2024 ANNUAL ENVIRONMENTAL MONITORING REPORT

Hansville Landfill, Kitsap County, Washington

Prepared for: Kitsap County Public Works - Solid Waste

Project No. AS160423-05 • February 28, 2025 FINAL

earth + water

Aspect
A Geosyntec Company

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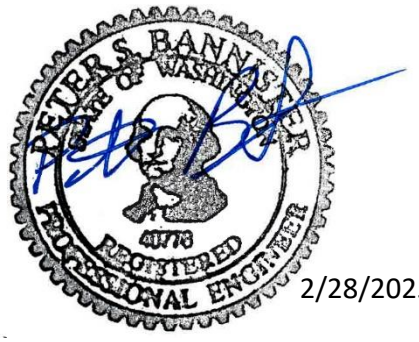
Aspect Consulting



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Acronyms

Aspect	Aspect Consulting, a Geosyntec Company
bgs	below ground surface
CAP	Cleanup Action Plan
CMP	Compliance Monitoring Plan
COCs	contaminants of concern
County	Kitsap County
Ecology	Washington State Department of Ecology
FS	Feasibility Study
KCSL	Kitsap County Sanitary Landfill
KPHD	Kitsap Public Health District
LCL	lower confidence limit
mg/L	milligrams per liter
µg/L	micrograms per liter
MSW	municipal solid waste
MTCA	Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
ppm	parts per million
RASR	Remedial Action Status Report
RI	Remedial Investigation
scfm	standard cubic feet per minute
SEM	surface emissions monitoring
Site	Hansville Landfill Site
SHA	Site Hazard Assessment
UCL	upper confidence limit
VOCs	volatile organic compounds
WAC	Washington Administrative Code
WMW	Waste Management of Washington

1 Introduction

This combined fourth quarter 2024 and 2024 annual monitoring report documents site activities conducted at and environmental monitoring results for the Hansville Landfill Site (Site; or the Landfill). This report was prepared by Aspect Consulting, a Geosyntec company, (Aspect) on behalf of Kitsap County (County) Public Works Solid Waste Division and Waste Management of Washington (WMW). Cleanup activities at the Site have been conducted under the Washington State Model Toxics Control Act (MTCA). Ongoing environmental monitoring at the Site supports the remedy of natural attenuation of groundwater with enhanced monitoring and institutional controls that were established with the final Cleanup Action Plan (CAP) provided with the Amended Consent Decree No. 95-2-03005-1 (August 5, 2011). The data sets presented in this report were collected in accordance with the Ecology-approved Compliance Monitoring Plan (CMP; SCS Engineers, 2011; SCS Engineers, 2012), except where otherwise noted.

During 2024, conditions monitored at the Site were consistent with historical trends and continued to show improvements in protection of human health and the environment. This report is organized to include topics listed in the CMP (SCS Engineers, 2011).

- Section 2 summarizes Site background, including general Site information, regulatory framework, surrounding land use, hydrogeologic conditions, the environmental monitoring network, and cleanup criteria.
- Section 3 describes Site activities during the fourth quarter 2024 and provides a summary of previous Site activities in 2024.
- Section 4 describes landfill gas collection activities and monitoring results during the fourth quarter 2024. The landfill gas collection system was safely operated to improve groundwater protection. Supporting figures and data tables are presented in Appendix A.
- Section 5 describes groundwater and surface water conditions observed during the fourth quarter 2024, including statistical analysis of trends in groundwater concentrations for 2024 and an assessment of natural attenuation processes. Supporting figures and data tables are presented in Appendix B, statistical analyses are included in Appendix C, and Appendix D presents laboratory reports and data review.
- Section 6 summarizes landfill inspection reports prepared by the Kitsap Public Health District (KPHD). Copies of the inspection reports are included in Appendix E.
- Section 7 lists reference sources used in this report.

2 Site Background

Details on Site background were provided in the Remedial Investigation (RI) report (Parametrix, 2006), and the Feasibility Study (FS) report (Parametrix, 2009). This section summarizes Site background to provide context for ongoing Site activities and compliance monitoring.

2.1 Site Location and Description

The closed Hansville Landfill is located on an approximately 73-acre parcel within the northeast quarter of Section 9, Township 27 North, Range 2 East of the Willamette Meridian, in Kitsap County, Washington. The Landfill is approximately 5 miles south of the unincorporated community of Hansville on the northernmost reach of the Kitsap Peninsula, and is situated on the upper portions of several sloping drainages with perennial creeks that ultimately discharge into Port Gamble Bay. The topography ranges between approximately 310 and 390 feet elevation North American Vertical Datum of 1988 (NAVD88). A Site location map is provided on Figure B-1, showing property boundaries and other Site features.

The Site includes the Landfill, the Landfill property (Property), and a portion of land owned by the Port Gamble S'Klallam Tribe. The Landfill was active between 1962 and 1989, and consists of three separate disposal areas, or cells. These include the following:

- A 13-acre municipal solid waste disposal cell (main municipal solid waste [MSW] cell) situated within the central portion of the Property.
- A 4-acre demolition disposal cell situated on the northeast corner of the property, which accepted construction, demolition, and land-clearing wastes.
- A 0.33-acre septage lagoon located immediately southwest of the demolition disposal area, which accepted residential septic tank waste until 1982. A second septage disposal area was reportedly located near the northeast corner of the demolition disposal area.

2.1.1 Engineering Controls

The engineering controls at the Landfill include engineered cover systems and an active landfill gas collection system. The engineered cover systems incorporate a geomembrane, vegetated surface, and integrated surface water control to prevent erosion. The layout of the landfill gas collection system is shown on Figure A-1, and includes:

- 13 vertical collection wells installed within the main MSW cell.
- Approximately 3,200 feet of horizontal collector trench installed below the engineered cover system at the main MSW cell and the demolition disposal cell with 8 monitoring and control points.
- Laterals and a perimeter header leading to the blower and flare compound.

The 10 perimeter collection wells originally installed outside the western edge of the main MSW cell were decommissioned in 2019 because they were subject to vacuum leaks and did not support landfill gas collection (Aspect, 2020).

2.1.2 Current Property Uses

The County owns the Property and has operated a transfer station east of the Landfill for solid waste transfer and/or recycling operations since 1989. The remaining portions of the Property are largely comprised of a former soil borrow area and wooded land. Prior to development of the landfill, the Property was undeveloped forested land.

2.2 Regulatory Framework

The Hansville Landfill is a former MSW landfill that stopped accepting waste and closed in 1989. The closure met requirements of Chapter 173-304 of the Washington Administrative Code (WAC), and included the following engineering controls:

- Installation of horizontal gas collector trenches in the main MSW cells and the demolition disposal cell to prevent landfill gas migration.
- Installation of an engineered cover system over all three distinct disposal areas to reduce or eliminate precipitation infiltration through refuse.

In 1991, the Bremerton-Kitsap County Health Department required corrective actions to better control landfill gas migration and prevent groundwater impacts. Kitsap County Sanitary Landfill[1] (KCSL) converted the landfill gas collection system from passive to active. KCSL also conducted additional investigations, continued environmental monitoring, and implemented additional improvements at the Site as part of a corrective action program. The active landfill gas collection and flare system has been in operation since 1991.

Also, in 1991, the Washington State Department of Ecology (Ecology) performed a Site Hazard Assessment (SHA) under MTCA, which resulted in an initial ranking of 3. In 1992, this ranking was subsequently changed to a 1 (the highest rank on a scale of 1 to 5) based on changes in the state ranking model.

In October 1995, Ecology signed a consent decree with the County and KCSL to conduct a RI/FS for the Site. The RI/FS reports (Parametrix, 2006; Parametrix, 2009) identified contaminants of concern (COCs) related to the landfill in groundwater and in seepage to surface water. Based on these findings, Site-specific cleanup levels were developed for arsenic, vinyl chloride, and manganese in groundwater, and arsenic and vinyl chloride in surface water. The highest concentrations of these COCs were observed adjacent to the waste disposal areas, with decreasing concentrations at increasing distances to the landfill.

In preparing the 2011 Amended Consent Decree and CAP, Ecology selected the remedy involving natural attenuation of groundwater with enhanced monitoring and institutional controls (including a restrictive covenant for the Landfill Property). A CMP (SCS Engineers, 2011; SCS Engineers, 2012) provides monitoring program details, including

[1] By 1998, WMW assumed control of KCSL through a series of sales, mergers, and acquisitions.

the Sampling and Analysis Plan and the Quality Assurance Plan. Ongoing compliance monitoring under the CAP has been conducted since the fourth quarter 2011.

During the summer of 2016, Ecology initiated the first 5-year review of the Hansville Landfill MTCA remedy as defined under the 2011 Amended Consent Decree. Consistent with Section XXVI of the Amended Consent Decree, a Remedial Action Status Report (RASR; SCS Engineers, 2016) was prepared and submitted to Ecology. In August 2016, Ecology prepared a draft memorandum that included an evaluation of the previous 5 years of groundwater data and comments to the RASR. Based on Ecology's review, the current monitoring program will continue to be implemented through the next 5-year MTCA review cycle. According to Ecology's website the next 5-year review was planned for 2022. To support Ecology's planned 5-year review, Aspect prepared a RASR and submitted an Agency Review Draft on June 28, 2022 (Aspect, 2022a). At the time of this report an update from Ecology on the status of the planned 5-year review has not been received.

2.3 Surrounding Land Use

The Property is bordered to the south and west by lands owned by the Port Gamble S'Klallam Tribe. Tribal lands in the immediate vicinity of the Landfill Property consists of woodland and recreational land. The Point Casino and Hotel is located approximately 1,000 feet from the Landfill. The nearest Tribal residential land use is approximately 2,000 feet from the Landfill.

Surrounding areas to the north and east of the Property are zoned by the County as light industrial use, low-density residential, and rural woodland. The nearest off-property structures include a shop and office approximately 200 feet from the demolition disposal cell.

2.4 Hydrogeology

The regional near-surface geology in the vicinity of the Landfill is dominated by glacio-fluvial and glaciolacustrine deposits associated with the Vashon glaciation. The RI (Parametrix, 2006) identifies the following main stratigraphic units at the Site (from ground surface downward):

- **Sand** – This unit was reported in all the investigative borings from the ground surface to depths ranging from 62 to 142 feet below ground surface (bgs) and is also called the upper aquifer. All the monitoring wells are completed in the upper aquifer. The sand deposit consists primarily of poorly graded, fine- and medium-grained sand with trace amounts of silt and gravel. The material is dark yellowish brown to dark gray in color, dense to very dense, and dry to saturated. The RI references the sand unit as the upper aquifer. This unit has been interpreted as outwash associated with the Vashon Drift.

- **Transition Zone** – This zone was reported at three boring locations (MW-8, MW-9, and MW-14), occurs at the bottom of the upper aquifer, and is approximately 15 feet thick. It consists of interbedded layers of sand, silty sand, and silt, and does not appear to be extensive.

- **Silt** – This unit was reported in all borings advanced through the upper aquifer. It occurred at depths ranging from approximately 66 feet bgs (at MW-9) to 163 feet bgs (at MW-14). The silt is dark gray, silty to moderately plastic, very dense, and dry. This unit has been interpreted to be the Kitsap Formation.

Groundwater in the upper aquifer near the Landfill is approximately 50 feet below the bottom extent of refuse. Groundwater flows towards the west-southwest, and discharges into the headwaters of perennial creeks, including Creek A, Creek B, and Middle Creek (see Figure B-1). The dense silts reported for the Kitsap Formation underlying the upper aquifer restrict downward groundwater flow.

2.5 Environmental Monitoring Network

This section summarizes historical development of the Site performance and compliance monitoring network. The following are the conditional points of compliance for the Hansville Site described in the CAP:

- The Upper Aquifer at the Landfill Property boundary
- The Upper Aquifer downgradient of the Landfill Property boundary and upgradient of the creek headwaters on Tribal property
- Groundwater discharge to surface water at the headwaters of Creek A, Creek B, and Middle Creek on Tribal property

2.5.1 Subsurface Gas

Since 1990, the landfill gas collection system and gas probes have been monitored to assess potential landfill gas migration from the Landfill, and landfill gas concentrations within the waste.

All (nine) subsurface gas probes were installed outside the waste in native soils to measure for potential landfill gas migration. In 1990, six subsurface gas probes (GP-1, GP-2S, GP-2I, GP-2D, GP-3, and GP-4) were installed at four on-Property locations to monitor the southern portion of the Landfill. In 1994 and 1996, gas probes GP-5 and GP-6 were installed to monitor the northern portion of the Landfill. In 1996, gas probe GP-7 was installed, to monitor the off-Property area west of the Landfill, adjacent to groundwater monitoring well MW-9.

Per the CAP, landfill gas performance monitoring includes quarterly field measurements at the nine subsurface gas probes and the landfill gas collection system (21 vertical well and horizontal trench monitoring locations, the blower inlet and outlet ports). Subsurface gas compliance monitoring locations are shown on Figures A-1 and B-1.

2.5.2 Groundwater

Groundwater monitoring was initiated at the Site in 1982 with the installation of three monitoring wells (MW-1 through MW-3). Three additional monitoring wells (MW-4 through MW-6) were added to the monitoring program in 1988. Beginning in 1996, 10 monitoring wells were installed as part of a phased RI (Parametrix, 2006):

- Phase I included wells MW-7 through MW-12

- Phase II included wells MW-8D, MW-12I, MW-13S, MW-13D, and MW-14

Based on the RI groundwater monitoring results, the CAP includes the following six points of compliance: MW-5, MW-6, MW-7, MW-12I, MW-13D, and MW-14. See Figure B-1 for the groundwater compliance monitoring locations.

2.5.3 Surface Water

Surface water monitoring commenced in 1991 at two locations on Middle Creek (SW-1 and SW-2). Two additional locations (SW-SB and SW-3) were added in 1992 and 1994, respectively. Seven new surface water sampling locations (SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10) were established in 1996 during the RI (Parametrix, 2006). Based on the RI surface water monitoring results, the CAP includes the following four points of compliance: SW-1, SW-4, SW-6, and SW-7. See Figure B-1 for the surface water compliance monitoring locations.

2.5.4 Cleanup Criteria

The CAP established the final Site-specific cleanup levels for groundwater and surface water, summarized in the table below.

Table 1. Hansville Landfill Site Cleanup Levels

Chemical	Media	Site Cleanup Level (µg/L)	Origin of Cleanup Level
Vinyl Chloride	Groundwater	0.025	EPA[1] Human Health, 2004
Arsenic		5	Background
Manganese		2,240	Method B Formula Value
Vinyl Chloride	Surface Water	0.025	EPA Human Health, 2004
Arsenic		5	Background

[1]U.S. Environmental Protection Agency

The performance standard for on-Property probes is to operate the landfill gas collection system to maintain methane concentrations below five percent by volume (see WAC 173-304-460).

3 Site Activities

Site activities during 2024 included routine environmental monitoring of landfill gas, groundwater, and surface water. A chronology of on-Site activities performed during the fourth quarter 2024 is provided below. There were no deviations from the CMP (SCS, 2011) during the fourth quarter 2024 environmental monitoring.

- On October 16, 2024, Aspect completed the fourth quarter groundwater and surface water sampling in accordance with the CMP (SCS Engineers, 2011). Details of groundwater and surface water sampling are provided in Section 5.
- On October 8, November 21, and December 26, 2024, Aspect completed the monthly performance monitoring of the blower system, biofilter system, and condensate management system.
- On December 26, 2024, Aspect conducted compliance landfill gas monitoring in accordance with the CMP (SCS Engineers, 2011). Details of landfill gas monitoring are provided in Section 4.

Previously during 2024, Site activities were documented in quarterly reports (Aspect, 2024a; 2024b; and 2024c) and included the following:

- Monthly performance and maintenance checks of the flare compound and condensate recovery systems.
- Quarterly landfill gas compliance monitoring and wellfield tuning and maintenance.
- Quarterly groundwater and surface water performance and compliance monitoring.

4 Landfill Gas Conditions

The following sections provide a discussion of landfill gas monitoring, landfill gas collection system performance, and explosive gas control. The layout of the landfill gas collection system is shown on Figure A-1 (Appendix A).

Since active landfill gas collection started in 1991, the system has historically been operated to control landfill gas migration and to protect groundwater. Since 1992, little to no methane has been observed at gas compliance probes. In 1995, the maximum methane concentration was 38 percent, and the balance gas concentration was 44 percent, indicating that approximately half of the gas collected was from the atmosphere. Until approximately January 2013, landfill gas collection rates decreased steadily due to low methane concentrations and difficulty in sustaining flare operation.

From 2013 through 2022, the landfill gas collection rate was maintained at approximately 70 standard cubic feet per minute (scfm) to improve groundwater protection, and average methane and carbon dioxide concentrations were about 4 percent and 12 percent, respectively. Starting in 2023, to further improve groundwater protection, the second blower was activated to provide a total landfill gas collection rate of approximately 120 scfm. Even under this higher flow rate, methane and carbon dioxide concentrations continued to be observed at around 3 percent and 16 percent, respectively.

4.1 Landfill Gas Monitoring

During the fourth quarter 2024, monitoring at the landfill gas collection system blower compound was performed on October 8, November 21, and December 26, and compliance monitoring of the landfill gas collection system and compliance probes was performed on December 26.

Landfill gas concentrations were measured with a calibrated GEM-5000 multigas meter. Landfill gas monitoring parameters collected for the compliance monitoring event are included in Appendix A, Tables A-1 through A-4, and summarized below:

- Landfill gas composition measurements included methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), and balance gas (Balance) concentrations.
- Collection system pressure measurements included the static pressure measured before and after any valve adjustments or purging, reported as “initial” and “adjusted,” respectively. No valve adjustments were made during the December 30 compliance monitoring round.
- Collection system flow-rate measurements were obtained at all locations via orifice plates. The differential pressure and gas temperature were measured to calculate flow. Table A-1 presents flow rates measured after valve adjustments, reported as “adjusted.”

4.2 Landfill Gas System Performance

During the fourth quarter 2024, the flow at the blower inlet was approximately 110 scfm. Methane and carbon dioxide concentrations at the blower inlet were 2.4 and 15.4 percent

by volume, respectively. The oxygen concentration was 3.7 percent by volume. The explosive range for methane in air is approximately 5 to 15 percent by volume, whereas the minimum methane concentration to sustain a flame is approximately 20 percent. Landfill gas measured at the blower inlet has contained less than 20 percent methane since 2012.

During the fourth quarter 2024, methane concentrations measured at individual collection locations ranged between 0.0 and 6.9 percent by volume. The landfill gas concentrations across the wellfield have remained relatively stable since mid-2017. Wellfield optimization will continue to focus on maximizing methane and carbon dioxide collection rates.

Wellhead temperatures at vertical extraction well R-9 increased to above 100 degrees Fahrenheit in June 2023. Wellhead conditions at R-9 were monitored monthly until December 2023, and the maximum temperature observed was 108.4 degrees Fahrenheit in September 2023. In 2024, wellhead conditions at R-9 were monitored quarterly, and the maximum temperature observed was 107.7 degrees Fahrenheit in June 2024. This temperature was below a 110-degree-Fahrenheit threshold that would trigger reducing landfill gas collection from this location.

Condensate Management

On October 8, 2024, the 2,000-gallon condensate system storage tank held approximately 1,650 gallons, and the 2,000-gallon western sump was approximately half-full. The condensate system storage tank and western sump were last emptied in October 2024. On December 26, 2024, the condensate tank held approximately 900 gallons.

Biofilter Bed Treatment Performance

The biofilter bed (biobed) was installed March 8, 2023. Methane concentrations were monitored across the biobed surface and in the breathing zone during Site visits in 2023. The breathing zone conditions were measured using a personal four-gas meter with warning thresholds set to 10 percent of the lower explosive limit, at 19.5 percent oxygen, at 25 parts per million (ppm) carbon monoxide, or at 5 ppm hydrogen sulfide. Concentrations in the breathing zone and the biobed surface were below the alarm threshold and the design criterion, respectively. Surface emissions monitoring (SEM) was conducted on November 21 and December 26, 2024. The highest methane and carbon dioxide readings observed were 0.3 percent and 1.0 percent, respectively. The biobed appears to be effectively reducing greenhouse gas emissions and controlling odor. No supplemental media was added to the biobed in 2024.

4.3 Explosive Gas Control

Methane was not detected at any of the landfill gas compliance monitoring probe locations during the fourth quarter 2024. Locations of on-Property compliance probes GP-1, GP-2S, GP-2M, GP-2D, GP-3, GP-4, GP-5, and GP-6 are shown on Figure A-1, and the location of off-Property compliance probe GP-7 is shown on Figure B-1. Aspect observed an animal bore hole under monitoring probe GP-6. Routine compliance monitoring continues to show that the Site remains in compliance with explosive gas

control, per WAC 173-304-460. Carbon dioxide concentrations in the compliance monitoring probes ranged from 0.1 to 4.1 percent by volume, and oxygen concentrations ranged from 16.3 to 21.6 percent by volume.

5 Groundwater and Surface Water Conditions

This section addresses groundwater and surface water conditions based on the monitoring event on October 16, 2024. Samples were collected from six groundwater monitoring wells and from four surface water monitoring locations (see Figure B-1) for laboratory analysis.

5.1 Groundwater and Surface Water Monitoring

During the fourth quarter 2024, Aspect monitored and sampled groundwater and surface water on October 16, 2024.

Field parameter measurements were made with a calibrated YSI multiparameter probe, and a calibrated Hach turbidimeter. Samples were collected in laboratory-supplied bottles and delivered to the laboratory on ice, using standard chain-of-custody methods, for analysis. Field parameters and laboratory results for all sampling events in 2024 are organized in Tables B-2 and B-3 (Appendix B), and listed below:

- Field parameters included dissolved oxygen, pH, oxidation-reduction potential (Redox), specific conductivity, temperature, and turbidity.
- Conventional parameters included alkalinity, ammonia (as N), bicarbonate, carbonate, chloride, nitrate (as N), nitrite (as N), orthophosphate (as P), sulfate, and total organic carbon.
- Dissolved metals included arsenic and manganese.
- Detected volatile organic compounds (VOCs) included total 1,2-dichloroethene, cis-1,2-dichloroethene, and vinyl chloride.

