

QUARTERLY MONITORING REPORT 3rd QUARTER (September) 2024

OLALLA LANDFILL

KITSAP COUNTY, WASHINGTON

December 2024



Prepared by

TRC Environmental Corporation, on behalf of
Kitsap County Department of Public Works
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INTRODUCTION

The Olalla Landfill (Landfill) is located approximately 0.75 mile east of Highway 16 on Burley-Olalla Road in Kitsap County, Washington. The Landfill was closed in 1989 in accordance with the Olalla Final Closure Plan (Parametrix,1988). Post-closure activities have consisted primarily of quarterly monitoring and maintenance per Washington Administrative Code (WAC) 173-304-407 (Minimum Functional Standards for Solid Waste Handling [MFS]), “General Closure and Post Closure Requirements” Kitsap County Board of Health Ordinance 2010-01 “Solid Waste Regulations” and Solid Waste Handling Permits (the Permit) issued by the Kitsap Public Health District (KPHD).

A Remedial Investigation/Feasibility Study (RI/FS; Parametrix, 2014a) was performed at the Landfill starting in May 2010 and ending May 2014 when the RI/FS was submitted to the Washington State Department of Ecology (Ecology) and KPHD. Upon approval of the RI/FS, the Kitsap County Solid Waste Division (SWD) prepared a Cleanup Action Plan (CAP; Parametrix, 2014b) to summarize the RI/FS activities and present the preferred cleanup action, which was selected based on the results of the RI/FS. Ecology and KPHD approved the CAP in December 2014.

The approved cleanup action, monitored natural attenuation (MNA) and land use controls, is based on a continuation of ongoing groundwater, surface water, and landfill gas monitoring in accordance with the SWHP. Quarterly monitoring results will be used to evaluate the effectiveness of the cleanup action and to verify that natural attenuation continues to occur at the Landfill. The overall effectiveness of the cleanup action will be evaluated at 5-year intervals as part of the periodic review process. A 5-year Remedial Action Status Report was submitted to Ecology on March 29, 2023.

Specific groundwater, surface water, and landfill gas monitoring methods and procedures that are performed under the requirements of MFS, the SWHP, and the CAP are documented in a Compliance Monitoring Plan (CMP; EPI 2015). The CMP integrates all the previously noted monitoring program requirements into one document that contains a site-specific Sampling and Analysis Plan (SAP), Quality Assurance Plan (QAP), and Health and Safety Plan (HASP).

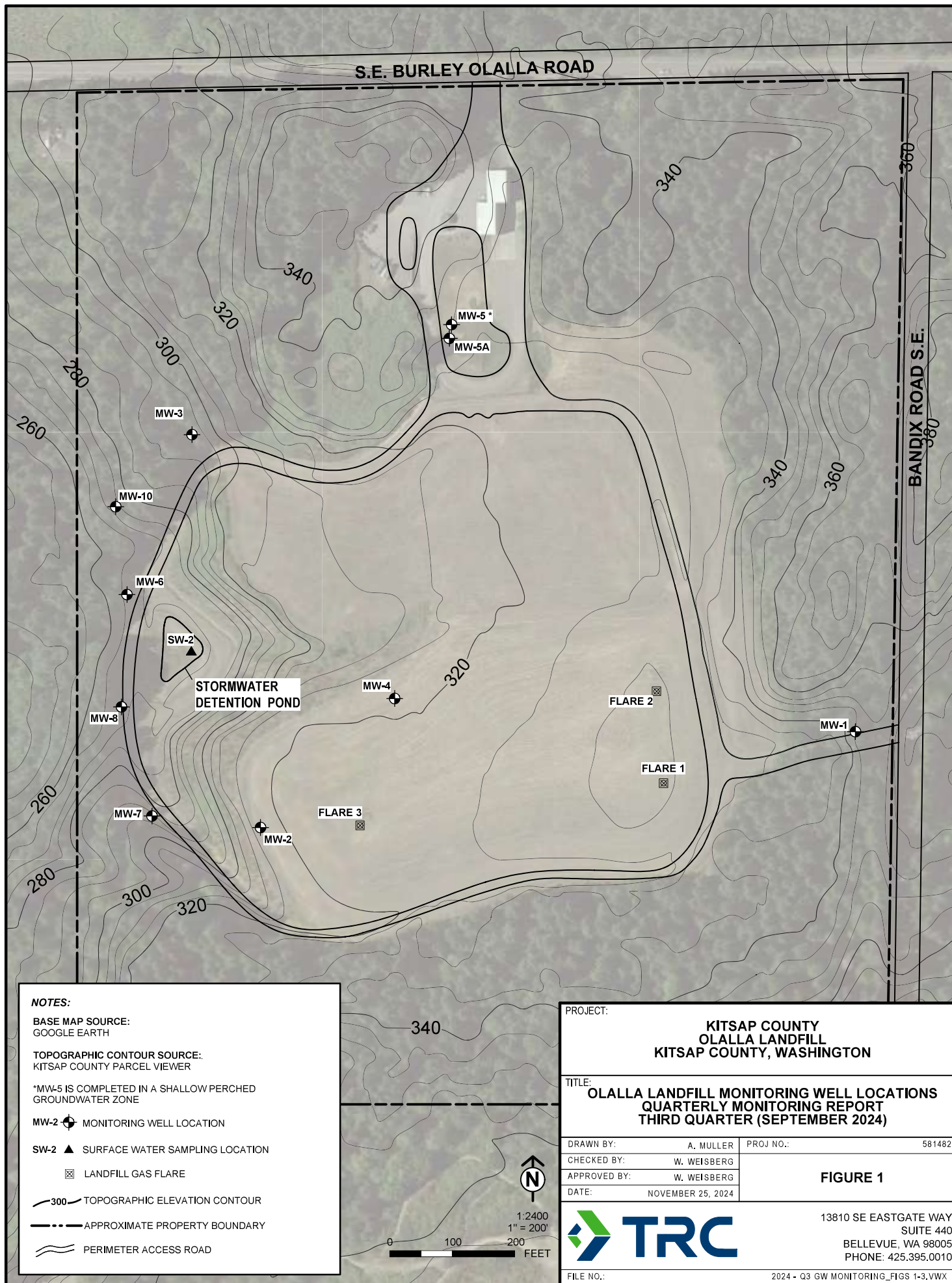
Results of the September 2024 quarterly groundwater and landfill gas monitoring event performed under the SWHP, CAP, and CMP are documented in this report. September 2024 analytical and field data were uploaded to Ecology’s Electronic Information Management (EIM) system on, Tuesday, October 22nd, 2024.

In addition to the Introduction, this report consists of four main sections: Monitoring Program Description, Monitoring Results, Statistical Analysis, and Conclusions. The Monitoring Program Description section summarizes the monitoring well network and laboratory analyses. The Monitoring Results section contains landfill gas field measurement data, groundwater elevation data, and groundwater quality data. The Statistical Analysis section presents elements of the statistical evaluation process and the statistical results. Results of monitoring data evaluations and regulatory exceedances are summarized in the Conclusions section.

MONITORING PROGRAM DESCRIPTION

The sampling locations, analytical parameters, and frequency of sample collection for groundwater, surface water, and landfill gas monitoring at the Landfill are specified in the 2021-2025 Permit issued by KPHD and dated February 10, 2021, the 2014 CAP, and the 2015 CMP. Monitoring well, landfill gas flare locations, and the surface water sampling location (SW-2, which is sampled annually) are shown on Figure 1. Specific information pertaining to this monitoring event is summarized in the following bullets:

- TRC Environmental Corporation (TRC) performed groundwater depth-to-water measurements and sampling activities, and measured landfill gas parameters at each of the three on-site passive landfill gas flares on September 12, 2024.
- Groundwater samples were collected from the upgradient monitoring well MW-1 and downgradient monitoring wells MW-3, MW-6, MW-8, and MW-10. One field duplicate sample was collected from downgradient monitoring well MW-8 and was assigned the identifier MW-12.
- Depth-to-water measurements were performed at all on-site monitoring wells, including MW-5, which is completed in a shallow, discontinuous, perched groundwater zone that is not hydraulically connected to the uppermost aquifer beneath the Landfill. Depth-to-water data, excluding data from MW-5, were used to prepare a groundwater elevation contour map (presented on Figure 2).
- Samples were hand-delivered to Analytical Resources, Inc. (ARI) in Tukwila, Washington, the principal laboratory for sample analysis, the afternoon the sample collection was completed.
- Samples were analyzed within their respective holding times, except total coliform and laboratory-measured pH samples. The holding time for total coliform is 6 hours and the pH holding time is 15 minutes; these short holding times cannot be achieved at the laboratory. However, pH holding times are achieved by the field-measured pH data. Both field- and laboratory-measured pH data are included in data tables and statistical evaluations presented in this report for comparison. However, field-measured pH data represent the dataset and statistical evaluations that should be considered for demonstrations of regulatory compliance.
- Data evaluations, statistical tests, and data reporting were performed by TRC in accordance with methods described in the Unified Guidance (USEPA 2004 [draft] and 2009 [final]) and developed with input and direction from KPHD and Ecology and in accordance with procedures documented in the CAP and CMP.



MONITORING RESULTS

Monitoring results consist of landfill gas composition, groundwater elevations, and groundwater quality data. Data summaries are presented in Appendix A. The field book and notes from the monitoring event are presented in Appendix B. Laboratory data sheets are presented in Appendix C. Time-series plots of the most recent 20 monitoring events of laboratory and field measurement data are presented in Appendix D.

Landfill Gas Data

Landfill gas measurements were taken at the three passive flares at the Landfill on September 12, 2024. Landfill gas data are summarized in a data table presented in Appendix A and in the following bullets.

- Methane was not detected in any of the three flares; all had measured methane concentrations of 0.0 percent by volume.
- Instrument-measured Lower Explosive Limit (LEL) values were 3 percent for flare 3 and 0 percent for flares 1 and 2.
- Oxygen concentrations were 20.4, 20.3, and 18.9 percent by volume in Flares 1, 2, and 3, respectively.
- Carbon dioxide concentrations were 1.3 percent by volume for flare 3 and 0.0 percent by volume for flares 1 and 2.
- Gas pressure measurements were 0.03 inches of water for all three flares.

Groundwater Elevation Data and Flow Direction

All monitoring wells installed at the Landfill, except for MW-5, are screened in a laterally continuous sand and gravel unit that has been interpreted as belonging to the same aquifer unit (Parametrix, 1988). Monitoring well MW-5 is screened in a shallow perched groundwater zone. Replacement monitoring well MW-5A was drilled close to MW-5 and is screened in the same aquifer as the other monitoring wells at the Landfill.

The Permit and CAP do not require water level or water quality data to be collected from MW-5 as part of the monitoring program for the Landfill because the shallow perched groundwater zone that MW-5 is completed in is discontinuous and is not hydraulically connected to the uppermost continuous aquifer in which the other Landfill monitoring wells are completed. However, SWD has elected to measure the depth to water in MW-5 as additional information. The depth-to-water measurement for MW-5 is included in the field notes, which are presented in Appendix B.

The Permit and CAP specify annual monitoring of crossgradient monitoring wells MW-5A and MW-7. As requested by the SWD, quarterly groundwater level measurements are made at MW-5A and MW-7 to provide a more comprehensive dataset for the groundwater elevation contour map and the groundwater elevation hydrograph.

Depth-to-groundwater measurements were performed at all 10 on-site monitoring wells on September 12, 2024. These data were used to calculate groundwater elevations in each of the wells and to construct the groundwater elevation contour map presented as Figure 2. The new groundwater elevation data were also added to a groundwater elevation hydrograph presented in Appendix A.

The groundwater flow direction beneath the Landfill during this quarterly monitoring event was generally toward the west-northwest as depicted on Figure 2. The groundwater elevation contour pattern and flow directions have been consistent throughout all four seasons and over many years of water level measurements.

September 2024 groundwater elevations were higher in nine on-site monitoring wells and lower at MW-5 measured relative to September 2023 groundwater elevations. Differences ranged from 0.19 foot lower in downgradient gradient well MW-5 to 0.21 feet higher in upgradient well MW-3. The groundwater elevation was higher in crossgradient well MW-5A at 0.31 feet.

Groundwater Quality Data

A summary table of the groundwater quality data for the Landfill is presented in Appendix A. Based on the sampling schedule in the Permit and CAP, crossgradient wells MW-5, MW-5A, and MW-7 were not sampled during this quarterly sampling event and therefore, are not included in Appendix A or in Tables 1 and 2 below. Laboratory data sheets for all field samples and laboratory quality control samples reported by ARI are presented in Appendix C.

Exceedances of Primary Regulatory Standards

Arsenic and total coliform were the only constituents that exceeded Washington State Primary Drinking Water Standards (WAC 246-290-310) or Washington State Primary Groundwater Standards (WAC 173-200-040), as summarized in Table 1 below.

Table 1
September 2024 Water Quality Parameter Concentrations
Exceeding Washington State Primary Standards

Constituent	Drinking Water Standard ^a	Ground-water Standard ^b	CUL ^c	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12 ^d
Arsenic	10	0.05	1.29	0.138	0.18	0.435	.733	2.010	0.717
Total Coliform	1 cfu/100 mL	1 cfu/100 mL	NA	--	84	--	--	--	--

Unless noted, concentrations are reported in micrograms per liter (µg/L), which are the same units as the listed regulatory standards.

cfu/100 mL Colony-forming units per 100 milliliters.

-- Sample was not analyzed for this compound.

^a Per WAC 246-290-310

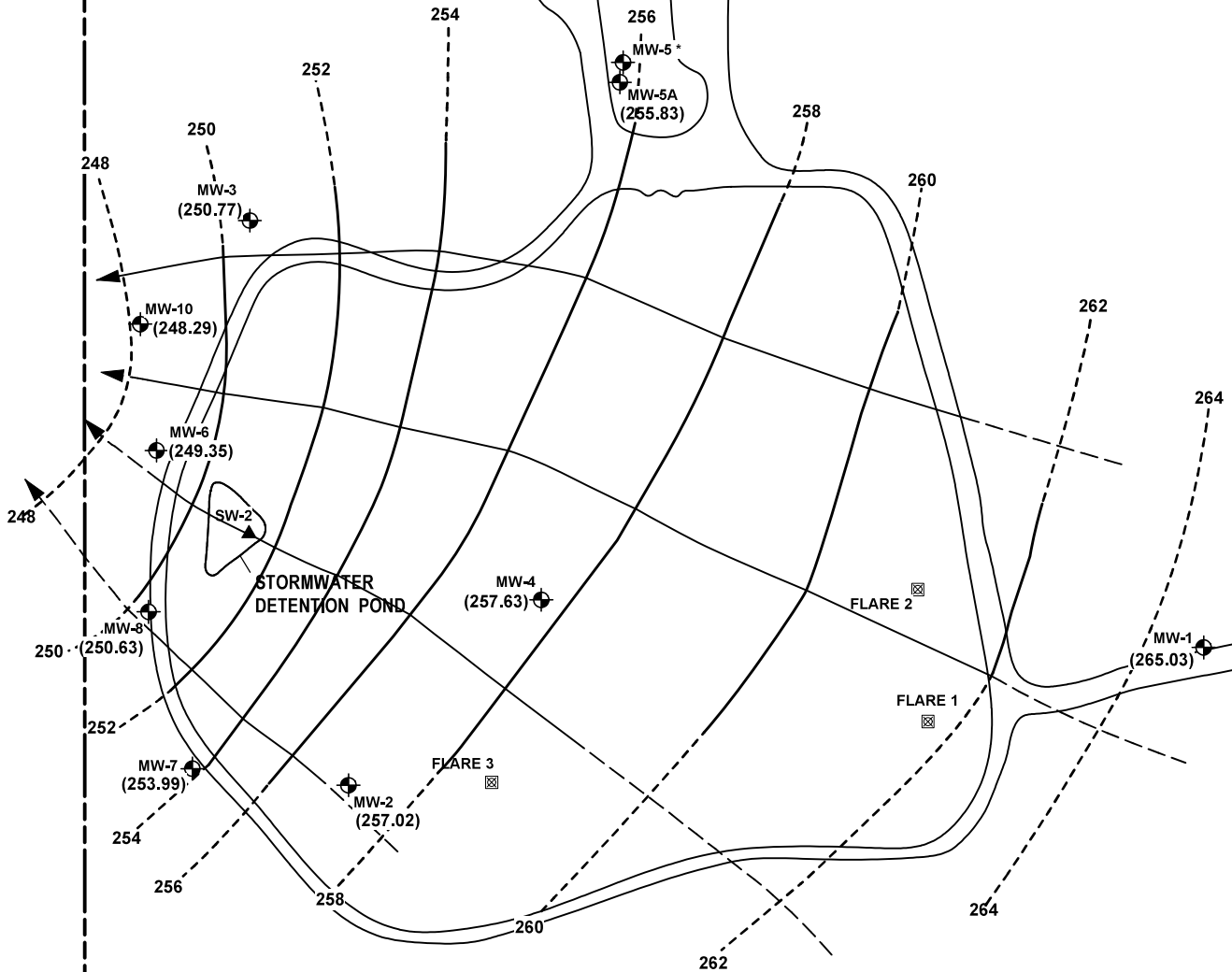
^b Per WAC 173-200-040

^c Site-Specific Cleanup Level (CUL)

^d Field duplicate sample from monitoring well MW-8.

S.E. BURLEY OLALLA ROAD

BANDIX ROAD S.E.



NOTES:

* MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.

- MW-2  MONITORING WELL LOCATION
- SW-2  SURFACE WATER SAMPLING LOCATION
-  LANDFILL GAS FLARE
-  GROUNDWATER ELEVATION CONTOUR
-  INFERRED GROUNDWATER FLOW PATH
-  APPROXIMATE PROPERTY BOUNDARY
-  PERIMETER ACCESS ROAD



1:2400
1" = 200'
FEET

0 100 200

PROJECT:

KITSAP COUNTY
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

TITLE: OLALLA LANDFILL GROUNDWATER ELEVATION
CONTOUR MAP - SEPTEMBER 12, 2024
QUARTERLY MONITORING REPORT
THIRD QUARTER (SEPTEMBER 2024)

DRAWN BY: A. MULLER PROJ NO.: 581482

CHECKED BY: W. WEISBERG

APPROVED BY: W. WEISBERG

DATE: NOVEMBER 26, 2024

FIGURE 2



13810 SE EASTGATE WAY
SUITE 440
BELLEVUE, WA 98005
PHONE: 425.395.0010

FILE NO.:

2024 - Q3 GW MONITORING_FIGS 1-3.VWX

- Arsenic was detected in samples from all five wells sampled at concentrations ranging from 0.138 µg/L in the sample from upgradient well MW-1 to 2.010 µg/L in downgradient well MW-10. Arsenic concentrations for all sampled wells exceed the Washington State Primary Groundwater Standard of 0.05 µg/L (WAC 173-200-040). None of the arsenic concentrations exceeded the Washington State Primary Drinking Water Standard of 10 µg/L (WAC 246-290-310). Only the arsenic concentration of 2.010 µg/L in the sample from MW-10 exceeds the Site-Specific Cleanup Level of 1.29 µg/L, which is based on arsenic background data.
- Total coliform was detected at a colony count of 84 colony-forming units (CFU) per 100 milliliters (mL) in the sample from MW-3. This value exceeds the Washington State Primary Groundwater and Drinking Water Standards of 1 cfu/100 mL. Total coliform has never been detected in this well and this exceedance is most likely from cross-contamination either in the field or in the laboratory.. This one-time exceedance does not warrant additional action at this time. TRC will continue to monitor for total coliform in MW-3.

Exceedances of Secondary Regulatory Standards

Manganese and pH (field- and laboratory-measured) were the only constituents that exceeded Washington State Secondary Drinking Water Standards (WAC 246-290-310) or Washington State Secondary Groundwater Standards (WAC 173-200-040), as summarized in Table 2 below.

Table 2 September 2024 Water Quality Parameter Concentrations Exceeding Washington State Secondary Standards									
Constituent	Drinking Water Standard ^a	Ground-water Standard ^b	CUL ^c	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12 ^d
Manganese	50	50	50	ND	4,880	426	731	3,680	704
pH (field)	----	6.5 - 8.5	----	6.3	6.2	6.5	6.4	6.5	6.4
pH (lab)	----	6.5 - 8.5	----	6.1 J	6.2 J	6.5 J	6.6 J	6.5 J	6.6 J
Except for pH, concentrations are reported in µg/L, which are the same units as the listed regulatory standards. ^a Per WAC 246-290-310. ^b Per WAC 173-200-040. ^c Site-Specific Cleanup Level (CUL). ^d Field duplicate sample from monitoring well MW-8. J = Estimated value, holding time exceeded. ND = Not Detected. ---- = No established standard									

- Manganese was detected in samples from downgradient wells MW-3, MW-6, MW-8, and MW-10 at concentrations of 4,880 µg/L, 426 µg/L, 731 µg/L, and 3,680 µg/L, respectively. Manganese was also detected in MW-12, the field duplicate sample from MW-8, at a concentration of 704 µg/L. These concentrations exceed the Washington State Secondary Groundwater and Drinking Water Standards, and Site-Specific Cleanup Level of 50 µg/L. Manganese is a common constituent of

landfill leachate and is more soluble in geochemically reducing aquifer conditions that are commonly associated with landfills.

- The field-measured pH values for MW-1, MW-3, MW-8 and field duplicate MW-12, were 6.3, 6.2, and 6.4 standard pH units, respectively. These are lower than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 standard pH units.
- The laboratory-measured pH value for MW-1 and MW-3 were 6.1 and 6.2 standard pH units respectively. The pH value is lower than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 standard pH units. All laboratory-measured pH samples exceeded their 15-minute holding time and are J-qualified; however, evaluations of compliance with regulatory standards and statistical evaluations are based on field-measured pH values.

