

ANNUAL GROUNDWATER MONITORING REPORT (2024-2025)

Shelton C Street Landfill, Shelton,
Washington

Prepared for: City of Shelton

Project No. AS150074C • July 30, 2025 FINAL



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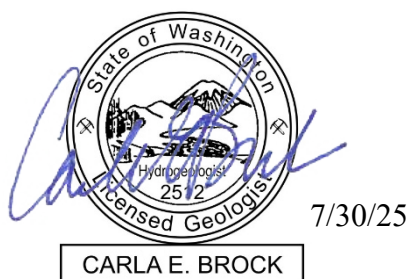
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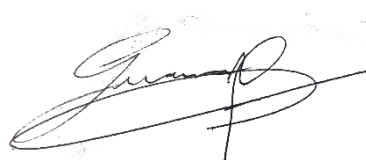
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Executive Summary

Aspect Consulting, a Geosyntec Consultants, Inc. company, (Aspect) prepared this Annual Groundwater Monitoring Report to present the results of post-cleanup construction semiannual groundwater monitoring and sampling conducted at the Shelton C Street Landfill, a former municipal solid waste landfill, located in Shelton, Washington (Site; Figure 1). The Site is located on a 16.7-acre parcel (Property; Figure 1) owned by the City of Shelton (City). The Property is at the west end of the West C Street, just west of the overpass across U.S. Highway 101.

This Annual Groundwater Monitoring Report has been prepared to meet the requirements of Agreed Order No. DE 19541 (Agreed Order) between the Washington State Department of Ecology (Ecology) and the City, executed on December 20, 2021. The cleanup action, as documented in the Construction Completion Report (CCR; Aspect, 2023a), complies with the Model Toxics Control Act (MTCA), Chapter 70.105D Revised Code of Washington (RCW), and the MTCA Cleanup Regulation, Chapter 173-340 of the Washington Administrative Code (WAC).

The post-construction monitoring well network is comprised of four monitoring wells consisting of cross- and downgradient wells situated as close as practicable to the landfill waste boundary (AMW-1 to AMW-4; Figures 2 and 3). Groundwater monitoring and sampling consists of two semiannual events, one occurring in the late summer/early fall and the other in the winter of each year, following completion of the cleanup construction (see the CCR; Aspect, 2023a). This report documents the post-construction groundwater monitoring events that were conducted on September 23, 2024, and February 4, 2025, the third and fourth post-construction events, respectively.

During the September 2024 and February 2025 events, groundwater was measured at depths of 82.89 to 108.70 feet below top of well casing, equivalent to elevations 70.79 to 62.73 feet NAVD88. Groundwater is present within Quaternary recessional glacial outwash below the base of landfill waste debris. The groundwater flow direction was calculated to be toward the southeast in September 2024 and toward south-southeast in February 2025.

Groundwater samples collected from each well were analyzed for total iron and total manganese. During the September 2024 and February 2025 groundwater monitoring events, total iron and total manganese were detected in all four existing monitoring wells at concentrations above the Site-specific cleanup levels.

Overall, concentrations of total iron and manganese in samples collected during the September 2024 monitoring event were generally higher than in samples collected during the February 2025 monitoring event from the same wells, except for AMW-3. The February 2025 event also generally showed lower turbidity in samples collected from AMW-1, AMW-3, and AMW-4 relative to the September 2024 event, which likely contributed to the lower detected concentrations in February 2025. The same relationship between turbidity and analytical results was also observed in the August 2023 and

February 2024 monitoring events. When compared to the first and second monitoring events (February 2023 and September 2024, respectively), the detections of total iron and total manganese in all wells are higher during the third and fourth monitoring events. Table 1 summarizes the findings of groundwater monitoring data from August 2023 to February 2025.

Groundwater monitoring events will continue on a semiannual basis, occurring in approximately August and February of each year for a minimum period of 5 years (through February 2028) and for at least 2 years after compliance is achieved. Compliance will be achieved when the average concentration of four consecutive sampling events is below the cleanup level or background concentration.

This Executive Summary should only be used in the context of the full report.

1 Introduction

Aspect Consulting, a Geosyntec Consultants, Inc. company, (Aspect) prepared this Annual Groundwater Monitoring Report to present the results of post-cleanup construction groundwater monitoring and sampling conducted in late 2024 and early 2025 at the Shelton C Street Landfill, a former municipal solid waste landfill, located in Shelton, Washington (Site; Figure 1). The Site is located on a 16.7-acre parcel (Property; Figure 1) owned by the City of Shelton (City). The Property is at the west end of West C Street, just west of the overpass across U.S. Highway 101.

This Annual Groundwater Monitoring Report has been prepared to meet the requirements of Agreed Order No. DE 19541 (Agreed Order) between the Washington State Department of Ecology (Ecology) and the City, executed on December 20, 2021, providing requirements for the remedial action at the Site. Ecology has determined that the remedial action complies with the Model Toxics Control Act (MTCA), Chapter 70.105D Revised Code of Washington (RCW), and the MTCA Cleanup Regulation, Chapter 173-340 of the Washington Administrative Code (WAC).

Activities described in this report were conducted in accordance with the Cleanup Action Plan (CAP; Ecology, 2021) and the Engineering Design Report (EDR; Aspect, 2022a and 2022b) which collectively provide the plans, specifications, and monitoring requirements for the engineering concepts of the cleanup action. The cleanup action construction is documented in the Construction Completion Report (CCR; Aspect, 2023a).

1.1 Report Organization

The following sections of this report are organized as follows:

- **Section 2 – Background** briefly describes use history of the Property and gives an overview of the cleanup action.
 - **Section 3 – Groundwater Monitoring Activities** describes the purpose, scope, methods, and results of the semiannual groundwater monitoring events.
 - **Section 4 – Conclusion** briefly evaluates the groundwater monitoring results relative to cleanup goals and presents the schedule for ongoing monitoring.
 - **Section 5 – References** lists the documents cited in this report.
- Section 6 – Limitations** provides guidelines for additional information governing the use of this report.

2 Site Background

In 2016, the City entered into Agreed Order No. DE 12929 with Ecology to perform a Remedial Investigation and Feasibility Study (RI/FS) and submit a draft CAP for the Site. The RI field work was completed in 2020, and the final RI/FS report was provided to Ecology in 2021 along with the draft CAP, fulfilling the requirements of Agreed Order No. DE 12929.