5.2 Groundwater Elevations and Flow

Depth-to-groundwater measurements and calculated water table elevations for the fourth quarter 2024 are presented in Table B-1, and a potentiometric surface map is provided on Figure B-1. Groundwater elevations ranged from 237.7 feet NAVD88 in MW-12I to 265.7 feet NAVD88 in MW-5. Groundwater at the Site flowed generally towards the west-southwest. Groundwater gradients ranged from 0.007 feet/feet in the upgradient areas, to 0.013 feet/feet further downgradient, with the gradient steepening and becoming more southwest oriented as it approaches the groundwater discharge area (Figure B-1). Groundwater elevation and gradient conditions were consistent with those observed during previous monitoring events.

The RI (Parmetrix, 2006) reported information on groundwater flow rates and travel times for flow lines from the disposal areas through MW-12I and MW-13D. Based on this information, groundwater from the Landfill to MW-12I traveled at an annual average velocity of approximately 640 feet per day, and requires approximately 2.5 years to travel from the Landfill to MW-12I. Likewise, groundwater from the Landfill to MW-13D travels at an annual average velocity of 165 feet per day and requires approximately 13 year to travel from the Landfill to MW-13D.

5.3 Water Quality Results

Groundwater quality results from the fourth quarter 2024 are presented in Table B-2, including field parameters, conventional parameters, dissolved metals, and VOCs. During the fourth quarter 2024 monitoring event, field parameters were within the range of observed values during previous monitoring events. Analytical results for groundwater COCs are summarized below (see Appendix B for water quality results tables and figures).

- The dissolved arsenic concentrations in monitoring well MW-14 and MW-13D were 0.0129 milligrams per liter (mg/L) and 0.0051 milligrams per liter (mg/L), respectively, and exceeded the 0.005 mg/L cleanup level. Dissolved arsenic was detected at concentrations below the cleanup level at the other groundwater points of compliance. See Section 5.5 for statistical evaluation of the arsenic concentrations.
- Dissolved manganese concentrations were less than the 2.24 mg/L cleanup level at all groundwater points of compliance.
- The vinyl chloride concentrations at monitoring wells MW-6 and MW-12I were 0.050 micrograms per liter (µg/L) and 0.12 µg/L, respectively, and exceeded the 0.025 µg/L cleanup level. At monitoring well MW-14, the vinyl chloride concentration was detected below the cleanup level, at 0.024 µg/L. Vinyl chloride was not detected above the laboratory reporting limit of 0.020 µg/L at other groundwater points of compliance. See Section 5.5 for statistical evaluation of the vinyl chloride concentrations.

Surface water quality results from the fourth quarter 2024 are presented in Table B-3, including field parameters, conventional parameters, dissolved metals, and VOCs. Field parameters and analyte concentrations observed during the fourth quarter 2024 monitoring event were within the range of observed values during other monitoring events in 2024. During the fourth quarter 2024, all analytical results for surface water COCs were either not detected at their respective reporting limits or were detected at concentrations below the Site cleanup levels.

- Dissolved arsenic was detected at concentrations below the Site cleanup level of 0.005 mg/L at all surface water monitoring locations.
- Dissolved manganese was detected at concentrations below the Site cleanup level of 2.24 mg/L at SW-4, SW-6, and SW-7. Dissolved manganese was not detected at SW-1.
- Vinyl chloride has not been detected in surface water samples since the third quarter 2013, and reporting limits have been less than the cleanup level of 0.025 µg/L.

5.4 Geochemical Parameters

Geochemical parameters in groundwater and surface water serve as indicators of landfill effects and can distinguish leachate impacts from gas-to-groundwater impacts. As shown in Tables B-2 and B-3, geochemical parameters collected at the Site include field parameters (dissolved oxygen, pH, Redox, specific conductivity, and temperature), alkalinity/carbonate/bicarbonate, chloride, nitrate/nitrite/ammonia, sulfate, and total organic carbon. During the second quarter sampling event on April 17, 2024, dissolved oxygen was not measured at two locations (MW-12I and MW-13D) due to sensor malfunction.

Based on low concentrations of geochemical parameters identified as leachate indicators (such as chloride, sulfate, alkalinity, and bicarbonate) across the Site, there appears to be little if any leachate effect on groundwater and surface water quality. However, the downgradient monitoring wells show lower dissolved oxygen concentrations than the upgradient well (MW-5), which is likely caused by landfill gas coming in contact with groundwater directly beneath the landfill. Optimizing landfill gas collection may reduce these impacts.

5.5 Statistical Evaluation

The groundwater quality data were evaluated following the description provided in the CAP (Appendix D). Time-series graphs show arsenic and vinyl chloride concentrations since 2007. Trend analysis and projected average concentrations are based on data collected since 2007, following Ecology guidance from the first 5-year review. See Appendix C for time-series graphs for groundwater quality.

5.5.1 Time-Series Graphs

Groundwater sampling results since 2007 are shown on time-series plots for dissolved arsenic (Figure C-1) and vinyl chloride (Figure C-2) at all compliance monitoring locations. Concentrations are decreasing or stable in all cases except dissolved arsenic concentrations observed at MW-13D, which have gradually increased to slightly above or at cleanup levels.

Figure C-1 shows that dissolved arsenic concentrations in groundwater have been less than the cleanup level of 0.005 mg/L at MW-5 (background well), MW-6, MW-7, and MW-12I. A slow and steady increase in dissolved arsenic concentrations has been observed at MW-13D, where concentrations historically hovered below the cleanup level and exceeded the cleanup level for the first time in the second quarter 2020 (Figure C-1). Dissolved arsenic concentrations at MW-14 were above Site cleanup levels, but have been decreasing since 2007.

Figure C-2 shows vinyl chloride concentrations in groundwater have been less than the cleanup level of 0.025 µg/L at MW-5 (background well), MW-7, and MW-13D. Vinyl chloride concentrations at MW-6, MW-12I, and MW-14 continued to trend downward over the long-term. During 2022, 2023, and 2024 the vinyl chloride concentration at MW-12I showed both a decreasing long-term trend and seasonality with relatively higher concentrations during the third and fourth quarters compared to the other quarters. A

similar seasonality has been observed, where maximum annual concentrations were recorded in the dry season of 2020, 2019, 2018, 2015, 2013, 2012, for example.

5.5.2 Statistical Trend Analysis

Based on the results of statistical analysis provided in Table C-1, the dissolved arsenic concentrations in groundwater at MW-14, and vinyl chloride concentrations in groundwater at MW-6, MW-12I, and MW-14, have statistically significant downward trends. These results show continued progress toward achieving cleanup levels.

A statistically significant increasing trend in dissolved arsenic concentrations was observed at monitoring well MW-13D. Dissolved arsenic concentrations exceeded the Site-specific cleanup levels during the first two quarters 2022, but leveled out at the cleanup levels in quarters three and four. In 2023, dissolved arsenic concentrations were below Site-specific cleanup levels during the first three quarters, and increased above the Site-specific cleanup level in the fourth quarter 2023. In 2024, dissolved arsenic concentrations were above Site-specific cleanup levels during the first, third, and fourth quarters. Throughout 2022, 2023, and 2024, the arsenic concentrations remained below Ecology's reported regional natural background value reported by Ecology (Ecology, 2016; Ecology, 2022), as shown on Figure C-3. Statistical trend analysis for dissolved arsenic concentrations in MW-13D has been conducted since 2019 (Aspect, 2020). As previously noted, arsenic concentrations since 2007 likely reflect natural variations or off-Site influences, as opposed to effects from the Site. This conclusion is based on an engineering analysis that identified a lack of other landfill indicators (like vinyl chloride, specific conductance, manganese, etc.) and the substantial lag between landfill activities and arsenic concentration increases. Dissolved arsenic concentrations in MW-13D and other locations continue to be monitored and evaluated.

Statistical analysis of groundwater data was performed in accordance with the CMP (SCS Engineers, 2011). The program Sanitas (ver. 10.0.15) was used to evaluate the Mann-Kendall Test and Sen's Slope. Mann-Kendall testing was performed to assess whether there were statistically significant trends in groundwater concentrations using the two-tailed test (alpha = 0.05). Mann-Kendall results are reported as an approximated normal distribution Test Value "Z" (where the number of data points was greater than 40). Sen's slope analysis was performed to identify the trend direction for statistically significant trends, and reflects the median of the slopes of all pairs of historical data.

Table C-1 provides results of statistical trend analysis, including the Mann-Kendall Test and Sen's Slope analysis. In all cases, the trends are statistically significant because the magnitude of the Mann-Kendall Test Value (Z) was greater than the Critical Value (which is based on the number of data points and alpha). In cases where the Sen's Slope is negative, it indicates a decreasing trend, and where the Sen's Slope is positive, it indicates an increasing trend.

5.5.3 Trend Projections

To qualitatively evaluate the convergence of downward trending groundwater exceedances with cleanup levels, exponential attenuation curves are shown on Figure C-3. These curves are projected out 10 years, through the end of 2035. Based on these long-term projections, the findings include:

- Within 10 years, the average vinyl chloride concentrations will meet the cleanup level in MW-6, MW-12I, and MW-14.
- In more than 10 years, the average dissolved arsenic in MW-14 will meet the cleanup level.

Optimizing the landfill gas collection system may reduce the time to meet cleanup levels. This is consistent with elements of the contaminant fate-and-transport model presented in the RI/FS (Parametrix, 2006; Parametrix, 2009). Increasing landfill gas collection reduces the potential for landfill gas (containing carbon dioxide, methane, and VOCs) to come in contact with groundwater, which results in low dissolved oxygen.

- For vinyl chloride, this means reducing the mass transfer from vapor phase to groundwater and increasing the natural attenuation rates.
- For dissolved metals, this means maintaining a higher pH in groundwater and preventing mobilization of naturally occurring arsenic and manganese.

A linear trend was calculated for increasing dissolved arsenic concentrations at MW-13D, as shown on Figure C-3. This projected trend biases future concentrations high because it does not account for the historical oscillation in concentrations. For reference, the graph for MW-13D on Figure C-3 shows the average natural background concentration for the Puget Sound basin, based on Ecology's publication *Natural Background Groundwater Arsenic Concentrations in Washington State* (Ecology, 2016). The mean dissolved-arsenic concentration at MW-13D exceeded the cleanup level but remained below the natural background level during 2024. It is not expected to exceed the natural background concentration in the next 10 years.

5.5.4 Calculation of Statistical Limits

Statistical limit concentrations were evaluated to assess the approach toward cleanup levels consistent with the CAP. Table C-2 shows the calculated annual statistics—including the mean,[2] 95 percent upper confidence limit (UCL), and 95 percent lower confidence limit (LCL)—for sampling results from 2007 through 2024. Table C-2 was updated this year and shows slight difference from previous annual report C-2 tables to include perceived outliers in the data set going back to 2007. The changes are minute in the overall means, UCLs, and LCLs.

Except for dissolved arsenic at MW-13D, the mean and UCL concentrations have trended downward over time. For dissolved arsenic at MW-14, the UCL has lagged the mean trend by at least 5 years. For vinyl chloride at MW-6, MW-12I, and MW-14, the UCL has lagged the mean trend by 1 to 2 years. This lag will need to be considered when determining compliance with groundwater and surface water cleanup levels under MTCA (per WAC 173-340-720(9) and 173-340-730(7), respectively).

Statistical limit concentrations for dissolved arsenic at MW-13D were added to Table C-2 in the annual 2020 report to account for the observed increasing trend. The LCL concentrations at MW-13D equaled (but did not exceed) the dissolved arsenic cleanup

[2] The mean statistic was based on the least-squares regression method for log-transformed data, as shown by the curved trend lines on Figure C-3.

level in 2021, 2022, 2023, and 2024, while the UCL slightly exceeded the cleanup level in 2022, 2023, and 2024. We recommend taking the steps necessary for establishing background dissolved arsenic concentrations at this Site.

6 Annual Inspections

During 2024, the KPHD inspected the Landfill once each quarter. The inspection dates and comments are:

- March 15, 2024: Compliant; cap was mowed and in "good condition," stormwater improvements increased drainage. An exposed pipe end was inspected by Aspect on the top of the landfill and was deemed not to be in use (no evidence of landfill gas venting.
- June 27, 2024: Compliant; cap was mowed and in "good condition," and stormwater improvements maintained drainage efforts.
- September 27, 2024: Compliant; cap in "good condition," and stormwater drainage has maintained improved performance.
- December 13, 2024: Compliant; cap in "good condition," and stormwater improvements have continued to perform well.

A copy of each inspection form and summary letter is included in Appendix E.

7 References

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SCS Engineers (SCS), 2016, Remedial Action Status Report (RASR), May 2016.

Washington State Department of Ecology (Ecology), 2011, Cleanup Action Plan Hansville Landfill, Kitsap County, Washington, Ecology Facility Site Identification Number: 2605, June 2011.

Washington State Department of Ecology (Ecology), 2016, Natural Background Groundwater Arsenic Concentrations in Washington State, Ecology Publication No. 14-09-044, March 2016.

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8 Limitations

Work for this project was performed for the Kitsap County Public Works Division (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.

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APPENDIX A

Landfill Gas Data

Table A-1. Landfill Gas Data, First Quarter 2024

Project No. AS160423, Hansville Landfill, Hansville, Washington

Location	Map ID	Date/Time	Methane CH_4 (% by vol)	Carbon Dioxide CO_2 (% by vol)	Oxygen O_2 (% by vol)	Balance Bal (% by vol)	System Pressure ("H_2O)	Static Pressure ("H_2O)	Wellhead Temperature (°F)	Flow Rate (SCFM)
Blower Inlet		3/28/24 8:30	3.1	15	3	78.9	-7.38	-6.37	49.3	116
Blower Outlet		3/28/24 8:35	2.8	14.7	3	79.5	0.12	N/A	76.7	N/A
Extraction Well 001	R-1	3/28/24 13:08	3	15.7	0.1	81.2	-1.66	-0.72	55.3	0.6
Extraction Well 002	R-2	3/28/24 13:19	1.3	13.5	5.9	79.3	-1.71	N/A	73.7	N/A
Extraction Well 003	R-3	3/28/24 13:54	5.2	16.8	0	78	-4.97	-1.89	47.9	4
Extraction Well 004	R-4	3/28/24 14:25	2.8	17.3	1.3	78.6	-6.2	-2.06	65.3	3.5
Extraction Well 005	R-5	3/28/24 14:52	2.6	18.6	0.6	78.2	-4.56	-1.33	72.3	3.3
Extraction Well 006	R-6	3/28/24 15:05	2.4	10	10.7	76.9	-6.26	-2.16	85.4	3.5
Extraction Well 007	R-7	3/28/24 15:10	0	15.3	3.2	81.5	-4.56	-1.41	64.4	3.5
Extraction Well 008	R-8	3/28/24 12:42	3.5	18.4	0	78.1	-3.06	-1.24	58.4	2.7
Extraction Well 009	R-9	3/28/24 12:53	1.2	13	5.6	80.2	-2.78	N/A	104.2	N/A
Extraction Well 010	R-10	3/28/24 13:01	4.5	10.8	5.6	79.1	-1.77	-1.17	60.7	1.6
Extraction Well 011	R-11	3/28/24 13:32	2.4	13.7	0	83.9	-1.8	-1.13	54.7	1.8
Extraction Well 012	R-12	3/28/24 14:00	5.6	8.6	0	85.8	-2.78	-1.55	45.1	1.3
Extraction Well 013	R-13	3/28/24 15:14	2.3	14.8	2.5	80.4	-4.97	N/A	69.2	N/A
Trench Collector TD-1	TD-1	3/28/24 12:33	1.2	19.5	0.1	79.2	-0.08	0	53.8	0
Trench Collector TR-1	TR-1	3/28/24 14:58	0.2	10.7	9.1	80	-4.71	-1.25	68.6	3.3
Trench Collector TR-2	TR-2	3/28/24 12:48	4.2	16.7	0.8	78.3	-1.7	N/A	54.4	N/A
Trench Collector TR-3	TR-3	3/28/24 13:13	3.3	16.2	1.4	79.1	-1.53	N/A	57.7	N/A
Trench Collector TR-4	TR-4	3/28/24 14:34	0.9	18.1	0.4	80.6	-5.09	-1.27	57.2	3.3
Trench Collector TR-5	TR-5	3/28/24 14:11	3.6	15.5	2.8	78.1	-1.42	N/A	48.5	N/A
Trench Collector TR-6	TR-6	3/28/24 14:04	5.3	15.2	1.8	77.7	-1.61	N/A	49.7	N/A
Trench Collector TR-7	TR-7	3/28/24 14:17	7.1	14.4	1.2	77.3	-4.33	-1.46	46.8	3.5
Gas Probe 1	GP-1	3/28/24 9:12	0	1.5	19.4	79.1	0.01	N/A	N/A	N/A
Gas Probe 2 Shallow	GP-2S	3/28/24 9:37	0	0.6	20.7	79.1	-0.01	N/A	N/A	N/A
Gas Probe 2 Middle	GP-2M	3/28/24 9:52	0	1.3	19.3	78.7	0.11	N/A	N/A	N/A
Gas Probe 2 Deep	GP-2D	3/28/24 9:59	0	1.6	18.3	79.4	0.19	N/A	N/A	N/A
Gas Probe 3	GP-3	3/28/24 10:35	0	1.4	20.4	80.1	0.02	N/A	N/A	N/A
Gas Probe 4	GP-4	3/28/24 10:55	0	1.6	20.3	78.2	0.02	N/A	N/A	N/A
Gas Probe 5	GP-5	3/28/24 11:46	0	0.1	21.3	78.1	0	N/A	N/A	N/A
Gas Probe 6	GP-6	3/28/24 12:14	0	4.4	15.2	78.6	-0.03	N/A	N/A	N/A
Gas Probe 7	GP-7	3/28/24 11:10	0	3	18.9	80.4	-0.01	N/A	N/A	N/A

Notes

System pressure represents the vacuum available at the wellhead. Static pressure represents the equilibrium downhole pressure.

Flow rates measured using orifice plates (where installed).

N/A = indicates parameter not measured.

°F = degrees Fahrenheit

"H_2O = inches water column

SCFM = standard cubici feet per minute

Table A-2. Landfill Gas Data, Second Quarter 2024

Project No. AS160423, Hansville Landfill, Hansville, Washington

Location	Map ID	Date/Time	Methane CH_4 (% by vol)	Carbon Dioxide CO_2 (% by vol)	Oxygen O_2 (% by vol)	Balance Bal (% by vol)	System Pressure ("H_2O)	Static Pressure ("H_2O)	Wellhead Temperature (°F)	Flow Rate (SCFM)
Blower Inlet		6/26/24 8:34	3.2	16.1	2.9	77.8	-7.81	-6.24	63.2	112.1
Blower Outlet		6/26/24 8:40	3.2	16.1	2.8	77.9	0.21	N/A	92.5	N/A
Extraction Well 001	R-1	6/26/24 13:38	4.6	15.8	0.1	79.5	-1.84	-1.08	69.9	0.5
Extraction Well 002	R-2	6/26/24 13:59	1.4	13.5	6	79.1	-2.18	N/A	81.7	N/A
Extraction Well 003	R-3	6/26/24 14:06	5.3	16.9	0	77.8	-6.63	-2.21	68.7	3.7
Extraction Well 004	R-4	6/26/24 14:19	2.9	17.4	1.4	78.3	-6.79	-2.44	75.6	3.3
Extraction Well 005	R-5	6/26/24 15:04	2.9	18.7	0.7	77.7	-4.69	-1.87	79.8	3.6
Extraction Well 006	R-6	6/26/24 15:18	2.4	9.7	9.7	78.2	-4.93	-2.62	93	3.6
Extraction Well 007	R-7	6/26/24 14:57	0	15.3	3.1	81.6	-6.23	-2.04	68.6	3.3
Extraction Well 008	R-8	6/26/24 13:04	3.8	19.1	0.1	77	-4.31	-1.65	68.9	2.4
Extraction Well 009	R-9	6/26/24 13:14	1.2	13.2	5.6	80	-2.16	N/A	107.4	N/A
Extraction Well 010	R-10	6/26/24 13:31	5.1	10.8	5.5	78.6	-2.38	-1.51	70.5	1.5
Extraction Well 011	R-11	6/26/24 13:26	2.6	13.8	0	83.6	-1.84	-1.55	71.3	1.6
Extraction Well 012	R-12	6/26/24 14:36	6.2	8.7	0	85.1	-2.68	-2.07	64	0.7
Extraction Well 013	R-13	6/26/24 14:52	2.6	15	2.3	80.1	-5.34	N/A	74.7	N/A
Trench Collector TD-1	TD-1	6/26/24 12:54	1.3	20.5	0.2	78	-4.84	0.41	68.4	18.1
Trench Collector TR-1	TR-1	6/26/24 15:23	0.2	10.8	10.1	78.9	-5.86	-1.88	77.8	3.3
Trench Collector TR-2	TR-2	6/26/24 13:09	4.5	18.1	1	76.4	-2.09	N/A	62.9	N/A
Trench Collector TR-3	TR-3	6/26/24 13:43	2.9	17.6	1.2	78.3	-1.82	N/A	66.3	N/A
Trench Collector TR-4	TR-4	6/26/24 14:24	1.4	19.6	0	79	-6.55	-1.79	69.1	3.7
Trench Collector TR-5	TR-5	6/26/24 14:46	3.3	16.4	2.9	77.4	-2.18	N/A	69.2	N/A
Trench Collector TR-6	TR-6	6/26/24 14:42	4.5	16.6	2.1	76.8	-2.91	N/A	65.1	N/A
Trench Collector TR-7	TR-7	6/26/24 14:13	5.8	15.9	1.5	76.8	-6.79	-1.89	67.8	3.8
Gas Probe 1	GP-1	6/26/24 9:31	0	1.3	19.6	79.1	-0.03	N/A	N/A	N/A
Gas Probe 2 Shallow	GP-2S	6/26/24 10:14	0	0.1	21.2	79.1	0	N/A	N/A	N/A
Gas Probe 2 Middle	GP-2M	6/26/24 10:19	0	1.2	19	78.7	-0.16	N/A	N/A	N/A
Gas Probe 2 Deep	GP-2D	6/26/24 10:30	0	1.4	18.4	79.8	-0.26	N/A	N/A	N/A
Gas Probe 3	GP-3	6/26/24 10:50	0	1	20.5	80.2	0.02	N/A	N/A	N/A
Gas Probe 4	GP-4	6/26/24 11:12	0	1.5	20	78.5	-0.02	N/A	N/A	N/A
Gas Probe 5	GP-5	6/26/24 12:20	0	0.1	20.9	78.5	-0.03	N/A	N/A	N/A
Gas Probe 6	GP-6	6/26/24 12:36	0	2.8	17.4	79	-0.04	N/A	N/A	N/A
Gas Probe 7	GP-7	6/26/24 11:51	0	3.1	18.2	79.8	-0.09	N/A	N/A	N/A

Notes

System pressure represents the vacuum available at the wellhead. Static pressure represents the equilibrium downhole pressure.