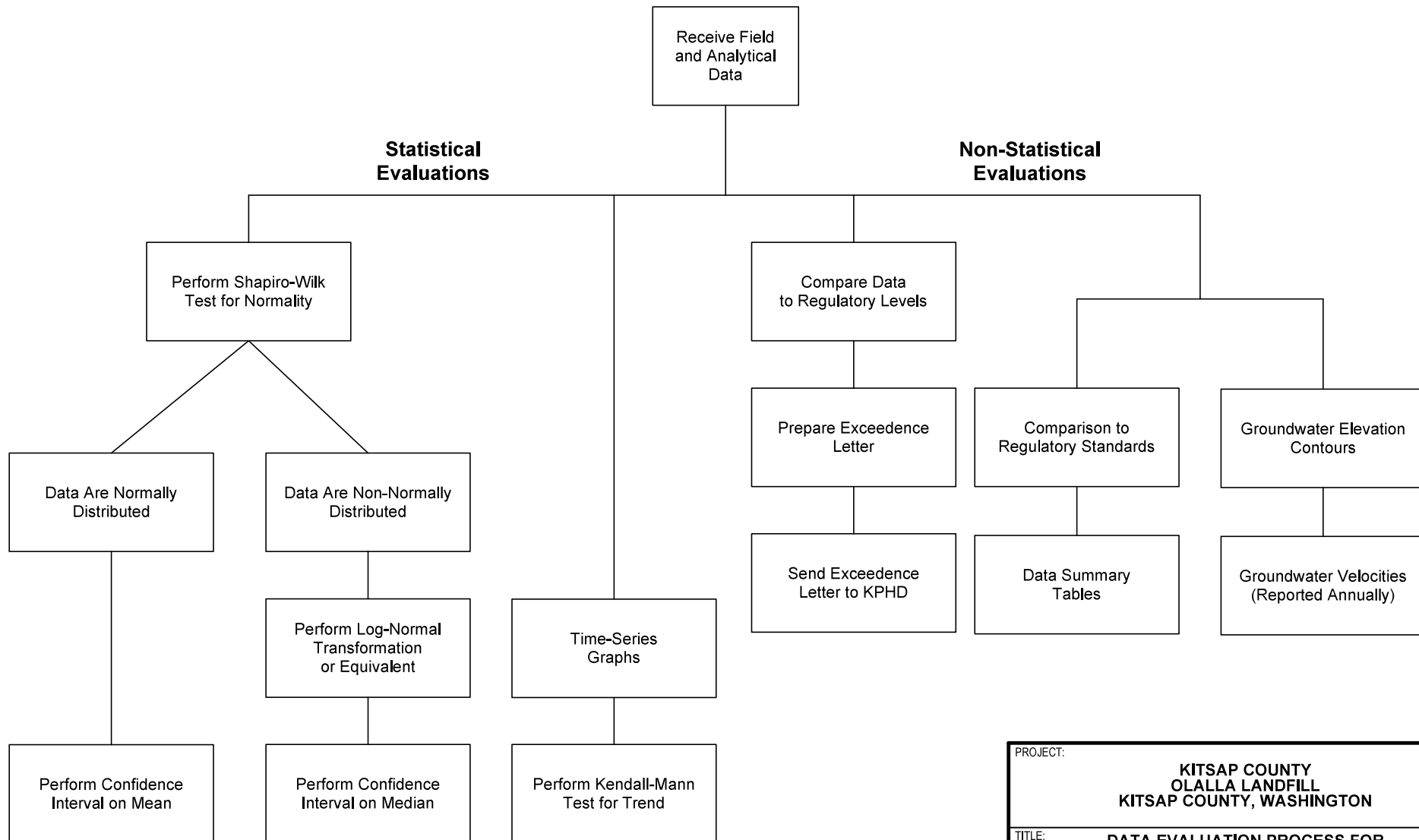
STATISTICAL ANALYSIS

SWD and their consultant developed the statistical evaluation process used in this report with input and direction from KPHD and Ecology. KPHD and Ecology referenced the United States Environmental Protection Agency (USEPA 2004) *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (Unified Guidance; USEPA 2004) as the basis for evaluating appropriate statistical methods for Landfill groundwater data. The statistical methods used in this report are consistent with recommended methods found in the Unified Guidance, which was updated in 2009 (USEPA, 2009).

Statistical analysis of groundwater data for the Landfill uses four tools: time-series plots, Mann-Kendall test for trend, Shapiro-Wilk test for normality, and 95% confidence intervals (parametric and non-parametric). Application of these tools is based on statistical methods identified in the Unified Guidance and is documented in the CAP. The four statistical tools, along with non-statistical data evaluation tools, are applied to the data following the process shown on Figure 3.

Statistical analyses are performed on a dataset consisting of a moving window of the 20 most recent sampling events (as one new data point is added the oldest data point is dropped). For most wells, this is a five-year moving window of data. Wells MW-5, MW-5A, and MW-7 are sampled annually and SWD has defined the window of data used for statistical analyses as 20 sampling events rather than five years of data for these two wells, except for time series graphs, which cover a five-year window. The moving window of 20 sampling events provides enough data points for adequate statistical power while focusing the statistical evaluations on the most recent and most relevant data. Statistical analyses for the Landfill groundwater monitoring data are performed using the following criteria:

- Dissolved metals, volatile organic compounds (VOCs), conventional water quality parameters, and field parameters required for groundwater analysis under the current Section IV.D.2 Solid Waste Handling Permit for Olalla Landfill are presented in time-series plots (Appendix D), and in summary tables of results for the Mann-Kendall trend test, Shapiro-Wilk test for normality, and 95% confidence intervals.
- Statistical tests are not automatically performed for every constituent or parameter measured. Some constituents have not been detected in samples collected during the past 5 years (20 events) or do not have enough detections to support one or more of the statistical analyses. Datasets that do not have enough detections may be temporarily dropped from the specific statistical evaluations that are not amenable to those datasets.
- VOCs, conventional constituents, and metals detections include values at concentrations less than laboratory specified reporting limits (i.e., J-qualified), but do not include values where the constituent was also detected in the method blank (i.e., values qualified with a “B”).
- Non-detections are managed by assigning them a uniform value that is less than the reporting limit for that constituent, as prescribed in Section 14.4.2.2 of the Unified Guidance. Guidance from the United States Geological Survey suggests that censoring values that are less than the detection limit (non-detects) provides more accurate statistical results compared to substituting a value, commonly one half of the reporting limit (USGS, 2008). The SWD assigns a value of zero to non-detected results as recommended by the USGS and KPHD. J-qualified analytical results are reported as the detected values as recommended by the USGS guidance.



PROJECT:			KITSAP COUNTY OLALLA LANDFILL KITSAP COUNTY, WASHINGTON
TITLE:			DATA EVALUATION PROCESS FOR OLALLA LANDFILL GROUNDWATER DATA QUARTERLY MONITORING REPORT THIRD QUARTER (SEPTEMBER 2024)
DRAWN BY:	A. MULLER	PROJ NO.:	581482
CHECKED BY:	W. WEISBERG	FIGURE 3	
APPROVED BY:	W. WEISBERG		
DATE:	NOVEMBER 26, 2024		
		13810 SE EASTGATE WAY SUITE 440 BELLEVUE, WA 98005 PHONE: 425.395.0010	
FILE NO.:		2024 - Q3 GW MONITORING_FIGS 1-3,VWX	

The following subsections briefly describe the tools used in the statistical evaluation and summarize analytical results.

Time-Series Plots

Time-series plots are used to compare field parameter measurements or analytical results over time. The plots provide a convenient graphical means of delineating seasonal trends and large differences in constituent concentrations between upgradient and downgradient wells and can also be used to readily identify measurements that exceed regulatory levels. Time-series plots for the most recent 20 sampling events are presented by constituent in Appendix D and include upgradient well MW-1 and the four downgradient wells MW-3, MW-6, MW-8, and MW-10. Data from crossgradient wells MW-5, MW-5A, and MW-7 are presented using the same time scale but have fewer data points due to their annual sampling schedules.

The moving window of 20 data points adds new data with each successive sampling event and drops the oldest data point to maintain a consistent sample population of the most current 20 data points. Using data from the 20 most recent sampling events corresponds to the same dataset that is used for the other statistical analyses that are summarized on Figure 3.

Applicable Washington State drinking water and groundwater regulatory levels are shown on the time-series graphs when possible. Some constituents do not have regulatory levels or have regulatory levels that are much greater than the concentrations that are detected in samples from the monitoring wells and cannot be shown at the appropriate Y-axis scale of the time-series graph. Site-Specific Cleanup Levels for arsenic and vinyl chloride are indicated on their respective time-series plots.

Mann-Kendall Trend Test

The Mann-Kendall trend test is a non-parametric statistical method recommended in the Unified Guidance for sites in the compliance assessment and corrective action monitoring phases and is appropriately paired with time-series plots. The Mann-Kendall trend test is used to determine if data trends graphically presented in time-series plots are statistically significant. The Mann-Kendall test is applied to the 20 most recent data points as described in the second paragraph of the Statistical Analysis section. Mann-Kendall trend tests for data from wells MW-5, MW-5A, and MW-7 are performed annually, during the fourth quarter monitoring event when they are sampled.

Mann-Kendall Trend Test results for 125 well-constituent combinations are summarized in Table 3. A total of eight well-constituent combinations have statistically significant downward concentration trends. The downward well-constituent concentration trends are presented below:

- Ammonia: MW-10
- Arsenic: MW-10
- Manganese: MW-8
- Sodium: MW-6, MW-10
- Dissolved Oxygen: MW-1
- Potassium: MW-10
- Sulfate: MW-1

Table 3
September 2024 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	NO TREND	NO TREND	UP	NO TREND	DOWN
Arsenic - Dissolved	UP	UP	NO TREND	NO TREND	DOWN
Barium - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Bicarbonate	NO TREND	NO TREND	NO TREND	NO TREND	UP
Calcium	UP	UP	NO TREND	NO TREND	UP
Carbonate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
COD	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chloride	UP	UP	NO TREND	NO TREND	NO TREND
Dissolved Oxygen	NO TREND	UP	UP	NO TREND	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	UP
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	DOWN	NO TREND
Nitrate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Nitrite	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Oxidation Reduction Potential	DOWN	NO TREND	NO TREND	NO TREND	NO TREND
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
pH - Laboratory	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Potassium	NO TREND	NO TREND	UP	NO TREND	DOWN
Sodium	NO TREND	NO TREND	DOWN	NO TREND	DOWN
Specific Conductance	UP	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	DOWN	NO TREND	NO TREND	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	UP
Total Coliform	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
TOC	UP	UP	NO TREND	UP	UP
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND

Notes:

NO TREND = No statistically significant trend or dataset has four or fewer detections and cannot be evaluated.

UP = Statistically significant upward trend.

DOWN = Statistically significant downward trend.

- Of the eight well-constituent combinations with statistically significant downward concentration trends the following constituent have a current concentration that is greater than applicable Washington State Primary or Secondary Drinking Water or Groundwater Standards:
 - o Arsenic: MW-10
 - o Manganese: MW-8
- A total of 19 well-constituent combinations have statistically significant upward concentration trends. The upward well-constituent concentration trends are presented below:

o Ammonia: MW-6	o Iron: MW-10
o Arsenic: MW-1, MW-3	o Potassium: MW-6
o Bicarbonate: MW-10	o Specific Conductance: MW-1
o Calcium: MW-1, MW-3, MW-10	o Temperature: MW-10
o Chloride: MW-1, MW-3	o Total Organic Carbon (TOC): MW-1,
o Dissolved Oxygen: MW-3, MW-6	MW-3, MW-8, MW-10
- There were no statistically significant concentration trends for the remaining 98 well-constituent combinations. Of the well-constituent combinations without statistically significant trends, 10 have current constituent concentrations that are greater than (less than in the case of pH) applicable Washington State Primary or Secondary Drinking Water or Groundwater Standards. These well-constituent combinations are presented below:
 - o Arsenic: MW-6, MW-8
 - o Manganese: MW-1, MW-3, MW-6, MW-10
 - o pH (field-measured): MW-1, MW-3, MW-8
 - o pH (lab-measured): MW-1, MW-3

Shapiro-Wilk Test for Normality

The Shapiro-Wilk Test for Normality is a method recommended in the Unified Guidance for evaluating whether datasets are normally distributed. The Shapiro-Wilk Test for Normality is applied quarterly to the 20 data point moving window of analytical data for each well-constituent pair that had enough data points to apply this statistical method. Well-constituent combinations that contain fewer than four detections in the most recent 20 data points cannot be evaluated by this statistical test and are indicated as non-detects (i.e., ND) in Table 4. Shapiro-Wilk results are summarized in Table 4 and in the following bullets:

- There are 125 well-constituent combinations.
- A total of 40 well-constituent combinations were normally distributed.
- A total of 49 well-constituent combinations were non-normally distributed.
- The remaining 36 well-constituent combinations had all non-detections or fewer than four detections and could not be tested for normality by the Shapiro-Wilk method.

Table 4
September 2024 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	ND	ND	Non-Normal	ND	Normal
Arsenic - Dissolved	Non-Normal	Non-Normal	Non-Normal	Normal	Normal
Barium - Dissolved	Non-Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Bicarbonate	Non-Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Calcium	Normal	Normal	Non-Normal	Normal	Normal
Carbonate	ND	ND	ND	ND	ND
COD	ND	ND	ND	ND	ND
Chloride	Normal	Normal	Normal	Non-Normal	Normal
Dissolved Oxygen	Non-Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Iron - Dissolved	ND	ND	Non-Normal	Non-Normal	ND
Manganese - Dissolved	ND	Normal	Normal	Normal	Normal
Nitrate	Non-Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Nitrite	ND	ND	Non-Normal	ND	ND
Oxidation-Reduction Potential	Normal	Normal	Non-Normal	Non-Normal	Normal
pH - Field	Non-Normal	Non-Normal	Normal	Normal	Normal
pH - Laboratory	Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Potassium	Normal	Normal	Normal	Normal	Normal
Sodium	Non-Normal	Non-Normal	Normal	Normal	Normal
Specific Conductance	Non-Normal	Normal	Normal	Normal	Non-Normal
Sulfate	Normal	Normal	Normal	Normal	Non-Normal
Temperature	Normal	Non-Normal	Normal	Normal	Non-Normal
Total Coliform	ND	ND	ND	ND	ND
TOC	Non-Normal	Non-Normal	Non-Normal	Non-Normal	Non-Normal
Vinyl Chloride	ND	ND	ND	ND	ND
Zinc - Dissolved	ND	ND	ND	ND	ND

Notes:

ND = Dataset has four or fewer quarters with detects and statistical tests cannot be performed.

The results of the Shapiro-Wilk Test for Normality are used to determine which type of confidence interval evaluation is appropriate for each well-constituent combination dataset. Datasets that are normally distributed are evaluated using the 95% confidence interval around the mean (a parametric statistical test). Datasets that are non-normally distributed are adjusted by log-normal transformation prior to being evaluated using the 95% confidence interval around the median (a non-parametric statistical test).

Confidence Interval

The statistical test for the confidence interval is recommended in the Unified Guidance and is appropriate for compliance assessment and corrective action monitoring phases. In addition, evaluation of the confidence interval is appropriate when data are compared to a fixed limit such as a regulatory standard. Confidence intervals are a common and statistically defensible way to assess compliance with a fixed numerical limit.

The moving window of 20 data points was evaluated for the 95% confidence interval for each well-constituent pair that had enough data points to apply this statistical method. The moving window of 20 data points adds new data with each successive sampling event and drops data from the oldest sampling event to maintain a consistent sample population of the most current 20 data points.

Confidence intervals compared to Washington State Drinking Water and Groundwater Standards, when available, are summarized in Table 5. Arsenic and vinyl chloride confidence limits are also compared to Site-Specific Cleanup Levels. Exceedance of a regulatory level is triggered when the lower 95% confidence interval is greater than the regulatory level; these cases are highlighted red. Compliance is attained if the upper 95% confidence limit does not exceed the regulatory level; these cases are highlighted green. In some cases, the upper 95% confidence interval exceeds the regulatory level, but the lower 95% confidence interval does not. This condition is not an exceedance but should be monitored for changes and is highlighted yellow.

Observations regarding the confidence interval results are summarized in the following bullets:

- There are 27 constituents and parameters in samples from five wells that are tracked quarterly in Table 5 for a total of 135 well-constituent combinations. Arsenic and vinyl chloride are presented twice in Table 5 to allow comparisons of their confidence intervals to Washington State Primary Groundwater Standards and to their Site-Specific Cleanup Levels.
- A total of 120 well-constituent combinations have upper 95% confidence intervals that are lower than applicable regulatory levels (are not exceedances), represent a range of pH values that are within the Washington State Secondary Groundwater Standard range (are not exceedances), have no applicable regulatory levels, or simply had an insufficient number of detections to perform the 95% confidence interval evaluation.

Table 5
September 2024 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N)	ND	ND	41 to 548	ND	58 to 77	None	
Arsenic - Dissolved	0.10 to 0.11	0.11 to 0.12	0.29 to 0.42	0.88 to 1.11	1.81 to 2.00	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	0.10 to 0.11	0.11 to 0.12	0.29 to 0.42	0.88 to 1.11	1.81 to 2.00	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	ND to ND	13.0 to 15.5	15.9 to 21.0	ND to 4.1	14.5 to 17.6	1000 µg/L	Primary GW Standard
Bicarbonate	54. to 60.0	158 to 212	170 to 197	86 to 120	210 to 239	None	
Calcium	11,489 to 12,441	39,517 to 47,513	31,800 to 38,100	16,025 to 20,465	39,785 to 44,235	None	
Carbonate	ND	ND	ND	ND	ND	None	
COD (mg/L)	ND	ND	ND	ND	ND	None	
Chloride	4,934 to 5,888	3,906 to 5,200	1,835 to 2,607	2,160 to 2,270	5,004 to 7,489	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.27 to 9.62	0.450 to 1.15	0.260 to 0.480	0.290 to 1.540	0.210 to 0.530	None	
Iron - Dissolved	ND	ND	112 to 260	172 to 344	ND	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	ND	4,928 to 6,140	368 to 492	1,718 to 2,188	3,925 to 4,314	50 µg/L	Secondary GW and DW Standard
Nitrate	314 to 202	ND to 46	ND to 260	24 to 37	ND to ND	10,000 µg/L	Primary GW and DW Standard
Nitrite	ND	ND	ND to 21	ND	ND	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential	167 to 237	176 to 252	59 to 107	45 to 95	121 to 188	None	
pH - Field	6.3 to 6.5	6.2 to 6.3	6.6 to 6.7	6.6 to 6.7	6.6 to 6.7	6.5 - 8.5	Secondary GW Standard
pH - Laboratory	6.3 to 6.5	6.1 to 6.3	6.5 to 6.7	6.5 to 6.7	6.5 to 6.6	6.5 - 8.5	Secondary GW Standard
Potassium	634 to 686	752 to 822	1,666 to 2,145	928 to 997	1,193 to 1,295	None	
Sodium	4,570 to 4,900	7,240 to 9,080	7,214 to 9,249	6,623 to 7,416	14,018 to 17,413	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	124 to 138	362 to 457	296 to 377	172 to 266	403 to 482	700 µmhos/cm	Secondary DW Standard
Sulfate	4,068 to 4,379	15,704 to 18,844	6,340 to 8,401	3,993 to 4,609	8,210 to 15,500	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.7 to 11.2	11.7 to 12.2	11.6 to 12.1	11.0 to 11.4	11.4 to 11.7	None	
Total Coliform (Colony Forming Units/100 mL)	ND	ND	ND	ND	ND	1/100mL	Primary GW and DW Standard
TOC	ND to 830	2,130 to 3,070	1,860 to 2,430	670 to 950	2,820 to 3,560	None	
Vinyl Chloride	ND	ND	ND	ND	ND	0.02 µg/L	Primary GW Standard
Vinyl Chloride	ND	ND	ND	ND	ND	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	ND	ND	ND	ND	ND	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

ND = Data all non-detects or 4 or fewer detections

 = 95% Lower CI Exceeds Regulatory Level (Exceedence)

 = 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedence, No Compliance)

 = 95% Upper CI Does not Exceed Regulatory Level (No Exceedence)

 = No Regulatory Level

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

- A total of 12 statistically evaluated well-constituent combinations have upper and lower 95% confidence intervals that are greater than applicable regulatory levels and are highlighted in red. For pH, the criterion is if both the upper and lower confidence intervals are outside (above or below) the Washington State Secondary Groundwater Standard range of 6.5 to 8.5. Well-constituent combinations that have statistically significant exceedances are presented below:
 - o Arsenic: MW-1, MW-3, MW-6, MW-8, and MW-10 (WA State Primary Groundwater Standard)
 - o Arsenic: MW-10 (Site-Specific Cleanup Level)
 - o Manganese: MW-3, MW-6, MW-8, and MW-10
 - o pH (field-measured): MW-3
 - o pH (laboratory-measured): MW-3
- There are three statistically evaluated well-constituent combinations that have upper 95% confidence intervals that are greater than or equal to applicable regulatory levels but lower 95% confidence intervals that are less than applicable regulatory levels. For pH, the upper or lower confidence interval is within the Washington State Secondary Groundwater Standard range. These are not statistical exceedances but should be monitored for changes. Well-constituent combinations that should be closely monitored are presented below:
 - o Iron: MW-8
 - o pH (field-measured): MW-1 and MW-3

CONCLUSIONS

Quarterly monitoring data collected during the September 2024 monitoring event at the Olalla Landfill are summarized in the following sections.

Landfill Gas

Landfill gas parameters were measured at the three passive gas flares on September 12, 2024. Field measurement summaries are included in Appendix A. Field notes for landfill gas measurements are included in Appendix B (electronic version only). Conclusions based on landfill gas measurements are summarized in the following bullets.

- Flares 1, 2, and 3 had indicators of landfill gas with approximately normal oxygen concentrations of 20.4, 20.3, and 18.9 percent by volume, respectively. None of the flares had measurable concentrations of methane.
- Carbon dioxide concentrations in flare 3 were seen at 1.3 percent by volume while flares 1 and 2 reported 0 percent by volume.
- Instrument-measured LEL values were 3 percent for flare 3 and 0 percent for flares 1 and 2.
- Gas pressure measurements were 0.03 inches of water in all 3 flares. The consistently and unmeasurably low gas pressure readings indicate a low potential for landfill gas flow from any of the flares.
- Weather station data from the Bremerton National Airport indicate that barometric pressure slightly increased from a mean of 29.33 inches of mercury on September 11, 2024, the day before the monitoring event, to a mean of 29.51 inches of mercury on September 12, 2024, the day the flares were measured (Weather Underground, Station KPWT, 2024). There is a negligible decreasing trend in barometric pressure.

Groundwater Elevation and Flow Direction Data

The groundwater flow direction in the uppermost aquifer beneath the Landfill during this monitoring event was generally toward the west-northwest, with groundwater from beneath the Landfill flowing toward downgradient wells MW-3, MW-6, MW-8, and MW-10 as depicted on Figure 2. The groundwater flow direction and elevation contour pattern are consistent with historical data from the Landfill.