In 2021, the City entered into Agreed Order No. DE 19541 with Ecology to implement the cleanup action described in the draft CAP. The completed requirements of the 2021 Agreed Order include preparation of the EDR with the Compliance Monitoring Plan, construction plans, and specifications between 2021 and July 2022 (Aspect, 2022a); conducting the cleanup construction; preparation of the CCR in October 2023 (Aspect, 2023a); conducting the first year of post-construction groundwater monitoring and sampling (Aspect, 2024); and recording of an Environmental Covenant (REF).

2.1 Site Use History

The Property was purchased by the City in May 1928, including both the parcel and a perpetual easement for access; landfilling activities started the same year. In July 1931, the City sold the Property to Rainier Pulp and Paper Company but retained the right to continue to use the land as a garbage dump. Rayonier, Incorporated, successor of Rainier Pulp and Paper Company, sold the Property back to the City in July 1949.

The landfill received municipal solid waste between approximately 1928 and the mid-1980s. Early on, waste consolidation practices included open burning and on-Property incineration, common for the era (Aspect, 2021). Between 1931 and 1974, the landfill received by-products, research waste, and demolition debris from nearby pulp mills. Sludge from the City's wastewater treatment plan (WWTP) was brought to the landfill between 1973 and the mid-1980s. From 1976 to 1981, fly ash from the wood-burning power plant at the Simpson Timber Company mill was mixed with the WWTP sludge and put in the landfill. The WWTP sludge was disposed of in the northwestern part of the landfill and is estimated to be up to 5 feet thick. The cover soil and WWTP sludge overlie municipal solid waste that is approximately 20 to 25 feet thick.

The Property has been generally unused since the mid-1980s, and public access to the Property and surrounding properties is restricted for safety reasons. There is no available information documenting landfill closure activities, and it is not known whether any were completed. However, the results of investigation activities suggest that some of the landfill waste was covered with imported soil.

2.2 Cleanup Action Overview

The cleanup activities were designed to improve protection of human health and the environment at the Site and are documented in the CCR (Aspect, 2023a). Cleanup construction occurred between April and June 2023 and consisted of construction of a low permeability soil cap over the full extent of landfill waste, and installation of a fence with signage at the cap perimeter to restrict unauthorized access to the landfill. Cleanup action construction was substantially completed on June 14, 2023. An environmental

covenant in the form of deed restriction, which prevents future unrestricted development or any other activities resulting in potential exposure to landfill waste, was recorded on April 17, 2025.

Long-term monitoring is being conducted to verify the remedy remains protective over time, as described in the Inspection, Monitoring, and Maintenance (I, M, and M) Plan (Aspect, 2023b). The I, M, and M Plan, together with the Compliance Monitoring Plan (Aspect, 2022a), outline procedures for post-construction monitoring, which consists of periodic Site inspections, as-needed maintenance, groundwater monitoring and sampling, annual topographic survey of the soil cap, and periodic reporting. This includes semiannual groundwater monitoring and sampling occurring in the late summer/early fall and winter of each year following completion of the cleanup construction (see the CCR; Aspect, 2023a). The first and second post-construction events occurred in August 2023 and February 2024 and are summarized in the Annual Groundwater Monitoring Report (2023-2024) dated October 14, 2024 (Aspect, 2024). The September 2024 and February 2024 groundwater monitoring and sampling activities and results are described in Section 3.

3 Groundwater Monitoring Activities

Groundwater monitoring and sampling started in August 2023, approximately 2 months after substantial completion of cleanup action construction and has been occurring semiannually. The third post-construction groundwater monitoring occurred on September 23, 2024, and the fourth on February 4, 2025. The monitoring well network at the Site consists of four monitoring wells, AMW-1 through AMW-4, that were originally installed as part of the RI. The monitoring wells are constructed with a 20-foot screened interval at the top of the water bearing zone, which is present within recessional outwash, to total depths of 105 to 120 feet below ground surface (bgs; Aspect, 2021). The locations of the monitoring wells are shown relative to the landfill and other Property features on Figures 2 and 3.

3.1 Field Activities

The groundwater monitoring events consisted of measuring groundwater levels and collecting groundwater samples for laboratory analysis. Groundwater levels were measured using an electronic water level indicator (decontaminated¹ between wells) from the top of the north side of the well casing stickup ranging between 2.42 to 2.89 feet above ground level. Each water level measurement was recorded to the nearest hundredth of a foot, relative to the top of the north side of the well casing. A portable QED bladder pump, decontaminated between wells, was used for groundwater low-flow purging and sampling during both monitoring events. Groundwater samples were collected from the monitoring wells using low-flow sampling methodology² following purging and stabilization of field parameters (temperature, specific conductivity, dissolved oxygen (DO), pH, oxidation reduction potential (ORP), and turbidity).

The groundwater samples were submitted for laboratory analysis of total iron and total manganese³ in accordance with the EDR (Aspect, 2022a). Groundwater samples were placed in a cooler on ice and transported under standard chain-of-custody procedures to Friedman & Bruya, Inc. of Seattle, Washington, for analysis using EPA Method 200.8.

3.2 Results

This section summarizes the results of the groundwater sampling, including hydrogeologic conditions and chemical analytical testing of groundwater samples.

¹ Decontamination procedure involves the use ofalconox (a low-foaming phosphate-free powdered cleaner for manual and ultrasonic cleaning) and distilled water.

² U.S. Environmental Protection Agency (EPA), Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated January 19, 2010.

³ Groundwater samples were also submitted for laboratory analysis of dissolved iron and dissolved manganese, but because these aren't contaminants of concern (COCs) for the Site, the data is included in the laboratory analytical report but is not presented and discussed in this report.

3.2.1 Hydrogeology

Groundwater elevations for the September 2024 monitoring event ranged from 62.73 to 64.24 feet NAVD88, and groundwater elevations for the February 2025 monitoring event ranged from 70.35 to 70.91 feet NAVD88 (Table 1). Groundwater in the wells is present within Quaternary recessional glacial outwash (Aspect, 2021). Based on the water level measurements, groundwater elevations fluctuated up to 7.81 feet between September 2024 and February 2025, with higher groundwater elevations observed in February 2025, likely attributable to higher precipitation in the winter season. This is consistent with seasonal variability in groundwater elevations observed during previous groundwater monitoring events at the Site. The inferred groundwater flow direction on September 23, 2024, was to the southeast and to the south-southeast on February 4, 2025, as shown on Figures 2 and 3, respectively. The inferred groundwater flow directions are consistent with historical groundwater flow direction observed at the Site.

