/D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-50




Photograph 1. Well LLMW-18S



Photograph 2. Well LLMW-18S location

Date: 09/2/2020
0504-068-07

LLMW-18S	
Everett Smelter Everett, Washington	
	Figure B-51




Photograph 1. Well LLMW-19D



Photograph 2. Well LLMW-19D location

Date: 09/2/2020
0504-068-07

LLMW-19D	
Everett Smelter Everett, Washington	
	Figure B-52




Photograph 1. Well LLMW-20D



Photograph 2. Well LLMW-20D location

0504-068-07 Date: 09/2/2020

LLMW-20D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-53




Photograph 1. Well LLMW-21S



Photograph 2. Well LLMW-21S location

0504-068-07 Date: 09/2/2020

LLMW-21S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-54




Photograph 1. Well LLMW-23S



Photograph 2. Well LLMW-23S location

Date: 09/2/2020
0504-068-07

LLMW-23S	
Everett Smelter Everett, Washington	
	Figure B-55



Photograph 1. Well LLMW-23D



Photograph 2. Well LLMW-23D location

LLMW-23D

Everett Smelter
Everett, Washington



Figure B-56




Photograph 1. Well LLMW-24D



Photograph 2. Well LLMW-24D location

0504-068-07 Date: 09/2/2020

LLMW-24D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-57




Photograph 1. Well LLMW-25D



Photograph 2. Well LLMW-25D location

Date: 09/2/2020

0504-068-07

LLMW-25D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-58




Photograph 1. Well LLMW-27S



Photograph 2. Well LLMW-27S location

Date: 09/2/2020

0504-068-07

LLMW-27S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-59




Photograph 1. Well LLMW-27D



Photograph 2. Well LLMW-27D location

0504-068-07 Date: 09/2/2020

LLMW-27D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-60




Photograph 1. Well LLMW-29S



Photograph 2. Well LLMW-29S location

Date: 09/2/2020
0504-068-07

LLMW-29S	
Everett Smelter Everett, Washington	
	Figure B-61




Photograph 1. Well LLMW-29D



Photograph 2. Well LLMW-29D location

Date: 09/2/2020
0504-068-07

LLMW-29D	
Everett Smelter Everett, Washington	
	Figure B-62




Photograph 1. Well LLMW-31D



Photograph 2. Well LLMW-31D location

0504-068-07 Date: 09/2/2020

LLMW-31D	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-63




Photograph 1. Well LLMW-33S



Photograph 2. Well LLMW-33S location

Date: 09/2/2020
0504-068-07

LLMW-33S	
Everett Smelter Everett, Washington	
	Figure B-64




Photograph 1. Well LLMW-33D



Photograph 2. Well LLMW-33D location

Date: 09/2/2020
0504-068-07

LLMW-33D	
Everett Smelter Everett, Washington	
	Figure B-65




Photograph 1. Well LLMW-34S



Photograph 2. Well LLMW-34S location

Date: 09/2/2020

0504-068-07

LLMW-34S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-66