September 2024 groundwater elevations were higher in nine of the 10 on-site monitoring wells measured relative to September 2023 groundwater elevations. Differences ranged from 0.13 foot higher in upgradient well MW-1 to 0.21 feet higher in downgradient well MW-3. The groundwater elevation was higher in crossgradient well MW-5A by 0.31 foot.

Bremerton National Airport Weather Station precipitation data indicate 0.08 inches of precipitation for August–September 2023 compared to 2.29 inches of precipitation for August–September 2024 (Weather Underground, Station KPWT 2024). The lower groundwater elevations noted in the wells for June 2024 relative to June 2023 is consistent with the much lower precipitation totals. Groundwater elevations year to year indicate a larger scale decreasing trend that started after 2017 and appears to have ended in 2020.

The larger scale decreasing groundwater elevation trend from 2017 to 2020 and leveling off in 2020–2022, decreasing in 2023, and now leveling off in 2024 is visually apparent on the groundwater elevation time series graph presented in Appendix A.

Exceedances of Primary Regulatory Standards

Upgradient Well (MW-1)

Arsenic

- The arsenic concentration in the sample from MW-1 is 0.138 µg/L, which exceeds the Washington State Primary Groundwater Standard of 0.05 µg/L. However, this concentration does not exceed the Washington State Primary Drinking Water Standard of 10 µg/L or the Site-Specific Cleanup Level of 1.29 µg/L.
- The upper and lower 95% confidence intervals for arsenic in samples from MW-1 exceed the Washington State Primary Groundwater Standard of 0.05 µg/L. This represents a statistically significant exceedance for arsenic in samples from MW-1.
- However, both the upper and lower 95% confidence intervals for arsenic in samples from MW-1 are less than the Site-Specific Cleanup Level of 1.29 µg/L. This represents statistically significant compliance with the Site-Specific Cleanup Level for arsenic at MW-1.

Downgradient Wells (MW-3, MW-6, MW-8 and MW-10)

Arsenic

MW-3, MW-6, MW-8, and MW-10

- Arsenic concentrations in groundwater samples from MW-3, MW-6, MW-8, and MW-10 are 0.180 µg/L, 0.435 µg/L, 0.733 µg/L, and 2.010 µg/L, respectively. Arsenic was also detected in MW-12, the field duplicate sample from MW-8, at a concentration of 0.717 µg/L. None of the arsenic concentrations exceed the Washington State Drinking Water Standard of 10 µg/L. Samples from all downgradient wells have arsenic concentrations that exceed the Washington State Primary Groundwater Standard of 0.05 µg/L. The arsenic concentration in the sample from MW-10 also exceeds the Site-Specific Cleanup Level of 1.29 µg/L.
- The upper and lower 95% confidence limits for arsenic data from wells MW-3, MW-6, MW-8, and MW-10 exceed the Washington State Primary Groundwater Standard of 0.05 µg/L. This represents statistically significant exceedances of that standard for arsenic for those wells.
- The upper and lower 95% confidence limits for arsenic data from MW-3, MW-6, and MW-8 are less than the Site-Specific Cleanup Level of 1.29 µg/L. This represents statistically significant compliance with the Site-Specific Cleanup Level for arsenic for those wells.
- The upper and lower 95% confidence limits for arsenic data from well MW-10 exceed the Site-Specific Cleanup Level of 1.29 µg/L. This represents a statistically significant exceedance of the Site-Specific Cleanup Level for arsenic in data from MW-10.

Exceedances of Secondary Regulatory Standards

Upgradient Well (MW-1)

pH (Field-Measured)

- Purge water from MW-1 had a field-measured pH value of 6.2 standard pH units, which is lower than the lower limit of the Washington State Secondary Groundwater Standard range of values of 6.5 to 8.5 standard pH units.
- The upper and lower 95% confidence limits for field-measured pH in purge water from MW-1 are less than the lower limit of the Washington State Secondary Groundwater Standard of 6.5 standard pH units. This represents a statistically significant deviation from the regulatory range of pH values in measurements from MW-1.

pH (Laboratory-Measured)

MW-1

- The sample from MW-1 has a laboratory-measured pH value of 6.1 standard pH units, which is lower than the lower limit of the Washington State Secondary Groundwater Standard range of values of 6.5 to 8.5 standard pH units.
- The upper and lower 95% confidence limits for laboratory-measured pH in samples from MW-1 are less than the lower limit of the Washington State Secondary Groundwater Standard of 6.5 standard pH units. This represents a statistically significant deviation from the regulatory range of pH values in samples from MW-1.

Downgradient Wells (MW-3, MW-6, MW-8, and MW-10)

Manganese

MW-3, MW-6, MW-8, and MW-10

- Samples from MW-3, MW-6, MW-8, and MW-10 have manganese concentrations of 4,880 µg/L, 426 µg/L, 731 µg/L, and 3,680 µg/L, respectively. Manganese was also detected in MW-12, the field duplicate sample from MW-8, at a concentration of 704 µg/L. These concentrations exceed the Washington State Secondary Groundwater and Drinking Water Standards and the Site-Specific Cleanup Level of 50 µg/L.
- The upper and lower 95% confidence limits for manganese in samples from MW-3, MW-6, MW-8, and MW-10 exceed the Washington State Secondary Drinking Water and Groundwater Standard of 50 µg/L. These represent statistically significant exceedances for manganese in data from those downgradient wells.

pH (Field-Measured)

MW-3

- Purge water from MW-3 had a field-measured pH value of 6.2 standard pH units, which is lower than the lower limit of the Washington State Secondary Groundwater Standard range of values of 6.5 to 8.5 standard pH units.
- The upper and lower 95% confidence limits for field-measured pH in purge water from MW-3 are less than the lower limit of the Washington State Secondary Groundwater Standard of 6.5 standard

pH units. This represents a statistically significant deviation from the regulatory range of pH values in measurements from MW-3.

pH (Laboratory-Measured)

MW-3 and MW-10

- Samples from MW-3 and MW-10 have a laboratory-measured pH value of 6.2 and 6.4 standard pH units, respectively. This is lower than the lower limit of the Washington State Secondary Groundwater Standard range of values of 6.5 to 8.5 standard pH units.
- The upper and lower 95% confidence limits for laboratory-measured pH in samples from MW-3 and MW-10 are less than the lower limit of the Washington State Secondary Groundwater Standard of 6.5 standard pH units. This represents a statistically significant deviation from the regulatory range of pH values in samples from MW-3 and MW-10.

Total Coliform

MW-3

- Total coliform was detected in the sample from well MW-3 at a count of 84 cfu/100 mL, which exceeds the Washington State Primary Groundwater and Drinking Water Standards of 1 cfu/100mL. However, total coliform was not detected in any other sample, which indicates that the detected total coliform in the MW-3 sample might have been anomalous. Total coliform detected in the MW-3 sample might have been introduced from an outside source in the field, analytical laboratory, or the laboratory-supplied sample bottle. Additional data are required to determine if a trend exists or if this is a single occurrence of cross-contamination.
- The upper 95% confidence limits for the most recent 29 samples from MW-3 are non-detect, which is less than the lower limit of the Washington State Primary Groundwater Standard of 1 cfu/100 mL. This represents a statistically significant compliance for total coliform at MW-3.

Analytical Tests for Volatile Organic Compounds

This section lists and describes detections of additional VOC constituents in groundwater samples from the Landfill. The VOC detections listed in this section are at concentrations less than applicable Washington State Drinking Water Standards or Washington State Groundwater Standards or are for constituents that do not have applicable regulatory standards.

- Chlorobenzene was detected in the sample from MW-6 at a concentration of 1.92 µg/L, which is less than the Washington State Primary Drinking Water Standard of 100 µg/L.

Analytical Test for Total Organic Carbon

This section describes detections of TOC in groundwater samples from the Landfill. The TOC detections listed in this section do not have applicable regulatory standards.

TOC concentrations increased in all five wells. Groundwater samples collected from MW-1, MW-3, MW-6, MW-8, and MW-10 contained TOC concentrations of 4.62 mg/L, 22.68 mg/L, 21.58 mg/L, 5.51 mg/L and 17.75 mg/L, respectively. The typical concentrations in the monitoring wells vary from 0.7 to 2.0 mg/L. Analytical results from MW-3, MW-6, and MW-10 indicate an abnormal spike compared to historical trends.

TRC is unaware of any change in circumstances or site conditions that may have caused the increase in the September 2024 quarterly groundwater and landfill gas monitoring event. TRC will continue to monitor and assess for TOC at all monitoring well locations to determine if any trends persist, or if this was a single abnormal occurrence.

BIBLIOGRAPHY

- Environmental Partners, Inc. (EPI). 2015. *Compliance Monitoring Plan – Post Closure Monitoring Under the Olalla Landfill Cleanup Action Plan*. Prepared for Kitsap County Department of Public Works Solid Waste Division. 17 March.
- Kitsap County Solid Waste Division. 2006. *Draft Sampling and Analysis Plan for the Olalla Landfill*. August.
- Kitsap Public Health District. 2021. *Solid Waste Landfill Post Closure Permit 2021-2025*. February.
- Parametrix, Inc. (Parametrix). 1988. *Olalla Landfill Final Closure Plan*. Prepared for Kitsap County Department of Public Works. Port Orchard, Washington.
- Parametrix, Inc. (Parametrix). 2014a. *Olalla Landfill Remedial Investigation/Feasibility Study*. Prepared for Kitsap County Department of Public Works. May.
- Parametrix, Inc. (Parametrix.) 2014b. *Olalla Landfill Cleanup Action Plan*. Prepared for Kitsap County Department of Public Works. December.
- United States Environmental Protection Agency (EPA). 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. EPA 530-R-09-007. March.
- United States Geological Survey (USGS). 2008. "Invasive Data – How Substituting Values for Low-Level Trace Element Data Can Ruin Results." PowerPoint presentation by Dennis Helsel.
- Washington State Department of Ecology (Ecology). 2012. *Guidance for Groundwater Monitoring at Landfills and Other Facilities Regulated Under Chapters 173-304, 173-306, 173-350, and 173-351 WAC*. Olympia, Washington. Publication No. 12-07-072 Olympia, Washington. December.
- Weather Underground. 2024. *Bremerton National Airport Weather Station (KPWT)*.

Appendix A
Quarterly Monitoring Data, September 2024

Landfill Gas Data
Groundwater Elevations
Groundwater Quality Data

**Olalla Landfill
Landfill Gas Data
September 2024 Quarterly Monitoring Event**

September 12, 2024	Flare #1	Flare #2	Flare #3
METHANE, (% LEL) ^a	0	0	0.0
METHANE, (% Volume)	0.0	0.0	0.0
OXYGEN, (% Volume)	20.4	20.3	18.9
CARBON DIOXIDE, (% Volume)	0.0	0.0	1.3
TEMPERATURE (°F)	66	66	66
PRESSURE (inches of water column)	0.03	0.03	0.03
AMBIENT TEMPERATURE, (°F)	66		

Note:

^a LEL is a calculated value from the methane % volume measurement.

**Olalla Landfill
Groundwater Elevations
September 2024 Quarterly Monitoring Event**

Station	Reference Elevation*	Depth to Water (feet)	Groundwater Elevation*
September 12, 2024			
MW-1	343.79	78.76	265.03
MW-2	323.25	66.23	257.02
MW-3	296.95	46.18	250.77
MW-4	320.93	63.30	257.63
MW-5A	332.53	76.70	255.83
MW-6	271.17	21.82	249.35
MW-7	280.43	26.44	253.99
MW-8	272.85	22.22	250.63
MW-10	279.21	30.92	248.29

Note:

*Elevations in Feet NGVD 29

Groundwater Quality Data

September 2024 Quarterly Monitoring Event

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	State Drinking Water Standard (a)	State Ground- water Standard (b)	Site- Specific Cleanup Level (c)	Units	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10	MW-12(FD)
CONVENTIONALS												
ALKALINITY	-----	-----	-----	mg/L	58.9	212	NA	200	NA	62.6	215	63.8
AMMONIA NITROGEN	-----	-----	-----	mg/L	0.040 U	0.040 U	NA	0.94	NA	0.040 U	0.045	0.040 U
BICARBONATE	-----	-----	-----	mg/L	58.9	212	NA	200	NA	62.6	215	63.8
CARBONATE	-----	-----	-----	mg/L	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	1.0 U	1.0 U
CHEMICAL OXYGEN DEMAND (COD)	-----	-----	-----	mg/L	10.0 U	10.0 U	NA	10.0 U	NA	10.0 U	10.0 U	10.0 U
CHLORIDE	250**	250**	-----	mg/L	8.10	7.85	NA	1.87	NA	2.24	5.45	2.23
DISSOLVED OXYGEN	-----	-----	-----	mg/L	9.78	0.90	NA	0.67	NA	1.27	0.47	NA
NITRATE NITROGEN	10*	10*	-----	mg/L	0.080	0.046	NA	0.020 U	NA	0.095	0.020 U	0.095
NITRITE NITROGEN	1*	-----	-----	mg/L	0.010 U	0.010 U	NA	0.010 U	NA	0.010 U	0.010 U	0.010 U
OXIDATION REDUCTION POTENTIAL (ORP)	-----	-----	-----	mV	80.9	89.6	NA	67.4	NA	54.5	80.3	NA
pH (field)	-----	6.5-8.5**	-----	-log H+	6.3	6.2	NA	6.5	NA	6.4	6.5	NA
pH (laboratory)	-----	6.5-8.5**	-----	-log H+	6.1 H	6.2 H	NA	6.5 H	NA	6.6 H	6.5 H	6.6 H
SPECIFIC CONDUCTANCE	700**	-----	-----	umhos/cm	129	389	NA	340	NA	108	385	NA
SULFATE	250**	250**	-----	mg/L	4.1	15.5	NA	10.9	NA	3.50	16.6	3.5
TEMPERATURE	-----	-----	-----	°C	11.1	11.8	NA	11.1	NA	11.1	11.2	NA
TOTAL COLIFORM	1/100 mL*	1/100 mL*	-----	cfu/100 mL	1.0 U	84.0	NA	1.0 U	NA	1.0 U	1.0 U	1.0 U
TOTAL ORGANIC CARBON (TOC)	-----	-----	-----	mg/L	4.62	22.68	NA	21.58	NA	5.51	17.75	5.58
TURBIDITY	-----	-----	-----	NTU	3.7	2.96	NA	4.92	NA	4.97	1.72	NA
DISSOLVED METALS												
ARSENIC	10*	0.05*	1.29	µg/L	0.14	0.18	NA	0.44	NA	0.73	2.01	0.72
BARIUM	2,000*	1,000*	-----	µg/L	6.0 U	15.0	NA	25.0	NA	6.0 U	13.8	6.0 U
CALCIUM	-----	-----	-----	mg/L	12.7	51.3	NA	38.1	NA	10.0	46.9	9.55
IRON	300**	300**	300	µg/L	200 U	200 U	NA	250	NA	200 U	200 U	200 U
MANGANESE	50**	50**	50	µg/L	4.0 U	4,880	NA	426	NA	731	3,680	704
POTASSIUM	-----	-----	-----	mg/L	0.692	0.779	NA	2.73	NA	0.948	1.00	0.93
SODIUM	20***	-----	-----	mg/L	4.57	8.02	NA	6.77	NA	5.31	8.56	5.19
ZINC	5,000**	5,000**	-----	µg/L	6.0 U	6.0 U	NA	6.0 U	NA	6.0 U	6.0 U	6.0 U
VOLATILE ORGANIC COMPOUNDS												
VINYL CHLORIDE	2*	0.02*	0.29	µg/L	0.02 U	0.02 U	NA	0.02 U	NA	0.02 U	0.02 U	0.02 U

Notes:

Concentration exceeds Washington State Drinking Water or Groundwater Standards

FD = Field Duplicate of MW-3 was labeled MW-9.

Regulatory Standards:

(a) WAC 246-290-310

(b) WAC 173-200-040

(c) WAC 173-201A-200 - Nitrate and Nitrite Standards noted are for Class AA water. Fecal coliform standard is 100/100mL for Primary Contact Recreation.

The appropriate class of water for the detention pond has not been established.

(c) Site-specific Cleanup Levels per Olalla Landfill Cleanup Action Plan, December 2014

* Primary Standard

** Secondary Standard

*** Recommended level of concern for consumers with restricted daily sodium intake.

Data Qualifiers:

H = Analyzed outside of holding time.

NA = Not Analyzed

U = Indicates compound was analyzed for, but not detected at the specified detection limit.

Groundwater Quality Data
September 2024 Quarterly Monitoring Event
Page 2 of 3

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground- water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12(FD)
1,1,1,2-TETRACHLOROETHANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-TRICHLOROETHANE	200	200	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-TRICHLOROETHANE	5	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHANE	----	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHENE	7	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROPROPENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-TRICHLOROBENZENE	----	----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROPROPANE	----	----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	70	----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRIMETHYLBENZENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	----	----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	600	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROETHANE	5	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROPROPANE	5	0.6	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROBENZENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROPROPANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-DICHLOROBENZENE	75	4	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-DICHLOROPROPANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	----	----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROETHYLVINYLETHER	----	----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-HEXANONE	----	----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-ISOPROPYLTOLUENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-METHYL-2-PANTANONE	----	----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	----	----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACROLEIN	----	----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	----	----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	5	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOBENZENE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOFORM	----	5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOMETHANE	----	----	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON DISULFIDE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CARBON TETRACHLORIDE	5	0.3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	100	----	µg/L	0.2 U	0.2 U	1.92	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROETHANE	----	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROFORM	----	7	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROMETHANE	----	----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Groundwater Quality Data
September 2024 Quarterly Monitoring Event
Page 3 of 3

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground- water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-17(FD)
CIS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DIBROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLOROBROMOMETHANE	-----	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	700	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLENE DIBROMIDE	-----	0.001	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HEXACHLOROBUTADIENE	-----	-----	µg/L	2 U	2 U	2 U	2 U	2 U	2 U
IODOMETHANE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYLENE CHLORIDE	5	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
M & P-XYLENE	10	-----	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NAPHTHALENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
N-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
N-PROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
O-XYLENE	10	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
SEC-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
STYRENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TERT-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TETRACHLOROETHENE	5	0.8	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOLUENE	1000	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,2-DICHLOROETHENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,4-DICHLORO-2-BUTENE			µg/L	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRICHLOROFLUOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL ACETATE			µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL CHLORIDE	2	0.02	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

Notes:

FD = Field Duplicate of MW-8 was labeled MW-12.

Regulatory Standards:

All regulatory standards listed for VOCs are Primary Regulatory Standards

(a) WAC 246-290-310

(b) WAC 173-200-040

Data Qualifiers:

U = Indicates compound was analyzed for but was not detected at the specified detection limit.

Appendix B
Monitoring Field Notes, September 2024

Olalla Landfill Quarterly Monitoring Field Book September 2024



**Olalla Landfill
Kitsap County, Washington
Project Number: 581482.0000. Task 3**

**TRC Environmental Corporation
13810 SE Eastgate Way, Suite 440
Bellevue, WA 98005
(425) 395-0010
(425) 281-3629**

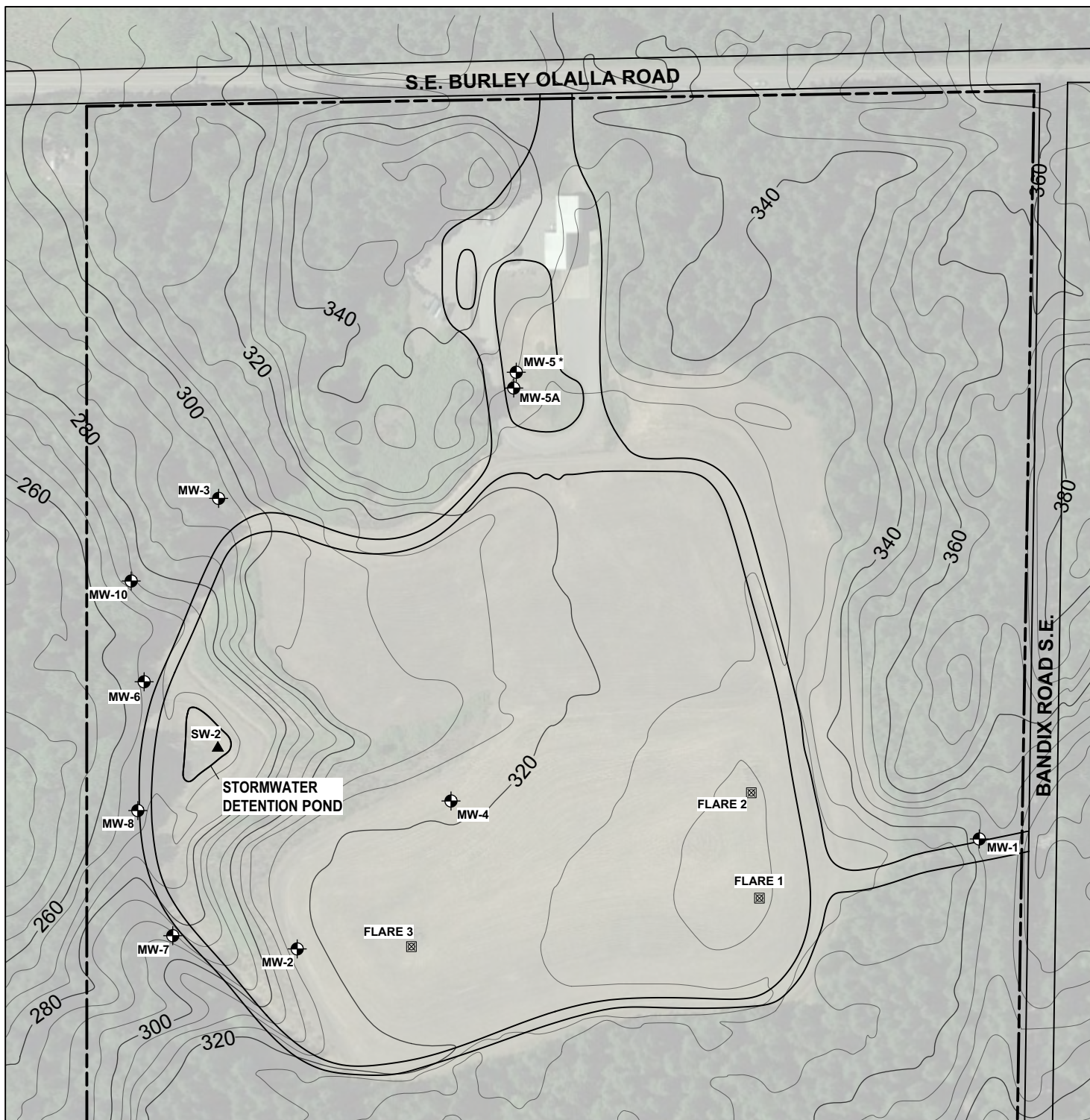
Project Instructions - Olalla Landfill Quarterly Monitoring

- Access the landfill from the main entrance off SE Burley Olalla Rd. The gate is locked, and the keys are with the Olalla equipment. Lock the gate behind you after entry.
- Inspect each well and pump head and note any repairs that are needed.
- Collect depth to water measurements at all wells including interior landfill wells MW-2 and MW-4 and shallow well MW-5 (next to MW-5A).
- Collect groundwater samples from MW-1, MW-3, MW-6, MW-8, and MW-10. There are **no samples** from interior wells MW-2 and MW-4 or from cross-gradient wells MW-5A and MW-7. Use the lowest sustainable flowrate for sample collection. Purge water can be poured on the ground away from the wells.
- The dissolved metals samples for each location get field filtered through single use 0.45 micron in-line filters.
- Take a field duplicate at MW-8 and label it as MW-12. Note it as the field duplicate in the field book.
- Measure landfill gas at all three flares using the GEM 2000. Call me if the measurements look odd or if you're having trouble with the GEM 2000.
- Make sure all wells, flare gates, and main entrance gate are locked before you leave.