3.2.2 Analytical Data for Secondary Contaminants

The chemical analytical results of the groundwater samples were evaluated relative to the Site-specific cleanup levels developed during the RI/FS (Aspect, 2021) in accordance with the procedures outlined in MTCA. Groundwater samples were analyzed for total iron, total manganese, dissolved iron, and dissolved manganese using EPA method 200.8. During the first and second monitoring events in August 2023 and February 2024, groundwater samples were only analyzed for total iron and total manganese. During the events in September 2024 and February 2025, groundwater samples were analyzed for total iron and total manganese and inadvertently also analyzed for dissolved iron and dissolved manganese. Results for total iron and manganese are discussed in this section and summarized on the attached Table 1; results for dissolved iron and dissolved manganese are in the laboratory reports in Appendix A.

Total iron and manganese were detected in all samples collected during each of the two sampling events, as follows:

September 2024 Results

- Total iron concentrations in all wells exceeded the Site-specific cleanup level of 300 micrograms per liter ($\mu\text{g/L}$), ranging from 1,000 $\mu\text{g/L}$ in AMW-2 to 14,000 $\mu\text{g/L}$ in AMW-4.
- Total manganese concentrations in all wells also exceeded the Site-specific cleanup level of 50 $\mu\text{g/L}$, ranging from 450 $\mu\text{g/L}$ in AMW-4 to 6,100 $\mu\text{g/L}$ in AMW-3.

February 2025 Results

- Total iron concentrations in all wells exceeded the Site-specific cleanup level of 300 $\mu\text{g/L}$, ranging from 360 $\mu\text{g/L}$ in AMW-1 to 3,300 $\mu\text{g/L}$ in AMW-4.
- Total manganese concentrations in all wells also exceeded the Site-specific cleanup level of 50 $\mu\text{g/L}$, ranging from 59 $\mu\text{g/L}$ in AMW-1 to 8,000 $\mu\text{g/L}$ in AMW-3.

Results from the semiannual groundwater sampling events are summarized in Table 1. Laboratory reports are included in Appendix A.

3.2.3 Quality Assurance and Quality Control

Aspect performed a Data Quality Review (DQR) of all analytical data for this study. Aspect's standard DQR is based on the EPA Stage 2A data validation, with minor modifications designed to meet Aspect's internal data quality and management program goals and requirements and other project-specific objectives. The results of quality assurance/quality control (QA/QC) samples (field duplicate samples as summarized in Table 1), laboratory-applied flags, and laboratory-provided analysis comments are reviewed. Qualifier flags are assigned to the data where appropriate, which indicate data usability for study goals and objectives.

Based on review of the laboratory QA/QC results, the results of Aspect's DQR, and review of the data qualifiers, it is Aspect's opinion that the data for this study are known to be of good quality and are acceptable for use for project goals, and objectives are qualified.

Validated data has been uploaded to Ecology's Environmental Information Management (EIM) System in accordance with the Agreed Order.

4 Conclusion

The results of the September 2024 and February 2025 groundwater monitoring events identify total iron and total manganese in groundwater samples collected from all four monitoring wells at concentrations above the Site-specific cleanup levels. Iron and manganese are secondary contaminants in the groundwater that are attributable to the subtle reducing and/or slightly acidic conditions associated with carbon dioxide in landfill gas resulting in dissolution of naturally occurring constituents from native soils (Aspect, 2021). Groundwater monitoring will continue on a semiannual basis to evaluate post-construction trends in groundwater quality for a minimum period of 5 years (through February 2028).

5 References

- Aspect Consulting, LLC (Aspect), 2021, Final Remedial Investigation and Feasibility Study Report, Shelton C Street Landfill, Shelton, Washington, December 16, 2021.
- Aspect Consulting, LLC (Aspect), 2022a, Engineering Design Report, Shelton C Street Landfill, Shelton, Washington, July 11, 2022.
- Aspect Consulting, LLC (Aspect), 2022b, Engineering Design Report Addendum, Shelton C Street Landfill, Shelton, Washington, October 6, 2022.
- Aspect Consulting, LLC (Aspect), 2023a, Construction Completion Report, Shelton C Street Landfill, Shelton, Washington, October 25, 2023.
- Aspect Consulting, LLC (Aspect), 2023b, Inspection, Monitoring, and Maintenance Plan, Shelton C Street Landfill, Shelton, Washington, November 27, 2023.
- Aspect Consulting (Aspect), 2024, Annual Groundwater Monitoring Report (2023-2024), Shelton C Street Landfill, Shelton, Washington, May 7, 2024.
- Washington State Department of Ecology (Ecology), 2021, Cleanup Action Plan, Shelton C Street Landfill, City of Shelton, August 10, 2021.

6 Limitations

Work for this project was performed for the City of Shelton (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