Flow rates measured using orifice plates (where installed).

N/A = indicates parameter not measured.

°F = degrees Fahrenheit

"H_2O = inches water column

SCFM = standard cubici feet per minute

Table A-3. Landfill Gas Data, Third Quarter 2024

Project No. AS160423, Hansville Landfill, Hansville, Washington

Location	Map ID	Date/Time	Methane CH_4 (% by vol)	Carbon Dioxide CO_2 (% by vol)	Oxygen O_2 (% by vol)	Balance Bal (% by vol)	System Pressure ("H_2O)	Static Pressure ("H_2O)	Wellhead Temperature (°F)	Flow Rate (SCFM)
Blower Inlet		9/25/24 15:19	3.5	16.7	3	76.8	-6.29	-6.48	64.8	108.2
Blower Outlet		9/25/24 15:24	3.3	16.6	3	77.1	0.16	N/A	93.7	N/A
Extraction Well 001	R-1	9/30/24 13:05	4	16.1	0.1	79.8	-1.15	-0.15	67	0.5
Extraction Well 002	R-2	9/30/24 13:31	1.2	13.6	6.4	78.8	-1.2	N/A	83.7	N/A
Extraction Well 003	R-3	9/30/24 13:37	5.2	17.7	0	77.1	-3.71	-1.18	71.6	3
Extraction Well 004	R-4	9/30/24 14:43	2.4	17	1.9	78.7	-5.06	-1.26	77.6	3.3
Extraction Well 005	R-5	9/30/24 14:36	2.7	19	0.9	77.4	-5.79	-0.7	85	2.8
Extraction Well 006	R-6	9/30/24 14:30	2.1	9.7	11.7	76.5	-5.17	-1.48	94.1	3.9
Extraction Well 007	R-7	9/30/24 14:15	0	16	2.5	81.5	-3.92	-0.66	71.7	2.9
Extraction Well 008	R-8	9/25/24 15:54	4	19.8	0.1	76.1	-3.14	-1.55	64.5	2.2
Extraction Well 009	R-9	9/25/24 16:08	1.2	13.2	6.5	79.1	-2.06	N/A	106.6	N/A
Extraction Well 010	R-10	9/30/24 12:59	4.8	11.2	5.7	78.3	-1.2	-0.66	70.3	1.4
Extraction Well 011	R-11	9/30/24 13:15	2.4	14.4	0	83.2	-1.17	-0.59	72	1.3
Extraction Well 012	R-12	9/30/24 13:44	5.8	9.9	0	84.3	-1.1	-0.88	68.9	2.2
Extraction Well 013	R-13	9/30/24 13:56	2.6	15.6	2.3	79.5	-4.04	N/A	76.2	N/A
Trench Collector TD-1	TD-1	9/25/24 15:45	1.8	21.9	0.2	76.1	-5.67	0.57	60.2	17.3
Trench Collector TR-1	TR-1	9/30/24 14:20	0.1	10.9	9.4	79.6	-3.93	-0.65	87.7	2.9
Trench Collector TR-2	TR-2	9/25/24 16:02	6.2	19.4	0.8	73.6	-2.08	N/A	64.2	N/A
Trench Collector TR-3	TR-3	9/30/24 13:09	4.3	18.5	1.2	76	-1.01	N/A	71.5	N/A
Trench Collector TR-4	TR-4	9/30/24 14:50	1.4	19.4	0.3	78.9	-5.58	-0.45	76.6	3.7
Trench Collector TR-5	TR-5	9/30/24 13:52	3.1	16.7	3.1	77.1	-0.76	N/A	71.3	N/A
Trench Collector TR-6	TR-6	9/30/24 13:48	5.2	16.7	2	76.1	-0.97	N/A	70.3	N/A
Trench Collector TR-7	TR-7	9/30/24 14:56	6.9	16	1.3	75.8	0	-0.64	0	3.7
Gas Probe 1	GP-1	9/25/24 12:08	0	1.6	19.3	79.1	-0.06	N/A	N/A	N/A
Gas Probe 2 Shallow	GP-2S	9/25/24 12:37	0	0.1	21.2	78.7	-0.02	N/A	N/A	N/A
Gas Probe 2 Middle	GP-2M	9/25/24 12:51	0	1.3	18.7	80	-0.21	N/A	N/A	N/A
Gas Probe 2 Deep	GP-2D	9/25/24 13:00	0	1.3	18.4	80.3	-0.28	N/A	N/A	N/A
Gas Probe 3	GP-3	9/25/24 13:20	0	1.3	20.3	78.4	0.01	N/A	N/A	N/A
Gas Probe 4	GP-4	9/25/24 13:45	0	1.7	19.8	78.5	0.03	N/A	N/A	N/A
Gas Probe 5	GP-5	9/25/24 14:26	0	0.1	21.3	78.6	-0.02	N/A	N/A	N/A
Gas Probe 6	GP-6	9/25/24 14:45	0	4	16.1	79.9	-0.01	N/A	N/A	N/A
Gas Probe 7	GP-7	9/25/24 14:02	0	3	18.8	78.2	0.06	N/A	N/A	N/A

Notes

System pressure represents the vacuum available at the wellhead. Static pressure represents the equilibrium downhole pressure.

Flow rates measured using orifice plates (where installed).

N/A = indicates parameter not measured.

°F = degrees Fahrenheit

"H_2O = inches water column

SCFM = standard cubici feet per minute

Table A-4. Landfill Gas Data, Fourth Quarter 2024

Project No. AS160423, Hansville Landfill, Hansville, Washington

Location	Map ID	Date	Methane CH4 (% by vol)	Carbon Dioxide CO2 (% by vol)	Oxygen O2 (% by vol)	Balance Bal (% by vol)	System Pressure ("H_2O)	Static Pressure ("H_2O)	Wellhead Temperature (°F)	Flow Rate (SCFM)
Blower Inlet		12/26/24 15:48	2.4	15.3	3.7	78.6	-8.81	-9.91	46.9	109.9
Blower Outlet		12/26/24 15:55	2.4	15.4	3.7	78.5	0.2	N/A	79.5	N/A
Extraction Well 001	R-1	12/26/24 13:31	5.4	16.3	0	78.3	-4.28	-3.02	57.3	0.5
Extraction Well 002	R-2	12/26/24 13:44	1.1	13.5	7.1	78.3	-3.75	N/A	72.2	N/A
Extraction Well 003	R-3	12/26/24 13:53	5	18.5	0	76.5	-6.19	-3.6	57.8	4.5
Extraction Well 004	R-4	12/26/24 14:49	2.6	17.7	1.6	78.1	-7.78	-3.69	70.3	2.8
Extraction Well 005	R-5	12/26/24 15:14	2.2	19.1	1	77.7	-6.33	-3.17	81	3.2
Extraction Well 006	R-6	12/26/24 15:25	2	9.3	11.8	76.9	-7.79	-3.95	90	3.4
Extraction Well 007	R-7	12/26/24 15:02	0	14.8	4.2	81	-6.17	-3.69	67.8	2.9
Extraction Well 008	R-8	12/26/24 12:47	4	19.7	0	76.3	-6.05	-3.82	58.9	1.7
Extraction Well 009	R-9	12/26/24 13:02	1	12.3	7.1	79.6	-5.53	N/A	101.5	N/A
Extraction Well 010	R-10	12/26/24 13:26	6	11.2	5.8	77	-3.77	-3.47	60.8	1
Extraction Well 011	R-11	12/26/24 13:40	2.5	14.7	0	82.8	-3.73	-3.58	55.4	0.9
Extraction Well 012	R-12	12/26/24 14:30	6.9	9.5	0	83.6	-4.8	-3.78	54.9	1.2
Extraction Well 013	R-13	12/26/24 14:57	2.4	15.1	2.7	79.8	-6.8	N/A	72.9	N/A
Trench Collector TD-1	TD-1	12/26/24 12:29	2.1	20.9	0.2	76.8	-8.72	-0.54	53.4	18
Trench Collector TR-1	TR-1	12/26/24 15:32	0.4	11.4	9.6	78.6	-6.3	-3.08	73.9	3.1
Trench Collector TR-2	TR-2	12/26/24 12:57	3.9	17.3	1.6	77.2	-3.9	N/A	56.6	N/A
Trench Collector TR-3	TR-3	12/26/24 13:35	2.3	16.4	1.7	79.6	-3.7	N/A	60.1	N/A
Trench Collector TR-4	TR-4	12/26/24 14:53	1.1	18.6	0.2	80.1	-7.54	-3.24	62	3.2
Trench Collector TR-5	TR-5	12/26/24 14:34	3.5	17.2	1.6	77.7	-3.41	N/A	59.9	N/A
Trench Collector TR-6	TR-6	12/26/24 14:39	3.9	17.2	1.5	77.4	-3.69	N/A	60.9	N/A
Trench Collector TR-7	TR-7	12/26/24 14:44	5.7	16.5	1	76.8	-6.37	-3.48	54	3.4
Gas Probe 1	GP-1	12/26/24 8:39	0.0	0.9	19.3	79.8	-0.06	N/A	N/A	N/A
Gas Probe 2 Shallow	GP-2S	12/26/24 9:01	0.0	0.1	21.6	79.8	-0.05	N/A	N/A	N/A
Gas Probe 2 Middle	GP-2M	12/26/24 9:16	0.0	1.4	19.1	78.3	-0.79	N/A	N/A	N/A
Gas Probe 2 Deep	GP-2D	12/26/24 9:27	0.0	0.8	20.2	79.5	-1.3	N/A	N/A	N/A
Gas Probe 3	GP-3	12/26/24 9:54	0.0	1.3	20.6	79	-0.25	N/A	N/A	N/A
Gas Probe 4	GP-4	12/26/24 10:26	0.0	1.8	20.3	78.1	-0.37	N/A	N/A	N/A
Gas Probe 5	GP-5	12/26/24 11:42	0.0	0.1	21.5	77.9	0.01	N/A	N/A	N/A
Gas Probe 6	GP-6	12/26/24 11:58	0.0	4.1	16.3	78.4	-0.58	N/A	N/A	N/A
Gas Probe 7	GP-7	12/26/24 10:43	0.0	3.3	18.7	79.6	-0.14	N/A	N/A	N/A

Notes

System pressure represents the vacuum available at the wellhead. Static pressure represents the equilibrium downhole pressure.

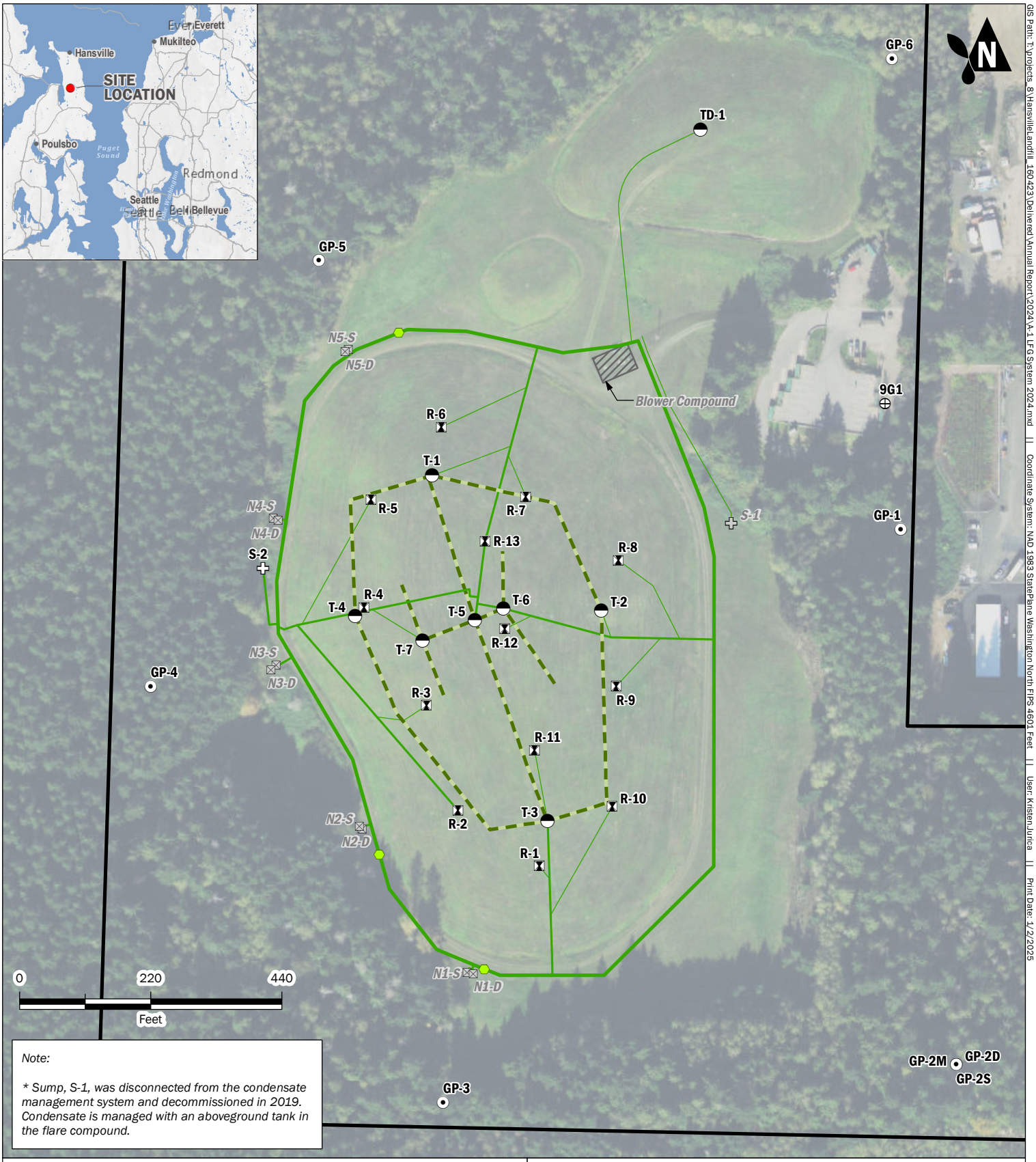
Flow rates measured using orifice plates (where installed).

N/A = indicates parameter not measured.

°F = degrees Fahrenheit

"H_2O = inches water column

SCFM = standard cubici feet per minute



Note:

** Sump, S-1, was disconnected from the condensate management system and decommissioned in 2019. Condensate is managed with an aboveground tank in the flare compound.*

Exploration

- Gas Detection Probe
- Gas Extraction Well (in Refuse Completion)
- Gas Extraction Well (Native Soil Completion) *Disconnected in October, 2019*
- Trench Completion
- Well Geologic Control
- Condensate Sump
- Condensate Sump* *Decomissioned in 2019*

Landfill Gas System

- LFG Pipe - 2"
- LFG Pipe - 4"
- LFG Pipe - 6"
- Trench
- LFG Valve
- Landfill Boundary

Landfill Gas System

2024 Annual Environmental Monitoring Report
Hansville Landfill
Kitsap County, Washington

Aspect Consulting	JAN-2025	BY: JSJ / CMT / KMJ	FIGURE NO. A-1
	PROJECT NO. 160423	REVISED BY: ---/---	

GIS Path: T:\projects_8\Hansville Landfill_160423\Delivered\Annual Report\2024\A-1 LFG System 2024.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || User: KristenJurica || Print Date: 1/2/2025

APPENDIX B

Water Quality Results

Table B-1. Water Level Elevations

Project No. AS160423, Hansville Landfill, Hansville, Washington

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	100.41	266.5
MW-6	332.0	332.7	260	245	74.52	258.2
MW-7	344.3	346.0	259	244	85.28	260.7
MW-12I	245.6	248.1	217	207	9.95	238.2
MW-13D	258.1	260.4	205	195	11.30	249.1
MW-14	338.6	341.1	262	247	82.18	258.9

Notes

Depths to water collected January 17, 2024.

Elevations relative to North American Vertical Datum of 1988 (NAVD88). ft = feet

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	100.50	266.4
MW-6	332.0	332.7	260	245	74.33	258.4
MW-7	344.3	346.0	259	244	85.15	260.9
MW-12I	245.6	248.1	217	207	9.91	238.2
MW-13D	258.1	260.4	205	195	11.20	249.2
MW-14	338.6	341.1	262	247	82.36	258.7

Notes

Depths to water collected April 17, 2024.

Elevations relative to North American Vertical Datum of 1988 (NAVD88). ft = feet

Table B-1. Water Level Elevations

Project No. AS160423, Hansville Landfill, Hansville, Washington

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	100.92	266.0
MW-6	332.0	332.7	260	245	74.76	257.9
MW-7	344.3	346.0	259	244	85.35	260.7
MW-12I	245.6	248.1	217	207	10.28	237.8
MW-13D	258.1	260.4	205	195	11.71	248.7
MW-14	338.6	341.1	262	247	82.87	258.2

Notes

Depths to water collected July 17, 2024.

Elevations relative to North American Vertical Datum of 1988 (NAVD88). ft = feet

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	101.25	265.7
MW-6	332.0	332.7	260	245	75.15	257.6
MW-7	344.3	346.0	259	244	85.70	260.3
MW-12I	245.6	248.1	217	207	10.39	237.7
MW-13D	258.1	260.4	205	195	12.49	247.9
MW-14	338.6	341.1	262	247	83.20	257.9

Notes

Depths to water collected October 16, 2024.

Elevations relative to North American Vertical Datum of 1988 (NAVD88). ft = feet

Table B-2. Groundwater Quality Results

Project No. AS160423, Hansville Landfill, Hansville, Washington

DRAFT

Parameter	Units	Site Cleanup Level	Location: MW-5 Date: 01/17/2024	MW-5 04/17/2024	MW-5 07/17/2024	MW-5 10/16/2024	MW-6 01/17/2024	MW-6 04/17/2024	MW-6 07/17/2024	MW-6 10/16/2024	MW-7 01/17/2024	MW-7 04/17/2024	MW-7 07/17/2024	MW-7 10/16/2024	MW-12I 01/17/2024	MW-12I 04/17/2024	MW-12I 07/17/2024
Field Parameters																	
Temperature	deg C		**9**	**9.19**	**12.93**	**11.82**	**11.34**	**12.2**	**15.79**	**12.85**	**7.59**	**9.2**	**10.5**	**10.06**	**9.45**	**9.91**	**11.07**
Specific Conductivity	uS/cm		**122.51**	**121.04**	**114.84**	**163.47**	**155.79**	**227.9**	**138.75**	**223.69**	**174.14**	**264.3**	**250.4**	**221.91**	**190.66**	**181.73**	**184.56**
Dissolved Oxygen	mg/L		**9.8**	**9.12**	**9.45**	**9.45**	**0.28**	**0.32**	**1.24**	**0.42**	**1.44**	**0.93**	**0.83**	**0.47**	**0.15**	--	**0.15**
pH	pH units		**7.14**	**7.8**	**7.04**	**7.18**	**7.21**	**7.18**	**6.97**	**6.99**	**6.43**	**6.21**	**6.37**	**6.41**	**7.12**	**7.41**	**7.12**
Redox	mV		**120.5**	**196.5**	**164.5**	**153.4**	**73.2**	**201.7**	**126.5**	**138**	**134**	**121.5**	**181.8**	**146.8**	**97.3**	**83.5**	**117.6**
Turbidity	NTU		**5.54**	**0.72**	**0.4**	**1.09**	**2.93**	**1.39**	**1.96**	**0.43**	**20.5**	**0.86**	**0.92**	**4.66**	**2.57**	**1.23**	**0.58**
Conventionals																	
Bicarbonate	mg/L		**77**	**77**	**75**	**75**	**100**	**100**	**98**	**130**	**130**	**140**	**140**	**140**	**120**	**130**	**130**
Carbonate	mg/L		< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Alkalinity	mg/L		**77**	**77**	**75**	**75**	**100**	**100**	**98**	**130**	**130**	**140**	**140**	**140**	**120**	**130**	**130**
Ammonia (as N)	mg/L		< 0.03 U	< 0.03 U	< 0.030 U	< 0.030 U	< 0.03 U	< 0.03 U	< 0.030 U	< 0.030 U	**0.03**	< 0.03 U	< 0.030 U	< 0.030 U	< 0.03 U	< 0.03 U	< 0.030 U
Chloride	mg/L		< 3 U	**3.3**	**3.0**	**3.4**	**3.5**	**4.4**	**3.7**	**4.1**	< 3 U	< 3 U	< 3.0 U	< 3.0 U	**11**	**9.7**	**10**
Nitrate (as N)	mg/L		**3.39**	**3.13**	**4.71 J**	**3.75**	**0.43**	**0.329**	**0.149 J**	**0.409**	**0.576**	**0.557**	**0.801 J**	**0.418**	< 0.1 U	< 0.1 U	**0.104 J**
Nitrite (as N)	mg/L		< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Orthophosphate	mg/L		**0.037**	**0.039**	**0.032**	**0.039**	**0.033**	**0.035**	**0.03**	**0.034**	**0.06**	**0.052**	**0.042**	**0.054**	**0.045**	**0.048**	**0.044**
Sulfate	mg/L		**7.5**	**8**	**7.5**	**8.1**	**16**	**17**	**15**	**15**	**5.2**	**6.1**	**6.0**	**5.7**	**11**	**11**	**12**
Total Organic Carbon	mg/L		< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**1.6**	**1.5**	**1.7**	**1.4**	**2.2**	**1.9**	**2.2**
Dissolved Metals																	
Arsenic	µg/L	5	**1.75**	**1.69**	**1.74**	**1.69**	**1.92**	**1.95**	**1.76**	**1.59**	**1.49**	**1.37**	**1.29**	**1.22**	**2.24**	**2.57**	**1.99**
Manganese	µg/L	2240	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**200**	**190**	**150**	**190**	**2.2**	**1.2**	**1.0**	< 1.0 U	**68**	**67**	**63**
Volatile Organic Compounds (VOCs)																	
1,2-Dichloroethene	µg/L		< 2 U	--	--	--	< 2 U	--	--	--	< 2 U	--	--	--	< 2 U	--	--
cis-1,2-Dichloroethene	µg/L		< 1 U	--	--	--	< 1 U	--	--	--	< 1 U	--	--	--	< 1 U	--	--
Vinyl Chloride	µg/L	0.025	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	**0.053**	**0.045**	**0.039**	**0.050**	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	**0.062**	**0.041**	**0.063**