1.1.1 Field Duplicate Sample Identification

A field duplicate sample is collected from one of the four downgradient monitoring wells, (MW-3, MW-6, MW-8, or MW-10) during the quarterly monitoring events as described in Section 3.7.1. Duplicate sample locations will be rotated throughout the year such that each of the four downgradient monitoring wells will have one duplicate sample collected every year. Duplicate samples will be assigned fictitious sample identifiers using the following duplicate sample identification system:

- First quarter: MW-9 is the field duplicate of MW-3
- Second quarter: MW-17 is the field duplicate of MW-6
- Third quarter: MW-12 is the field duplicate of MW-8
- Fourth quarter: MW-13 is the field duplicate of MW-1



NOTES:

BASE MAP SOURCE:
GOOGLE EARTH

TOPOGRAPHIC CONTOUR SOURCE:
KITSAP COUNTY PARCEL VIEWER

*MW-5 IS COMPLETED IN A SHALLOW PERCHED
GROUNDWATER ZONE

MW-2  MONITORING WELL LOCATION

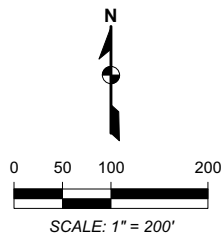
SW-2  SURFACE WATER SAMPLING LOCATION

 LANDFILL GAS FLARE

 300 TOPOGRAPHIC ELEVATION CONTOUR

 APPROXIMATE PROPERTY BOUNDARY

 PERIMETER ACCESS ROAD



1180 NW MAPLE ST, SUITE 310
ISSAQUAH, WA 98027
425.395.0010
WWW.TRCCOMPANIES.COM

FIGURE 1

OLALLA LANDFILL MONITORING WELL LOCATIONS

REPORT
QUARTERLY MONITORING REPORT
3RD QUARTER (SEPTEMBER, 2020)

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 9/28/20
DRAWN BY JYT
REVIEWED BY DCK

September 2024 Quarterly Event Bottle Order Form

Project Name	Olalla Landfill Monitoring	Date of Bottle Request	August 27, 2024
Project Number	581482.0	Date Bottle are Needed	September 12th, 2024
Client:	TRC 13810 SE Eastgate Way, Suite 440, Bellevue, WA 98005	Estimated Date Samples will Return:	September 12th, 2024
Client Contact:	Wes Weisberg		

Lab PM:	Kelly Bottem	Order completed by:	Evan Miller
# of Coolers:	as needed	YES	Include LOOSE Labels
Trip Blanks	1 set (3 VOAs)	YES	Include COC's

Number of Samples	Analysis Requested	Bottles Per Sample	Typical Bottle Size and Type	Preservation	Total Bottles
Groundwater Samples					
7	Volatiles	3	40mL VOA	HCL	21
7	Vinyl chloride by SIM or Low Level	2	40mL VOA	HCL	14
7	Dissolved metals (As, Fe, Zn, Ba, Mn)	1	500 mL HDPE	Field Filtered/HNO ₃	7
7	Total metals (K, Na, Ca)	1	500 mL HDPE	HNO ₃	7
7	Alkalinity, carbonate, bicarbonate	1	Small OJ	-	7
7	Nitrate, nitrite, chloride, sulfate, pH	1	Large OJ	-	7
7	TOC, COD, ammonia	1	250 mL AG	H ₂ SO ₄	7
7	Total coliform	1	Corning	Na ₂ S ₂ O ₃	7
Surface Water Sample (Sampled in March or December)					
0	pH	1	500 mL poly		0
0	Nitrate-Nitrogen	1			0
0	Fecal coliform	1	glass or poly	-	0
				Total Bottles:	77

Depth to Water Measurement Field Data - Olalla Landfill Monitoring

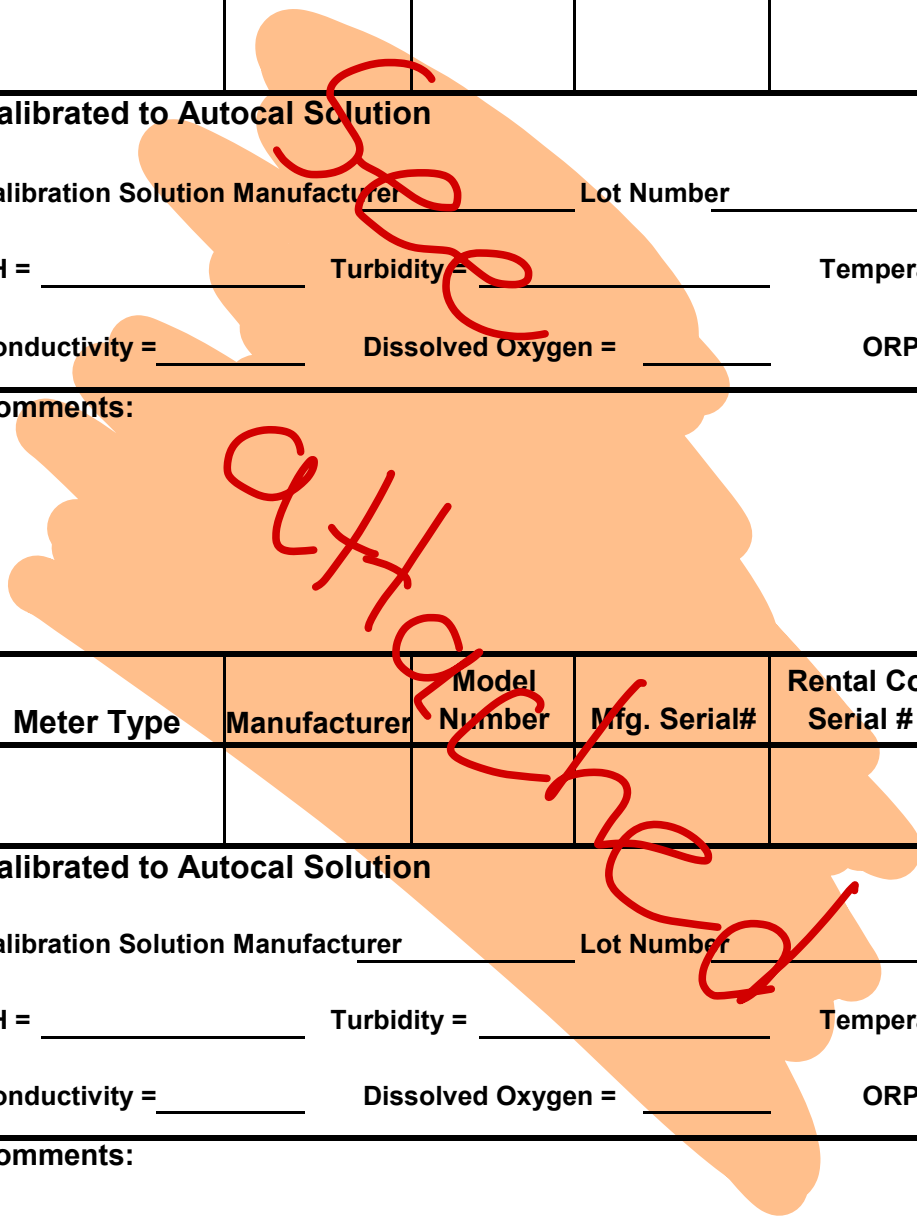
Well	Time	Measuring Point Elevation (ft. NGVD ¹)	Depth to Water (ft.)	Comments and Well Inspection ² Notes
MW-1	0950	343.79	78.76	New Pump installed,
MW-2	0938	323.25	66.23	NO comment
MW-3	1100	296.95	46.18	NO comment
MW-4	0947	320.93	63.30	WASP nest present
MW-5	0958	334.17	12.04	NO comment
MW-5A	1005	332.53	76.70	NO comment
MW-6	1208	271.17	21.62	NO comment
MW-7	1405	280.43	26.44	NO comment
MW-8	1330	272.85	22.22	NO comment
MW-10	1130	279.21	30.92	NO comment

Notes:

¹NGVD = National Geodetic Vertical Datum (1929)

²Observations regarding the condition of the well and surrounding area (e.g., protective casing, surface seal, cap, lock, bollards, soil conditions near the well such as depressions, ponded surface water, or other subsidence features, and any installed sampling equipment).

Multiparameter Probe Calibration Log - Olalla Landfill Groundwater Monitoring

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time
Calibrated to Autocal Solution						
Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____						
pH = _____ Turbidity = _____ Temperature = _____						
Conductivity = _____ Dissolved Oxygen = _____ ORP = _____						
Comments:						
						
Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time
Calibrated to Autocal Solution						
Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____						
pH = _____ Turbidity = _____ Temperature = _____						
Conductivity = _____ Dissolved Oxygen = _____ ORP = _____						
Comments:						

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-1	Date	9-12-2024
Sample: ID	MW-1	Field Team: (Initials)	LB + EM
Field Conditions	Overcast, ~ 61°F		

Low-Flow Purge Information

Well Diameter (in.)	2"	Purge Method :	Submersible pump
Well Depth (ft.)	87.00	Other: :	
Depth to Water (ft.)	78.76	Start Time	1025
Depth of Water Column	—	End Time	1050
1 Casing Volume (gal.)	—	Total Gallons Purged	2.0 gal
Controller setting (Hz)	252.0		

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1026	0.3	6.27	0.129	11.0	9.55	11.2	67.7	clear, no odor
1029	0.6	6.25	0.129	42.5	9.62	11.1	71.8	
1032	0.9	6.24	0.130	16.0	9.71	11.1	75.1	
1035	1.2	6.23	0.129	13.0	9.75	11.1	76.9	
1036	1.5	6.24	0.130	7.40	9.77	11.1	78.5	
1041	1.8	6.25	0.129	3.71	9.78	11.1	80.9	

Sample Information

Sample Method(s) : Submersible pump

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1045	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	H ₂ SO ₄ to pH <2, cool to <4°C	
COD		250-mL HDPE	H ₂ SO ₄ to pH <2, cool to <4°C	
Total Metals		250-mL HDPE	HNO ₃ to pH <2, cool to <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO ₃ to pH <2, cool to <4°C	

Sample End Time 1050

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-3	Date	9-12-24
Sample: ID	MW-3	Field Team: (Initials)	LB & EM
Field Conditions	Overcast, 63°F		

Low-Flow Purge Information

Well Diameter (in.)	2"	Purge Method :	Submersible pump
Well Depth (ft.)	55.00	Other: :	
Depth to Water (ft.)	46.18	Start Time	1100
Depth of Water Column	—	End Time	1125
1 Casing Volume (gal.)	—	Total Gallons Purged	2.5 gal.
Controller setting (Hz)	154.00		

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1100	0.3	6.07	0.427	7.87	2.54	10.6	99.2	Clear, no odor
1103	0.6	6.09	0.402	3.87	1.58	11.2	96.0	
1106	0.9	6.10	0.393	3.80	1.02	11.5	93.4	
1109	1.2	6.12	0.391	3.09	0.97	11.7	92.1	
1112	1.5	6.14	0.390	3.10	0.94	11.7	91.0	
1115	1.8	6.15	0.384	2.96	0.90	11.8	89.6	

Sample Information

Sample Method(s) : Submersible pump

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1120	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform	↓	300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters	↓	500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite	↓	500-mL HDPE	Cool to <4°C	
TOC	↓	250-mL AG	H ₂ SO ₄ to pH <2, cool to <4°C	
COD	↓	250-mL HDPE	H ₂ SO ₄ to pH <2, cool to <4°C	
Total Metals	↓	250-mL HDPE	HNO ₃ to pH <2, cool to <4°C	
Dissolved Metals	↓	250-mL HDPE	Field filter, HNO ₃ to pH <2, cool to <4°C	

Sample End Time 1125

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-10	Date	9-12-24
Sample: ID	MW-10	Field Team: (Initials)	CB & EM
Field Conditions	Partly sunny, 65°F		

Low-Flow Purge Information

Well Diameter (in.)	2"	Purge Method :	Submersible pump
Well Depth (ft.)	47.00	Other: :	
Depth to Water (ft.)	30.92	Start Time	1135
Depth of Water Column	—	End Time	1200
1 Casing Volume (gal.)	—	Total Gallons Purged	2.5 gal
Controller setting (Hz)	13500		

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1135	0.3	6.53	0.414	3.40	2.73	10.3	87.4	clear, no odor
1138	0.6	6.51	0.402	3.00	1.54	10.7	86.6	↓
1141	0.9	6.49	0.395	2.69	1.37	10.7	85.7	
1144	1.2	6.48	0.389	1.87	1.00	11.0	84.2	
1147	1.5	6.49	0.386	1.81	0.71	11.1	81.9	
1150	1.8	6.50	0.385	1.72	0.47	11.2	80.3	

Sample Information

Sample Method(s) : Submersible pump

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1155	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform	↓	300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	H ₂ SO ₄ to pH <2, cool to <4°C	
COD		250-mL HDPE	H ₂ SO ₄ to pH <2, cool to <4°C	
Total Metals		250-mL HDPE	HNO ₃ to pH <2, cool to <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO ₃ to pH <2, cool to <4°C	

Sample End Time 1200

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	<u>MW-6</u>	Date	<u>9-17-24</u>
Sample: ID	<u>MW-6</u>	Field Team: (Initials)	<u>LOFEM</u>
Field Conditions	<u>Partly Sunny, 66°F</u>		

Low-Flow Purge Information

Well Diameter (in.)	<u>2"</u>	Purge Method :	<u>Submersible pump</u>
Well Depth (ft.)	<u>35.00</u>	Other: :	
Depth to Water (ft.)	<u>21.82</u>	Start Time	<u>1205</u>
Depth of Water Column	<u>—</u>	End Time	<u>1230</u>
1 Casing Volume (gal.)	<u>—</u>	Total Gallons Purged	
Controller setting (Hz)	<u>116.00</u>		

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
<u>1200</u>	<u>0.3</u>	<u>6.44</u>	<u>0.340</u>	<u>18.9</u>	<u>0.99</u>	<u>11.0</u>	<u>74.7</u>	<u>clear no odor</u>
<u>1213</u>	<u>0.6</u>	<u>6.45</u>	<u>0.341</u>	<u>7.19</u>	<u>0.77</u>	<u>11.0</u>	<u>72.9</u>	
<u>1216</u>	<u>0.5</u>	<u>6.46</u>	<u>0.343</u>	<u>4.43</u>	<u>0.73</u>	<u>11.0</u>	<u>70.8</u>	
<u>1219</u>	<u>1.2</u>	<u>6.47</u>	<u>0.341</u>	<u>4.08</u>	<u>0.69</u>	<u>11.1</u>	<u>69.3</u>	
<u>1222</u>	<u>1.5</u>	<u>6.47</u>	<u>0.340</u>	<u>4.92</u>	<u>0.67</u>	<u>11.1</u>	<u>67.4</u>	

Sample Information

Sample Method(s) : Submersible pump

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	<u>1225</u>	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	H ₂ SO ₄ to pH <2, cool to <4°C	
COD		250-mL HDPE	H ₂ SO ₄ to pH <2, cool to <4°C	
Total Metals		250-mL HDPE	HNO ₃ to pH <2, cool to <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO ₃ to pH <2, cool to <4°C	

Sample End Time 1230

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-8	Date	9-12-24
Sample: ID	MW-8	Field Team: (Initials)	LB & EM
Field Conditions	Sunny, 69°F		

Low-Flow Purge Information

Well Diameter (in.)	2"	Purge Method :	Submersible pump
Well Depth (ft.)	38.00	Other :	
Depth to Water (ft.)	22.22	Start Time	1330
Depth of Water Column	—	End Time	1355
1 Casing Volume (gal.)	—	Total Gallons Purged	2.5 gal
Controller setting (Hz)	118.00		

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1330	0.3	6.68	0.088	17.5	2.03	10.7	33.6	clear no odor
1333	0.6	6.84	0.097	9.48	1.75	10.9	46.4	
1336	0.9	6.37	0.103	11.5	1.53	11.0	52.7	
1339	1.2	6.36	0.102	10.3	1.44	11.0	53.1	
1342	1.5	6.35	0.105	6.26	1.38	11.0	54.9	
1345	1.8	6.32	0.107	5.32	1.31	11.0	55.3	
1348	2.1	6.38	0.108	4.97	1.27	11.1	54.5	↓

Sample Information

Sample Method(s) : Submersible pump

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1350	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform	↓	300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	H ₂ SO ₄ to pH <2, cool to <4°C	
COD		250-mL HDPE	H ₂ SO ₄ to pH <2, cool to <4°C	
Total Metals		250-mL HDPE	HNO ₃ to pH <2, cool to <4°C	
Dissolved Metals	↓	250-mL HDPE	Field filter, HNO ₃ to pH <2, cool to <4°C	

Sample End Time 1355

Comments / Exceptions:

Dup collected, MW-12 @ 1310

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Landfill Gas Monitoring Field Data - Olalla Landfill Monitoring

Instrument Used:	GEM 2000	Date and Time:	9-12-14 @ 1230
Ambient Temperature:	66°F	Field Team:	LB + FM
Field Conditions:	Sunny, 66°F. Pressure = 29.95 =		

Landfill Gas Data

Flare #	Time	Methane (% vol.)	% LEL	Oxygen (% vol.)	Carbon Dioxide (% vol.)	Temperature (°C)	Gas Pressure ("H ₂ O)
Flare 3	1241	00.0	003	18.9	1.3	18.9	0.03
Flare 2	1253	00.0	000	20.3	0.00	↓	0.03
Flare 1	1300	00.0	000	20.4	0.00	↓	0.03

Comments / Inspection Results¹

¹Inspect the following: lock and gate operation, tightness of bolts and clamps, differential settlement, valve operation, debris or breaks in hose barb.

EQUIPCO

CES LANDTECH MODEL: GEM 2000 CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: DN

DATE: 01/10/24

INSTRUMENT INFORMATION

RENTAL ID: GEM2000. 10

SERIAL NUMBER: GM07475/04

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO₂

LOT #: 48-124626893-1

GAS RESPONSE: 35 % CO₂ $\pm 2\%$

2. CALIBRATION GAS: 50 % Vol. Methane

LOT #: 48-124626893-1

GAS RESPONSE: 50 % Vol. Methane $\pm 2\%$

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE
MANUFACTURER

YSI ProDSS RENTAL CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: OM

DATE: 9/10/24

RENTAL CUSTOMER: TRC

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSI-ProDSS. 21

SERIAL NUMBER: 16J104728

CALIBRATION INFORMATION

PARAMETER:	STANDARD:	PASS ()	LOT #
1. CONDUCTIVITY	1,000 μ Mhos	<u>X</u>	<u>088047</u>
2. pH ZERO	pH 7	<u>X</u>	<u>086097</u>
pH SLOPE	pH 4	<u>X</u>	<u>090769</u>
pH SLOPE	pH 10	<u>X</u>	<u>090771</u>
3. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	<u>✓</u>	N/A
4. TURBIDITY ZERO	0.0 NTU's	—	N/A
TURBIDITY SPAN	100 NTU's	—	N/A
5. REDOX (ORP)	231mV (YSI Zobell solution)	<u>X</u>	<u>122123</u>

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: <u>standard</u>	Page: <u>1</u> of <u>1</u>
ARI Client Company: <u>TRC</u>	Phone: <u>425-395-0010</u>	Date: <u>9/12/24</u> Ice Present? ☐
Client Contact: <u>Wesley Weisberg</u>	<u>ECuddy@TRC.com</u> cc: <u>cmoo@</u>	No. of Coolers: <u>2</u> Cooler Temps:



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Client Project Name: <u>Kitsap County Olalla</u>					Analysis Requested										Notes/Comments											
Client Project #: <u>581482</u>					Samplers: <u>EM, LB</u>					Voc and VC	68 STM	Dissolved Metals	As, Fe, Zn, Cu, Pb	Total Metals	K, Na, C	Alkalinity	Carbonate	Bicarbonate	Nitrate-Nitrite	Chloride, Sulfate	pH	Tot. Sol.	Ammonia	Total Coliform		
Sample ID	Date	Time	Matrix	No. Containers																						
MW-1	9/12/24	1045	H ₂ O	11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
MW-3		1120			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
MW-10		1155			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
MW-6		1225			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
MW-12		1310			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
MW-8		1350			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Comments/Special Instructions <u>PO# 213288</u>					Relinquished by: (Signature) <u>cm</u>					Received by: (Signature)					Relinquished by: (Signature)					Received by: (Signature)						
					Printed Name: <u>EMBN Miller</u>					Printed Name:					Printed Name:					Printed Name:						
					Company: <u>TRC</u>					Company:					Company:					Company:						
					Date & Time: <u>9/12/24</u>					Date & Time:					Date & Time:					Date & Time:						

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Olalla Landfill - 581482
Q3 monitoring Event

Olalla, WA

Kitsap County

9-12-24

L. Brient 

Supelco Monitoring Event
Conds: Overcast, 61°F

- 0430 TRC (L. Briant & E. Miller) On-site.
- 0435 Equip PPE, review HHS for Site.
- 0840 Mob to mw-1, replace pump w/ newly-repaired sub-pump.
- 0905 Generator issues when hooked up to pump. Attempt to troubleshoot.
"Bus under voltage" error on pump.
- 0915 confer w/ Home Depot regarding replacement generator.
- 0925 L. Briant off-site to get new generator.
- 0945 E. Miller to gauge wells while away.
- 1015 L. Briant back on-site. new generator works.
- 1020 Begin purge on mw-1.
- 1045 Sample mw-1, mob to mw-3.
- 1100 Begin Purge on mw-3.
- 1120 Sample mw-3, mob to mw-10.
- 1130 Begin Purge of mw-10.
- 1155 Sample mw-10, mob to mw-6.