TABLES

Table 1. Groundwater Monitoring Data

Project No. AS150074C, C Street Landfill, Shelton, Washington

Confidential Attorney Client Privilege

Analyte Group					Field Parameters						Metals	
Analyte Unit Site-Specific Cleanup Level					Temperature deg C na	Specific Conductance uS/cm na	Dissolved Oxygen mg/L na	pH pH units na	Oxidation Reduction Potential mV na	Turbidity NTU na	Iron, total ug/L 300	Manganese total ug/L 50
Location	Sample	Date	DTW (feet bTOC)	Groundwater Elevation (feet NAVD88)								
AMW-1	AMW-1-011218	1/12/2018	83.07	72.83	10.1	219.8	2.67	6.81	106.6	2.73	233	71.4
	AMW-5-011218*	1/12/2018	83.07	72.83	10.1	219.8	2.67	6.81	106.6	2.73	234	68.3
	AMW-1-122018	12/20/2018	89.13	66.77	10.1	271.1	5.22	6.45	78.6	4.68	274	15.9
	AMW-1-040119	4/1/2019	87.65	68.25	10	301.3	5.3	6.22	234.5	4.88	129	1.80
	AMW-1-070119	7/1/2019	91.53	64.37	11.9	359.7	0.76	6.28	171.7	12.8	348	46.5
	AMW-5-070119	7/1/2019	91.53	64.37	11.9	359.7	0.76	6.28	171.7	12.8	339	41.9
	AMW-1-080323	8/3/2023	90.85	65.05	13.95	296.24	0.45	6.34	156.1	13.4	703	1010
	AMW-5-080323*	8/3/2023	90.85	65.05	13.95	296.24	0.45	6.34	156.1	13.4	768	873
	AMW-1-020624	2/6/2024	83.22	72.68	10.08	214.35	5.7	6.16	127.8	2.37	193	20
	AMW-1-092324	9/23/2024	92.8	63.1	13.91	243.65	0.54	6.25	200.5	51.8	1900	590
AMW-2	AMW-1-020425	2/4/2025	84.99	70.91	9.88	227.18	4.83	6.09	143.7	6.91	360	59
	AMW-2-011218	1/12/2018	83.3	72.24	10.1	232.6	0.26	6.91	41.2	1.47	566	1250
	AMW-2-122018	12/20/2018	88.52	67.02	9.9	245.5	0.23	6.83	57.6	0.93	279	1970
	AMW-5-122018*	12/20/2018	88.52	67.02	9.9	245.5	0.23	6.83	57.6	0.93	317	1910
	AMW-2-040119	4/1/2019	87.17	68.37	10.2	258.3	3.3	6.47	218.2	4.66	149	464
	AMW-2-070119	7/1/2019	90.95	64.59	11.8	266	3.01	6.47	181	15.2	463	759
	AMW-2-080323	8/3/2023	90.83	64.71	13.94	229.4	3.37	6.17	200.7	6	325	1220
	AMW-2-020624	2/6/2024	83.48	72.06	9.68	233.17	0.87	6.45	141.5	2.03	181	1290
	AMW-5-092324*	9/23/2024	92.81	62.73	13.2	247.95	0.94	6.48	178.7	29.4	970	2400
	AMW-2-092324	9/23/2024	92.81	62.73	13.2	247.95	0.94	6.48	178.7	29.4	1000	2800
AMW-3	AMW-5-020425*	2/4/2025	85.19	70.35	9.04	246.47	0.37	6.3	144.4	44.4	2000	4000
	AMW-2-020425	2/4/2025	85.19	70.35	9.04	246.47	0.37	6.3	144.4	44.4	2300	4300
	AMW-3-011218	1/12/2018	100.1	72.84	10.3	252.2	6.25	7.07	146.7	3.89	241	130
	AMW-3-122018	12/20/2018	104.97	67.97	9.8	465.4	2.71	7.52	68.7	4.31	574	2560
	AMW-3-040119	4/1/2019	104.83	68.11	10.6	770	0.98	7.25	204.4	4.6	289	757
	AMW-3-070119	7/1/2019	107.75	65.19	11.9	830	0.27	7.13	173.4	16.4	486	2350
	AMW-3-080323	8/3/2023	107.2	65.74	18.9	708.35	0.29	7.35	189.8	7.94	1030	2880
	AMW-3-020624	2/6/2024	100.32	72.62	9.76	579.59	1.05	7.2	146.5	4.34	360	864
	AMW-3-092324	9/23/2024	108.7	64.24	12.81	708.4	0.33	7.31	119.6	21.3	1600	6100
	AMW-3-020425	2/4/2025	102.12	70.82	4.53	637.62	0.7	7.23	164.7	21	1900	8000
AMW-4	AMW-4-011218	1/12/2018	81.22	72.46	10.3	730	2.52	6.87	191.4	130	3250	402
	AMW-4-122018	12/20/2018	86.56	67.12	10.1	504.4	0.42	6.07	116.7	2.66	1390	84
	AMW-4-040119	4/1/2019	85.19	68.49	10.5	900	3.13	6.63	224.7	5.1	1180	31.4 J
	AMW-5-040119	4/1/2019	85.19	68.49	10.5	900	3.13	6.63	224.7	5.1	860	19.9 J
	AMW-4-070119	7/1/2019	88.98	64.7	14.1	870	2.81	6.43	213.8	61.3	5630	176
	AMW-4-080323	8/3/2023	88.7	64.98	15.84	841.1	2.83	6.55	186.9	38	2670	95.6
	AMW-4-020624	2/6/2024	81.12	72.56	10.56	831.35	3.49	6.69	140.8	24.1	1150	25.4
	AMW-5-020624*	2/6/2024	81.12	72.56	10.56	831.35	3.49	6.69	140.8	24.1	1120	25.4
	AMW-4-092324	9/23/2024	89.62	64.06	16.17	520.96	1.92	6.59	246.7	537	14000	450
	AMW-4-020425	2/4/2025	82.89	70.79	10.01	744.17	2.84	6.62	165.5	91.5	3300	120

Notes:

Bold indicates a detected concentration

Gray shading indicates a concentration that exceeds the Site-specific screening level.