Photograph 1. Well LLMW-34D



Photograph 2. Well LLMW-34D location

Date: 09/2/2020
0504-068-07

LLMW-34D	
Everett Smelter Everett, Washington	
	Figure B-67




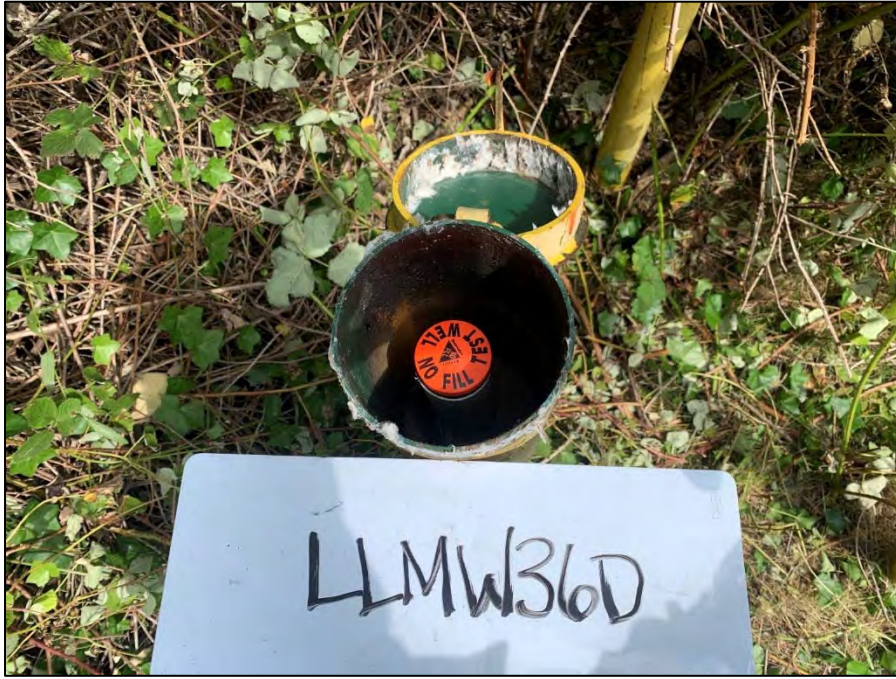
Photograph 1. Well LLMW-35D



Photograph 2. Well LLMW-35D location

Date: 09/2/2020
0504-068-07

LLMW-35D	
Everett Smelter Everett, Washington	
	Figure B-68




Photograph 1. Well LLMW-36D



Photograph 2. Well LLMW-36D location

Date: 09/2/2020
0504-068-07

LLMW-36D	
Everett Smelter Everett, Washington	
	Figure B-69




Photograph 1. Well LLMW-37S



Photograph 2. Well LLMW-37S location

Date: 09/2/2020

0504-068-07

LLMW-37S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-70




Photograph 1. Well LLMW-38S



Photograph 2. Well LLMW-38S location

0504-068-07 Date: 09/2/2020

LLMW-38S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-71




Photograph 1. Well LLMW-39S



Photograph 2. Well LLMW-39S location

Date: 09/2/2020

0504-068-07

LLMW-39S	
Everett Smelter Everett, Washington	
	Figure B-72




Photograph 1. Well LLMW-40S



Photograph 2. Well LLMW-40S location

Date: 09/2/2020
0504-068-07

LLMW-40S	
Everett Smelter Everett, Washington	
	Figure B-73




Photograph 1. Well LLMW-41S



Photograph 2. Well LLMW-41S location

Date: 09/2/2020

0504-068-07

LLMW-41S	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-74




Photograph 1. Well LLMW-42S



Photograph 2. Well LLMW-42S location

Date: 09/2/2020
0504-068-07

LLMW-42S	
Everett Smelter Everett, Washington	
	Figure B-75




Photograph 1. Well EV-6A



Photograph 2. Well EV-6A location

Date: 09/2/2020
0504-068-07

EV-6A	
Everett Smelter Everett, Washington	
	Figure B-76




Photograph 1. Well EV-6B



Photograph 2. Well EV-6B location

0504-068-07 Date: 09/2/2020

EV-6B	
Everett Smelter Everett, Washington	
	Figure B-77




Photograph 1. Well EV-20B



Photograph 2. Well EV-20B location

Date: 09/2/2020
0504-068-07

EV-20B	
Everett Smelter Everett, Washington	
	Figure B-78




Photograph 1. Well EV-22A



Photograph 2. Well EV-22A location

0504-068-07 Date: 09/2/2020

EV-22A	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-79




Photograph 1. Well EV-22B



Photograph 2. Well EV-22B location

0504-068-07 Date: 09/2/2020

EV-22B	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-80




Photograph 1. Well PZ-1B



Photograph 2. Well PZ-1B location

Date: 09/2/2020
0504-068-07

PZ-1B	
Everett Smelter Everett, Washington	
	Figure B-81




Photograph 1. Well PZ-3B



Photograph 2. Well PZ-3B location

0504-068-07 Date: 09/2/2020

PZ-3B	
Everett Smelter Everett, Washington	
GEOENGINEERS 	Figure B-82