1205 Begin purge on mw-6.

1225 Sample mw-6.

1235 Begin flare analysis.

1305 Finish flare analysis, gauge mw-8.
take lunch break.

1310 Time for Dup, mw-12, will be "1310".

1325 mob equipment to mw-8. Begin purge.

1350 Sample mw-8, collect Dup
by mw-12.

1405 mob to mw-7, gauge well only.

1415 Fill out CAC, confirm all samples w/ times & ID.

1430 Call PM, inform of status.

1440 Lock-up facility. LD to return both generators & EM to laboratory.

1445 TRC off-site.

UB

9-12-221

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: <u>standard</u>	Page: <u>1</u> of <u>1</u>
ARI Client Company: <u>TRC</u>	Phone: <u>425-395-0010</u>	Date: <u>9/12/24</u> Ice Present? ☐
Client Contact: <u>Wesley Weisberg</u>	<u>ECuddy@TRC.com</u>	No. of Coolers: <u>2</u> Cooler Temps:
Client Project Name: <u>Kitsap County Olalla</u>	<u>cc: wweisberg@trc.com</u>	



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested										Notes/Comments
					Voc and Uv 68 STM	Dissolved Metals As, Fe, Zn, Cu, Mn	Total Metals	K, Na, C	Alkalinity Carbonate, Bicarbonate	Nitrate-Nitrite Chloride, Sulfide	pH	Tot. Sol., Ammonia	Total Coliform		
MW-1	9/12/24	1045	H ₂ O	11	X	X	X	X	X	X	X	X			
MW-3		1120			X	X	X	X	X	X	X	X			
MW-10		1155			X	X	X	X	X	X	X	X			
MW-6		1225			X	X	X	X	X	X	X	X			
MW-12		1310			X	X	X	X	X	X	X	X			
MW-8		1350			X	X	X	X	X	X	X	X			
Comments/Special Instructions <u>PO# 213288</u>	Relinquished by: (Signature) <u>com</u>	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)											
	Printed Name: <u>EMBN Miller</u>	Printed Name:	Printed Name:	Printed Name:											
	Company: <u>TRC</u>	Company:	Company:	Company:											
	Date & Time: <u>9/12/24</u>	Date & Time:	Date & Time:	Date & Time:											

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Appendix C
Laboratory Data Sheets, September 2024



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

03 October 2024

Eric Caddy
TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah, WA 98027

RE: Olalla Landfill (581482)

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)
24I0256

Associated SDG ID(s)
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

Kelly Bottem, Client Services Manager

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.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <u>2410256</u>		Turn-around Requested: <u>Standard</u>		Page: <u>1</u> of <u>1</u>		
ARI Client Company: <u>TRC</u>		Phone: <u>425-395-0010</u>		Date: <u>9/12/24</u>	Ice Present? <u>Yes</u>	
Client Contact: <u>Wesley Weisberg</u>		Email: <u>ECuddy@TRC.com</u>		No. of Coolers: <u>2</u>	Cooler Temps: <u>12.1 13.9</u>	
Client Project Name: <u>Kitsap County Olalla</u>		CC: <u>WWeisberg</u>		Analysis Requested		
Client Project #: <u>581482</u>		Samplers: <u>EM, LB</u>		VOC and VC 68 SIM Dissolved Metals As, Fe, Zn, Cu, Mn Total Metals K, Na, C Alkalinity Carbonate, Bicarbonate Nitrate, Nitrite Chloride, Sulfide pH TOC, COD, Ammonia Total Coliform		
Sample ID	Date	Time	Matrix	No. Containers		
MW-1	9/12/24	1045	H2O	11	X	X
MW-3		1120			X	X
MW-10		1155			X	X
MW-6		1225			X	X
MW-12		1310			X	X
MW-8		1350			X	X
Comments/Special Instructions <u>PO# 213288</u>		Relinquished by: <u>em</u>		Received by: <u>SW</u>		
		(Signature)		(Signature)		
		Printed Name: <u>EVAN Miller</u>		Printed Name: <u>Savannah Wright</u>		
		Company: <u>TRC</u>		Company: <u>Ari</u>		
Date & Time: <u>9/12/24</u>		Date & Time: <u>9-12-24 14:36</u>		Date & Time: <u> </u>		



Analytical Resources, LLC
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

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Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	24I0256-01	Water	12-Sep-2024 10:45	12-Sep-2024 14:36
MW-1	24I0256-02	Water	12-Sep-2024 10:45	12-Sep-2024 14:36
MW-3	24I0256-03	Water	12-Sep-2024 11:20	12-Sep-2024 14:36
MW-3	24I0256-04	Water	12-Sep-2024 11:20	12-Sep-2024 14:36
MW-10	24I0256-05	Water	12-Sep-2024 11:55	12-Sep-2024 14:36
MW-10	24I0256-06	Water	12-Sep-2024 11:55	12-Sep-2024 14:36
MW-6	24I0256-07	Water	12-Sep-2024 12:25	12-Sep-2024 14:36
MW-6	24I0256-08	Water	12-Sep-2024 12:25	12-Sep-2024 14:36
MW-12	24I0256-09	Water	12-Sep-2024 13:10	12-Sep-2024 14:36
MW-12	24I0256-10	Water	12-Sep-2024 13:10	12-Sep-2024 14:36
MW-8	24I0256-11	Water	12-Sep-2024 13:50	12-Sep-2024 14:36
MW-8	24I0256-12	Water	12-Sep-2024 13:50	12-Sep-2024 14:36
Trip Blanks	24I0256-13	Water	12-Sep-2024 10:45	12-Sep-2024 14:36



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Work Order Case Narrative

Volatiles - EPA Method SW8260D

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged on the associated forms.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 6010D and 200.8

The sample(s) were digested 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



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of pH which was sent to the lab outside of the 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 reference material (SRM) 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

24I0256

Client: TRC Companies, Inc

Project Manager: Kelly Bottem

Project: Olalla Landfill

Project Number: 581482

Preservation Confirmation

Container ID	Container Type	pH
24I0256-01 A	HDPE NM, 1000 mL	
24I0256-01 B	HDPE NM, 500 mL	
24I0256-01 C	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
24I0256-01 D	Corning Plastic, 125 mL, Na2S2O3	
24I0256-01 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-01 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-01 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-01 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-01 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-01 J	HDPE NM, 500 mL, 1:1 HNO3	L2 pass
24I0256-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2 pass
24I0256-03 A	HDPE NM, 1000 mL	
24I0256-03 B	HDPE NM, 500 mL	
24I0256-03 C	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
24I0256-03 D	Corning Plastic, 125 mL, Na2S2O3	
24I0256-03 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-03 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-03 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-03 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-03 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-03 J	HDPE NM, 500 mL, 1:1 HNO3	L2 pass
24I0256-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2 pass
24I0256-05 A	HDPE NM, 1000 mL	
24I0256-05 B	HDPE NM, 500 mL	
24I0256-05 C	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
24I0256-05 D	Corning Plastic, 125 mL, Na2S2O3	
24I0256-05 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-05 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-05 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-05 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-05 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-05 J	HDPE NM, 500 mL, 1:1 HNO3	L2 pass



WORK ORDER

24I0256

Client: TRC Companies, Inc

Project Manager: Kelly Bottem

Project: Olalla Landfill

Project Number: 581482

24I0256-06 A	HDPE NM, 500 mL, 1:1 HNO ₃ (FF)	L2 pass
24I0256-07 A	HDPE NM, 1000 mL	
24I0256-07 B	HDPE NM, 500 mL	
24I0256-07 C	Glass NM, Amber, 250 mL, 9N H ₂ SO ₄	L2 pass
24I0256-07 D	Corning Plastic, 125 mL, Na ₂ S ₂ O ₃	
24I0256-07 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-07 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-07 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-07 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-07 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-07 J	HDPE NM, 500 mL, 1:1 HNO ₃	L2 pass
24I0256-08 A	HDPE NM, 500 mL, 1:1 HNO ₃ (FF)	L2 pass
24I0256-09 A	HDPE NM, 1000 mL	
24I0256-09 B	HDPE NM, 500 mL	
24I0256-09 C	Glass NM, Amber, 250 mL, 9N H ₂ SO ₄	L2 pass
24I0256-09 D	Corning Plastic, 125 mL, Na ₂ S ₂ O ₃	
24I0256-09 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-09 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-09 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-09 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-09 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-09 J	HDPE NM, 500 mL, 1:1 HNO ₃	L2 pass
24I0256-10 A	HDPE NM, 500 mL, 1:1 HNO ₃ (FF)	L2 pass
24I0256-11 A	HDPE NM, 1000 mL	
24I0256-11 B	HDPE NM, 500 mL	
24I0256-11 C	Glass NM, Amber, 250 mL, 9N H ₂ SO ₄	L2 pass
24I0256-11 D	Corning Plastic, 125 mL, Na ₂ S ₂ O ₃	
24I0256-11 E	VOA Vial, Clear, 40 mL, HCL	
24I0256-11 F	VOA Vial, Clear, 40 mL, HCL	
24I0256-11 G	VOA Vial, Clear, 40 mL, HCL	
24I0256-11 H	VOA Vial, Clear, 40 mL, HCL	
24I0256-11 I	VOA Vial, Clear, 40 mL, HCL	
24I0256-11 J	HDPE NM, 500 mL, 1:1 HNO ₃	L2 pass
24I0256-12 A	HDPE NM, 500 mL, 1:1 HNO ₃ (FF)	L2 pass



WORK ORDER

24I0256

Client: TRC Companies, Inc

Project Manager: Kelly Bottem

Project: Olalla Landfill

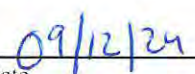
Project Number: 581482

24I0256-13 A VOA Vial, Clear, 40 mL, HCL

24I0256-13 B VOA Vial, Clear, 40 mL, HCL

24I0256-13 C VOA Vial, Clear, 40 mL, HCL


Preservation Confirmed By


Date



Cooler Receipt Form

ARI Client: TRC
COC No(s): NA
Assigned ARI Job No: 2410256

Project Name: Kitsap County Olalla
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
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)

Time 14:36 12.1 13.9
If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 9708
Cooler Accepted by: AW Date: 9-12-24 Time: 14:36

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: 09/11/24 NA 09/11/24
Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: mn Date: 09/12/24 Time: 1500 Labels checked by: mn

**** 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:

By: _____ Date: _____



Cooler Temperature Compliance Form

ARI Work Order: 2410256

Cooler#: 1 Temperature(°C): 12.1

Sample ID	Bottle Count	Bottle Type
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Samples were
above 6.0°C

Cooler#: 2 Temperature(°C): 13.9

Sample ID	Bottle Count	Bottle Type
-----------	--------------	-------------

Samples were
above 6.0°C

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type
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Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type
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Completed by: SEW Date: 9-12-24 Time: 14:36



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:03

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-01 G

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U



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MW-1
24I0256-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U



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Reported:
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MW-1
24I0256-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>107</i>	<i>%</i>	
<i>Surrogate: Toluene-d8</i>			<i>80-120 %</i>	<i>101</i>	<i>%</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>80-120 %</i>	<i>93.9</i>	<i>%</i>	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			<i>80-120 %</i>	<i>102</i>	<i>%</i>	



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Reported:
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MW-1
24I0256-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 10:45

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 15:32

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-01 E

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	98.1	%	



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Reported:
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MW-1
24I0256-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 09/12/2024 10:45
Analyzed: 09/30/2024 20:40

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BMI0618
Prepared: 09/25/2024

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 24I0256-01 J 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	12.7	mg/L	
Potassium	7440-09-7	1	0.500	0.692	mg/L	
Sodium	7440-23-5	1	0.500	4.57	mg/L	



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Reported:
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MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 10:45

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 18:58

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	8.10	mg/L	



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 10:45

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:15

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-01

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0801	mg/L	



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 10:45

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.080	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 10:45

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 15:18

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	4.09	mg/L	



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 10:45

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:19

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 10:45

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 15:56

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	4.62	mg/L	



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MW-1
24I0256-01 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 10:45

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 16:00

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	58.9	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	58.9	mg/L CaCO ₃	



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 10:45

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.11	pH Units	H



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-01 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 10:45

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:41

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U



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Reported:
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MW-1
24I0256-01 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 10:45

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-01

Preparation Batch: BMI0288

Sample Size: 100 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U



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Reported:
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MW-1
24I0256-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 10:45

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:31

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-02 A 01

Preparation Batch: BM10568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.138	ug/L	



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MW-1
24I0256-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 10:45

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:11

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-02 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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Reported:
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MW-1
24I0256-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8	Sampled: 09/12/2024 10:45
Instrument: ICPMS1 Analyst: DOE	Analyzed: 10/01/2024 11:57
Sample Preparation:	Extract ID: 24I0256-02 A 02
Preparation Method: REN - EPA 3010A M	
Preparation Batch: BMI0578	Sample Size: 25 mL
Prepared: 09/23/2024	Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

MW-1
24I0256-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D		Sampled: 09/12/2024 10:45
Instrument: ICP3 Analyst: SH		Analyzed: 09/25/2024 16:54
Sample Preparation:	Preparation Method: WMN (No Prep)	Extract ID: 24I0256-02 A 03
	Preparation Batch: BMI0600	
	Prepared: 09/24/2024	
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	ND	mg/L	U
Manganese, Dissolved	7439-96-5	1	0.0040	ND	mg/L	U



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1180 NW Maple Street, Suite 310
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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-3
24I0256-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:20

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:26

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-03 E

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



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MW-3
24I0256-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:20

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:26

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



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MW-3
24I0256-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:20

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:26

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	109	%	
Surrogate: Toluene-d8			80-120 %	97.4	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.8	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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MW-3
24I0256-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 11:20

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 15:54

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-03 F

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	99.0	%	



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MW-3
24I0256-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 09/12/2024 11:20

Instrument: ICP3 Analyst: SH

Analyzed: 09/30/2024 20:37

Sample Preparation:

Preparation Method: TWC EPA 3010A

Extract ID: 24I0256-03 J 01

Preparation Batch: BMI0618

Sample Size: 25 mL

Prepared: 09/25/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	51.3	mg/L	
Potassium	7440-09-7	1	0.500	0.779	mg/L	
Sodium	7440-23-5	1	0.500	8.02	mg/L	



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 11:20

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 19:26

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	7.85	mg/L	



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 11:20

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:30

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-03

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0461	mg/L	



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 11:20

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:30

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.046	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 11:20

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:39

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 11:20

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 17:13

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	22.68	mg/L	



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 11:20

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 16:00

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	212	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	212	mg/L CaCO ₃	



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 11:20

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.20	pH Units	H



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MW-3
24I0256-03 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 11:20

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:45

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U



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MW-3
24I0256-03 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 11:20

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03

Preparation Batch: BMI0288

Sample Size: 25 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	4	4	84	CFU/100 ml	



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MW-3
24I0256-03RE1 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 11:20

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 16:00

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-03RE1 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	4.00	4.00	15.5	mg/L	D



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Reported:
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MW-3
24I0256-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 11:20

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:07

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-04 A 01

Preparation Batch: BM10568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.180	ug/L	



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MW-3
24I0256-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 11:20

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:36

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-04 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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MW-3
24I0256-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8

Sampled: 09/12/2024 11:20

Instrument: ICPMS1 Analyst: DOE

Analyzed: 10/01/2024 12:21

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-04 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	ND	ug/L	U



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MW-3
24I0256-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 09/12/2024 11:20
Instrument: ICP3 Analyst: SH	Analyzed: 09/25/2024 16:57
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BMI0600
	Sample Size: 25 mL
	Prepared: 09/24/2024
	Final Volume: 25 mL
	Extract ID: 24I0256-04 A 03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0150	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	4.88	mg/L	



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Reported:
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MW-10
24I0256-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:55

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:48

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-05 E

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-10
24I0256-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:55

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



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MW-10
24I0256-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 11:55

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 17:48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	102	%	
Surrogate: Toluene-d8			80-120 %	98.3	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	95.9	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	101	%	



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Reported:
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MW-10
24I0256-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 11:55

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 16:16

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-05 G

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	100	%	



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Reported:
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MW-10
24I0256-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 09/12/2024 11:55
Analyzed: 09/30/2024 21:10

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BMI0618 Sample Size: 25 mL
Prepared: 09/25/2024 Final Volume: 25 mL

Extract ID: 24I0256-05 J 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	46.9	mg/L	
Potassium	7440-09-7	1	0.500	1.00	mg/L	
Sodium	7440-23-5	1	0.500	8.56	mg/L	



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 11:55

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 19:28

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	5.45	mg/L	



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 11:55

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:31

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-05

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 11:55

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:31

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 11:55

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 15:54

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	16.6	mg/L	



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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 11:55

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:40

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 11:55

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 18:12

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	17.75	mg/L	



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 11:55

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 15:45

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	215	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	215	mg/L CaCO ₃	



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 11:55

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.45	pH Units	H



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Reported:
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MW-10
24I0256-05 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 11:55

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:54

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.045	mg/L	



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MW-10
24I0256-05 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 11:55

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-05

Preparation Batch: BMI0288

Sample Size: 100 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U



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Reported:
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MW-10
24I0256-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 11:55

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:11

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-06 A 01

Preparation Batch: BMI0568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	2.01	ug/L	



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Reported:
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MW-10
24I0256-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 11:55

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:16

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-06 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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MW-10
24I0256-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8

Sampled: 09/12/2024 11:55

Instrument: ICPMS1 Analyst: DOE

Analyzed: 10/01/2024 12:02

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-06 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	ND	ug/L	U



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MW-10
24I0256-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 09/12/2024 11:55
Instrument: ICP3 Analyst: SH	Analyzed: 09/25/2024 17:00
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BMI0600
	Sample Size: 25 mL
	Prepared: 09/24/2024
	Final Volume: 25 mL
	Extract ID: 24I0256-06 A 03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0138	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	3.68	mg/L	



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Reported:
03-Oct-2024 15:18

MW-6
24I0256-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 12:25

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:10

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-07 E

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

MW-6
24I0256-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 12:25

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:10

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	1.92	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-6
24I0256-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 12:25

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:10

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	109	%	
Surrogate: Toluene-d8			80-120 %	98.0	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	98.9	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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Reported:
03-Oct-2024 15:18

MW-6
24I0256-07 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 12:25

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 16:39

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-07 F

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	99.4	%	



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Reported:
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MW-6
24I0256-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 09/12/2024 12:25
Instrument: ICP3 Analyst: SH	Analyzed: 09/30/2024 21:13
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BMI0618
	Prepared: 09/25/2024
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 24I0256-07 J 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	38.1	mg/L	
Potassium	7440-09-7	1	0.500	2.73	mg/L	
Sodium	7440-23-5	1	0.500	6.77	mg/L	



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 12:25

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 19:29

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	1.87	mg/L	



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Reported:
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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 12:25

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:33

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-07

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 12:25

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:33

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 12:25

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:41

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 12:25

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 18:30

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	21.58	mg/L	



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 12:25

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 15:45

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	200	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	200	mg/L CaCO ₃	



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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 12:25

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.47	pH Units	H



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Reported:
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MW-6
24I0256-07 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 12:25

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:55

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.942	mg/L	



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Reported:
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MW-6
24I0256-07 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 12:25

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07

Preparation Batch: BMI0288

Sample Size: 100 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U



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Reported:
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MW-6
24I0256-07RE1 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 12:25

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 16:02

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-07RE1 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	4.00	4.00	10.9	mg/L	D



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MW-6
24I0256-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 12:25

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:15

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-08 A 01

Preparation Batch: BM10568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.435	ug/L	



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Reported:
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MW-6
24I0256-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 12:25

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:21

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-08 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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Reported:
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MW-6
24I0256-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8

Sampled: 09/12/2024 12:25

Instrument: ICPMS1 Analyst: DOE

Analyzed: 10/01/2024 12:06

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-08 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	250	ug/L	D



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MW-6
24I0256-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 09/12/2024 12:25
Instrument: ICP3 Analyst: SH	Analyzed: 09/25/2024 17:42
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BMI0600
	Sample Size: 25 mL
	Prepared: 09/24/2024
	Final Volume: 25 mL
	Extract ID: 24I0256-08 A 03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0250	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	0.426	mg/L	



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Reported:
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MW-12
24I0256-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:10

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:32

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-09 E

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



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MW-12
24I0256-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:10

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:32

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



TRC Companies, Inc
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Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-12
24I0256-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:10

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:32

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	99.1	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	90.8	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	103	%	



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Reported:
03-Oct-2024 15:18

MW-12
24I0256-09 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 13:10

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 17:01

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-09 F

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	100	%	



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Project Number: 581482
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Reported:
03-Oct-2024 15:18

MW-12
24I0256-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 09/12/2024 13:10
Analyzed: 09/30/2024 21:16

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BMI0618 Sample Size: 25 mL
Prepared: 09/25/2024 Final Volume: 25 mL

Extract ID: 24I0256-09 J 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	9.55	mg/L	
Potassium	7440-09-7	1	0.500	0.930	mg/L	
Sodium	7440-23-5	1	0.500	5.19	mg/L	



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 13:10

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 19:38

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.23	mg/L	



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 13:10

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:34

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-09

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0954	mg/L	



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 13:10

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:34

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.095	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 13:10

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 15:57

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	3.47	mg/L	



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 13:10

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:43

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 13:10

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 18:51

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.58	mg/L	



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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 13:10

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 16:00

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	63.8	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	63.8	mg/L CaCO ₃	