mg/L = milligrams per liter

ug/L = micrograms per liter

deg C = degrees Celsius

uS/cm = microSiemens per centimeter

mV = millivolts

na = not applicable

NTU = Nephelometric Turbidity Units

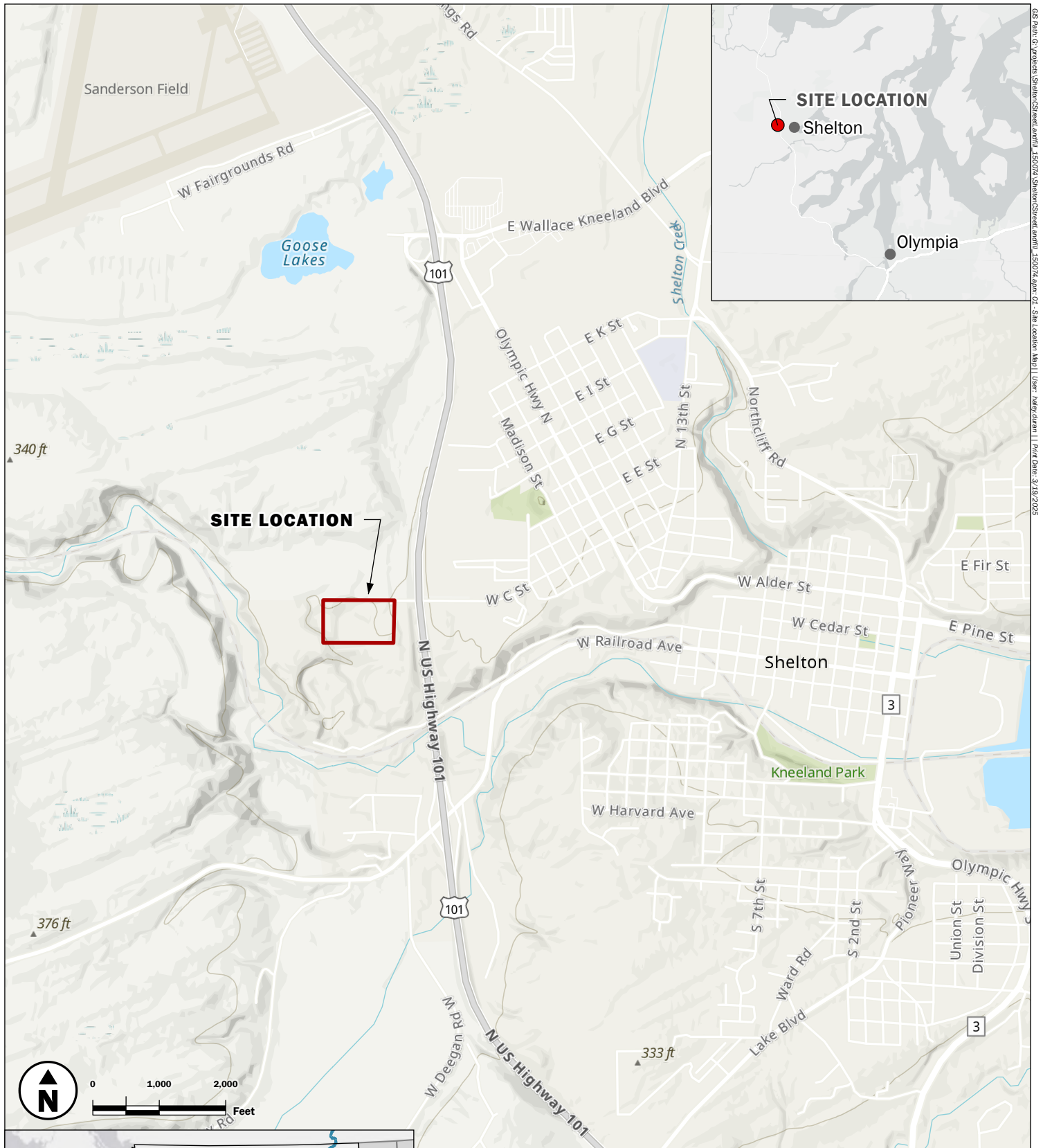
DTW = Depth to Water

bTOC = below Top of Casing

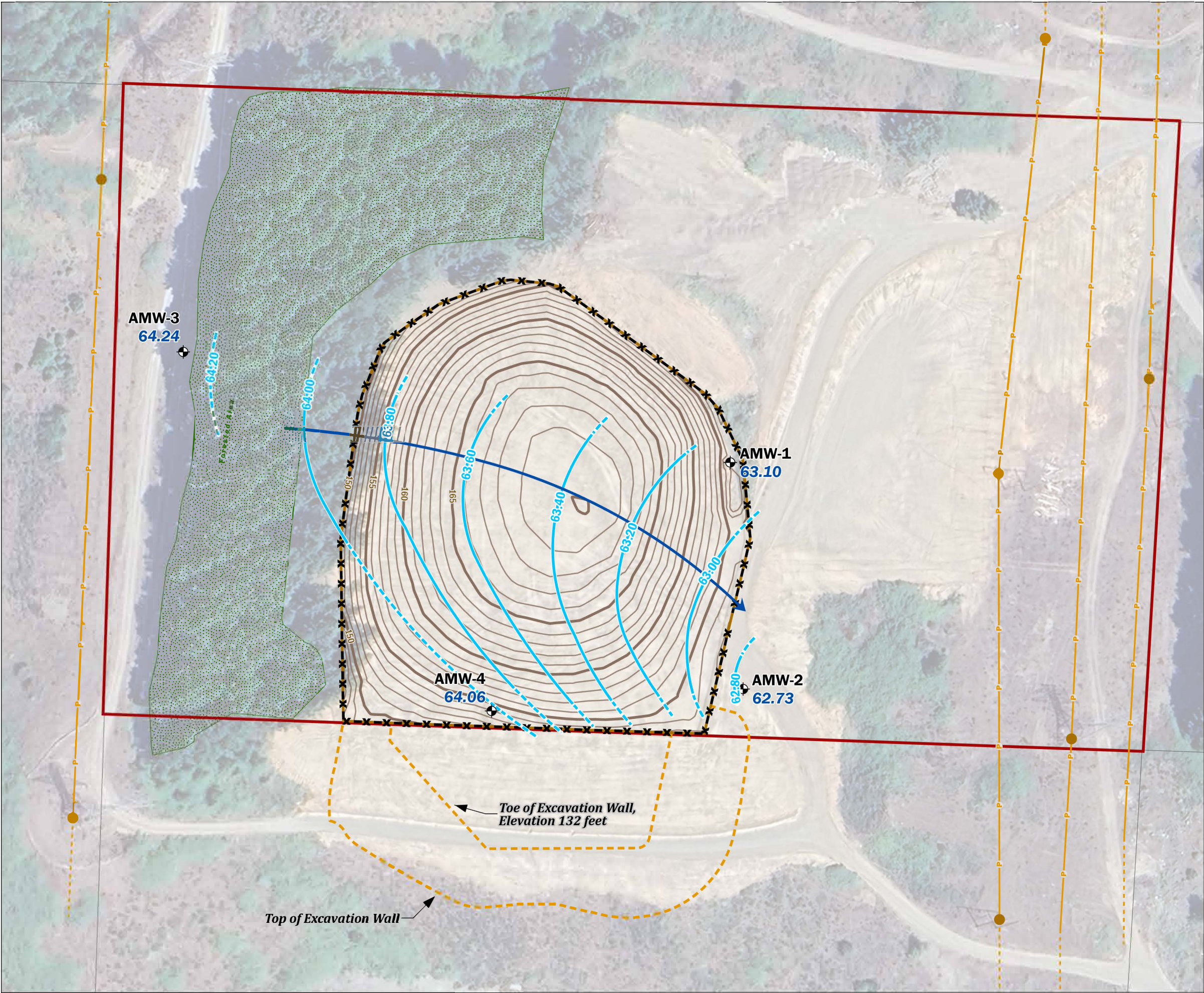
NAVD88 = North American Vertical Datum of 1988