Notes

Bold text = Analyte was detected

Shaded Cell = Result exceeded Site Cleanup level

U = Not detected at or above the Reporting Limit shown

J = Result value estimated

(--) = not analyzed

mg/L = milligram per liter

mV = millivolts

µS/cm = microSiemens per centimeter

deg C = degrees Celcius

NTU = Nephelometric Turbidity Units

µg/L = microgram per liter

Table B-2. Groundwater Quality Results

Project No. AS160423, Hansville Landfill, Hansville, Washington

Parameter	Units	Site Cleanup Level	Location: MW-12I Date: 10/16/2024	MW-13D 01/17/2024	MW-13D 04/17/2024	MW-13D 07/17/2024	MW-13D 10/16/2024	MW-14 01/17/2024	MW-14 04/17/2024	MW-14 07/17/2024	MW-14 10/16/2024
Field Parameters											
Temperature	deg C		**10.02**	**9.75**	**10.44**	**14.66**	**10.6**	**10**	**10.9**	**13.3**	**11.88**
Specific Conductivity	uS/cm		**254.46**	**118.63**	**113.15**	**107.37**	**154.07**	**172.8**	**214**	**150**	**134.69**
Dissolved Oxygen	mg/L		**0.04**	**0.14**	--	**0.47**	**0.07**	**0.34**	**32**	**0.35**	**0.26**
pH	pH units		**7.18**	**7.66**	**8.2**	**7.4**	**7.64**	**7.21**	**7.25**	**7.39**	**7.41**
Redox	mV		**109.6**	**68.6**	**45.2**	**127.8**	**8.34**	**96.1**	**206.9**	**51.1**	**87.7**
Turbidity	NTU		**0.39**	**18**	**8.03**	**6.77**	**2.29**	**23.1**	**1**	**1.84**	**4.44**
Conventionals											
Bicarbonate	mg/L		**140**	**72**	**72**	**66**	**69**	**89**	**100**	**69**	**66**
Carbonate	mg/L		< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Alkalinity	mg/L		**140**	**72**	**72**	**66**	**69**	**89**	**100**	**69**	**66**
Ammonia (as N)	mg/L		< 0.030 U	**0.035**	< 0.03 U	< 0.030 U	< 0.030 U	**0.049**	< 0.03 U	< 0.030 U	< 0.030 U
Chloride	mg/L		**7.3**	**4.4**	**5.5**	**5.2**	**5.8**	**3.9**	**4.7**	< 3.0 U	< 3.0 U
Nitrate (as N)	mg/L		< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	**0.159**	< 0.1 U	< 0.1 U	**0.112**
Nitrite (as N)	mg/L		< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Orthophosphate	mg/L		**0.05**	**0.085**	**0.084**	**0.082**	**0.084**	**0.136 J**	**0.122**	**0.142**	**0.136**
Sulfate	mg/L		**12**	**15**	**16**	**16**	**16**	**9**	**10**	**8.5**	**9.3**
Total Organic Carbon	mg/L		**1.4**	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**1.6**	**1.3**	**2.6**	**2.1**
Dissolved Metals											
Arsenic	µg/L	5	**2.34**	**5.05**	**4.95**	**5.31**	**5.11**	**12.7**	**11.8**	**13.7**	**12.9**
Manganese	µg/L	2240	**76**	**11**	**14**	**6.2**	**18**	**1200**	**1100**	**770**	**600**
Volatile Organic Compounds (VOCs)											
1,2-Dichloroethene	µg/L		--	< 2 U	--	--	--	< 2 U	--	--	--
cis-1,2-Dichloroethene	µg/L		--	< 1 U	--	--	--	**1.6**	--	--	--
Vinyl Chloride	µg/L	0.025	**0.12**	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	**0.022**	< 0.02 U	< 0.020 U	**0.024**

Notes

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J = Result value estimated

(--) = not analyzed

mg/L = milligram per liter

mV = millivolts

µS/cm = microSiemens per centimeter

deg C = degrees Celcius

NTU = Nephelometric Turbidity Units

µg/L = microgram per liter

Table B-3. Surface Water Quality Results

Project No. AS160423, Hansville Landfill, Hansville, Washington

Parameter	Units	Site Cleanup Level	Location / Date	SW-1 01/17/2024	SW-1 04/17/2024	SW-1 07/17/2024	SW-1 10/16/2024	SW-4 01/17/2024	SW-4 04/17/2024	SW-4 07/17/2024	SW-4 10/16/2024	SW-6 01/17/2024	SW-6 04/17/2024	SW-6 07/17/2024	SW-6 10/16/2024	SW-7 01/17/2024	SW-7 04/17/2024	SW-7 07/17/2024	SW-7 10/16/2024
Field Parameters																			
Temperature	deg C			**7.1**	**9.3**	**12.1**	**11.27**	**4.4**	**8.9**	**13.2**	**12.15**	**2**	**8.9**	**15.9**	**12.03**	**3.7**	**9.1**	**14.8**	**12.5**
Specific Conductivity	uS/cm			**478.8**	**184.8**	**175.9**	**197.31**	**237.2**	**339.3**	**363.5**	**301.61**	**98.4**	**130.5**	**137.1**	**130.42**	**130.2**	**157.3**	**160.4**	**140.03**
Dissolved Oxygen	mg/L			**8.04**	**11.07**	**11.74**	**10.1**	**11.02**	**12.05**	**11.61**	**10.35**	**11.97**	**12.66**	**9.97**	**10.16**	**10.53**	**12.79**	**9.19**	**10.58**
pH	pH units			**6.65**	**7.16**	**7.33**	**5.81**	**7.02**	**7.74**	**7.95**	**7.39**	**7.5**	**7.16**	**7.55**	**7.24**	**7.61**	**7.37**	**7.77**	**7.6**
Redox	mV			**106.2**	**178.9**	**167.8**	**199.9**	**104.6**	**213.6**	**141.1**	**166**	**77.6**	**207.5**	**90.3**	**196**	**73.8**	**219**	**138.3**	**171.8**
Turbidity	NTU			**1.13**	**1.17**	**3.22**	**2.13**	**3.89**	**2.5**	**10.8**	**3.12**	**14.5**	**8.67**	**29.6**	**9.2**	**4.02**	**5.31**	**26.6**	**3.58**
Conventionals																			
Bicarbonate	mg/L			**73**	**74**	**71**	**70**	**130**	**140**	**160**	**150**	**44**	**56**	**65**	**66**	**60**	**65**	**76**	**75**
Carbonate	mg/L			< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Alkalinity	mg/L			**73**	**74**	**71**	**70**	**130**	**140**	**160**	**150**	**44**	**56**	**65**	**66**	**60**	**65**	**76**	**75**
Ammonia (as N)	mg/L			< 0.03 U	< 0.03 U	< 0.030 U	< 0.030 U	< 0.03 U	< 0.03 U	< 0.030 U	< 0.030 U	**0.068**	< 0.03 U	**0.040**	< 0.030 U	**0.055**	< 0.03 U	< 0.030 U	< 0.030 U
Chloride	mg/L			**4.3**	**5.8**	**6.8**	**5.8**	**8.5**	**11**	**15**	**12**	**3.7**	**4.2**	**7.3**	**4.2**	**3.6**	**4**	**10**	**4.8**
Nitrate (as N)	mg/L			**2.76**	**1.55**	**2.74 J**	**1.71**	**0.755**	**0.781**	**1.65 J**	**0.735**	**0.128**	< 0.1 U	**0.154 J**	< 0.1 U	**1.04**	**0.61**	**0.392 J**	**0.2**
Nitrite (as N)	mg/L			< 0.1 U	< 0.1 U	**0.147 J**	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Orthophosphate	mg/L			**0.036**	**0.028**	**0.035**	**0.035**	**0.022**	**0.02**	**0.026**	**0.021**	**0.026**	**0.028**	**0.06**	**0.041**	**0.068**	**0.055**	**0.132**	**0.244**
Sulfate	mg/L			**10**	**9.1**	**10**	**9.6**	**18**	**22**	**28**	**23**	**6**	**6.5**	**6.5**	**6.0**	**8.8**	**9.1**	**9.6**	**8.0**
Total Organic Carbon	mg/L			**2**	**1.8**	**1.5**	**1.4**	**11**	**6.5**	**2.8**	**5.4**	**23**	**14**	**8.4**	**8.6**	**10**	**7.2**	**6.2**	**7.1**
Dissolved Metals																			
Arsenic	µg/L	5		**1.45**	**1.51**	**1.67**	**1.53**	**1.49**	**1.62**	**1.49**	**1.65**	**1.98**	**2.55**	**3.63**	**2.67**	**1.21**	**1.47**	**2.22**	**2.42**
Manganese	µg/L	2240		< 1 U	**2.7**	< 1.0 U	< 1.0 U	**40**	**33**	**26**	**24**	**24**	**33**	**39**	**33**	**4.5**	**5**	**9.4**	**7.1**
Volatile Organic Compounds (VOCs)																			
1,2-Dichloroethene	µg/L			< 2 U	--	--	--	< 2 U	--	--	--	< 2 U	--	--	--	< 2 U	--	--	--
cis-1,2-Dichloroethene	µg/L			< 1 U	--	--	--	< 1 U	--	--	--	< 1 U	--	--	--	< 1 U	--	--	--
Vinyl Chloride	µg/L	0.025		< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U	< 0.02 U	< 0.02 U	< 0.020 U	< 0.020 U

Notes

Bold text = Analyte was detected

Shaded Cell = Result exceeded Site Cleanup level

U = Not detected at or above the Reporting Limit shown

J = Result value estimated

(--) = not analyzed

mg/L = milligram per liter

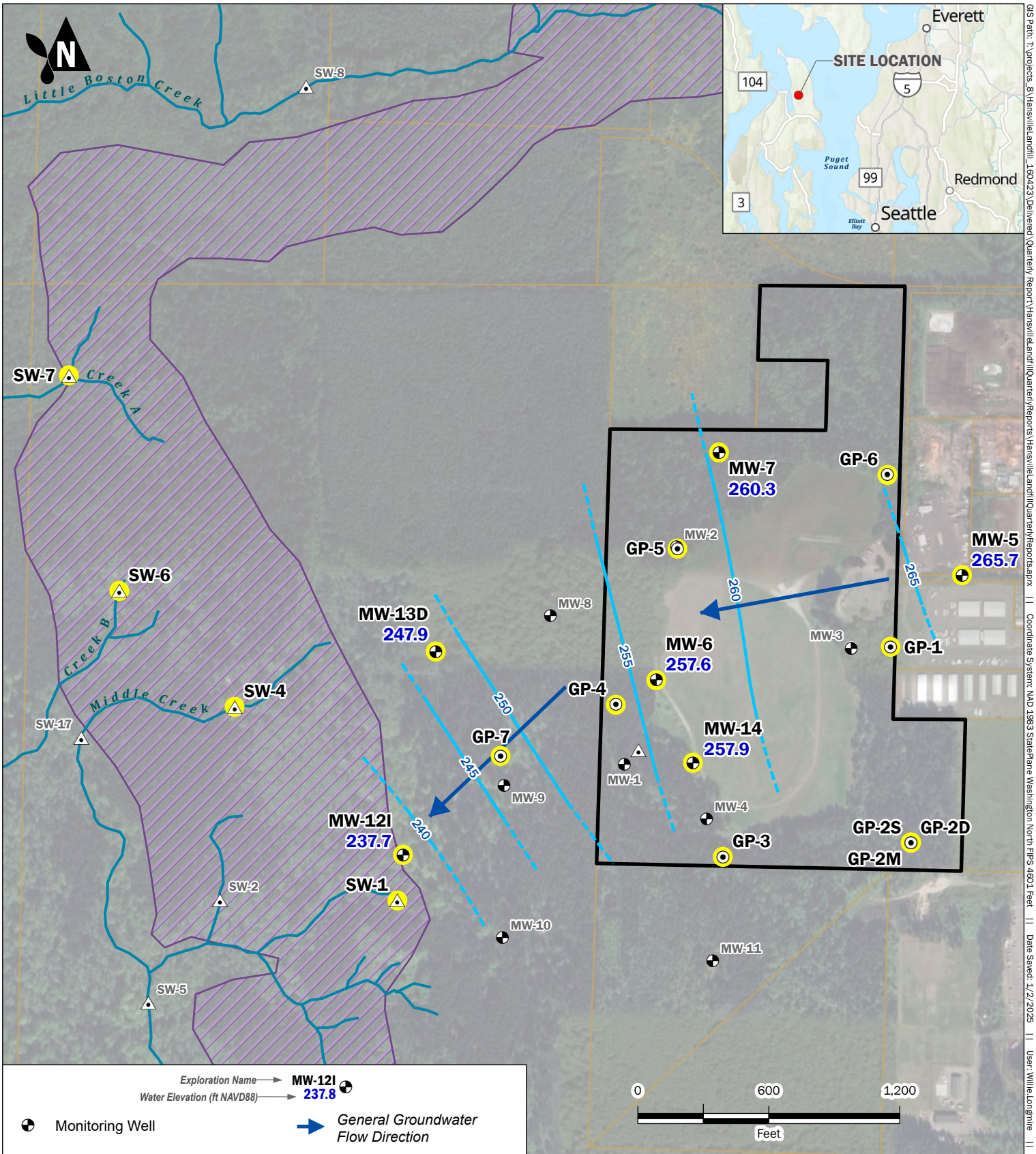
mV = millivolts

µS/cm = microSiemens per centimeter

deg C = degrees Celcius

NTU = Nephelometric Turbidity Units

µg/L = microgram per liter



Note: Vertical datum is NAVD88. Approximate area of groundwater discharge from upper aquifer delineation from Remedial Investigation Report (Parametrix, 2006).

Compliance Monitoring Locations

2024 Annual Environmental Monitoring Report
Hansville Landfill
Kitsap County, Washington

Aspect Consulting	JAN-2025	BY: CMT / HMD	FIGURE NO. B-1
	PROJECT NO. 160423	REVISED BY: WBL	

GIS Path: T:\projects_8\Hansville Landfill_160423\Delivered\Quarterly Report\Hansville Landfill Quarterly Reports\Hansville Landfill Quarterly Reports.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 1/2/2025 || User: Willie.Longmire || Print Date: 1/31/2025

APPENDIX C

Groundwater Statistics and Time-Series Graphs

Table C-1. Statistical Analysis

DRAFT

Project 160423, Hansville Landfill, Hansville, WA

Dissolved Arsenic Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(mg/L per day)	(mg/L per year)
MW-5	--[3]	--	--	--	--	--	--
MW-6	--	--	--	--	--	--	--
MW-7	--	--	--	--	--	--	--
MW-12I	--	--	--	--	--	--	--
MW-13D	Increasing	8.3	1.96	71	Yes	4.5E-04	0.163
MW-14	Decreasing	-8.3	-1.96	71	Yes	-2.4E-03	-0.861

Vinyl Chloride Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(ug/L per day)	(ug/L per year)
MW-5	--[3]	--	--	--	--	--	--
MW-6	Decreasing	-9.2	-1.96	72	Yes	-5.5E-05	-0.020
MW-7	--	--	--	--	--	--	--
MW-12I	Decreasing	-7.9	-1.96	72	Yes	-5.9E-05	-0.022
MW-13D	--	--	--	--	--	--	--
MW-14	Decreasing	-9.8	-1.96	72	Yes	-7.3E-05	-0.027

Notes

1 - The Statistical Trend indicates:
"Non-significant" if the magnitude of the Test Value is less than the Critical Value,
"Increasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is positive, or
"Decreasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is negative.

2 - Mann-Kendall tests were performed with alpha = 0.05 (95% confidence level).
For N>40, Mann-Kendall uses an approximation of a normal distribution, represented by Test Value Z.

3 - "--" Indicates statistical analysis not conducted.
ug/L - micrograms per liter
mg/L - milligrams per liter

4 - Data range is from 1st quarter 2007 through 4th quarter 2023

Table C-2. Statistical Limit Analysis

DRAFT

Project 160423, Hansville Landfill, Hansville, WA

Dissolved Arsenic Statistical Concentrations (mg/L)

Well	Statistic	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Site-specific Cleanup Level
MW-13D	LCL	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
	Trend	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.006	
	UCL	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	
MW-14	LCL	0.016	0.015	0.014	0.014	0.013	0.012	0.012	0.011	0.011	0.010	
	Trend	0.017	0.016	0.015	0.015	0.014	0.013	0.013	0.012	0.012	0.011	
	UCL	0.018	0.017	0.016	0.016	0.015	0.015	0.014	0.014	0.013	0.013	

Vinyl Chloride Statistical Concentrations (ug/L)

Well	Statistic	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Site-specific Cleanup Level
MW-6	LCL	0.130	0.112	0.095	0.081	0.069	0.059	0.050	0.042	0.036	0.030	0.025
	Trend	0.142	0.122	0.105	0.090	0.077	0.066	0.056	0.048	0.042	0.036	
	UCL	0.156	0.134	0.115	0.099	0.086	0.074	0.064	0.056	0.049	0.042	
MW-12I	LCL	0.131	0.114	0.099	0.085	0.073	0.063	0.053	0.046	0.039	0.033	
	Trend	0.149	0.130	0.113	0.098	0.085	0.074	0.064	0.056	0.048	0.042	
	UCL	0.169	0.147	0.128	0.112	0.099	0.087	0.077	0.068	0.060	0.053	
MW-14	LCL	0.118	0.097	0.079	0.064	0.052	0.042	0.034	0.027	0.022	0.018	
	Trend	0.131	0.108	0.088	0.072	0.059	0.048	0.039	0.032	0.026	0.022	
	UCL	0.146	0.120	0.098	0.081	0.067	0.055	0.046	0.038	0.032	0.027	

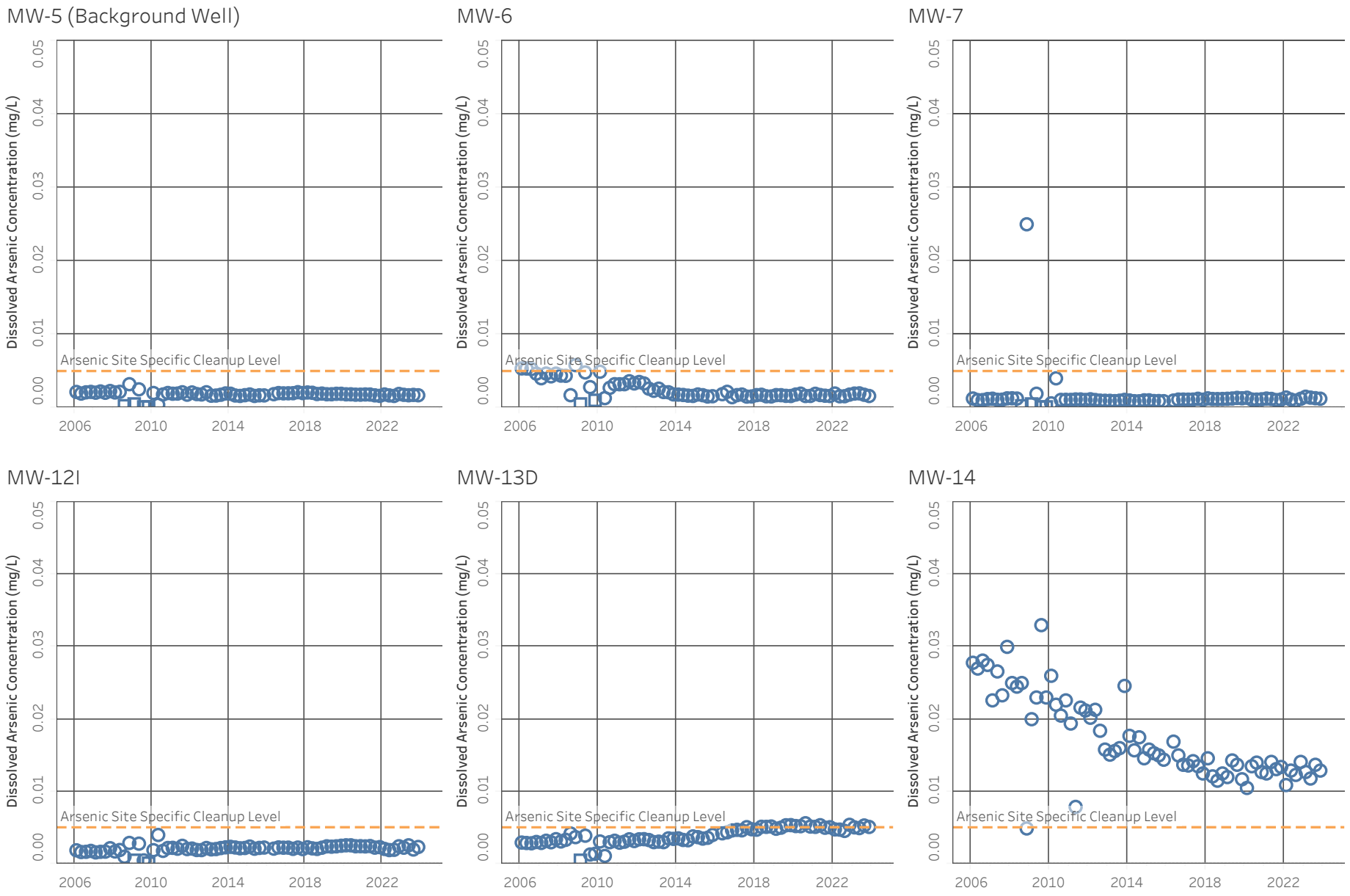
Notes

LCL is the 95% Lower Confidence Limit calculated using log-normal transformed concentrations.