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 13:10

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.62	pH Units	H



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Reported:
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MW-12
24I0256-09 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 13:10

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:56

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U



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Reported:
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MW-12
24I0256-09 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 13:10

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-09

Preparation Batch: BMI0288

Sample Size: 100 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U



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Reported:
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MW-12
24I0256-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 13:10

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:19

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-10 A 01

Preparation Batch: BMI0568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.717	ug/L	



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Reported:
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MW-12
24I0256-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 13:10

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:26

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-10 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

MW-12
24I0256-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8

Sampled: 09/12/2024 13:10

Instrument: ICPMS1 Analyst: DOE

Analyzed: 10/01/2024 12:11

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-10 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

MW-12
24I0256-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D

Sampled: 09/12/2024 13:10

Instrument: ICP3 Analyst: SH

Analyzed: 09/25/2024 17:45

Sample Preparation:

Preparation Method: WMN (No Prep)

Extract ID: 24I0256-10 A 03

Preparation Batch: BMI0600

Sample Size: 25 mL

Prepared: 09/24/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	ND	mg/L	U
Manganese, Dissolved	7439-96-5	1	0.0040	0.704	mg/L	



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MW-8
24I0256-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:50

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:54

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-11 E

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



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Reported:
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MW-8
24I0256-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:50

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



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MW-8
24I0256-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 13:50

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 18:54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	98.8	%	
Surrogate: Toluene-d8			80-120 %	95.0	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.9	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 13:50

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 17:23

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-11 F

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	99.5	%	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 09/12/2024 13:50
Instrument: ICP3 Analyst: SH	Analyzed: 09/30/2024 21:18
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BMI0618
	Prepared: 09/25/2024
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 24I0256-11 J 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	10.0	mg/L	
Potassium	7440-09-7	1	0.500	0.948	mg/L	
Sodium	7440-23-5	1	0.500	5.31	mg/L	



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 325.2

Sampled: 09/12/2024 13:50

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/12/2024 19:39

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 B

Preparation Batch: BMI0296

Sample Size: 10 mL

Prepared: 09/12/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.24	mg/L	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 13:50

Instrument: [CALC] Analyst: CB

Analyzed: 09/13/2024 17:35

Sample Preparation:

Preparation Method: [CALC]

Extract ID: 24I0256-11

Preparation Batch: [CALC]

Prepared: 09/13/2024

Final Volume: 1

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0947	mg/L	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 353.2

Sampled: 09/12/2024 13:50

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 17:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 B

Preparation Batch: BMI0324

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.095	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U



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Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 375.2

Sampled: 09/12/2024 13:50

Instrument: LACHAT2 Analyst: CB

Analyzed: 09/13/2024 15:58

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 B

Preparation Batch: BMI0311

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	3.50	mg/L	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 410.4

Sampled: 09/12/2024 13:50

Instrument: UV1800-1 Analyst: kott

Analyzed: 09/25/2024 10:44

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 C

Preparation Batch: BMI0592

Sample Size: 2 mL

Prepared: 09/24/2024

Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: EPA 9060A

Sampled: 09/12/2024 13:50

Instrument: TOC-LCSH Analyst: RMS

Analyzed: 09/27/2024 19:10

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 C

Preparation Batch: BMI0673

Sample Size: 20 mL

Prepared: 09/27/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.51	mg/L	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: SM 2320 B-11

Sampled: 09/12/2024 13:50

Instrument: Accumet AB150 Analyst: UW

Analyzed: 09/17/2024 16:00

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 A

Preparation Batch: BMI0410

Sample Size: 100 mL

Prepared: 09/17/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	62.6	mg/L CaCO ₃	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO ₃	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	62.6	mg/L CaCO ₃	



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Reported:
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MW-8
24I0256-11 (Water)

Wet Chemistry

Method: SM 4500-H+ B-11

Sampled: 09/12/2024 13:50

Instrument: Accumet AB150 Analyst: SRB

Analyzed: 09/12/2024 16:15

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 B

Preparation Batch: BMI0292

Sample Size: 50 mL

Prepared: 09/12/2024

Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.56	pH Units	H



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-11

Sampled: 09/12/2024 13:50

Instrument: LACHAT1 Analyst: CB

Analyzed: 09/24/2024 12:57

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11 C

Preparation Batch: BMI0576

Sample Size: 10 mL

Prepared: 09/23/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-11 (Water)

Microbiology

Method: SM 9222 B

Sampled: 09/12/2024 13:50

Instrument: N/A Analyst: LERB

Analyzed: 09/13/2024 15:07

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 24I0256-11

Preparation Batch: BMI0288

Sample Size: 100 mL

Prepared: 09/12/2024

Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 13:50

Instrument: ICPMS1 Analyst: HAL

Analyzed: 09/25/2024 01:27

Sample Preparation:

Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO₃ matrix 5x

Extract ID: 24I0256-12 A 01

Preparation Batch: BMI0568

Sample Size: 100 mL

Prepared: 09/23/2024

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.733	ug/L	



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 09/12/2024 13:50

Instrument: ICPMS1 Analyst: DOE

Analyzed: 09/28/2024 06:31

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-12 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	6.00	ND	ug/L	U



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Reported:
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MW-8
24I0256-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8

Sampled: 09/12/2024 13:50

Instrument: ICPMS1 Analyst: DOE

Analyzed: 10/01/2024 12:16

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 24I0256-12 A 02

Preparation Batch: BMI0578

Sample Size: 25 mL

Prepared: 09/23/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	10	200	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

MW-8
24I0256-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D

Sampled: 09/12/2024 13:50

Instrument: ICP3 Analyst: SH

Analyzed: 09/25/2024 17:03

Sample Preparation:

Preparation Method: WMN (No Prep)

Extract ID: 24I0256-12 A 03

Preparation Batch: BMI0600

Sample Size: 25 mL

Prepared: 09/24/2024

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	ND	mg/L	U
Manganese, Dissolved	7439-96-5	1	0.0040	0.731	mg/L	



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Reported:
03-Oct-2024 15:18

Trip Blanks
24I0256-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 13:39

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-13 A

Preparation Batch: BMI0307

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U



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Reported:
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Trip Blanks
24I0256-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 13:39

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U



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Reported:
03-Oct-2024 15:18

Trip Blanks
24I0256-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 09/12/2024 10:45

Instrument: NT3 Analyst: LN

Analyzed: 09/13/2024 13:39

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	95.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.1	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	100	%	



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Trip Blanks
24I0256-13 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 09/12/2024 10:45

Instrument: NT16 Analyst: MN

Analyzed: 09/13/2024 15:10

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 24I0256-13 B

Preparation Batch: BMI0320

Sample Size: 10 mL

Prepared: 09/13/2024

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	96.7	%	



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Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0307-BLK1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 11:18							
Chloromethane	ND	0.50	ug/L						U
Vinyl Chloride	ND	0.20	ug/L						U
Bromomethane	ND	1.00	ug/L						U
Chloroethane	ND	0.20	ug/L						U
Trichlorofluoromethane	ND	0.20	ug/L						U
Acrolein	ND	5.00	ug/L						U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L						U
Acetone	ND	5.00	ug/L						U
1,1-Dichloroethene	ND	0.20	ug/L						U
Iodomethane	ND	1.00	ug/L						U
Methylene Chloride	ND	1.00	ug/L						U
Acrylonitrile	ND	1.00	ug/L						U
Carbon Disulfide	ND	0.20	ug/L						U
trans-1,2-Dichloroethene	ND	0.20	ug/L						U
Vinyl Acetate	ND	0.20	ug/L						U
1,1-Dichloroethane	ND	0.20	ug/L						U
2-Butanone	ND	5.00	ug/L						U
2,2-Dichloropropane	ND	0.20	ug/L						U
cis-1,2-Dichloroethene	ND	0.20	ug/L						U
Chloroform	ND	0.20	ug/L						U
Bromochloromethane	ND	0.20	ug/L						U
1,1,1-Trichloroethane	ND	0.20	ug/L						U
1,1-Dichloropropene	ND	0.20	ug/L						U
Carbon tetrachloride	ND	0.20	ug/L						U
1,2-Dichloroethane	ND	0.20	ug/L						U
Benzene	ND	0.20	ug/L						U
Trichloroethene	ND	0.20	ug/L						U
1,2-Dichloropropane	ND	0.20	ug/L						U
Bromodichloromethane	ND	0.20	ug/L						U
Dibromomethane	ND	0.20	ug/L						U
2-Chloroethyl vinyl ether	ND	1.00	ug/L						U
4-Methyl-2-Pentanone	ND	5.00	ug/L						U
cis-1,3-Dichloropropene	ND	0.20	ug/L						U
Toluene	ND	0.20	ug/L						U
trans-1,3-Dichloropropene	ND	0.20	ug/L						U



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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0307-BLK1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 11:18							
2-Hexanone	ND	5.00	ug/L						U
1,1,2-Trichloroethane	ND	0.20	ug/L						U
1,3-Dichloropropane	ND	0.20	ug/L						U
Tetrachloroethene	ND	0.20	ug/L						U
Dibromochloromethane	ND	0.20	ug/L						U
1,2-Dibromoethane	ND	0.20	ug/L						U
Chlorobenzene	ND	0.20	ug/L						U
Ethylbenzene	ND	0.20	ug/L						U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L						U
m,p-Xylene	ND	0.40	ug/L						U
o-Xylene	ND	0.20	ug/L						U
Xylenes, total	ND	0.60	ug/L						U
Styrene	ND	0.20	ug/L						U
Bromoform	ND	0.20	ug/L						U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L						U
1,2,3-Trichloropropane	ND	0.50	ug/L						U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L						U
n-Propylbenzene	ND	0.20	ug/L						U
Bromobenzene	ND	0.20	ug/L						U
Isopropyl Benzene	ND	0.20	ug/L						U
2-Chlorotoluene	ND	0.20	ug/L						U
4-Chlorotoluene	ND	0.20	ug/L						U
t-Butylbenzene	ND	0.20	ug/L						U
1,3,5-Trimethylbenzene	ND	0.20	ug/L						U
1,2,4-Trimethylbenzene	ND	0.20	ug/L						U
s-Butylbenzene	ND	0.20	ug/L						U
4-Isopropyl Toluene	ND	0.20	ug/L						U
1,3-Dichlorobenzene	ND	0.20	ug/L						U
1,4-Dichlorobenzene	ND	0.20	ug/L						U
n-Butylbenzene	ND	0.20	ug/L						U
1,2-Dichlorobenzene	ND	0.20	ug/L						U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L						U
1,2,4-Trichlorobenzene	ND	0.50	ug/L						U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L						U
Naphthalene	ND	0.50	ug/L						U



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0307-BLK1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 11:18								
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.67		ug/L	5.00		93.3	80-129			
Surrogate: Toluene-d8	4.90		ug/L	5.00		98.1	80-120			
Surrogate: 4-Bromofluorobenzene	4.91		ug/L	5.00		98.2	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.00		ug/L	5.00		100	80-120			



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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BMI0307-BS1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 09:50								
Chloromethane	8.84	0.50	ug/L	10.0		88.4	60-138			
Vinyl Chloride	9.07	0.20	ug/L	10.0		90.7	66-133			
Bromomethane	9.60	1.00	ug/L	10.0		96.0	72-131			
Chloroethane	9.47	0.20	ug/L	10.0		94.7	60-155			
Trichlorofluoromethane	10.5	0.20	ug/L	10.0		105	62-141			
Acrolein	45.1	5.00	ug/L	50.0		90.3	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.96	0.20	ug/L	10.0		99.6	76-129			
Acetone	42.1	5.00	ug/L	50.0		84.2	58-142			
1,1-Dichloroethene	9.07	0.20	ug/L	10.0		90.7	69-135			
Iodomethane	9.09	1.00	ug/L	10.0		90.9	56-147			
Methylene Chloride	8.09	1.00	ug/L	10.0		80.9	65-135			
Acrylonitrile	8.94	1.00	ug/L	10.0		89.4	64-134			
Carbon Disulfide	10.3	0.20	ug/L	10.0		103	78-125			
trans-1,2-Dichloroethene	9.08	0.20	ug/L	10.0		90.8	78-128			
Vinyl Acetate	9.02	0.20	ug/L	10.0		90.2	55-138			
1,1-Dichloroethane	9.43	0.20	ug/L	10.0		94.3	76-124			
2-Butanone	43.7	5.00	ug/L	50.0		87.5	61-140			
2,2-Dichloropropane	10.2	0.20	ug/L	10.0		102	66-147			
cis-1,2-Dichloroethene	9.22	0.20	ug/L	10.0		92.2	80-121			
Chloroform	9.43	0.20	ug/L	10.0		94.3	80-122			
Bromochloromethane	9.04	0.20	ug/L	10.0		90.4	80-121			
1,1,1-Trichloroethane	9.49	0.20	ug/L	10.0		94.9	79-123			
1,1-Dichloropropene	9.28	0.20	ug/L	10.0		92.8	80-127			
Carbon tetrachloride	9.32	0.20	ug/L	10.0		93.2	53-137			
1,2-Dichloroethane	8.80	0.20	ug/L	10.0		88.0	75-123			
Benzene	9.64	0.20	ug/L	10.0		96.4	80-120			
Trichloroethene	9.42	0.20	ug/L	10.0		94.2	80-120			
1,2-Dichloropropane	9.29	0.20	ug/L	10.0		92.9	80-120			
Bromodichloromethane	9.36	0.20	ug/L	10.0		93.6	80-121			
Dibromomethane	8.99	0.20	ug/L	10.0		89.9	80-120			
2-Chloroethyl vinyl ether	9.14	1.00	ug/L	10.0		91.4	64-120			
4-Methyl-2-Pentanone	44.5	5.00	ug/L	50.0		89.0	67-133			
cis-1,3-Dichloropropene	9.42	0.20	ug/L	10.0		94.2	80-124			
Toluene	11.0	0.20	ug/L	10.0		110	80-120			
trans-1,3-Dichloropropene	9.37	0.20	ug/L	10.0		93.7	71-127			



TRC Companies, Inc
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Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BMI0307-BS1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 09:50								
2-Hexanone	43.0	5.00	ug/L	50.0		86.0	69-133			
1,1,2-Trichloroethane	9.15	0.20	ug/L	10.0		91.5	80-121			
1,3-Dichloropropane	9.19	0.20	ug/L	10.0		91.9	80-120			
Tetrachloroethene	9.34	0.20	ug/L	10.0		93.4	80-120			
Dibromochloromethane	9.56	0.20	ug/L	10.0		95.6	65-135			
1,2-Dibromoethane	9.02	0.20	ug/L	10.0		90.2	80-121			
Chlorobenzene	9.08	0.20	ug/L	10.0		90.8	80-120			
Ethylbenzene	9.21	0.20	ug/L	10.0		92.1	80-120			
1,1,1,2-Tetrachloroethane	9.16	0.20	ug/L	10.0		91.6	80-120			
m,p-Xylene	18.2	0.40	ug/L	20.0		91.0	80-121			
o-Xylene	9.21	0.20	ug/L	10.0		92.1	80-121			
Xylenes, total	27.4	0.60	ug/L	30.0		91.3	76-127			
Styrene	9.87	0.20	ug/L	10.0		98.7	80-124			
Bromoform	9.30	0.20	ug/L	10.0		93.0	51-134			
1,1,2,2-Tetrachloroethane	8.74	0.20	ug/L	10.0		87.4	77-123			
1,2,3-Trichloropropane	8.32	0.50	ug/L	10.0		83.2	76-125			
trans-1,4-Dichloro 2-Butene	8.23	1.00	ug/L	10.0		82.3	55-129			
n-Propylbenzene	9.67	0.20	ug/L	10.0		96.7	78-130			
Bromobenzene	9.11	0.20	ug/L	10.0		91.1	80-120			
Isopropyl Benzene	9.44	0.20	ug/L	10.0		94.4	80-128			
2-Chlorotoluene	9.27	0.20	ug/L	10.0		92.7	78-122			
4-Chlorotoluene	9.48	0.20	ug/L	10.0		94.8	80-121			
t-Butylbenzene	9.60	0.20	ug/L	10.0		96.0	78-125			
1,3,5-Trimethylbenzene	9.66	0.20	ug/L	10.0		96.6	80-129			
1,2,4-Trimethylbenzene	9.42	0.20	ug/L	10.0		94.2	80-127			
s-Butylbenzene	9.61	0.20	ug/L	10.0		96.1	78-129			
4-Isopropyl Toluene	9.70	0.20	ug/L	10.0		97.0	79-130			
1,3-Dichlorobenzene	9.36	0.20	ug/L	10.0		93.6	80-120			
1,4-Dichlorobenzene	9.26	0.20	ug/L	10.0		92.6	80-120			
n-Butylbenzene	9.96	0.20	ug/L	10.0		99.6	74-129			
1,2-Dichlorobenzene	9.00	0.20	ug/L	10.0		90.0	80-120			
1,2-Dibromo-3-chloropropane	8.38	0.50	ug/L	10.0		83.8	62-123			
1,2,4-Trichlorobenzene	9.70	0.50	ug/L	10.0		97.0	64-124			
Hexachloro-1,3-Butadiene	9.58	0.50	ug/L	10.0		95.8	65-145			
Naphthalene	9.04	0.50	ug/L	10.0		90.4	50-134			



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
LCS (BMI0307-BS1)									
Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 09:50									
1,2,3-Trichlorobenzene	9.30	0.50	ug/L	10.0		93.0	49-133		
Dichlorodifluoromethane	9.34	0.20	ug/L	10.0		93.4	48-147		
Methyl tert-butyl Ether	8.79	0.50	ug/L	10.0		87.9	71-132		
2-Pentanone	43.2	5.00	ug/L	50.0		86.3	69-134		
Surrogate: 1,2-Dichloroethane-d4	4.69		ug/L	5.00		93.8	80-129		
Surrogate: Toluene-d8	5.06		ug/L	5.00		101	80-120		
Surrogate: 4-Bromofluorobenzene	4.91		ug/L	5.00		98.1	80-120		
Surrogate: 1,2-Dichlorobenzene-d4	4.92		ug/L	5.00		98.4	80-120		



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Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BMI0307-BSD1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 10:35								
Chloromethane	10.4	0.50	ug/L	10.0		104	60-138	15.70	30	
Vinyl Chloride	10.2	0.20	ug/L	10.0		102	66-133	11.50	30	
Bromomethane	10.8	1.00	ug/L	10.0		108	72-131	12.10	30	
Chloroethane	10.9	0.20	ug/L	10.0		109	60-155	13.90	30	
Trichlorofluoromethane	12.5	0.20	ug/L	10.0		125	62-141	17.60	30	
Acrolein	51.1	5.00	ug/L	50.0		102	52-190	12.40	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.2	0.20	ug/L	10.0		112	76-129	12.20	30	
Acetone	50.8	5.00	ug/L	50.0		102	58-142	18.80	30	
1,1-Dichloroethene	10.6	0.20	ug/L	10.0		106	69-135	15.70	30	
Iodomethane	10.8	1.00	ug/L	10.0		108	56-147	17.10	30	
Methylene Chloride	9.38	1.00	ug/L	10.0		93.8	65-135	14.80	30	
Acrylonitrile	9.91	1.00	ug/L	10.0		99.1	64-134	10.20	30	
Carbon Disulfide	12.1	0.20	ug/L	10.0		121	78-125	16.10	30	
trans-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	78-128	16.40	30	
Vinyl Acetate	10.5	0.20	ug/L	10.0		105	55-138	15.20	30	
1,1-Dichloroethane	11.0	0.20	ug/L	10.0		110	76-124	15.60	30	
2-Butanone	52.1	5.00	ug/L	50.0		104	61-140	17.50	30	
2,2-Dichloropropane	11.6	0.20	ug/L	10.0		116	66-147	12.60	30	
cis-1,2-Dichloroethene	11.1	0.20	ug/L	10.0		111	80-121	18.60	30	
Chloroform	10.7	0.20	ug/L	10.0		107	80-122	13.10	30	
Bromochloromethane	10.3	0.20	ug/L	10.0		103	80-121	13.10	30	
1,1,1-Trichloroethane	11.1	0.20	ug/L	10.0		111	79-123	15.50	30	
1,1-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-127	15.70	30	
Carbon tetrachloride	11.0	0.20	ug/L	10.0		110	53-137	16.40	30	
1,2-Dichloroethane	10.3	0.20	ug/L	10.0		103	75-123	16.10	30	
Benzene	11.2	0.20	ug/L	10.0		112	80-120	14.80	30	
Trichloroethene	10.9	0.20	ug/L	10.0		109	80-120	14.40	30	
1,2-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120	15.10	30	
Bromodichloromethane	10.7	0.20	ug/L	10.0		107	80-121	13.00	30	
Dibromomethane	10.2	0.20	ug/L	10.0		102	80-120	12.50	30	
2-Chloroethyl vinyl ether	11.0	1.00	ug/L	10.0		110	64-120	18.60	30	
4-Methyl-2-Pentanone	51.9	5.00	ug/L	50.0		104	67-133	15.40	30	
cis-1,3-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-124	14.60	30	
Toluene	13.0	0.20	ug/L	10.0		130	80-120	16.40	30	*
trans-1,3-Dichloropropene	10.9	0.20	ug/L	10.0		109	71-127	14.90	30	