* identifies a field duplicate

FIGURES

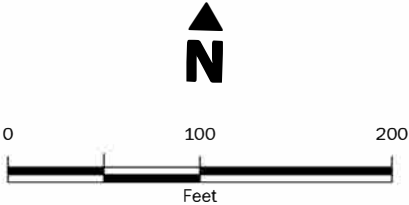


Site Vicinity Map Annual Groundwater Monitoring Report Shelton C Street Landfill Shelton, Washington			
	MAR-2025 PROJECT NO. AS150074	BY: RWN / HMD REVISED BY: --- / ---	FIGURE NO. 1



- Compliance Groundwater Monitoring Well
- Transmission Tower
- Transmission Line
- Chain Link Fence
- Landfill Cap
- Extent Landfill Waste
- Excavation South Property
- Inferred Groundwater Flow Direction
- Groundwater Elevation Contour (ft. NAVD88)
Dashed where Inferred
- Subject Property
- Forested Area
- Topography Contours 5 ft
- Topography Contours 1 ft
- Mason County Tax Parcel

Notes:
- All site feature locations are approximate.
- Topographic contours from PLS Survey October 2017.
- Aerial imagery from July 2023 Google Satellite Imagery.



Groundwater Elevation Contours September 2024

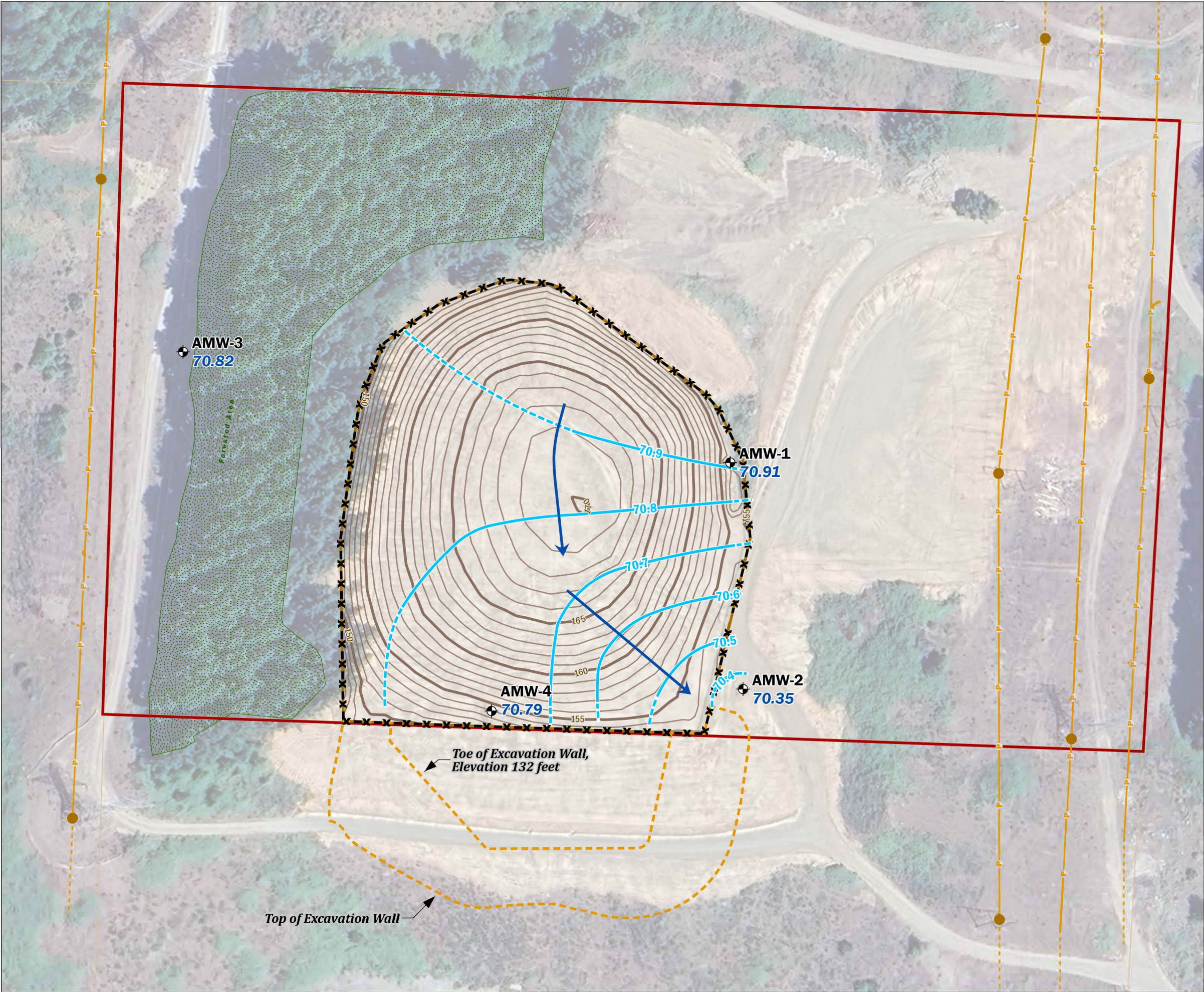
Annual Groundwater Monitoring Report
Shelton C Street Landfill
Shelton, Washington



MAY2025
PROJECT NO.
AS150074

BY:
RWN / HMD
REVISED BY:
---/---

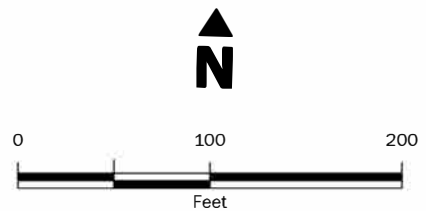
FIGURE NO.
2



- Compliance Groundwater Monitoring Well
- Transmission Tower
- Transmission Line
- Chain Link Fence
- Landfill Cap
- Extent Landfill Waste Excavation South Property
- Inferred Groundwater Flow Direction
- Groundwater Elevation Contour (ft. NAVD88)
Dashed where Inferred
- Subject Property
- Forested Area
- Topography Contours 1 ft
- Topography Contours 5 ft
- Mason County Tax Parcel

Notes:

- All site feature locations are approximate.
- Topographic contours from PLS Survey October 2017.
- Aerial imagery from July 2023 Google Satellite Imagery.