Trend is the average concentration calculated using least-squares fit a line for log-normal transformed concentrations.

UCL is the 95% Upper Confidence Limit calculated using log-normal transformed concentrations.

UCL, LCL calculated based on method described in CMP (SCS Engineers, 2011), except using data collected since January 2007.



Note: Non-detected values are shown at 1/2 the reporting limit. Results from First Quarter 2017 were rejected. See text.

Result Flags

○ Detected

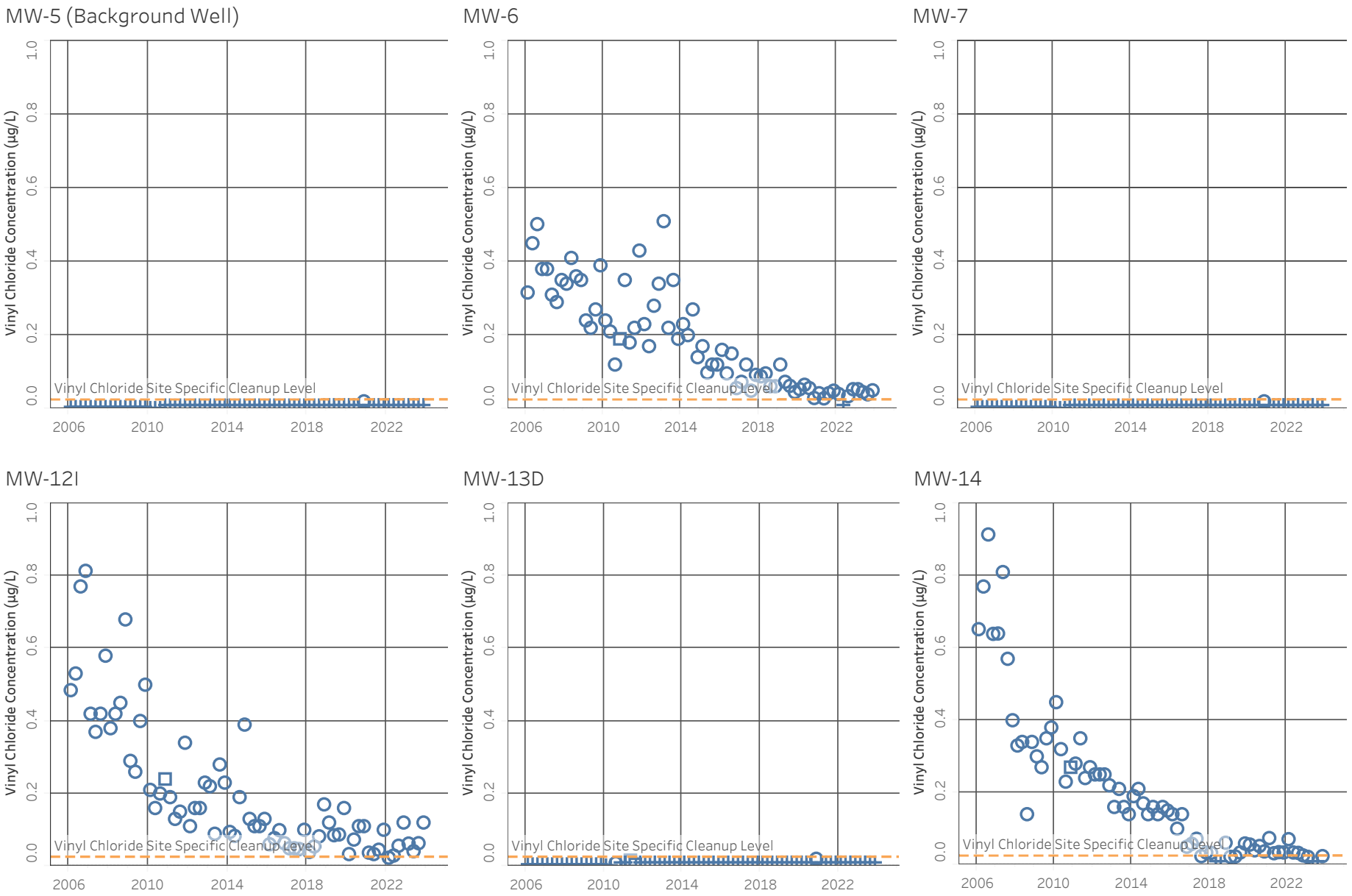
□ U - Non-Detect

Aspect CONSULTING

12/9/2024
Trend Plots (As)

Figure C-1 - Fourth Quarter Dissolved Arsenic Sampling Results

2024 Fourth Quarter Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA



Note: Non-detected values are shown at 1/2 the reporting limit.

Result Flags

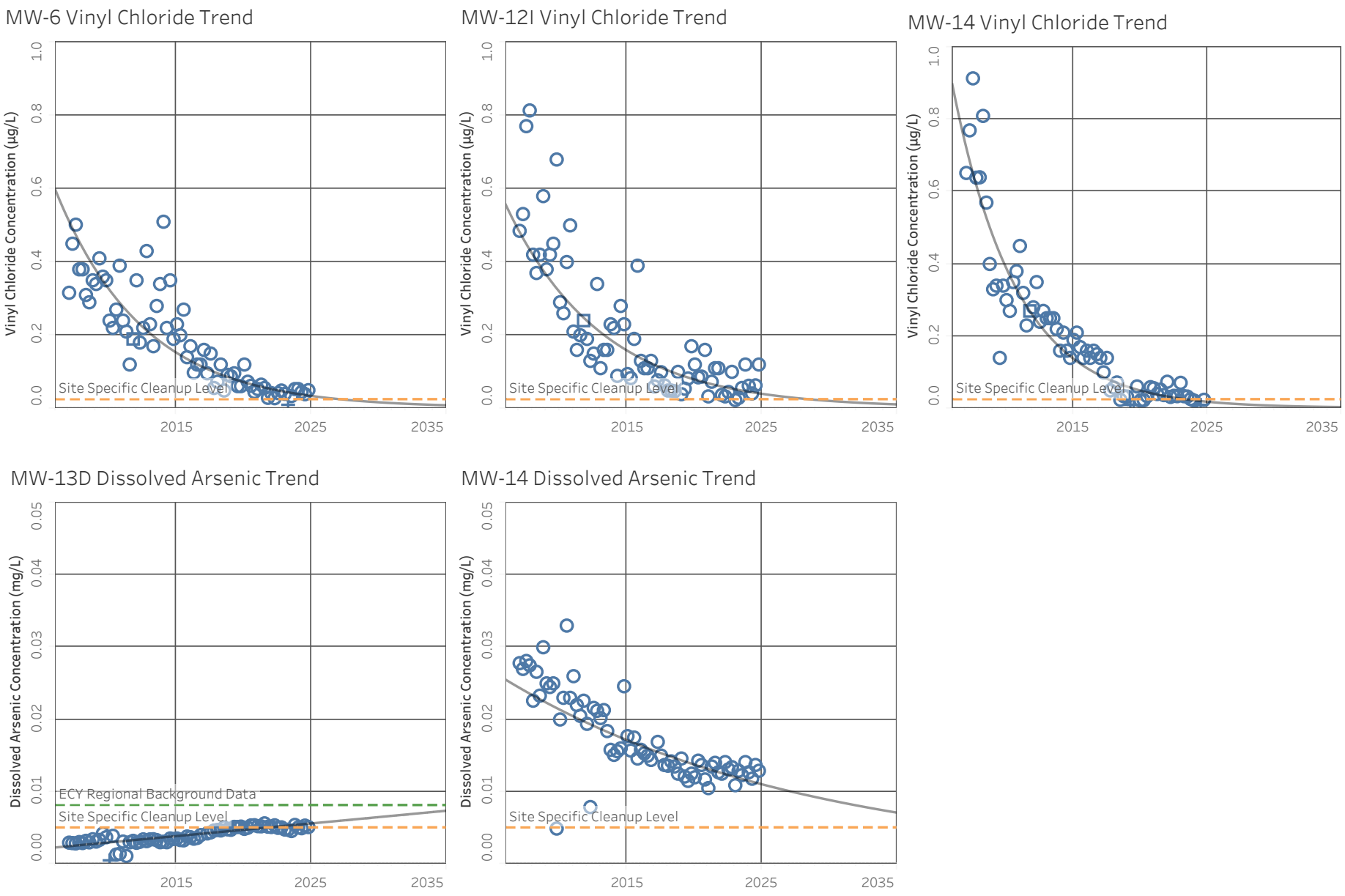
○ Detected □ J - Estimate + U - Non-Detect

Aspect CONSULTING

12/9/2024
Trend Plots (VC) 2021

Figure C-2 - 2024 Fourth Quarter Vinyl Chloride Sampling Results

2024 Fourth Quarter Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA



Note: Non-detected values are shown at 1/2 the reporting limit.
Attentuation curves based on exponential least squares fit to the data.

Aspect CONSULTING

12/9/2024
Trend Plots (VC) 2021

Figure C-3 - 10 Year Attenuation Curves
2024 Fourth Quarter Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

APPENDIX D

Fourth Quarter Field Forms and Laboratory Reports

Aspect CONSULTING

Sample ID: MW-5-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-5 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: TCE

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) —

Filter Pack Interval (ft. bgs) —

Starting Water Level (ft TOC): 101.25

Sample Intake Depth (ft TOC): Dedicated Tubing

Total Depth After Sampling (ft TOC): 127.33

Casing Diameter (inches): 2"

Casing Volume 26.08 (ft Water) x 0.62 (L/ft) = 16.17 (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good Well Sealed? YES Lock Present? YES

Standing Water in Vault? NO Ecology Well Tag Present (and Number if yes)? N/A

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1027			101.25							Begin purging
1032	1.0	0.2	101.25	11.44	157.06	8.54	6.90	139.5	1.66	clear, no odor or
1037	2.0		101.25	11.49	159.74	9.04	7.02	143.0	1.57	sheen
1042	3.0		101.25	11.73	160.78	9.16	7.09	148.7	1.30	
1047	4.0		101.25	11.75	161.78	9.35	7.13	147.2	1.06	
1052	5.0		101.25	11.82	163.47	9.45	7.18	153.4	1.09	
1055										Sample

Total Liters Purged: 6.0 Total Casing Volumes Removed: 0.37 Ending Water Level (ft TOC): 101.25

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1055	40 mL	VOA	3	N	N/A	clear	0.69	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) (yellow red)

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: Drum on site

Observations/Comments: —

Aspect CONSULTING

Sample ID: MW-6-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-6 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: RWN

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) –

Filter Pack Interval (ft. bgs) –

Starting Water Level (ft TOC): 75.15

Sample Intake Depth (ft TOC): Dedicated bladder Pump

Total Depth After Sampling (ft TOC): –

Casing Diameter (inches): 2"

Casing Volume _____ (ft Water) x 0.62 (L/ft) = _____ (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good Condition Well Sealed? Stick-up Lock Present? yes.

Standing Water in Vault? N/A Ecology Well Tag Present (and Number if yes)? _____

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1557			75.15						2.09	Begin purging
1602	0.50	0.10	75.20	12.95	223.46	1.23	6.98	143.6	1.79	Clear, no odor, no sheen
1607	1.00	0.10	75.20	12.87	225.67	0.63	7.01	140.9	0.90	↓
1612	1.50	0.10	75.20	12.84	224.78	0.45	7.00	139.6	0.48	↓
1617	2.00	0.10	75.20	12.87	224.70	0.42	7.02	137.2	0.57	↓
1622	2.50	0.10	75.20	12.85	223.69	0.42	6.99	138.0	0.43	All parameters stabilized
1625										Sample

Total Liters Purged: ~3.0 Total Casing Volumes Removed: _____ Ending Water Level (ft TOC): 75.15

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1625	40 mL	VOA	3	N	N/A	Clear	0.83	
↓	250 mL	Amber	2	N	H2SO4	↓	↓	
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) / (yellow red)

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: ~~Drum on site~~ to the ground

Observations/Comments: Clear, no odor, no sheen

Aspect CONSULTING

Sample ID: MW-7-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-7 Page: 1 of ___

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: FCE

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) —

Filter Pack Interval (ft. bgs) —

Starting Water Level (ft TOC): 85.70

Sample Intake Depth (ft TOC): Dedicated tubing

Total Depth After Sampling (ft TOC): 94.35

Casing Diameter (inches): 2"

Casing Volume 8.65 (ft Water) x 0.62 (L/ft) = 5.36 (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good Well Sealed? Yes Lock Present? Yes

Standing Water in Vault? No Ecology Well Tag Present (and Number if yes)? N/A

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0851			85.70							Begin purging
0856	1.0	0.2	85.70	10.26	216.55	1.31	6.38	162.3	106	Clear, no odor or sheen
0901	2.0		85.70	10.10	213.47	0.48	6.37	153.8	95.6	
0906	3.0		85.70	10.02	215.26	0.41	6.38	150.7	81.3	
0911	4.0		85.70	10.06	213.31	0.38	6.39	148.5	61.9	
0916	5.0		85.70	10.06	213.95	0.40	6.39	146.6	46.7	
0921	6.0		85.70	10.01	216.78	0.40	6.40	146.6	24.3	
0926	7.0		85.70	10.07	218.87	0.42	6.40	146.7	13.2	
0931	8.0		85.70	10.04	220.39	0.45	6.40	146.6	8.17	
0936	9.0		85.70	10.05	221.06	0.45	6.41	147.6	5.50	
0941	10.0		85.70	10.06	221.91	0.47	6.41	146.8	4.66	
0950										Sample

Total Liters Purged: 10.5 Total Casing Volumes Removed: 0.51 Ending Water Level (ft TOC): 85.70

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
0950	40 mL	VOA	3	N	N/A	Clear		
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & ~~serial number~~): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) / (yellow red)

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: Drum on site

Observations/Comments: —

Aspect CONSULTING

Sample ID: MW-12I-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-12I Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: FCE

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) —

Filter Pack Interval (ft. bgs) —

Starting Water Level (ft TOC): 10.39

Sample Intake Depth (ft TOC): Dedicated tubing

Total Depth After Sampling (ft TOC): 33.47

Casing Diameter (inches): 2"

Casing Volume 23.08 (ft Water) x 0.62 (L/ft) = 14.31 (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good Well Sealed? Yes Lock Present? Yes

Standing Water in Vault? N/A Ecology Well Tag Present (and Number if yes)? N/A

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1158			10.39							Begin purging
1203	1.0	0.2	10.39	10.05	259.78	10.14	7.11	105.2	1.96	Clear, no odor or sheen
1208	2.0		10.40	10.07	257.82	0.07	7.14	106.8	0.86	
1213	3.0		10.40	10.08	256.65	0.05	7.18	107.9	0.53	
1218	4.0		10.39	10.03	255.98	0.05	7.17	108.8	0.54	
1223	5.0		10.40	10.02	254.46	0.04	7.18	109.6	0.39	
1225										Sample

Total Liters Purged: 5.5 Total Casing Volumes Removed: 0.38 Ending Water Level (ft TOC): 10.35

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1225	40 mL	VOA	3	N	N/A	Clear	0.39	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) / (yellow red)

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: Drum on site

Observations/Comments:

Aspect CONSULTING

Sample ID: MW-13D-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-13D Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: FCE

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) —

Filter Pack Interval (ft. bgs) —

Starting Water Level (ft TOC): 12.49

Sample Intake Depth (ft TOC): Dedicated tubing

Total Depth After Sampling (ft TOC): 88.84

Casing Diameter (inches): 2"

Casing Volume 76.35 (ft Water) x 0.62 (L/ft) = 47.34 (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good Well Sealed? Yes Lock Present? Yes

Standing Water in Vault? N/A Ecology Well Tag Present (and Number if yes)? N/A

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1312			12.49							Begin purging
1317	1.0	10.2	12.47	10.66	151.18	0.18	7.57	91.8	3.55	Clear, no odor or sheen
1322	2.0		12.49	10.63	152.03	0.09	7.61	91.3	2.98	
1327	3.0		12.52	10.61	152.94	0.08	7.63	89.1	2.73	
1332	4.0		12.53	10.62	153.66	0.08	7.64	86.7	2.63	
1337	5.0		12.53	10.60	154.07	0.07	7.64	83.4	2.29	
1340										Sample

Total Liters Purged: 5.3 Total Casing Volumes Removed: 0.11 Ending Water Level (ft TOC): 12.09

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1340	40 mL	VOA	3	N	N/A	Clear	2.29	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) (yellow red)

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: Drum on site

Observations/Comments: —

Aspect CONSULTING

Sample ID: MW-14-241016 / MW-20DD-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-~~44~~14 | Page: 1 of 1

Project Name: Hansville Landfill Q4 2024
Project Number: AS160423
Date: 10/16/2024
Sampled by: FCE
Measuring Point of Well: NTOC
Screened Interval (ft. bgs): —
Filter Pack Interval (ft. bgs): —

Starting Water Level (ft TOC): 83.20
Sample Intake Depth (ft TOC): Dedicated Tubing
Total Depth After Sampling (ft TOC): 91.98
Casing Diameter (inches): 2"

Casing Volume 8.78 (ft Water) x 0.62 (L/ft) = 5.44 (L)
Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: Good
Well Sealed? yes
Lock Present? yes
Standing Water in Vault? N/A
Ecology Well Tag Present (and Number if yes)? N/A

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1508	—	—	83.20	—	—	—	—	—	—	Begin purging
1513	1.0	0.2	83.20	11.82	134.87	0.82	7.42	84.7	10.5	Clear, no odor,
1518	2.0	↓	83.22	11.79	135.15	0.32	7.41	87.3	7.91	or sheen
1523	3.0	↓	83.25	11.86	134.90	0.28	7.42	88.5	5.55	↓
1528	4.0	↓	83.25	11.87	134.76	0.27	7.42	87.4	4.61	↓
1533	5.0	↓	83.25	11.88	134.69	0.26	7.41	87.7	4.44	↓
1535	—	—	—	—	—	—	—	—	—	Sample

Total Liters Purged: 5.5 Total Casing Volumes Removed: 1.01 Ending Water Level (ft TOC): 83.20

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1535	40 mL	VOA	3	N	N/A	Clear	4.24	
↓	250 mL	Amber	2	N	H2SO4	↓	↓	
↓	250 mL	Poly	2	N	N/A	↓	↓	
↓	250 mL	Poly	1	Y	N/A	↓	↓	
↓	250 mL	Poly	1	Y	HNO3	↓	↓	
↓	500 mL	Poly	1	Y	HNO3	↓	↓	
↓	500 mL	Poly	1	1	N/A	↓	↓	

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/~~Purple~~), Turbidimeter (Pink/~~PinkYellow~~), WLI 150 (Blue/white / ~~yellow red~~)
Purging Equipment: ~~Dedicated bladder pump~~/Peristaltic pum
Decon Equipment: Aloconox + DI water
Disposal of Discharged Water: Drum on site
Observations/Comments: MW-~~20DD~~14 Duplicate sample MW-20DD, Sample time: 0850

Aspect CONSULTING

Sample ID: SW-1-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-1 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: RWP

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) -

Filter Pack Interval (ft. bgs) -

Starting Water Level (ft TOC): -

Sample Intake Depth (ft TOC): midpoint OF the Stream

Total Depth After Sampling (ft TOC): -

Casing Diameter (inches): -

Casing Volume - (ft Water) x - (L/ft) = - (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: - Well Sealed? - Lock Present? -

Standing Water in Vault? - Ecology Well Tag Present (and Number if yes)? -

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1105	-	-	-	11.27	197.31	10.10	5.81	199.9	2.13	clear, no odor, no sheen
1110										Sample

Total Liters Purged: Total Casing Volumes Removed: Ending Water Level (ft TOC):

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1110	40 mL	VOA	3	N	N/A	Clear	2.13	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), ~~WLI 150 (Blue/white) / (yellow rod)~~

Purging Equipment: Dedicated bladder pump/Peristaltic pum Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: ~~Drum on site~~ to ground

Observations/Comments:

Aspect CONSULTING

Sample ID: SW-4-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-4 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: RWN

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) –

Filter Pack Interval (ft. bgs) –

Starting Water Level (ft TOC): –

Sample Intake Depth (ft TOC): midlevel in the stream

Total Depth After Sampling (ft TOC): ~~NA~~ –

Casing Diameter (inches): –

Casing Volume – (ft Water) x – (L/ft) = – (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: – Well Sealed? – Lock Present? –

Standing Water in Vault? – Ecology Well Tag Present (and Number if yes)? –

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1200	–	0.10	–	12.15	301.61	10.35	7.39	166.0	3.12	clear, no odor, no sheen
1205										Sample

Total Liters Purged: – Total Casing Volumes Removed: – Ending Water Level (ft TOC): –

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1205	40 mL	VOA	3	N	N/A	Clear		
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), ~~WLI 150 (Blue/white) / (yellow red)~~