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BMI0307-BSD1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 10:35								
2-Hexanone	51.7	5.00	ug/L	50.0		103	69-133	18.50	30	
1,1,2-Trichloroethane	10.7	0.20	ug/L	10.0		107	80-121	15.30	30	
1,3-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120	13.30	30	
Tetrachloroethene	10.9	0.20	ug/L	10.0		109	80-120	15.90	30	
Dibromochloromethane	10.5	0.20	ug/L	10.0		105	65-135	9.46	30	
1,2-Dibromoethane	10.6	0.20	ug/L	10.0		106	80-121	16.20	30	
Chlorobenzene	10.7	0.20	ug/L	10.0		107	80-120	16.10	30	
Ethylbenzene	10.5	0.20	ug/L	10.0		105	80-120	13.40	30	
1,1,1,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	80-120	14.00	30	
m,p-Xylene	20.9	0.40	ug/L	20.0		105	80-121	14.00	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	13.20	30	
Xylenes, total	31.4	0.60	ug/L	30.0		105	76-127	13.70	30	
Styrene	11.2	0.20	ug/L	10.0		112	80-124	12.40	30	
Bromoform	11.1	0.20	ug/L	10.0		111	51-134	17.60	30	
1,1,2,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	77-123	17.90	30	
1,2,3-Trichloropropane	9.61	0.50	ug/L	10.0		96.1	76-125	14.40	30	
trans-1,4-Dichloro 2-Butene	9.41	1.00	ug/L	10.0		94.1	55-129	13.50	30	
n-Propylbenzene	11.1	0.20	ug/L	10.0		111	78-130	13.80	30	
Bromobenzene	10.7	0.20	ug/L	10.0		107	80-120	15.80	30	
Isopropyl Benzene	11.1	0.20	ug/L	10.0		111	80-128	16.20	30	
2-Chlorotoluene	10.9	0.20	ug/L	10.0		109	78-122	15.80	30	
4-Chlorotoluene	10.8	0.20	ug/L	10.0		108	80-121	12.70	30	
t-Butylbenzene	11.0	0.20	ug/L	10.0		110	78-125	13.20	30	
1,3,5-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-129	14.30	30	
1,2,4-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-127	14.50	30	
s-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-129	15.40	30	
4-Isopropyl Toluene	11.2	0.20	ug/L	10.0		112	79-130	14.00	30	
1,3-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	12.70	30	
1,4-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	13.90	30	
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129	12.10	30	
1,2-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120	15.60	30	
1,2-Dibromo-3-chloropropane	9.93	0.50	ug/L	10.0		99.3	62-123	16.90	30	
1,2,4-Trichlorobenzene	11.2	0.50	ug/L	10.0		112	64-124	14.40	30	
Hexachloro-1,3-Butadiene	11.1	0.50	ug/L	10.0		111	65-145	14.40	30	
Naphthalene	10.9	0.50	ug/L	10.0		109	50-134	18.20	30	



TRC Companies, Inc
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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0307 - EPA 8260D

Instrument: NT3 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BMI0307-BSD1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 10:35								
1,2,3-Trichlorobenzene	10.9	0.50	ug/L	10.0		109	49-133	15.70	30	
Dichlorodifluoromethane	10.3	0.20	ug/L	10.0		103	48-147	9.91	30	
Methyl tert-butyl Ether	10.3	0.50	ug/L	10.0		103	71-132	15.30	30	
2-Pentanone	51.2	5.00	ug/L	50.0		102	69-134	17.10	30	
Surrogate: 1,2-Dichloroethane-d4	4.72		ug/L	5.00		94.3	80-129			
Surrogate: Toluene-d8	5.03		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	5.00		101	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.89		ug/L	5.00		97.7	80-120			



TRC Companies, Inc
1180 NW Maple Street, Suite 310
Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BMI0320 - EPA 8260D-SIM

Instrument: NT16 Analyst: MN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0320-BLK1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 14:24							
Vinyl chloride	ND	20.0	ng/L						U
Surrogate: 1,2-Dichloroethane-d4	4920		ng/L	5000		98.5	80-129		



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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BMI0320 - EPA 8260D-SIM

Instrument: NT16 Analyst: MN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
LCS (BMI0320-BS1)									
Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 13:40									
Vinyl chloride	2210	20.0	ng/L	2000	111	62-141			
Surrogate: 1,2-Dichloroethane-d4	5030		ng/L	5000	101	80-129			



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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BMI0320 - EPA 8260D-SIM

Instrument: NT16 Analyst: MN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BMI0320-BSD1)		Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 14:02								
Vinyl chloride	2410	20.0	ng/L	2000		121	62-141	8.70	30	
Surrogate: 1,2-Dichloroethane-d4	5040		ng/L	5000		101	80-129			



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BMI0618 - EPA 6010D

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0618-BLK1)		Prepared: 25-Sep-2024 Analyzed: 30-Sep-2024 20:23								
Calcium	ND	0.0500	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
LCS (BMI0618-BS1)		Prepared: 25-Sep-2024 Analyzed: 30-Sep-2024 20:28								
Calcium	10.0	0.0500	mg/L	10.0		100	80-120			
Potassium	9.95	0.500	mg/L	10.0		99.5	80-120			
Sodium	9.41	0.500	mg/L	10.0		94.1	80-120			
Duplicate (BMI0618-DUP1)		Source: 24I0256-01		Prepared: 25-Sep-2024 Analyzed: 30-Sep-2024 20:42						
Calcium	13.1	0.0500	mg/L		12.7			3.10	20	
Potassium	0.621	0.500	mg/L		0.692			10.90	20	
Sodium	4.74	0.500	mg/L		4.57			3.79	20	
Matrix Spike (BMI0618-MS1)		Source: 24I0256-01		Prepared: 25-Sep-2024 Analyzed: 30-Sep-2024 20:45						
Calcium	22.2	0.0500	mg/L	10.0	12.7	95.5	75-125			
Potassium	10.2	0.500	mg/L	10.0	0.692	94.9	75-125			
Sodium	13.6	0.500	mg/L	10.0	4.57	90.0	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BMI0618-MSD1)		Source: 24I0256-01		Prepared: 25-Sep-2024 Analyzed: 30-Sep-2024 20:48						
Calcium	22.6	0.0500	mg/L	10.0	12.7	98.6	75-125	1.40	20	
Potassium	10.4	0.500	mg/L	10.0	0.692	96.7	75-125	1.78	20	
Sodium	13.8	0.500	mg/L	10.0	4.57	92.2	75-125	1.59	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BMI0568 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0568-BLK1)			Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 18:05							
Arsenic, Dissolved	75a	ND	0.0400	ug/L						U
LCS (BMI0568-BS1)			Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 18:09							
Arsenic, Dissolved	75a	5.17	0.0400	ug/L	5.00		103 80-120			
LCS Dup (BMI0568-BSD1)			Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 18:13							
Arsenic, Dissolved	75a	5.03	0.0400	ug/L	5.00		101 80-120	2.67	20	
Duplicate (BMI0568-DUP1)			Source: 24I0256-02		Prepared: 23-Sep-2024 Analyzed: 25-Sep-2024 01:35					
Arsenic, Dissolved	75a	0.127	0.0400	ug/L		0.138		8.76	20	
Matrix Spike (BMI0568-MS1)			Source: 24I0256-02		Prepared: 23-Sep-2024 Analyzed: 25-Sep-2024 01:38					
Arsenic, Dissolved	75a	4.78	0.0400	ug/L	5.00	0.138	92.9 75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BMI0578 - EPA 200.8

Instrument: ICPMS1 Analyst: DOE

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0578-BLK1)			Prepared: 23-Sep-2024 Analyzed: 27-Sep-2024 18:37								
Iron, Dissolved	54	ND	36.0	ug/L							U
Zinc, Dissolved	66	ND	6.00	ug/L							U
LCS (BMI0578-BS1)			Prepared: 23-Sep-2024 Analyzed: 27-Sep-2024 18:42								
Iron, Dissolved	54	5590	36.0	ug/L	5000		112	80-120			
Zinc, Dissolved	66	84.7	6.00	ug/L	80.0		106	80-120			
Duplicate (BMI0578-DUP1)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 28-Sep-2024 06:40						
Zinc, Dissolved	66	ND	6.00	ug/L		ND			20		U
Duplicate (BMI0578-DUP2)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 01-Oct-2024 12:25						
Iron, Dissolved	54	ND	360	ug/L		ND			20		U
Matrix Spike (BMI0578-MS1)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 28-Sep-2024 06:45						
Zinc, Dissolved	66	82.6	6.00	ug/L	80.0	ND	103	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BMI0578-MS2)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 01-Oct-2024 12:30						
Iron, Dissolved	54	4980	360	ug/L	5000	ND	99.6	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0578-MSD1)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 28-Sep-2024 06:50						
Zinc, Dissolved	66	79.0	6.00	ug/L	80.0	ND	98.7	75-125	4.51	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0578-MSD2)			Source: 24I0256-04		Prepared: 23-Sep-2024 Analyzed: 01-Oct-2024 12:35						
Iron, Dissolved	54	4820	360	ug/L	5000	ND	96.4	75-125	3.27	20	D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BMI0600 - EPA 6010D

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0600-BLK1)		Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 16:46								
Barium, Dissolved	ND	0.0060	mg/L							U
Manganese, Dissolved	ND	0.0040	mg/L							U
LCS (BMI0600-BS1)		Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 16:48								
Barium, Dissolved	1.89	0.0061	mg/L	2.00		94.5	80-120			
Manganese, Dissolved	0.471	0.0040	mg/L	0.500		94.2	80-120			
Duplicate (BMI0600-DUP1)		Source: 24I0256-12		Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 17:06						
Barium, Dissolved	ND	0.0060	mg/L		ND				20	U
Manganese, Dissolved	0.718	0.0040	mg/L		0.731			1.86	20	
Matrix Spike (BMI0600-MS1)		Source: 24I0256-12		Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 17:09						
Barium, Dissolved	1.91	0.0061	mg/L	2.00	ND	95.5	75-125			
Manganese, Dissolved	1.18	0.0040	mg/L	0.500	0.731	89.1	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BMI0600-MSD1)		Source: 24I0256-12		Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 17:12						
Barium, Dissolved	1.93	0.0061	mg/L	2.00	ND	96.6	75-125	1.13	20	
Manganese, Dissolved	1.19	0.0040	mg/L	0.500	0.731	91.4	75-125	0.98	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0292 - SM 4500-H+ B-11

Instrument: Accumet AB150 Analyst: SRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
LCS (BMI0292-BS1)					Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 16:15					
pH	7.02	0.01	0.01	pH Units	7.00	100	99.2-100.8			
Duplicate (BMI0292-DUP1)					Source: 24I0256-01 Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 16:15					
pH	6.14	0.01	0.01	pH Units	6.11			0.49	20	



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0296 - EPA 325.2

Instrument: LCHAT1 Analyst: CB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0296-BLK1)						Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 18:48					
Chloride	ND	1.00	1.00	mg/L							U
LCS (BMI0296-BS1)						Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 18:49					
Chloride	5.03	1.00	1.00	mg/L	5.00		101	90-110			
Duplicate (BMI0296-DUP1)						Source: 24I0256-01 Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 18:59					
Chloride	8.06	1.00	1.00	mg/L		8.10			0.50	20	
Matrix Spike (BMI0296-MS2)						Source: 24I0256-01 Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 19:18					
Chloride	34.6	1.00	5.00	mg/L	25.0	8.10	106	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0296-MSD2)						Source: 24I0256-01 Prepared: 12-Sep-2024 Analyzed: 12-Sep-2024 19:19					
Chloride	33.8	1.00	5.00	mg/L	25.0	8.10	103	75-125	2.34	20	D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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Reported:
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Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0311 - EPA 375.2

Instrument: LACHAT2 Analyst: CB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0311-BLK1)					Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 15:05						
Sulfate	ND	2.00	2.00	mg/L							U
LCS (BMI0311-BS1)					Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 15:06						
Sulfate	13.6	2.00	2.00	mg/L	15.0		90.7	90-110			
Duplicate (BMI0311-DUP1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 15:19						
Sulfate	4.07	2.00	2.00	mg/L		4.09			0.49	20	
Matrix Spike (BMI0311-MS1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 15:21						
Sulfate	17.0	2.00	2.00	mg/L	15.0	4.09	86.1	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0311-MSD1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 15:22						
Sulfate	18.5	2.00	2.00	mg/L	15.0	4.09	96.1	75-125	8.45	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0324 - EPA 353.2

Instrument: LACHAT2 Analyst: CB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0324-BLK1)					Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:11						
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BMI0324-BS1)					Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:12						
Nitrate + Nitrite as N	0.518	0.010	0.010	mg/L	0.500		104	90-110			
LCS (BMI0324-BS2)					Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:13						
Nitrate + Nitrite as N	0.521	0.010	0.010	mg/L	0.500		104	90-110			
Nitrite-N	0.496	0.010	0.010	mg/L	0.500		99.2	90-110			
Duplicate (BMI0324-DUP1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:16						
Nitrate + Nitrite as N	0.082	0.010	0.010	mg/L		0.080			1.86	20	
Nitrite-N	ND	0.010	0.010	mg/L		ND				20	U
Matrix Spike (BMI0324-MS1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:17						
Nitrate + Nitrite as N	0.589	0.010	0.010	mg/L	0.494	0.080	103	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BMI0324-MS2)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:18						
Nitrite-N	0.507	0.010	0.010	mg/L	0.500	ND	101	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0324-MSD1)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:19						
Nitrate + Nitrite as N	0.591	0.010	0.010	mg/L	0.494	0.080	103	75-125	0.34	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0324-MSD2)					Source: 24I0256-01 Prepared: 13-Sep-2024 Analyzed: 13-Sep-2024 17:29						
Nitrite-N	0.507	0.010	0.010	mg/L	0.500	ND	101	75-125	0.00	200	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0410 - SM 2320 B-11

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0410-BLK1) Prepared: 17-Sep-2024 Analyzed: 17-Sep-2024 16:00										
Alkalinity, Bicarbonate	ND	1.00	1.00	mg/L CaCO ₃						U
Alkalinity, Carbonate	ND	1.00	1.00	mg/L CaCO ₃						U
Alkalinity, Hydroxide	ND	1.00	1.00	mg/L CaCO ₃						U
Alkalinity, Total	ND	1.00	1.00	mg/L CaCO ₃						U
Reference (BMI0410-SRM1) Prepared: 17-Sep-2024 Analyzed: 17-Sep-2024 15:45										
Alkalinity, Total	154	1.00	1.00	mg/L CaCO ₃	153		101 84.97-115.03			



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Reported:
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Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0576 - SM 4500-NH3 H-11

Instrument: LCHAT1 Analyst: CB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0576-BLK1)					Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 12:38						
Ammonia-N	ND	0.040	0.040	mg/L							U
LCS (BMI0576-BS1)					Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 12:39						
Ammonia-N	0.456	0.040	0.040	mg/L	0.500		91.2	90-110			
Duplicate (BMI0576-DUP1)					Source: 24I0256-01 Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 12:42						
Ammonia-N	ND	0.040	0.040	mg/L		ND			20		U
Matrix Spike (BMI0576-MS1)					Source: 24I0256-01 Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 12:43						
Ammonia-N	0.505	0.040	0.040	mg/L	0.501	ND	101	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0576-MSD1)					Source: 24I0256-01 Prepared: 23-Sep-2024 Analyzed: 24-Sep-2024 12:44						
Ammonia-N	0.507	0.040	0.040	mg/L	0.501	ND	101	75-125	0.40	200	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0592 - EPA 410.4

Instrument: UV1800-1 Analyst: kott

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0592-BLK1)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 09:54						
COD	ND	10.0	10.0	mg/L							U
DL (BMI0592-BLK2)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:22						
COD	ND	10.0	10.0	mg/L							U
DL (BMI0592-BLK3)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:46						
COD	ND	10.0	10.0	mg/L							U
LCS (BMI0592-BS1)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 09:57						
COD	98.2	10.0	10.0	mg/L	100		98.2	90-110			
DL (BMI0592-BS2)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:23						
COD	97.8	10.0	10.0	mg/L	100		97.8	90-110			
DL (BMI0592-BS3)					Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:47						
COD	99.2	10.0	10.0	mg/L	100		99.2	90-110			
Duplicate (BMI0592-DUP2)					Source: 24I0256-01 Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:29						
COD	ND	10.0	10.0	mg/L		ND			10		U
Matrix Spike (BMI0592-MS1)					Source: 24I0256-01 Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:33						
COD	97.6	10.0	20.0	mg/L	100	ND	97.5	90-110			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0592-MSD1)					Source: 24I0256-01 Prepared: 24-Sep-2024 Analyzed: 25-Sep-2024 10:36						
COD	99.7	10.0	20.0	mg/L	100	ND	99.5	90-110	2.04	10	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0673 - EPA 9060A

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMI0673-BLK2)					Prepared: 27-Sep-2024 Analyzed: 01-Oct-2024 04:42						
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BMI0673-BS1)					Prepared: 27-Sep-2024 Analyzed: 27-Sep-2024 12:08						
Total Organic Carbon	21.35	0.50	0.50	mg/L	20.00		107	90-110			
Duplicate (BMI0673-DUP1)					Source: 24I0256-01 Prepared: 27-Sep-2024 Analyzed: 27-Sep-2024 16:17						
Total Organic Carbon	4.84	0.50	0.50	mg/L		4.62			4.76	20	
Matrix Spike (BMI0673-MS1)					Source: 24I0256-01 Prepared: 27-Sep-2024 Analyzed: 27-Sep-2024 16:36						
Total Organic Carbon	25.16	0.50	0.50	mg/L	20.00	4.62	103	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BMI0673-MSD1)					Source: 24I0256-01 Prepared: 27-Sep-2024 Analyzed: 27-Sep-2024 16:55						
Total Organic Carbon	25.16	0.50	0.50	mg/L	20.00	4.62	103	75-125	0.00	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



TRC Companies, Inc
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Issaquah WA, 98027

Project: Olalla Landfill
Project Number: 581482
Project Manager: Eric Caddy

Reported:
03-Oct-2024 15:18

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Blank (BMI0288-BLK1)

Prepared: 12-Sep-2024 Analyzed: 13-Sep-2024 15:07

Total Coliforms	ND	1	1	CFU/100 ml						U
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Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Iron-54	NELAP,WADOE,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 353.2 in Water	
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrite-N	WADOE,NELAP,DoD-ELAP
EPA 375.2 in Water	
Sulfate	WADOE,NELAP
EPA 410.4 in Water	
COD	DoD-ELAP,NELAP,WADOE
EPA 6010D in Water	
Calcium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Barium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroeth	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE



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Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE



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m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Pentanone	WADOE

EPA 8260D-SIM in Water

Vinyl chloride	NELAP,WADOE
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EPA 9060A in Water

Total Organic Carbon	DoD-ELAP,WADOE,NELAP
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SM 2320 B-11 in Water

Alkalinity, Bicarbonate	NELAP,WADOE,WA-DW,DoD-ELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW,NELAP

SM 4500-H+ B-11 in Water

pH	WADOE,NELAP,WA-DW
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SM 4500-NH3 H-11 in Water

Ammonia-N	WADOE,DoD-ELAP,NELAP
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SM 9222 B in Water

Total Coliforms	WADOE
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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



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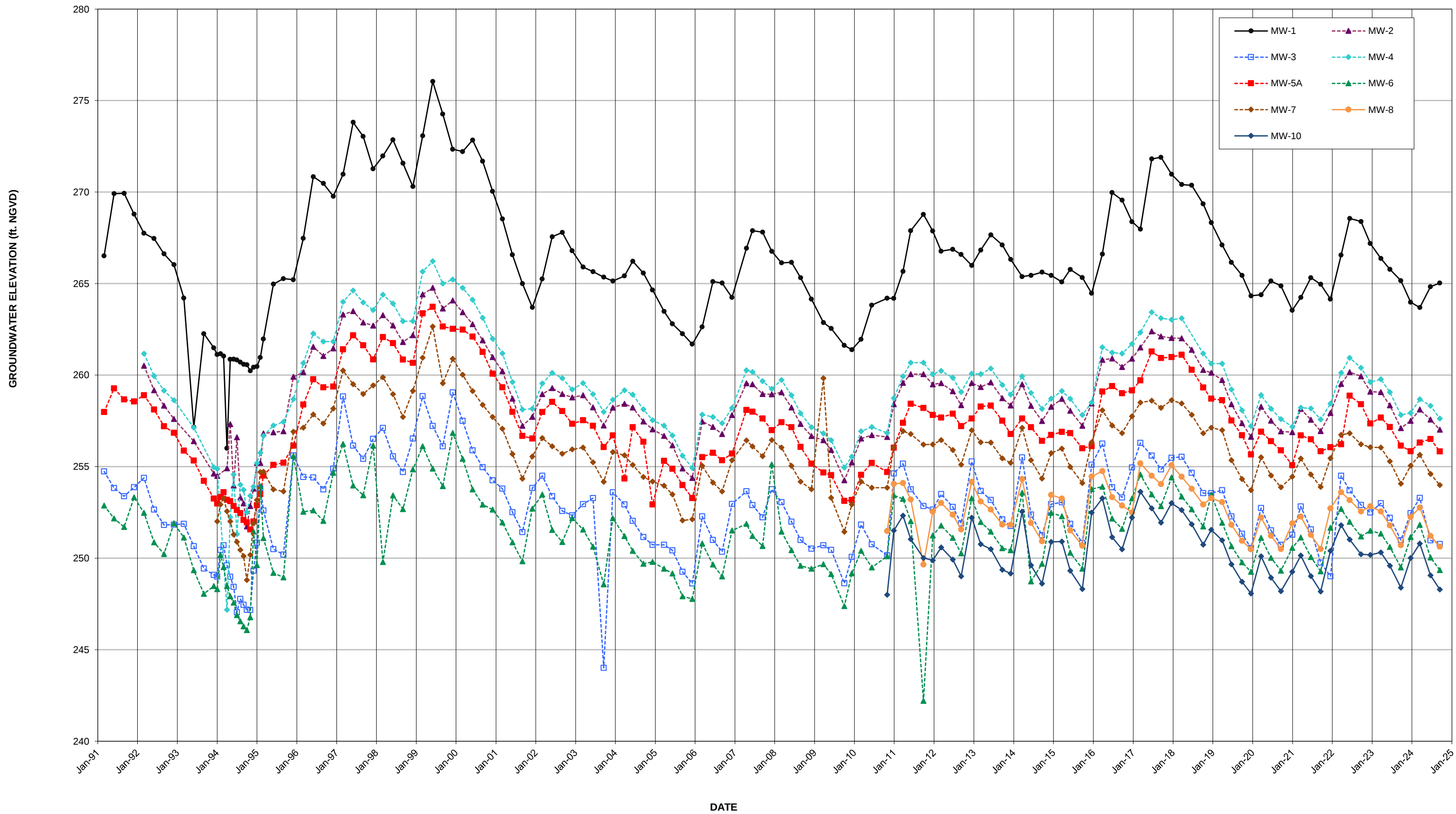
Reported:
03-Oct-2024 15:18

Notes and Definitions

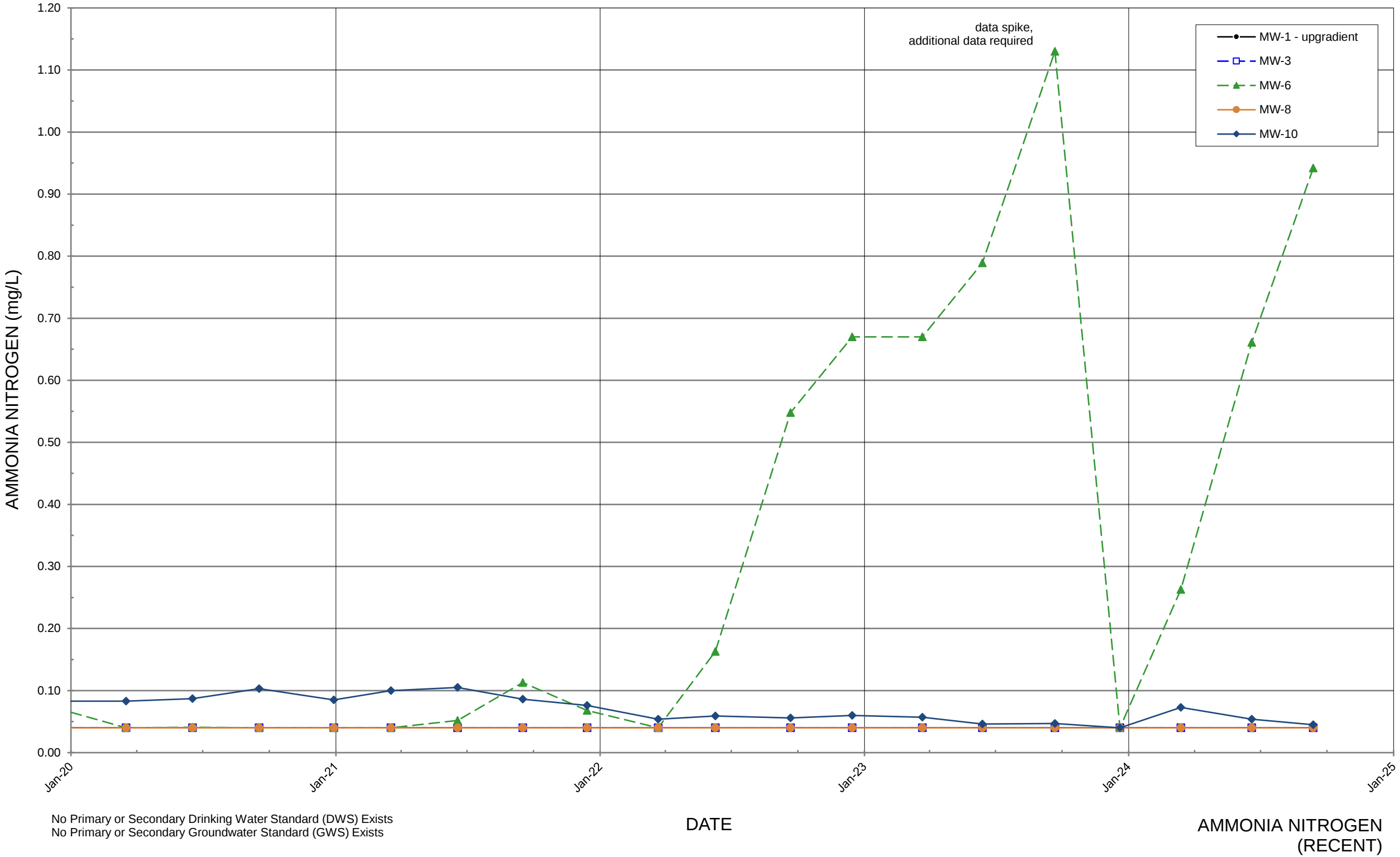
*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
H	Hold time violation - Hold time was exceeded.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
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.