Groundwater Elevation Contours February 2025

Annual Groundwater Monitoring Report
Shelton C Street Landfill
Shelton, Washington



MAY2025
PROJECT NO.
AS150074

BY:
RWN / HMD
REVISED BY:
---/---

FIGURE NO.
3

APPENDIX A

Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

October 2, 2024

Ali Cochrane, Project Manager
Aspect Consulting
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Ms Cochrane:

Included are the results from the testing of material submitted on September 24, 2024 from the C Street Landfill Shelton AS170054, F&BI 409382 project. There are 20 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Aspect Data, Carla Brock
ASP1002R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 24, 2024 by Friedman & Bruya, Inc. from the Aspect Consulting C Street Landfill Shelton AS170054, F&BI 409382 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Aspect Consulting</u>
409382 -01	AMW-1-092324
409382 -02	AMW-2-092324
409382 -03	AMW-3-092324
409382 -04	AMW-4-092324
409382 -05	AMW-5-092324

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-1-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-01
Date Analyzed:	09/27/24	Data File:	409382-01.313
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	1,900
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-1-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-01 x100
Date Analyzed:	09/27/24	Data File:	409382-01 x100.328
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	590
-----------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-2-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-02
Date Analyzed:	09/27/24	Data File:	409382-02.314
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	1,000
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-2-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-02 x100
Date Analyzed:	09/27/24	Data File:	409382-02 x100.329
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	2,800
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-3-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-03
Date Analyzed:	09/27/24	Data File:	409382-03.315
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	1,600
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-3-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-03 x100
Date Analyzed:	09/27/24	Data File:	409382-03 x100.330
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	6,100
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-4-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-04 x100
Date Analyzed:	09/27/24	Data File:	409382-04 x100.331
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	14,000
Manganese	450

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-5-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-05
Date Analyzed:	09/27/24	Data File:	409382-05.317
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	970
------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-5-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	409382-05 x100
Date Analyzed:	09/27/24	Data File:	409382-05 x100.332
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	2,400
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting
Date Received:	Not Applicable	Project:	C Street Landfill Shelton
Date Extracted:	09/26/24	Lab ID:	I4-803 mb
Date Analyzed:	09/26/24	Data File:	I4-803 mb.225
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	<50
Manganese	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-1-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	409382-01
Date Analyzed:	10/01/24	Data File:	409382-01.093
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	170
Manganese	32

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-2-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	409382-02
Date Analyzed:	10/01/24	Data File:	409382-02.094
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	160
Manganese	290

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-3-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	409382-03 x5
Date Analyzed:	10/01/24	Data File:	409382-03 x5.095
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	550
Manganese	290

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-4-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	409382-04 x5
Date Analyzed:	10/01/24	Data File:	409382-04 x5.096
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	360
Manganese	21

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-5-092324	Client:	Aspect Consulting
Date Received:	09/24/24	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	409382-05
Date Analyzed:	10/01/24	Data File:	409382-05.097
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	160
Manganese	280

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting
Date Received:	Not Applicable	Project:	C Street Landfill Shelton
Date Extracted:	09/25/24	Lab ID:	I4-795 mb2
Date Analyzed:	09/25/24	Data File:	I4-795 mb2.148
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	<50
Manganese	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/24

Date Received: 09/24/24

Project: C Street Landfill Shelton AS170054, F&BI 409382

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 409383-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	27,300	13900 b	13800 b	70-130	1 b
Manganese	ug/L (ppb)	20	1,520	4800 b	4800 b	70-130	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	91	85-115
Manganese	ug/L (ppb)	20	94	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/24

Date Received: 09/24/24

Project: C Street Landfill Shelton AS170054, F&BI 409382

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 409337-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	12,000	0 b	0 b	70-130	nm
Manganese	ug/L (ppb)	20	1,320	0 b	0 b	70-130	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	93	85-115
Manganese	ug/L (ppb)	20	98	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

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

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

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

5

Page # 1 of 1

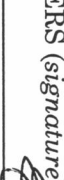
TURNAROUND TIME

☒ Standard turnaround
☐ RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
 Default: Dispose after 30

Default: Dispose after 30 days

5

SAMPLERS (signature) 		Page # <u>1</u> of <u>1</u>
PROJECT NAME C Street Landfill Shelton		PO # AS170054
REMARKS * Field Filtered For dissolved Fe + Mn.		INVOICE TO ASpect Consulting
Project specific RI's? Yes / No		
TURNAROUND TIME ☒ Standard turnaround ☐ RUSH _____ Rush charges authorized by: _____		
SAMPLE DISPOSAL ☐ Archive samples ☐ Other _____ Default: Dispose after 30 days		

[illegible]

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Kristi Naa	Aspect Consulting	9/24/24	1400
Received by: 	Anna	FLB	9/24/24	1400
Relinquished by:				
Received by:				
Samples received at <u>5</u> °C				

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 409382 CLIENT ASP INITIALS/DATE: AWB9/24

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

Cooler/Sample temperature 5 °C
Thermometer ID: Fluke 96312917

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

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

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/Date: AWB9/24
*or other representative documents, letters, and/or shipping memos

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

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

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

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

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

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

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☐ Yes ☐ No	☐ Not on COC/label
Date Sampled	☐ Yes ☐ No	☐ Not on COC/label
Time Sampled	☐ Yes ☐ No	☐ Not on COC/label
# of Containers	☐ Yes ☐ No	
Relinquished	☐ Yes ☐ No	
Requested analysis	☐ Yes ☐ On Hold	

Other comments (use a separate page if needed)

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

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 12, 2025

Ali Cochrane, Project Manager
Aspect Consulting
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Ms Cochrane:

Included are the results from the testing of material submitted on February 5, 2025 from the C Street Landfill A5150074 WO-AS150074C-4833, F&BI 502062 project. There are 22 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Aspect Data, Carla Brock
ASP0212R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 5, 2025 by Friedman & Bruya, Inc. from the Aspect Consulting C Street Landfill A5150074 WO-AS150074C-4833, F&BI 502062 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Aspect Consulting</u>
502062 -01	AMW-1-020425
502062 -02	AMW-2-020425
502062 -03	AMW-3-020425
502062 -04	AMW-4-020425
502062 -05	AMW-5-020425

Total iron in the 6020B matrix spike did not meet the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-1-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-01
Date Analyzed:	02/06/25	Data File:	502062-01.215
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	360
Manganese	59

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-2-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-02
Date Analyzed:	02/06/25	Data File:	502062-02.216
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	2,300
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-2-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-02 x10
Date Analyzed:	02/06/25	Data File:	502062-02 x10.197
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	4,300
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-3-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-03
Date Analyzed:	02/06/25	Data File:	502062-03.217
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	1,900
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-3-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-03 x10
Date Analyzed:	02/06/25	Data File:	502062-03 x10.198
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	8,000
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-4-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-04
Date Analyzed:	02/06/25	Data File:	502062-04.218
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	120
-----------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-4-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-04 x10
Date Analyzed:	02/06/25	Data File:	502062-04 x10.223
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Iron	3,300
------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-5-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-05
Date Analyzed:	02/06/25	Data File:	502062-05.219
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	2,000
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	AMW-5-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-05 x10
Date Analyzed:	02/06/25	Data File:	502062-05 x10.224
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Manganese	4,000
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting
Date Received:	Not Applicable	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	I5-108 mb
Date Analyzed:	02/06/25	Data File:	I5-108 mb.137
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	<50
Manganese	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-1-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-01
Date Analyzed:	02/06/25	Data File:	502062-01.178
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	110
Manganese	5.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-2-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-02
Date Analyzed:	02/06/25	Data File:	502062-02.191
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	120
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-2-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-02 x10
Date Analyzed:	02/06/25	Data File:	502062-02 x10.182
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Manganese	1,100
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-3-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-03
Date Analyzed:	02/06/25	Data File:	502062-03.192
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	370
Manganese	510

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-4-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-04
Date Analyzed:	02/06/25	Data File:	502062-04.193
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	310
Manganese	13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-5-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-05
Date Analyzed:	02/06/25	Data File:	502062-05.194
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	140
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	AMW-5-020425	Client:	Aspect Consulting
Date Received:	02/05/25	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	502062-05 x10
Date Analyzed:	02/06/25	Data File:	502062-05 x10.185
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Manganese	1,200
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting
Date Received:	Not Applicable	Project:	C Street Landfill A5150074
Date Extracted:	02/06/25	Lab ID:	I5-109 mb
Date Analyzed:	02/06/25	Data File:	I5-109 mb.139
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Iron	<50
Manganese	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/12/25

Date Received: 02/05/25

Project: C Street Landfill A5150074 WO-AS150074C-4833, F&BI 502062

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 502063-03 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	<500	69 vo	91	70-130	27 vo
Manganese	ug/L (ppb)	20	368	101 b	65 b	70-130	43 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	97	85-115
Manganese	ug/L (ppb)	20	100	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/12/25

Date Received: 02/05/25

Project: C Street Landfill A5150074 WO-AS150074C-4833, F&BI 502062

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 502062-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	108	102 b	94 b	70-130	8 b
Manganese	ug/L (ppb)	20	5.38	103 b	100 b	70-130	3 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	99	85-115
Manganese	ug/L (ppb)	20	99	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

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

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

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 between the method detection limit and the lowest calibration point. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

502062

SAMPLE CHAIN OF CUSTODY

02/05/25 K3

Page # 1 of 1

Report To Alli Cochran, Carla BrockCompany Aspect ConsultingAddress 710 2nd Ave Suite #550City, State, ZIP Seattle, WA 98104Phone (206) 838-6544 Email Alli.Cochran@aspectconsulting.com
Carla.Brock@aspectconsulting.comSAMPLERS (signature) 

PROJECT NAME

C Street Landfill

PO #

Project # : A515074
WC-A515074C-4833

INVOICE TO

REMARKS * FF : Field
Filtered for dissolved Fe+Mn
Aspect Consulting

Project specific RLS? - Yes / No

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by: _____
SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
Default: Dispose after 30 days

ANALYSES REQUESTED

						ANALYSES REQUESTED										Notes	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Fe EPA 200.8	Total Mn EPA 200.8	Dissolved Fe (µ) EPA 200.8		Dissolved Mn (µ) EPA 200.8
AMW-1-020425	01 A-B	02/04/2025	1410	Ground Water	2								X	X	X	X	
AMW-2-020425	02		1250		2								X	X	X	X	Turbidity = 44.4 NTU
AMW-3-020425	03		1140		2								X	X	X	X	Turbidity = 21 NTU
AMW-4-020425	04		1500		2								X	X	X	X	Turbidity = 91.5 NTU
AMW-5-020425	05		1200		2								X	X	X	X	Turbidity = 44.4 NTU

Samples received at 20°C

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by: Ris PaaAspect Consulting02/05/251603

Received by:

Relinquished by:

VINHFB2-5-2516:03

Received by:

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 502062 CLIENT Aspect INITIALS/ AP
DATE: 02/05/25

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

Cooler/Sample temperature 0 °C
Thermometer ID: Fluke 96312917

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

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

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ AP
*or other representative documents, letters, and/or shipping memos Date: 02/06/25

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

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

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

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

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

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

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☒ Yes ☐ No	☐ Not on COC/label
Date Sampled	☒ Yes ☐ No	☐ Not on COC/label
Time Sampled	☒ Yes ☐ No	☐ Not on COC/label
# of Containers	☒ Yes ☐ No	
Relinquished	☒ Yes ☐ No	
Requested analysis	☒ Yes ☐ On Hold	

Other comments (use a separate page if needed)

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

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

APPENDIX B

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect's services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect's services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect's services do not include an evaluation of radon or lead in drinking water, unless specifically requested.