Purging Equipment: Dedicated bladder pump/~~Peristaltic pump~~ Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: ~~Drum on site~~ purge to ground

Observations/Comments: clear, no odor, no sheen

Aspect CONSULTING

Sample ID: SW-6-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-6 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: RWN

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) -

Filter Pack Interval (ft. bgs) -

Starting Water Level (ft TOC): -

Sample Intake Depth (ft TOC): midlevel in the stream

Total Depth After Sampling (ft TOC): -

Casing Diameter (inches): -

Casing Volume - (ft Water) x - (L/ft) = - (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: - Well Sealed? - Lock Present? -

Standing Water in Vault? - Ecology Well Tag Present (and Number if yes)? -

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1450	-	0.10	-	13.03	130.42	10.16	7.24	169.0	9.2	Clear, no odor, no sheen
1455										Sample

Total Liters Purged: - Total Casing Volumes Removed: - Ending Water Level (ft TOC): -

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1455	40 mL	VOA	3	N	N/A	Clear	9.2	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): ~~AquaTroll (Pink/Purple), Turbidimeter (Pink/RinkYellow), WLI 150 (Blue/white) / (yellow red)~~

Purging Equipment: ~~Dedicated bladder pump~~/Peristaltic pump Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: ~~Drum on site~~ to the ground

Observations/Comments: No color but very fine suspended sediments observed in sample containers, no odor, no sheen

Aspect CONSULTING

Sample ID: SW-7-241016

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-7 Page: 1 of 1

Project Name: Hansville Landfill Q4 2024 Project Number: AS160423

Date: 10/16/2024

Sampled by: RWW

Measuring Point of Well: NTOC

Screened Interval (ft. bgs) -

Filter Pack Interval (ft. bgs) -

Starting Water Level (ft TOC): -

Sample Intake Depth (ft TOC): midlevel in the stream

Total Depth After Sampling (ft TOC): -

Casing Diameter (inches): -

Casing Volume - (ft Water) x - (L/ft) = - (L)

Casing volumes: 3/4"= 0.09 L/ft 2" = 0.62 L/ft 4" = 2.46 L/ft 6" = 5.56 L/ft

WELL CONDITION

Vault Condition: - Well Sealed? - Lock Present? -

Standing Water in Vault? - Ecology Well Tag Present (and Number if yes)? -

PURGING MEASUREMENTS

Stabilization Criteria (for 3 consecutive readings):		Typical 0.1-0.5 Lpm	Stable (<0.3 ft target)	na	± 3%	± 10% (or ± 0.5 mg/L if < 1 mg/L)	± 0.1	± 10 mV	± 10% (or 3 succesive < 10 NTU)	
Time	Cumul. Volume (L)	Purge Rate (mL/min)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1345	-	0.10	-	12.50	140.03	10.58	7.60	171.8	3.58	Clear, no odor, no sh
1350										Sample

Total Liters Purged: Total Casing Volumes Removed: Ending Water Level (ft TOC):

SAMPLE INVENTORY

Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1350	40 mL	VOA	3	N	N/A	Clear	3.58	
	250 mL	Amber	2	N	H2SO4			
	250 mL	Poly	2	N	N/A			
	250 mL	Poly	1	Y	N/A			
	250 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	Y	HNO3			
	500 mL	Poly	1	1	N/A			

METHODS

Parameters measured with (instrument model & serial number): AquaTroll (Pink/Purple), Turbidimeter (Pink/PinkYellow), WLI 150 (Blue/white) / ~~(yellow red)~~

Purging Equipment: ~~Dedicated bladder pump~~/Peristaltic pump Decon Equipment: Aloconox + DI water

Disposal of Discharged Water: ~~Drum on site~~ to the ground

Observations/Comments:

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Peter Bannister
Aspect Consulting
350 Madison Ave N
Bainbridge Island, Washington 98110

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JOB DESCRIPTION

Hansville Landfill
2Q_3Q_4Q Sampling

JOB NUMBER

280-198330-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

Job Notes

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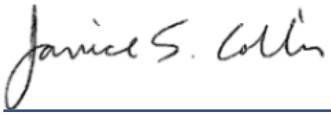

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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
280-198330-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) lower than Eurofins Environmental Testing standard reporting limits. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/18/2024 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1°C and 1.8°C.

Subcontract Work
Methods Dissolved As (ARI) - direct sub to ARI from field, Nitrate/Nitrite/o-phos(field filtered) (ARI) - direct sub to ARI from field: These methods were subcontracted to Analytical Resources, Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

GC/MS VOA
Method 8260D_SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 280-672235. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. MW5-241016 (280-198330-1), MW6-241016 (280-198330-2), MW7-241016 (280-198330-3), MW12I-241016 (280-198330-4), MW13D-241016 (280-198330-5), MW14-241016 (280-198330-6), MW20DD-241016 (280-198330-7), SW1-241016 (280-198330-8), SW4-241016 (280-198330-9), SW6-241016 (280-198330-10), SW7-241016 (280-198330-11), TB1-241016 (280-198330-12) and TB2-241016 (280-198330-13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 300.0_28D: The concentration of Chloride in the matrix spike and matrix spike duplicate (MS/MSD) parent sample is higher than the highest point of the calibration range. The recoveries for the MS/MSD are not within the recovery limits of 80-120%. (280-198342-A-1), (280-198342-A-1 MS) and (280-198342-A-1 MSD)

Method 300.0_28D: The concentration of Sulfate in the matrix spike and matrix spike duplicate (MS/MSD) parent sample is higher than the highest point of the calibration range. The recoveries for the MS/MSD are still within the recovery limits of 80-120%. (280-198342-A-1), (280-198342-A-1 MS) and (280-198342-A-1 MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Client Sample ID: MW5-241016 — Lab Sample ID: 280-198330-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		3.0		mg/L	1		300.0	Total/NA
Sulfate	8.1		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	75		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	75		10		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW6-241016 — Lab Sample ID: 280-198330-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.050		0.020		ug/L	1		8260D SIM	Total/NA
Manganese	190		1.0		ug/L	1		6020B	Dissolved
Chloride	4.1		3.0		mg/L	1		300.0	Total/NA
Sulfate	15		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW7-241016 — Lab Sample ID: 280-198330-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	5.7		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	1.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW12I-241016 — Lab Sample ID: 280-198330-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.12		0.020		ug/L	1		8260D SIM	Total/NA
Manganese	76		1.0		ug/L	1		6020B	Dissolved
Chloride	7.3		3.0		mg/L	1		300.0	Total/NA
Sulfate	12		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	1.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW13D-241016 — Lab Sample ID: 280-198330-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	18		1.0		ug/L	1		6020B	Dissolved
Chloride	5.8		3.0		mg/L	1		300.0	Total/NA
Sulfate	16		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	69		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	69		10		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW14-241016 — Lab Sample ID: 280-198330-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.024		0.020		ug/L	1		8260D SIM	Total/NA
Manganese	600		1.0		ug/L	1		6020B	Dissolved
Sulfate	9.3		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	66		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	66		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	2.1		1.0		mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Client Sample ID: MW20DD-241016 — Lab Sample ID: 280-198330-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.024		0.020		ug/L	1		8260D SIM	Total/NA
Manganese	580		1.0		ug/L	1		6020B	Dissolved
Sulfate	9.2		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	67		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	67		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	2.0		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW1-241016 — Lab Sample ID: 280-198330-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.8		3.0		mg/L	1		300.0	Total/NA
Sulfate	9.6		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	70		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	70		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	1.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW4-241016 — Lab Sample ID: 280-198330-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	24		1.0		ug/L	1		6020B	Dissolved
Chloride	12		3.0		mg/L	1		300.0	Total/NA
Sulfate	23		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	150		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	150		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	5.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW6-241016 — Lab Sample ID: 280-198330-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	33		1.0		ug/L	1		6020B	Dissolved
Chloride	4.2		3.0		mg/L	1		300.0	Total/NA
Sulfate	6.0		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	66		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	66		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	8.6		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW7-241016 — Lab Sample ID: 280-198330-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	7.1		1.0		ug/L	1		6020B	Dissolved
Chloride	4.8		3.0		mg/L	1		300.0	Total/NA
Sulfate	8.0		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	75		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	75		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Quad	7.1		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: TB1-241016 — Lab Sample ID: 280-198330-12

No Detections.

Client Sample ID: TB2-241016 — Lab Sample ID: 280-198330-13

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Method Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Method	Method Description	Protocol	Laboratory
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
300.0	Anions, Ion Chromatography	EPA	EET DEN
350.1	Nitrogen, Ammonia	EPA	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 5310B	Organic Carbon, Total (TOC)	SM	EET DEN
Subcontract	Dissolved As (ARI) - direct sub to ARI from field	None	SC0056
Subcontract	Nitrate/Nitrite/o-phos(field filtered) (ARI) - direct sub to ARI from field	None	SC0056
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
5030B	Purge and Trap	SW846	EET DEN

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

SC0056 = Analytical Resources, Inc, 4611 South 134th Place, Suite 100, Tukwila, WA 98168, TEL (206)695-6200

Sample Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-198330-1	MW5-241016	Water	10/16/24 10:55	10/18/24 09:05
280-198330-2	MW6-241016	Water	10/16/24 14:55	10/18/24 09:05
280-198330-3	MW7-241016	Water	10/16/24 09:50	10/18/24 09:05
280-198330-4	MW12I-241016	Water	10/16/24 12:25	10/18/24 09:05
280-198330-5	MW13D-241016	Water	10/16/24 13:40	10/18/24 09:05
280-198330-6	MW14-241016	Water	10/16/24 15:35	10/18/24 09:05
280-198330-7	MW20DD-241016	Water	10/16/24 08:50	10/18/24 09:05
280-198330-8	SW1-241016	Water	10/16/24 11:10	10/18/24 09:05
280-198330-9	SW4-241016	Water	10/16/24 12:05	10/18/24 09:05
280-198330-10	SW6-241016	Water	10/16/24 16:25	10/18/24 09:05
280-198330-11	SW7-241016	Water	10/16/24 13:50	10/18/24 09:05
280-198330-12	TB1-241016	Water	10/16/24 00:00	10/18/24 09:05
280-198330-13	TB2-241016	Water	10/16/24 00:00	10/18/24 09:05

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW5-241016
Date Collected: 10/16/24 10:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 16:14*	*1*

Client Sample ID: MW6-241016
Date Collected: 10/16/24 14:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.050**		0.020		ug/L			10/23/24 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 16:36*	*1*

Client Sample ID: MW7-241016
Date Collected: 10/16/24 09:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 16:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*77 - 120*		*10/23/24 16:57*	*1*

Client Sample ID: MW12I-241016
Date Collected: 10/16/24 12:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.12**		0.020		ug/L			10/23/24 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 17:18*	*1*

Client Sample ID: MW13D-241016
Date Collected: 10/16/24 13:40
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*77 - 120*		*10/23/24 17:39*	*1*

Client Sample ID: MW14-241016
Date Collected: 10/16/24 15:35
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.024**		0.020		ug/L			10/23/24 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*77 - 120*		*10/23/24 18:00*	*1*

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW20DD-241016
Date Collected: 10/16/24 08:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.024**		0.020		ug/L			10/23/24 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 18:22*	*1*

Client Sample ID: SW1-241016
Date Collected: 10/16/24 11:10
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*77 - 120*		*10/23/24 18:43*	*1*

Client Sample ID: SW4-241016
Date Collected: 10/16/24 12:05
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 19:03*	*1*

Client Sample ID: SW6-241016
Date Collected: 10/16/24 16:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*77 - 120*		*10/23/24 19:24*	*1*

Client Sample ID: SW7-241016
Date Collected: 10/16/24 13:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*77 - 120*		*10/23/24 19:45*	*1*

Client Sample ID: TB1-241016
Date Collected: 10/16/24 00:00
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 13:05*	*1*

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB2-241016
Date Collected: 10/16/24 00:00
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*77 - 120*		*10/23/24 13:26*	*1*

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW5-241016
Date Collected: 10/16/24 10:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		10/22/24 08:13	10/23/24 19:28	1

Client Sample ID: MW6-241016
Date Collected: 10/16/24 14:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**190**		1.0		ug/L		10/22/24 08:13	10/23/24 19:46	1

Client Sample ID: MW7-241016
Date Collected: 10/16/24 09:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		10/22/24 08:13	10/23/24 19:49	1

Client Sample ID: MW12I-241016
Date Collected: 10/16/24 12:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**76**		1.0		ug/L		10/22/24 08:13	10/23/24 19:53	1

Client Sample ID: MW13D-241016
Date Collected: 10/16/24 13:40
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**18**		1.0		ug/L		10/22/24 08:13	10/23/24 20:04	1

Client Sample ID: MW14-241016
Date Collected: 10/16/24 15:35
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**600**		1.0		ug/L		10/22/24 08:13	10/23/24 20:07	1

Client Sample ID: MW20DD-241016
Date Collected: 10/16/24 08:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**580**		1.0		ug/L		10/22/24 08:13	10/23/24 20:11	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: SW1-241016
Date Collected: 10/16/24 11:10
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		10/22/24 08:13	10/23/24 20:14	1

Client Sample ID: SW4-241016
Date Collected: 10/16/24 12:05
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**24**		1.0		ug/L		10/22/24 08:13	10/23/24 20:18	1

Client Sample ID: SW6-241016
Date Collected: 10/16/24 16:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**33**		1.0		ug/L		10/22/24 08:13	10/23/24 20:21	1

Client Sample ID: SW7-241016
Date Collected: 10/16/24 13:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**7.1**		1.0		ug/L		10/22/24 08:13	10/23/24 20:25	1

General Chemistry

Client Sample ID: MW5-241016
Date Collected: 10/16/24 10:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**3.4**		3.0		mg/L			10/24/24 22:28	1
Sulfate (EPA 300.0)	**8.1**		5.0		mg/L			10/24/24 22:28	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 11:44	1
Total Alkalinity (SM 2320B)	**75**		10		mg/L			10/22/24 04:31	1
Bicarbonate Alkalinity (SM 2320B)	**75**		10		mg/L			10/22/24 04:31	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 04:31	1
Total Organic Carbon - Quad (SM 5310B)	ND		1.0		mg/L			10/24/24 18:51	1

Client Sample ID: MW6-241016
Date Collected: 10/16/24 14:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4.1**		3.0		mg/L			10/24/24 22:39	1
Sulfate (EPA 300.0)	**15**		5.0		mg/L			10/24/24 22:39	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 13:06	1
Total Alkalinity (SM 2320B)	**130**		10		mg/L			10/22/24 05:14	1
Bicarbonate Alkalinity (SM 2320B)	**130**		10		mg/L			10/22/24 05:14	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:14	1
Total Organic Carbon - Quad (SM 5310B)	ND		1.0		mg/L			10/24/24 19:07	1

General Chemistry

Client Sample ID: MW7-241016
Date Collected: 10/16/24 09:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	ND		3.0		mg/L			10/24/24 22:50	1
Sulfate (EPA 300.0)	**5.7**		5.0		mg/L			10/24/24 22:50	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 13:50	1
Total Alkalinity (SM 2320B)	**140**		10		mg/L			10/22/24 05:28	1
Bicarbonate Alkalinity (SM 2320B)	**140**		10		mg/L			10/22/24 05:28	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:28	1
Total Organic Carbon - Quad (SM 5310B)	**1.4**		1.0		mg/L			10/24/24 19:21	1

Client Sample ID: MW12I-241016
Date Collected: 10/16/24 12:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**7.3**		3.0		mg/L			10/24/24 23:01	1
Sulfate (EPA 300.0)	**12**		5.0		mg/L			10/24/24 23:01	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 13:59	1
Total Alkalinity (SM 2320B)	**140**		10		mg/L			10/22/24 05:36	1
Bicarbonate Alkalinity (SM 2320B)	**140**		10		mg/L			10/22/24 05:36	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:36	1
Total Organic Carbon - Quad (SM 5310B)	**1.4**		1.0		mg/L			10/24/24 19:36	1

Client Sample ID: MW13D-241016
Date Collected: 10/16/24 13:40
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**5.8**		3.0		mg/L			10/24/24 23:12	1
Sulfate (EPA 300.0)	**16**		5.0		mg/L			10/24/24 23:12	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:01	1
Total Alkalinity (SM 2320B)	**69**		10		mg/L			10/22/24 05:43	1
Bicarbonate Alkalinity (SM 2320B)	**69**		10		mg/L			10/22/24 05:43	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:43	1
Total Organic Carbon - Quad (SM 5310B)	ND		1.0		mg/L			10/25/24 07:24	1

Client Sample ID: MW14-241016
Date Collected: 10/16/24 15:35
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	ND		3.0		mg/L			10/24/24 23:23	1
Sulfate (EPA 300.0)	**9.3**		5.0		mg/L			10/24/24 23:23	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:03	1
Total Alkalinity (SM 2320B)	**66**		10		mg/L			10/22/24 05:50	1
Bicarbonate Alkalinity (SM 2320B)	**66**		10		mg/L			10/22/24 05:50	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:50	1
Total Organic Carbon - Quad (SM 5310B)	**2.1**		1.0		mg/L			10/25/24 08:28	1

General Chemistry

Client Sample ID: MW20DD-241016
Date Collected: 10/16/24 08:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	ND		3.0		mg/L			10/25/24 00:40	1
Sulfate (EPA 300.0)	**9.2**		5.0		mg/L			10/25/24 00:40	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:05	1
Total Alkalinity (SM 2320B)	**67**		10		mg/L			10/22/24 05:57	1
Bicarbonate Alkalinity (SM 2320B)	**67**		10		mg/L			10/22/24 05:57	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 05:57	1
Total Organic Carbon - Quad (SM 5310B)	**2.0**		1.0		mg/L			10/25/24 07:41	1

Client Sample ID: SW1-241016
Date Collected: 10/16/24 11:10
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**5.8**		3.0		mg/L			10/25/24 00:51	1
Sulfate (EPA 300.0)	**9.6**		5.0		mg/L			10/25/24 00:51	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:07	1
Total Alkalinity (SM 2320B)	**70**		10		mg/L			10/22/24 06:04	1
Bicarbonate Alkalinity (SM 2320B)	**70**		10		mg/L			10/22/24 06:04	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 06:04	1
Total Organic Carbon - Quad (SM 5310B)	**1.4**		1.0		mg/L			10/25/24 07:58	1

Client Sample ID: SW4-241016
Date Collected: 10/16/24 12:05
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**12**		3.0		mg/L			10/25/24 01:02	1
Sulfate (EPA 300.0)	**23**		5.0		mg/L			10/25/24 01:02	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:09	1
Total Alkalinity (SM 2320B)	**150**		10		mg/L			10/22/24 06:11	1
Bicarbonate Alkalinity (SM 2320B)	**150**		10		mg/L			10/22/24 06:11	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 06:11	1
Total Organic Carbon - Quad (SM 5310B)	**5.4**		1.0		mg/L			10/25/24 08:12	1

Client Sample ID: SW6-241016
Date Collected: 10/16/24 16:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4.2**		3.0		mg/L			10/25/24 01:13	1
Sulfate (EPA 300.0)	**6.0**		5.0		mg/L			10/25/24 01:13	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:12	1
Total Alkalinity (SM 2320B)	**66**		10		mg/L			10/22/24 06:19	1
Bicarbonate Alkalinity (SM 2320B)	**66**		10		mg/L			10/22/24 06:19	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 06:19	1
Total Organic Carbon - Quad (SM 5310B)	**8.6**		1.0		mg/L			10/25/24 09:43	1

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

General Chemistry

Client Sample ID: SW7-241016
Date Collected: 10/16/24 13:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4.8**		3.0		mg/L			10/25/24 01:24	1
Sulfate (EPA 300.0)	**8.0**		5.0		mg/L			10/25/24 01:24	1
Ammonia as N (EPA 350.1)	ND		0.030		mg/L			10/23/24 14:14	1
Total Alkalinity (SM 2320B)	**75**		10		mg/L			10/22/24 06:26	1
Bicarbonate Alkalinity (SM 2320B)	**75**		10		mg/L			10/22/24 06:26	1
Carbonate Alkalinity (SM 2320B)	ND		10		mg/L			10/22/24 06:26	1
Total Organic Carbon - Quad (SM 5310B)	**7.1**		1.0		mg/L			10/25/24 09:57	1

Surrogate Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DBFM (77-120)
280-198330-1	MW5-241016	115
280-198330-2	MW6-241016	115
280-198330-3	MW7-241016	114
280-198330-4	MW12I-241016	115
280-198330-5	MW13D-241016	114
280-198330-6	MW14-241016	114
280-198330-7	MW20DD-241016	115
280-198330-8	SW1-241016	114
280-198330-9	SW4-241016	115
280-198330-10	SW6-241016	113
280-198330-11	SW7-241016	113
280-198330-12	TB1-241016	115
280-198330-13	TB2-241016	115
LCS 280-672235/1002	Lab Control Sample	115
LCSD 280-672235/3	Lab Control Sample Dup	116
MB 280-672235/6	Method Blank	116

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

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

Lab Sample ID: MB 280-672235/6
Matrix: Water
Analysis Batch: 672235

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			10/23/24 12:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*77 - 120*		*10/23/24 12:44*	*1*

Lab Sample ID: LCS 280-672235/1002
Matrix: Water
Analysis Batch: 672235

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.17		ug/L		117	40 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*77 - 120*

Lab Sample ID: LCSD 280-672235/3
Matrix: Water
Analysis Batch: 672235

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	1.00	1.13		ug/L		113	40 - 144	4	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*116*		*77 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-671874/1-A
Matrix: Water
Analysis Batch: 672254

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 671874

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		10/22/24 08:13	10/23/24 19:21	1

Lab Sample ID: LCS 280-671874/2-A
Matrix: Water
Analysis Batch: 672254

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 671874

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	40.0	39.5		ug/L		99	85 - 117

Lab Sample ID: 280-198330-1 MS
Matrix: Water
Analysis Batch: 672254

Client Sample ID: MW5-241016
Prep Type: Dissolved
Prep Batch: 671874

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	ND		40.0	37.1		ug/L		93	89 - 119

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-198330-1 MSD
Matrix: Water
Analysis Batch: 672254

Client Sample ID: MW5-241016
Prep Type: Dissolved
Prep Batch: 671874

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	ND		40.0	36.9		ug/L		92	89 - 119	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-672400/6
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/L			10/24/24 20:17	1
Sulfate	ND		5.0		mg/L			10/24/24 20:17	1

Lab Sample ID: LCS 280-672400/4
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101		mg/L		101	90 - 110
Sulfate	100	102		mg/L		102	90 - 110

Lab Sample ID: LCSD 280-672400/5
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	100		mg/L		100	90 - 110	0	10
Sulfate	100	102		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-672400/3
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.17		mg/L		103	50 - 150
Sulfate	5.00	5.12		mg/L		102	50 - 150

Lab Sample ID: 280-198342-A-1 MS
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	7700	E	50.0	7600	E 4	mg/L		-112	80 - 120
Sulfate	850	E	50.0	896	E 4	mg/L		94	80 - 120

Lab Sample ID: 280-198342-A-1 MSD
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	7700	E	50.0	7610	E 4	mg/L		-93	80 - 120	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-198342-A-1 MSD
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	850	E	50.0	897	E 4	mg/L		96	80 - 120	0	20

Lab Sample ID: 280-198342-A-1 DU
Matrix: Water
Analysis Batch: 672400

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	7700	E	7650	E	mg/L		0.1	15
Sulfate	850	E	856	E	mg/L		0.8	15

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-672236/18
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.030		mg/L			10/23/24 11:01	1

Lab Sample ID: MB 280-672236/56
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.030		mg/L			10/23/24 12:23	1

Lab Sample ID: MB 280-672236/94
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.030		mg/L			10/23/24 13:46	1

Lab Sample ID: LCS 280-672236/19
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	2.51	2.51		mg/L		100	90 - 110

Lab Sample ID: LCS 280-672236/57
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	2.51	2.51		mg/L		100	90 - 110

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 280-672236/95
Matrix: Water
Analysis Batch: 672236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	2.51	2.54		mg/L		101	90 - 110

Lab Sample ID: 280-198330-1 MS
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW5-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	ND		1.00	1.03		mg/L		103	90 - 110

Lab Sample ID: 280-198330-1 MSD
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW5-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.06		mg/L		105	90 - 110	2	10

Lab Sample ID: 280-198330-2 MS
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW6-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	ND		1.00	1.01		mg/L		101	90 - 110

Lab Sample ID: 280-198330-2 MSD
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW6-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.03		mg/L		103	90 - 110	2	10

Lab Sample ID: 280-198330-3 MS
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW7-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	ND		1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: 280-198330-3 MSD
Matrix: Water
Analysis Batch: 672236

Client Sample ID: MW7-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.05		mg/L		104	90 - 110	3	10

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-671985/34
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		10		mg/L			10/22/24 01:30	1
Bicarbonate Alkalinity	ND		10		mg/L			10/22/24 01:30	1
Carbonate Alkalinity	ND		10		mg/L			10/22/24 01:30	1

Lab Sample ID: MB 280-671985/62
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		10		mg/L			10/22/24 05:10	1
Bicarbonate Alkalinity	ND		10		mg/L			10/22/24 05:10	1
Carbonate Alkalinity	ND		10		mg/L			10/22/24 05:10	1

Lab Sample ID: LCS 280-671985/32
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Alkalinity			200	182		mg/L		91	89 - 110		

Lab Sample ID: LCS 280-671985/60
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Alkalinity			200	184		mg/L		92	89 - 110		

Lab Sample ID: LCSD 280-671985/33
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity			200	184		mg/L		92	89 - 110	0	10

Lab Sample ID: LCSD 280-671985/61
Matrix: Water
Analysis Batch: 671985

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Alkalinity			200	185		mg/L		93	89 - 110	1	10

Lab Sample ID: 280-198330-2 DU
Matrix: Water
Analysis Batch: 671985

Client Sample ID: MW6-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity	130			125		mg/L				3	10
Bicarbonate Alkalinity	130			125		mg/L				3	20
Carbonate Alkalinity	ND			ND		mg/L				NC	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-672486/4
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	ND		1.0		mg/L			10/24/24 10:25	1

Lab Sample ID: MB 280-672486/68
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	ND		1.0		mg/L			10/25/24 04:29	1

Lab Sample ID: LCS 280-672486/3
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon - Quad			25.0	24.6		mg/L		98	88 - 112		

Lab Sample ID: LCS 280-672486/67
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon - Quad			25.0	25.2		mg/L		101	88 - 112		

Lab Sample ID: 280-198123-C-1 MS
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon - Quad	ND		25.0	25.1		mg/L		100	88 - 112		

Lab Sample ID: 280-198123-C-1 MSD
Matrix: Water
Analysis Batch: 672486

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	ND		25.0	25.0		mg/L		100	88 - 112	1	15

Lab Sample ID: 280-198330-6 MS
Matrix: Water
Analysis Batch: 672486

Client Sample ID: MW14-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon - Quad	2.1		25.0	27.1		mg/L		100	88 - 112		

Lab Sample ID: 280-198330-6 MSD
Matrix: Water
Analysis Batch: 672486

Client Sample ID: MW14-241016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	2.1		25.0	27.1		mg/L		100	88 - 112	0	15

QC Association Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

GC/MS VOA

Analysis Batch: 672235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Total/NA	Water	8260D SIM	
280-198330-2	MW6-241016	Total/NA	Water	8260D SIM	
280-198330-3	MW7-241016	Total/NA	Water	8260D SIM	
280-198330-4	MW12I-241016	Total/NA	Water	8260D SIM	
280-198330-5	MW13D-241016	Total/NA	Water	8260D SIM	
280-198330-6	MW14-241016	Total/NA	Water	8260D SIM	
280-198330-7	MW20DD-241016	Total/NA	Water	8260D SIM	
280-198330-8	SW1-241016	Total/NA	Water	8260D SIM	
280-198330-9	SW4-241016	Total/NA	Water	8260D SIM	
280-198330-10	SW6-241016	Total/NA	Water	8260D SIM	
280-198330-11	SW7-241016	Total/NA	Water	8260D SIM	
280-198330-12	TB1-241016	Total/NA	Water	8260D SIM	
280-198330-13	TB2-241016	Total/NA	Water	8260D SIM	
MB 280-672235/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 280-672235/1002	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 280-672235/3	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

Metals

Prep Batch: 671874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Dissolved	Water	3005A	
280-198330-2	MW6-241016	Dissolved	Water	3005A	
280-198330-3	MW7-241016	Dissolved	Water	3005A	
280-198330-4	MW12I-241016	Dissolved	Water	3005A	
280-198330-5	MW13D-241016	Dissolved	Water	3005A	
280-198330-6	MW14-241016	Dissolved	Water	3005A	
280-198330-7	MW20DD-241016	Dissolved	Water	3005A	
280-198330-8	SW1-241016	Dissolved	Water	3005A	
280-198330-9	SW4-241016	Dissolved	Water	3005A	
280-198330-10	SW6-241016	Dissolved	Water	3005A	
280-198330-11	SW7-241016	Dissolved	Water	3005A	
MB 280-671874/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-671874/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-198330-1 MS	MW5-241016	Dissolved	Water	3005A	
280-198330-1 MSD	MW5-241016	Dissolved	Water	3005A	

Analysis Batch: 672254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Dissolved	Water	6020B	671874
280-198330-2	MW6-241016	Dissolved	Water	6020B	671874
280-198330-3	MW7-241016	Dissolved	Water	6020B	671874
280-198330-4	MW12I-241016	Dissolved	Water	6020B	671874
280-198330-5	MW13D-241016	Dissolved	Water	6020B	671874
280-198330-6	MW14-241016	Dissolved	Water	6020B	671874
280-198330-7	MW20DD-241016	Dissolved	Water	6020B	671874
280-198330-8	SW1-241016	Dissolved	Water	6020B	671874
280-198330-9	SW4-241016	Dissolved	Water	6020B	671874
280-198330-10	SW6-241016	Dissolved	Water	6020B	671874
280-198330-11	SW7-241016	Dissolved	Water	6020B	671874
MB 280-671874/1-A	Method Blank	Total Recoverable	Water	6020B	671874

Metals (Continued)

Analysis Batch: 672254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-671874/2-A	Lab Control Sample	Total Recoverable	Water	6020B	671874
280-198330-1 MS	MW5-241016	Dissolved	Water	6020B	671874
280-198330-1 MSD	MW5-241016	Dissolved	Water	6020B	671874

General Chemistry

Analysis Batch: 671985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Total/NA	Water	SM 2320B	
280-198330-2	MW6-241016	Total/NA	Water	SM 2320B	
280-198330-3	MW7-241016	Total/NA	Water	SM 2320B	
280-198330-4	MW12I-241016	Total/NA	Water	SM 2320B	
280-198330-5	MW13D-241016	Total/NA	Water	SM 2320B	
280-198330-6	MW14-241016	Total/NA	Water	SM 2320B	
280-198330-7	MW20DD-241016	Total/NA	Water	SM 2320B	
280-198330-8	SW1-241016	Total/NA	Water	SM 2320B	
280-198330-9	SW4-241016	Total/NA	Water	SM 2320B	
280-198330-10	SW6-241016	Total/NA	Water	SM 2320B	
280-198330-11	SW7-241016	Total/NA	Water	SM 2320B	
MB 280-671985/34	Method Blank	Total/NA	Water	SM 2320B	
MB 280-671985/62	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-671985/32	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-671985/60	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-671985/33	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 280-671985/61	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-198330-2 DU	MW6-241016	Total/NA	Water	SM 2320B	

Analysis Batch: 672236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Total/NA	Water	350.1	
280-198330-2	MW6-241016	Total/NA	Water	350.1	
280-198330-3	MW7-241016	Total/NA	Water	350.1	
280-198330-4	MW12I-241016	Total/NA	Water	350.1	
280-198330-5	MW13D-241016	Total/NA	Water	350.1	
280-198330-6	MW14-241016	Total/NA	Water	350.1	
280-198330-7	MW20DD-241016	Total/NA	Water	350.1	
280-198330-8	SW1-241016	Total/NA	Water	350.1	
280-198330-9	SW4-241016	Total/NA	Water	350.1	
280-198330-10	SW6-241016	Total/NA	Water	350.1	
280-198330-11	SW7-241016	Total/NA	Water	350.1	
MB 280-672236/18	Method Blank	Total/NA	Water	350.1	
MB 280-672236/56	Method Blank	Total/NA	Water	350.1	
MB 280-672236/94	Method Blank	Total/NA	Water	350.1	
LCS 280-672236/19	Lab Control Sample	Total/NA	Water	350.1	
LCS 280-672236/57	Lab Control Sample	Total/NA	Water	350.1	
LCS 280-672236/95	Lab Control Sample	Total/NA	Water	350.1	
280-198330-1 MS	MW5-241016	Total/NA	Water	350.1	
280-198330-1 MSD	MW5-241016	Total/NA	Water	350.1	
280-198330-2 MS	MW6-241016	Total/NA	Water	350.1	
280-198330-2 MSD	MW6-241016	Total/NA	Water	350.1	
280-198330-3 MS	MW7-241016	Total/NA	Water	350.1	

General Chemistry (Continued)

Analysis Batch: 672236 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-3 MSD	MW7-241016	Total/NA	Water	350.1	

Analysis Batch: 672400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Total/NA	Water	300.0	
280-198330-2	MW6-241016	Total/NA	Water	300.0	
280-198330-3	MW7-241016	Total/NA	Water	300.0	
280-198330-4	MW12I-241016	Total/NA	Water	300.0	
280-198330-5	MW13D-241016	Total/NA	Water	300.0	
280-198330-6	MW14-241016	Total/NA	Water	300.0	
280-198330-7	MW20DD-241016	Total/NA	Water	300.0	
280-198330-8	SW1-241016	Total/NA	Water	300.0	
280-198330-9	SW4-241016	Total/NA	Water	300.0	
280-198330-10	SW6-241016	Total/NA	Water	300.0	
280-198330-11	SW7-241016	Total/NA	Water	300.0	
MB 280-672400/6	Method Blank	Total/NA	Water	300.0	
LCS 280-672400/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-672400/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-672400/3	Lab Control Sample	Total/NA	Water	300.0	
280-198342-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-198342-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-198342-A-1 DU	Duplicate	Total/NA	Water	300.0	

Analysis Batch: 672486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-198330-1	MW5-241016	Total/NA	Water	SM 5310B	
280-198330-2	MW6-241016	Total/NA	Water	SM 5310B	
280-198330-3	MW7-241016	Total/NA	Water	SM 5310B	
280-198330-4	MW12I-241016	Total/NA	Water	SM 5310B	
280-198330-5	MW13D-241016	Total/NA	Water	SM 5310B	
280-198330-6	MW14-241016	Total/NA	Water	SM 5310B	
280-198330-7	MW20DD-241016	Total/NA	Water	SM 5310B	
280-198330-8	SW1-241016	Total/NA	Water	SM 5310B	
280-198330-9	SW4-241016	Total/NA	Water	SM 5310B	
280-198330-10	SW6-241016	Total/NA	Water	SM 5310B	
280-198330-11	SW7-241016	Total/NA	Water	SM 5310B	
MB 280-672486/4	Method Blank	Total/NA	Water	SM 5310B	
MB 280-672486/68	Method Blank	Total/NA	Water	SM 5310B	
LCS 280-672486/3	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 280-672486/67	Lab Control Sample	Total/NA	Water	SM 5310B	
280-198123-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
280-198123-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
280-198330-6 MS	MW14-241016	Total/NA	Water	SM 5310B	
280-198330-6 MSD	MW14-241016	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Client Sample ID: MW5-241016
Date Collected: 10/16/24 10:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 16:14	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 19:28	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 22:28	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 11:44	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 04:31	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/24/24 18:51	GMW	EET DEN

Client Sample ID: MW6-241016
Date Collected: 10/16/24 14:55
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 16:36	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 19:46	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 22:39	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 13:06	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:14	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/24/24 19:07	GMW	EET DEN

Client Sample ID: MW7-241016
Date Collected: 10/16/24 09:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 16:57	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 19:49	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 22:50	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 13:50	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:28	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/24/24 19:21	GMW	EET DEN

Client Sample ID: MW12I-241016
Date Collected: 10/16/24 12:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 17:18	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 19:53	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 23:01	IRC	EET DEN

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Client Sample ID: MW12I-241016
Date Collected: 10/16/24 12:25
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 13:59	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:36	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/24/24 19:36	GMW	EET DEN

Client Sample ID: MW13D-241016
Date Collected: 10/16/24 13:40
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 17:39	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:04	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 23:12	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:01	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:43	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 07:24	GMW	EET DEN

Client Sample ID: MW14-241016
Date Collected: 10/16/24 15:35
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 18:00	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:07	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/24/24 23:23	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:03	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:50	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 08:28	GMW	EET DEN

Client Sample ID: MW20DD-241016
Date Collected: 10/16/24 08:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 18:22	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:11	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/25/24 00:40	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:05	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 05:57	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 07:41	GMW	EET DEN

Client Sample ID: SW1-241016

Lab Sample ID: 280-198330-8

Date Collected: 10/16/24 11:10

Matrix: Water

Date Received: 10/18/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 18:43	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:14	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/25/24 00:51	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:07	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 06:04	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 07:58	GMW	EET DEN

Client Sample ID: SW4-241016

Lab Sample ID: 280-198330-9

Date Collected: 10/16/24 12:05

Matrix: Water

Date Received: 10/18/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 19:03	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:18	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/25/24 01:02	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:09	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 06:11	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 08:12	GMW	EET DEN

Client Sample ID: SW6-241016

Lab Sample ID: 280-198330-10

Date Collected: 10/16/24 16:25

Matrix: Water

Date Received: 10/18/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 19:24	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:21	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/25/24 01:13	IRC	EET DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:12	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 06:19	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 09:43	GMW	EET DEN

Client Sample ID: SW7-241016

Lab Sample ID: 280-198330-11

Date Collected: 10/16/24 13:50

Matrix: Water

Date Received: 10/18/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 19:45	DMC	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	671874	10/22/24 08:13	AMH	EET DEN
Dissolved	Analysis	6020B		1			672254	10/23/24 20:25	LMT	EET DEN
Total/NA	Analysis	300.0		1	10 mL	10 mL	672400	10/25/24 01:24	IRC	EET DEN

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Client Sample ID: SW7-241016
Date Collected: 10/16/24 13:50
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	10 mL	10 mL	672236	10/23/24 14:14	LBR	EET DEN
Total/NA	Analysis	SM 2320B		1			671985	10/22/24 06:26	EL	EET DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	672486	10/25/24 09:57	GMW	EET DEN

Client Sample ID: TB1-241016
Date Collected: 10/16/24 00:00
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 13:05	DMC	EET DEN

Client Sample ID: TB2-241016
Date Collected: 10/16/24 00:00
Date Received: 10/18/24 09:05

Lab Sample ID: 280-198330-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D SIM		1	5 mL	5 mL	672235	10/23/24 13:26	DMC	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

SC0056 = Analytical Resources, Inc, 4611 South 134th Place, Suite 100, Tukwila, WA 98168, TEL (206)695-6200

Accreditation/Certification Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-198330-1

Laboratory: Eurofins Denver

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C583	08-03-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 5310B		Water	Total Organic Carbon - Quad

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

01 November 2024

Janice Collins
Eurofins - Test America - Denver
4955 Yarrow Street
Arvada, CO 80002

RE: Hansville Landfill (28006013-2Q_3Q_4Q Sampling)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
24J0381	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shelly Fishel, Project Manager

Cert# 100006-012

24J0381

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing

ARI

Client Information	Sampler: Risi + Favour	Lab PM: Collins, Janice S	Carrier Tracking No(s):	COC No: 280-125973-19522.1
Client Contact: Peter Bannister	Phone: 404-210-6437	E-Mail: Janice.Collins@et.eurofinsus.com	State of Origin:	Page:
Company: Aspect Consulting, LLC	PWSID:			Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: Peter.Bannister@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q_3Q_4Q Sampling			
Site: Washington	SSOW#:			

Carmen.Tappero@aspectconsulting.com

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Alks/Cl/SO4	6020 - Dissolved Metals (field filtered)	Ammonia/TOC	8260D SIM - Vinyl Chloride		Ortho-phosphate (field filtered) - Direct sub to ARI	Dissolved Arsenic (Direct sub to ARI)	Nitrate/Nitrite (IC) - Direct sub to ARI							Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	S	A		N	D	N								
MW-3-241016	10/16/24	1055	G	W								X	X	X								Diss As,NO3,NO2,o-phos subbed direct to ARI
MW-6-241016		1625																				
MW-7-241016		0950																				
MW-12I-241016		1225																				
MW-13D-241016		1340																				
MW-1H-241016		1535																				
MW-20D-241016		0850																				
SW-1-241016		1110																				
SW-4-241016		1205																				
SW-6-241016		1455																				
SW-7-241016		1350																				

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/17/24 / 1123	Aspect		10/17/24 1123	ARI
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.3°C

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-5-241016	24J0381-01	Water	16-Oct-2024 10:55	17-Oct-2024 11:23
MW-6-241016	24J0381-02	Water	16-Oct-2024 16:25	17-Oct-2024 11:23
MW-7-241016	24J0381-03	Water	16-Oct-2024 09:50	17-Oct-2024 11:23
MW-12I-241016	24J0381-04	Water	16-Oct-2024 12:25	17-Oct-2024 11:23
MW-13D-241016	24J0381-05	Water	16-Oct-2024 13:40	17-Oct-2024 11:23
MW-14-241016	24J0381-06	Water	16-Oct-2024 15:35	17-Oct-2024 11:23
MW-20DD-241016	24J0381-07	Water	16-Oct-2024 08:50	17-Oct-2024 11:23
SW-1-241016	24J0381-08	Water	16-Oct-2024 11:10	17-Oct-2024 11:23
SW-4-241016	24J0381-09	Water	16-Oct-2024 12:05	17-Oct-2024 11:23
SW-6-241016	24J0381-10	Water	16-Oct-2024 14:55	17-Oct-2024 11:23
SW-7-241016	24J0381-11	Water	16-Oct-2024 13:50	17-Oct-2024 11:23

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Work Order Case Narrative

Client: Eurofins - Test America - Denver
Project: Hansville Landfill
Project Number: 28006013-2Q_3Q_4Q Sampling
Work Order: 24J0381

Sample receipt

Samples as listed on the preceding page were received 17-Oct-2024 11:23 under ARI work order 24J0381. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dissolved Metals - EPA Method 200.8

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

WORK ORDER

24J0381

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Eurofins - Test America - Denver **Project Manager:** Shelly Fishel

Project: Hansville Landfill **Project Number:** 28006013-2Q_3Q_4Q Sampling

Preservation Confirmation

Container ID	Container Type	pH
24J0381-01 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-01 B	HDPE NM, 500 mL	
24J0381-01 C	HDPE NM, 250mL	
24J0381-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-02 B	HDPE NM, 500 mL	
24J0381-02 C	HDPE NM, 250mL	
24J0381-03 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-03 B	HDPE NM, 500 mL	
24J0381-03 C	HDPE NM, 250mL	
24J0381-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-04 B	HDPE NM, 500 mL	
24J0381-04 C	HDPE NM, 250mL	
24J0381-05 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-05 B	HDPE NM, 500 mL	
24J0381-05 C	HDPE NM, 250mL	
24J0381-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-06 B	HDPE NM, 500 mL	
24J0381-06 C	HDPE NM, 250mL	
24J0381-07 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-07 B	HDPE NM, 500 mL	
24J0381-07 C	HDPE NM, 250mL	
24J0381-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-08 B	HDPE NM, 500 mL	
24J0381-08 C	HDPE NM, 250mL	
24J0381-09 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-09 B	HDPE NM, 500 mL	
24J0381-09 C	HDPE NM, 250mL	
24J0381-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-10 B	HDPE NM, 500 mL	
24J0381-10 C	HDPE NM, 250mL	
24J0381-11 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2
24J0381-11 B	HDPE NM, 500 mL	
24J0381-11 C	HDPE NM, 250mL	

Reviewed By Date

WORK ORDER

24J0381

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Eurofins - Test America - Denver

Project Manager: Shelly Fishel

Project: Hansville Landfill

Project Number: 28006013-2Q_3Q_4Q Sampling

SA
Preservation Confirmed By

10/17/24
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Aspect
Project Name: Hansville Land #11
COC No(s): 286-12573-14522.1 NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 24J0381
Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 0.5°C
Time 1123
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 30097108
Cooler Accepted by: MD Date: 10/17/24 Time: 1123

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ...	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: SA Date: 10/17/24 Time: 1211 Labels checked by: SA

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

MW-5-241016 container has analyes Cl/SO4 listed, CoC requests Nitrate/Nitrite.

By: SA Date: ~~10/16~~ SA 10/17/24

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-5-241016

24J0381-01 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 10:55

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:11

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-01 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.69	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-5-241016

24J0381-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 10:55

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 16:57

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-01 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	3.75	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-5-241016

24J0381-01 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 10:55

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:00

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-01 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0390	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-6-241016

24J0381-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 16:25

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 18:48

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-02 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.59	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-6-241016

24J0381-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 16:25

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 17:57

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-02 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.409	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-6-241016

24J0381-02 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 16:25

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:08

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-02 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0340	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-7-241016

24J0381-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 09:50

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 18:52

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-03 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.22	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-7-241016

24J0381-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 09:50

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 18:17

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-03 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.418	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-7-241016

24J0381-03 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 09:50

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:09

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-03 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0540	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-12I-241016

24J0381-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 12:25

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 18:56

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-04 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	2.34	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-12I-241016

24J0381-04 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 12:25

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 19:17

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-04 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-12I-241016

24J0381-04 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 12:25

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:10

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-04 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0500	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-13D-241016

24J0381-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 13:40

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:00

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-05 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	5.11	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-13D-241016

24J0381-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 13:40

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 19:37

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-05 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-13D-241016

24J0381-05 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 13:40

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:11

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-05 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0840	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-14-241016

24J0381-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 15:35

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:03

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-06 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	12.9	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-14-241016

24J0381-06 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 15:35

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 19:57

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-06 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.112	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-14-241016

24J0381-06 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 15:35

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:13

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-06 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.136	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-20DD-241016

24J0381-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 08:50

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:07

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-07 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	12.8	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-20DD-241016

24J0381-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 08:50

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 20:17

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-07 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.107	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

MW-20DD-241016

24J0381-07 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 08:50

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:14

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-07 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.133	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-1-241016

24J0381-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 11:10

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:38

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-08 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.53	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-1-241016

24J0381-08 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 11:10

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 20:37

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-08 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	1.71	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-1-241016

24J0381-08 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 11:10

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:15

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-08 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0350	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-4-241016

24J0381-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 12:05

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:42

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-09 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.65	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-4-241016

24J0381-09 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 12:05

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 20:57

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-09 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.735	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-4-241016

24J0381-09 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 12:05

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:16

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-09 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0210	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-6-241016

24J0381-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 14:55

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:45

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-10 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	2.67	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-6-241016

24J0381-10 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 14:55

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 21:17

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24J0381-10 B

Preparation Batch: BMJ0440 — Sample Size: 10 mL

Prepared: 10/17/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-6-241016

24J0381-10 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 14:55

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:17

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-10 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.0410	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-7-241016

24J0381-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 10/16/2024 13:50

Instrument: ICPMS1 Analyst: HAL — Analyzed: 10/30/2024 19:49

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 24J0381-11 A

Preparation Batch: BMJ0708 — Sample Size: 25 mL

Prepared: 10/30/2024 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	2.42	ug/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-7-241016

24J0381-11 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 10/16/2024 13:50

Instrument: IC930 Analyst: LERB — Analyzed: 10/17/2024 21:37

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BMJ0440; Prepared: 10/17/2024; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 24J0381-11 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.200	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

SW-7-241016

24J0381-11 (Water)

Wet Chemistry

Method: SM 4500-P E-11 — Sampled: 10/16/2024 13:50

Instrument: UV1800-2 Analyst: SRB — Analyzed: 10/17/2024 14:18

Sample Preparation: Preparation Method: SM 4500-P B-1 SRP — Extract ID: 24J0381-11 C

Preparation Batch: BMJ0437 — Sample Size: 50 mL

Prepared: 10/17/2024 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-44-42	1	0.0040	0.0040	0.244	mg-P/L	

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BMJ0708 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMJ0708-BLK1)					Prepared: 30-Oct-2024 Analyzed: 30-Oct-2024 17:59							
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
LCS (BMJ0708-BS1)					Prepared: 30-Oct-2024 Analyzed: 30-Oct-2024 18:06							
Arsenic, Dissolved	75a	24.6	0.0373	0.200	ug/L	25.0		98.3	80-120			
Duplicate (BMJ0708-DUP1)			**Source: 24J0381-01**		Prepared: 30-Oct-2024 Analyzed: 30-Oct-2024 19:15							
Arsenic, Dissolved	75a	1.71	0.0373	0.200	ug/L		1.69			1.59	20	
Matrix Spike (BMJ0708-MS1)			**Source: 24J0381-01**		Prepared: 30-Oct-2024 Analyzed: 30-Oct-2024 19:19							
Arsenic, Dissolved	75a	26.4	0.0373	0.200	ug/L	25.0	1.69	98.9	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMJ0437 - SM 4500-P E-11

Instrument: UV1800-2 Analyst: SRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMJ0437-BLK1)				Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 13:57							
Orthophosphorus	ND	0.0040	0.0040	mg-P/L							U
LCS (BMJ0437-BS1)				Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 13:59							
Orthophosphorus	0.156	0.0040	0.0040	mg-P/L	0.150		104	90-110			
Duplicate (BMJ0437-DUP1)		**Source: 24J0381-01**		Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 14:01							
Orthophosphorus	0.0400	0.0040	0.0040	mg-P/L		0.0390			2.53	20	
Matrix Spike (BMJ0437-MS1)		**Source: 24J0381-01**		Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 14:07							
Orthophosphorus	0.142	0.0040	0.0040	mg-P/L	0.101	0.0390	102	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMJ0440 - EPA 300.0

Instrument: IC930 Analyst: LERB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMJ0440-BLK1)				Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 16:17							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
LCS (BMJ0440-BS1)				Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 16:37							
Nitrate-N	5.18	0.100	0.100	mg/L	5.00		104	90-110			
Nitrite-N	5.00	0.100	0.100	mg/L	5.00		100	90-110			
Duplicate (BMJ0440-DUP1)		**Source: 24J0381-01**		Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 17:17							
Nitrate-N	3.67	0.100	0.100	mg/L		3.75			2.21	20	
Nitrite-N	ND	0.100	0.100	mg/L		ND				20	U
Matrix Spike (BMJ0440-MS1)		**Source: 24J0381-01**		Prepared: 17-Oct-2024 Analyzed: 17-Oct-2024 17:37							
Nitrate-N	5.72	0.100	0.100	mg/L	2.00	3.75	98.8	80-120			
Nitrite-N	1.82	0.100	0.100	mg/L	2.00	ND	90.8	80-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
SM 4500-P E-11 in Water	
Orthophosphorus	WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025
WA-DW	Ecology - Drinking Water	C558	06/30/2025

Eurofins - Test America - Denver	Project: Hansville Landfill	
4955 Yarrow Street	Project Number: 28006013-2Q_3Q_4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Janice Collins	01-Nov-2024 17:52

Notes and Definitions

D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing

TA

Client Information	Sampler: Risi + Favour	Lab PM: Collins, Janice S	Carrier Tracking No(s):	COC No: 280-125973-19522.1
Client Contact: Peter Bannister	Phone: 404-210-6437	E-Mail: Janice.Collins@et.eurofinsus.com	State of Origin:	Page:
Company: Aspect Consulting, LLC	PWSID:	Analysis Requested		Job #:
Address: 350 Madison Ave N	Due Date Requested:			Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110	Compliance Project: Δ Yes Δ No			
Phone: 404-210-6437	PO #: Purchase Order not required			
Email: Peter-Bannister@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q_3Q_4Q Sampling			
Site: Washington	SSOW#:			

Carmen.Tappero@aspectconsulting.com

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Alks/Cl/SO4	6020 - Dissolved Metals (field filtered)	Ammonia/TOC	8260D SIM - Vinyl Chloride	Ortho-phosphate (field filtered) - Direct sub to ARI	Dissolved Arsenic (Direct sub to ARI)	Nitrate/Nitrite (IC) - Direct sub to ARI	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	S	A	N	D	N		
MW-5-241016	10/16/24	1055	G	W			X	X	X	X					Diss As,NO3,NO2,o-phos subbed direct to ARI
MW-6-241016		1625													
MW-7-241016		0950													
MW-12I-241016		1225													
MW-13D-241016		1340													
MW-14-241016		1535													
MW-20SD-241016		0850													
SW-1-241016		1110													
SW-4-241016		1205													
SW-6-241016		1455													
SW-7-241016	↓	1350	↓	↓			↓	↓	↓	↓					

280-198330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/17/24 / 1040			10/18/24 0905	EEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.0, 1.7 m/y CF +0.1

Ver: 01/16/2019

11/8/2024

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing

TA

Client Information	Sampler: Risi + Favaro	Lab PM: Collins, Janice S	Carrier Tracking No(s):	COC No: 280-125973-19522.1
Client Contact: Peter Bannister	Phone: 404-210-6437	E-Mail: Janice.Collins@et.eurofinsus.com	State of Origin:	Page:
Company: Aspect Consulting, LLC	PWSID:			Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: Peter.Bannister@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q_3Q_4Q Sampling			
Site: Washington	SSOW#:			

Carmen.Tappero@Aspectconsulting.com

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Alks/Cl/SO4	6020 - Dissolved Metals (field filtered)	Ammonia/TOC	8260D SIM - Vinyl Chloride		Ortho-phosphate (field filtered) - Direct sub to ARI	Dissolved Arsenic (Direct sub to ARI)	Nitrate/Nitrite (IC) - Direct sub to ARI						Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	S	A		N	D	N							
TB1-241016	—	—		AQ						X											Diss As,NO3,NO2,o-phos subbed direct to ARI
TB2-241016	—	—		AQ						X											

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/17/24 1040	Aspect		10/18/24 0905	EEI DEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

11/8/2024

280-198330 Waybill

SHIP DATE: 17OCT24
ACTWGT: 42.10 LB
CAD: /SSFE2541
DIMS: 24x14x14 IN

Part # 156297-435 RRDB2 EXP 03/25

TO SAMPLE RECEIVING
EUROFINS ENVIRON TESTING
4955 YARROW ST
DENVER
ARVADA CO 80002 (US)
(303) 736-0100 REF:
INV:
PO: DEPT:

FedEx Express E

J244024091002uv

FRI - 18 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0667 8182 2609 2022

XA LAAA 1.6 80002
CO-US DEN

Temperature Controlled

eurofins Environment Testing

SHORT HOLD TIME

eurofins Environment Testing TestAmerica

ORIGIN ID:BFIA

SHIP DATE: 17OCT24
ACTWGT: 49.90 LB
CAD: /SSFE2541
DIMS: 24x14x14 IN

Part # 156297-435 RRDB2 EXP 03/25

TO SAMPLE RECEIVING
EUROFINS ENVIRON TESTING
4955 YARROW ST
DENVER
ARVADA CO 80002 (US)
(303) 763-0100 REF:
INV:
PO: DEPT:

FedEx Express E

J244024091002uv

FRI - 18 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0667 8182 2609 2033

XA LAAA 2.1 80002
CO-US DEN

Login Sample Receipt Checklist

Client: Aspect Consulting

Job Number: 280-198330-1

Login Number: 198330
List Number: 1
Creator: Naylis, Patrick J

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	False	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

APPENDIX E

Annual Inspection Forms – Kitsap Public Health District

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

April 17th, 2024

Alexis McKinnon
Kitsap County Public Works
614 Division Street, MS-27
Port Orchard, WA 98366

RE: FIRST QUARTER HANSVILLE LANDFILL INSPECTION

Dear Ms. McKinnon:

The Kitsap Public Health District (Health District) is writing to relay the results of the 1st quarter inspection of 2024 at the Hansville Landfill. Enclosed please find a copy of the inspection checklist/report for the quarterly inspection conducted on March 15th, 2024, at 9:00 A.M.

The following items were noted or discussed:

- The landfill cover was in good condition.
- Stormwater drainage has maintained its improved performance.
- An exposed pipe was noted on the top of the landfill. The pipe did not seem to be in use, but Alexis will investigate.

If you have any questions or comments, please feel free to contact me at (360) 728-2307.

Sincerely,

Jakob Hughes

Jakob Hughes
Environmental Health Specialist 2-RS
Solid and Hazardous Waste Program
Phone: (360)728-2307
Email: Jakob.Hughes@KitsapPublicHealth.org

KITSAP PUBLIC HEALTH DISTRICT

File Index: II.A.3

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Closed and Abandoned Landfill Inspection Form

Hansville Landfill
Facility Name

7791 NE Ecology Rd
Location of Facility

Jakob Hughes — 3/15/24
Inspector **Date** **Time**

Reason for Inspection	Type of Inspection	Results	Sample Taken?
☒ Scheduled ☐ Complaint ☐ Sample ☐ Other	☐ Annual ☒ Other (QTR)	☒ Compliant ☐ Substantially compliant ☐ Non-compliant	☐ Yes ☒ No **Attachments (photos, documents, etc.)?** ☐ Yes ☒ No

General

Landfill cap is intact. No garbage/waste eroding out of the cap.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-351-500(2)(a)(i)*

The landfill is undeveloped. No construction/buildings within the active area of the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(c)*

No stormwater is being detained or stored on the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(b)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

The site is free of solid waste, debris, and/or illegal dumping.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-407(5)(c)*

The site is free of noxious odors.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

There are no signs of leachate seeps coming from the landfill.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

Post-Closure Monitoring (for landfills closed between 1985 and 2003)

Groundwater is being monitored in accordance with WAC 173-304-490.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)*

Leachate is being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(B)*

Methane/landfill gasses are being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(A)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Comments

- No issues
- Exposed pipe- Will investigate if its scrap or in use

Signatures: _____ Environmental Health Specialist _____ Facility Representative 3/15/24 Date

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

July 3rd, 2024

Alexis McKinnon
Kitsap County Public Works
614 Division Street, MS-27
Port Orchard, WA 98366

RE: SECOND QUARTER HANSVILLE LANDFILL INSPECTION

Dear Ms. McKinnon:

The Kitsap Public Health District (Health District) is writing to relay the results of the 2nd quarter inspection of 2024 at the Hansville Landfill. Enclosed please find a copy of the inspection checklist/report for the quarterly inspection conducted on June 27th, 2024, at 9:00 A.M.

The following items were noted or discussed:

- The landfill cover was in good condition.
- Stormwater drainage has maintained its improved performance.
- Landfill was recently mowed.

If you have any questions or comments, please feel free to contact me at (360) 728-2307.

Sincerely,

Jakob Hughes

Jakob Hughes
Environmental Health Specialist 2-RS
Solid and Hazardous Waste Program
Phone: (360)728-2307
Email: Jakob.Hughes@KitsapPublicHealth.org

KITSAP PUBLIC HEALTH DISTRICT

File Index: II. A.3

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Closed and Abandoned Landfill Inspection Form

Hansville Landfill
Facility Name

7791 NE Ecology Rd
Location of Facility

Jakob Hughes — 06/27/24 — 9:00 A.M
Inspector **Date** **Time**

Reason for Inspection	Type of Inspection	Results	Sample Taken?
☒ Scheduled ☐ Complaint ☐ Sample ☐ Other	☐ Annual ☒ Other (Q4 2)	☒ Compliant ☐ Substantially compliant ☐ Non-compliant	☐ Yes ☒ No **Attachments (photos, documents, etc.)?** ☐ Yes ☐ No

General

Landfill cap is intact. No garbage/waste eroding out of the cap.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-351-500(2)(a)(i)*

The landfill is undeveloped. No construction/buildings within the active area of the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(c)*

No stormwater is being detained or stored on the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(b)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

The site is free of solid waste, debris, and/or illegal dumping.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-407(5)(c)*

The site is free of noxious odors.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

There are no signs of leachate seeps coming from the landfill.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

Post-Closure Monitoring (for landfills closed between 1985 and 2003)

Groundwater is being monitored in accordance with WAC 173-304-490.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)*

Leachate is being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(B)*

Methane/landfill gasses are being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(A)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Comments

- No Issues
- Landfill Recently Mowed

Signatures: _____ Environmental Health Specialist _____ Facility Representative 08/27/24 Date

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

October 30th, 2024

Alexis McKinnon
Kitsap County Public Works
614 Division Street, MS-27
Port Orchard, WA 98366

RE: THIRD QUARTER HANSVILLE LANDFILL INSPECTION

Dear Ms. McKinnon:

The Kitsap Public Health District (Health District) is writing to relay the results of the 3rd quarter inspection of 2024 at the Hansville Landfill. Enclosed please find a copy of the inspection checklist/report for the quarterly inspection conducted on September 27th, 2024, at 9:00 A.M.

The following items were noted or discussed:

- The landfill cover was in good condition.
- Stormwater drainage has maintained its improved performance.

If you have any questions or comments, please feel free to contact me at (360) 728-2307.

Sincerely,

Jakob Hughes

Jakob Hughes
Environmental Health Specialist 2-RS
Solid and Hazardous Waste Program
Phone: (360)728-2307
Email: Jakob.Hughes@KitsapPublicHealth.org

KITSAP PUBLIC HEALTH DISTRICT

File Index: II A.3

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Closed and Abandoned Landfill Inspection Form

Hansville Landfill (Post closure)
Facility Name

7791 NE Ecology Rd
Location of Facility

Jakob Hughes — 09/27/24 — 9:00 A.M
Inspector **Date** **Time**

Reason for Inspection	Type of Inspection	Results	Sample Taken?
☒ Scheduled ☐ Complaint ☐ Sample ☐ Other	☐ Annual ☒ Other QTR 3	☒ Compliant ☐ Substantially compliant ☐ Non-compliant	☐ Yes ☐ No **Attachments (photos, documents, etc.)?** ☐ Yes ☐ No

General

Landfill cap is intact. No garbage/waste eroding out of the cap.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-351-500(2)(a)(i)*

The landfill is undeveloped. No construction/buildings within the active area of the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(c)*

No stormwater is being detained or stored on the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(b)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

The site is free of solid waste, debris, and/or illegal dumping.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-407(5)(c)*

The site is free of noxious odors.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

There are no signs of leachate seeps coming from the landfill.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

Post-Closure Monitoring (for landfills closed between 1985 and 2003)

Groundwater is being monitored in accordance with WAC 173-304-490.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)*

Leachate is being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(B)*

Methane/landfill gasses are being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(A)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Comments

No issues

Signatures: Jakob Hughes _____ _____ 9/27/24
Environmental Health Specialist | Facility Representative | Date

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

December 18th, 2024

Alexis McKinnon
Kitsap County Public Works
614 Division Street, MS-27
Port Orchard, WA 98366

RE: FOURTH QUARTER HANSVILLE LANDFILL INSPECTION

Dear Ms. McKinnon:

The Kitsap Public Health District (Health District) is writing to relay the results of the 4th quarter inspection of 2024 at the Hansville Landfill. Enclosed please find a copy of the inspection checklist/report for the quarterly inspection conducted on December 13th, 2024, at 9:00 A.M.

The following items were noted or discussed:

- The landfill cover was in good condition.
- Stormwater drainage has maintained its improved performance.

If you have any questions or comments, please feel free to contact me at (360) 728-2307.

Sincerely,

Jakob Hughes

Jakob Hughes
Environmental Health Specialist 2-RS
Solid and Hazardous Waste Program
Phone: (360)728-2307
Email: Jakob.Hughes@KitsapPublicHealth.org

KITSAP PUBLIC HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

File Index: II. A.3

Closed and Abandoned Landfill Inspection Form

Hansville Landfill
Facility Name

7791 NE Ecology Rd
Location of Facility

Jakob Hughes — 12/13/24
Inspector **Date** **Time**

Reason for Inspection	Type of Inspection	Results	Sample Taken?
☒ Scheduled ☐ Complaint ☐ Sample ☐ Other	☐ Annual ☒ Other QTR4	☒ Compliant ☐ Substantially compliant ☐ Non-compliant	☐ Yes ☐ No **Attachments (photos, documents, etc.)?** ☐ Yes ☐ No

General

Landfill cap is intact. No garbage/waste eroding out of the cap.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-351-500(2)(a)(i)*

The landfill is undeveloped. No construction/buildings within the active area of the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(c)*

No stormwater is being detained or stored on the landfill.	
Yes ☒ No ☐ N/A ☐	**Citation:** *KCBH 2010-1-460(b)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

The site is free of solid waste, debris, and/or illegal dumping.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-407(5)(c)*

The site is free of noxious odors.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

There are no signs of leachate seeps coming from the landfill.	
Yes ☒ No ☐ N/A ☐	**Issue:** Potential cause for concern.

Post-Closure Monitoring (for landfills closed between 1985 and 2003)

Groundwater is being monitored in accordance with WAC 173-304-490.	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)*

Leachate is being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(B)*

Methane/landfill gasses are being monitored (if required by the Health District)	
Yes ☒ No ☐ N/A ☐	**Citation:** *WAC 173-304-460(3)(g)(ii)(A)*

KITSAP PUBLIC
HEALTH DISTRICT

345 6th Street, Suite 300
Bremerton, WA 98337
360-728-2235

Comments

No Issues
Drainage looks good

Signatures: _____ Environmental Health Specialist _____ Facility Representative 12/13/24 Date