Appendix D
Time-Series Graphs through September 2024

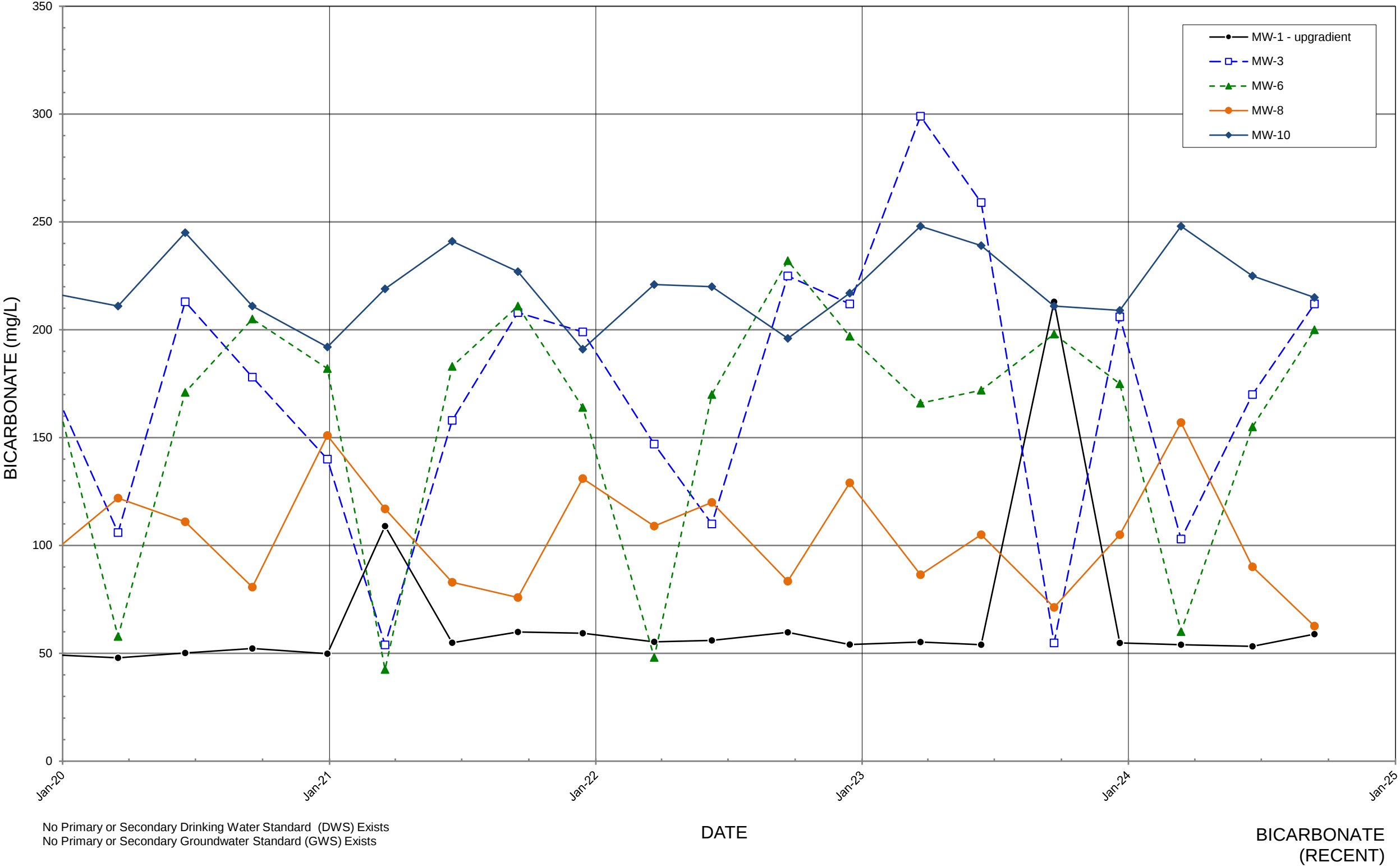
OLALLA LANDFILL
Groundwater Elevations



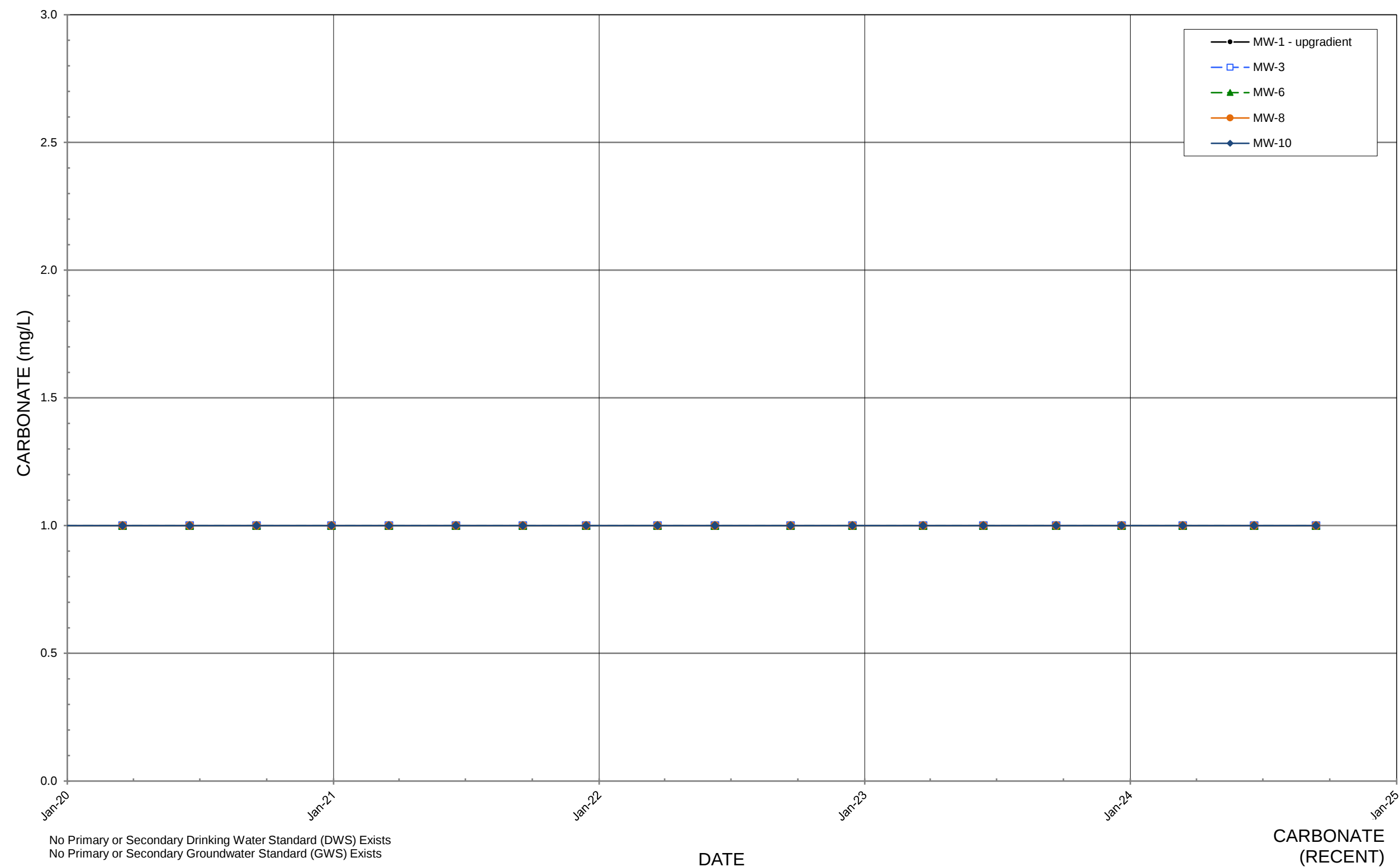
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Quarterly Monitoring Data (most recent five years)



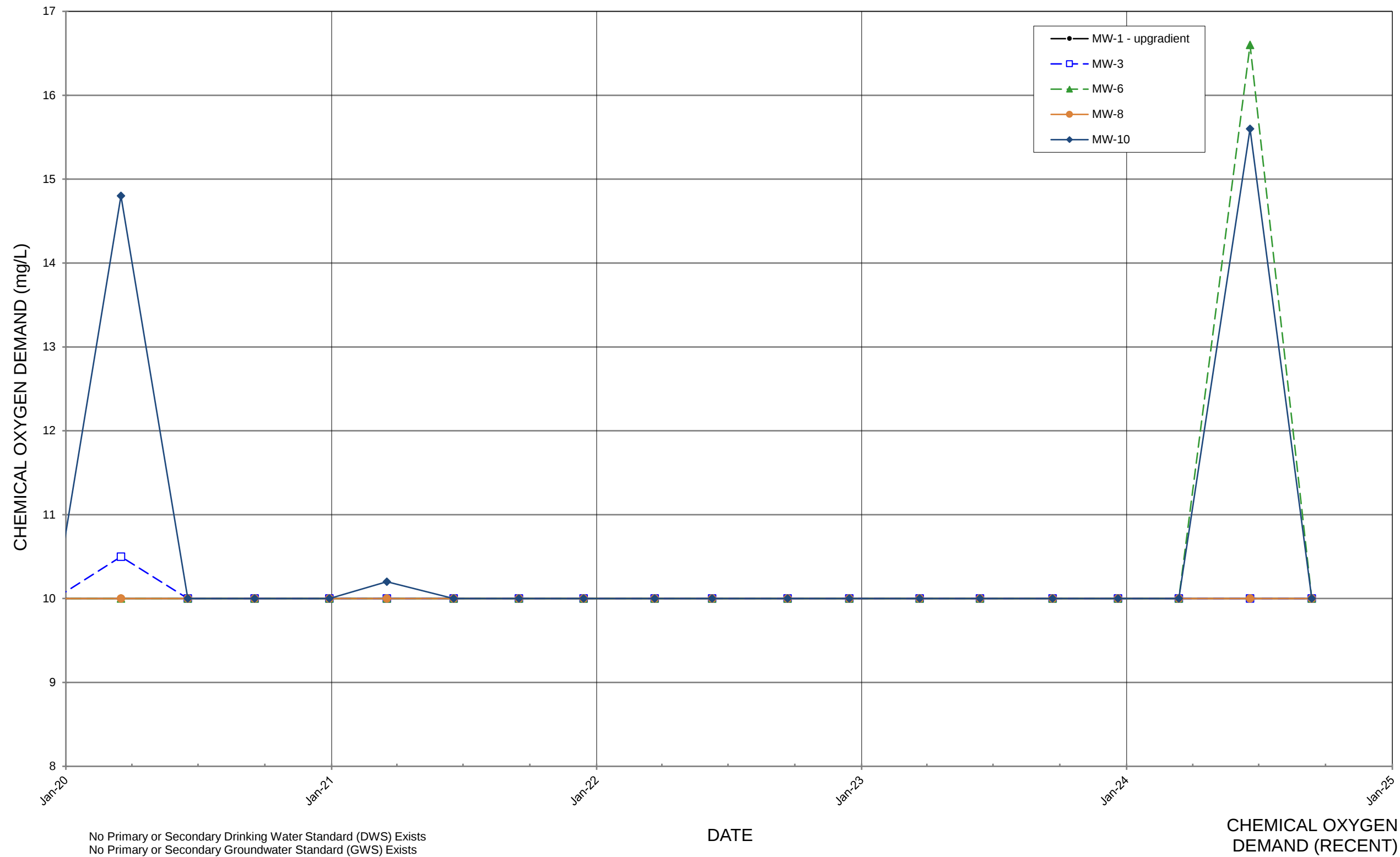
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Quarterly Monitoring Data (most recent five years)



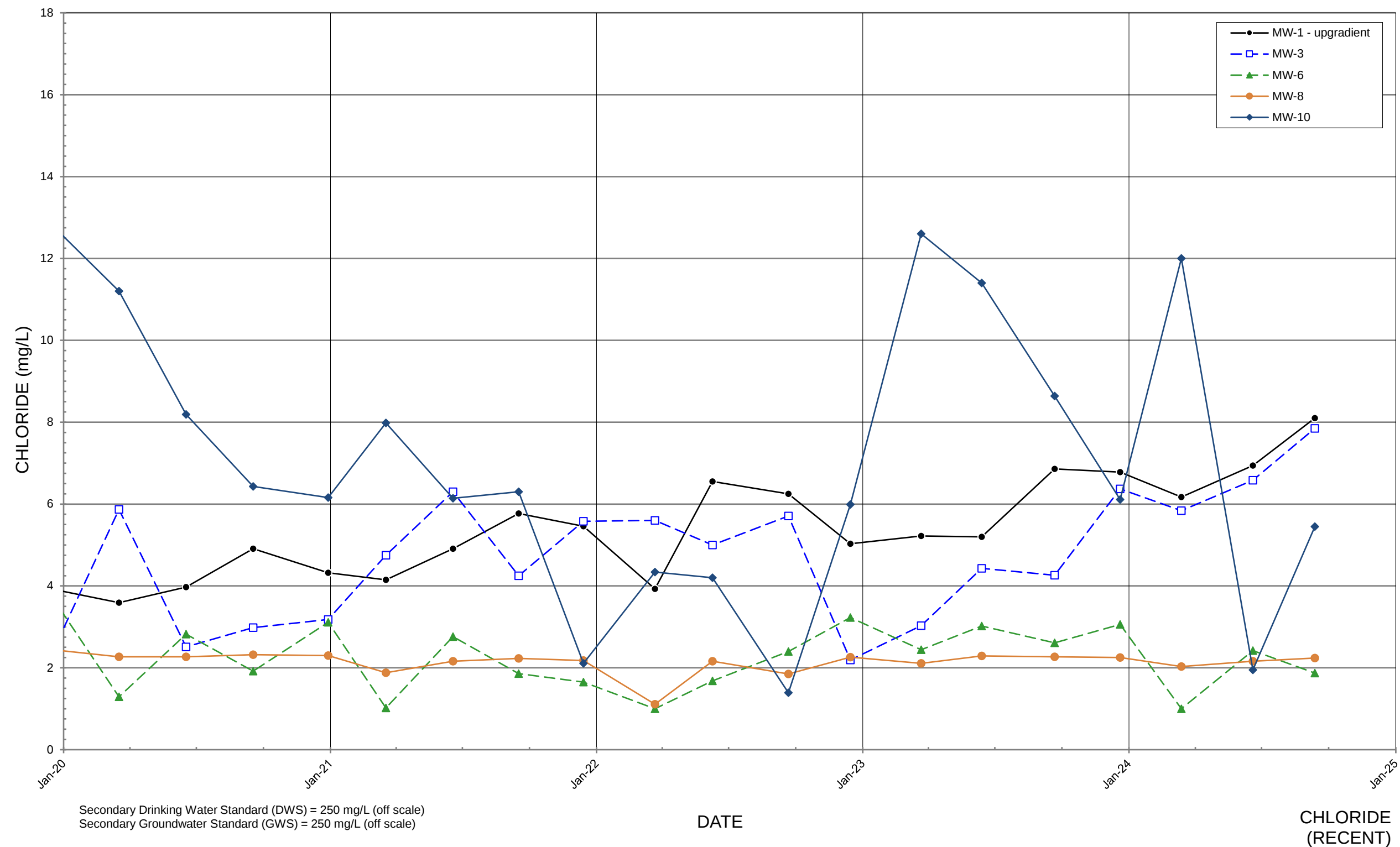
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



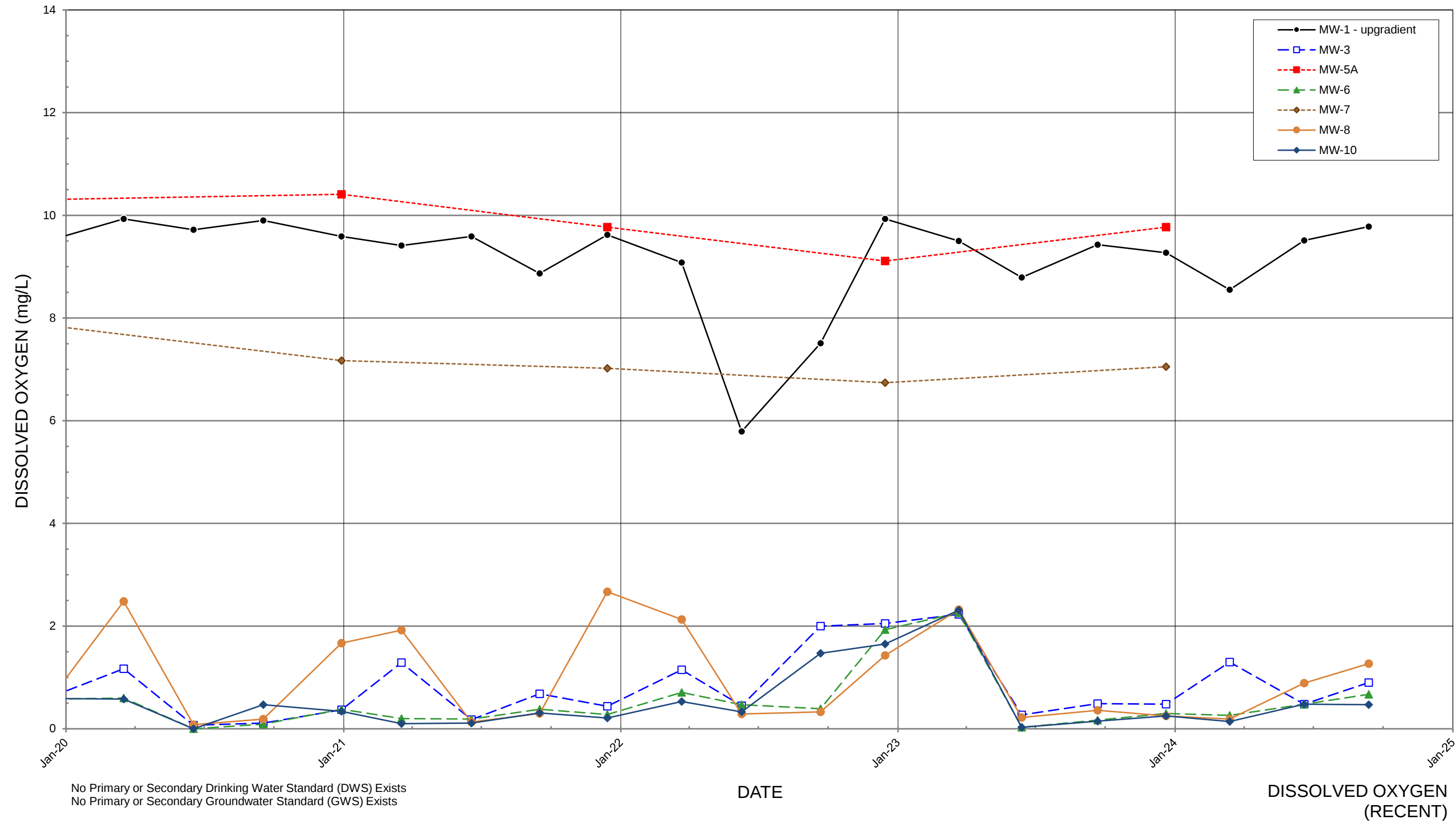
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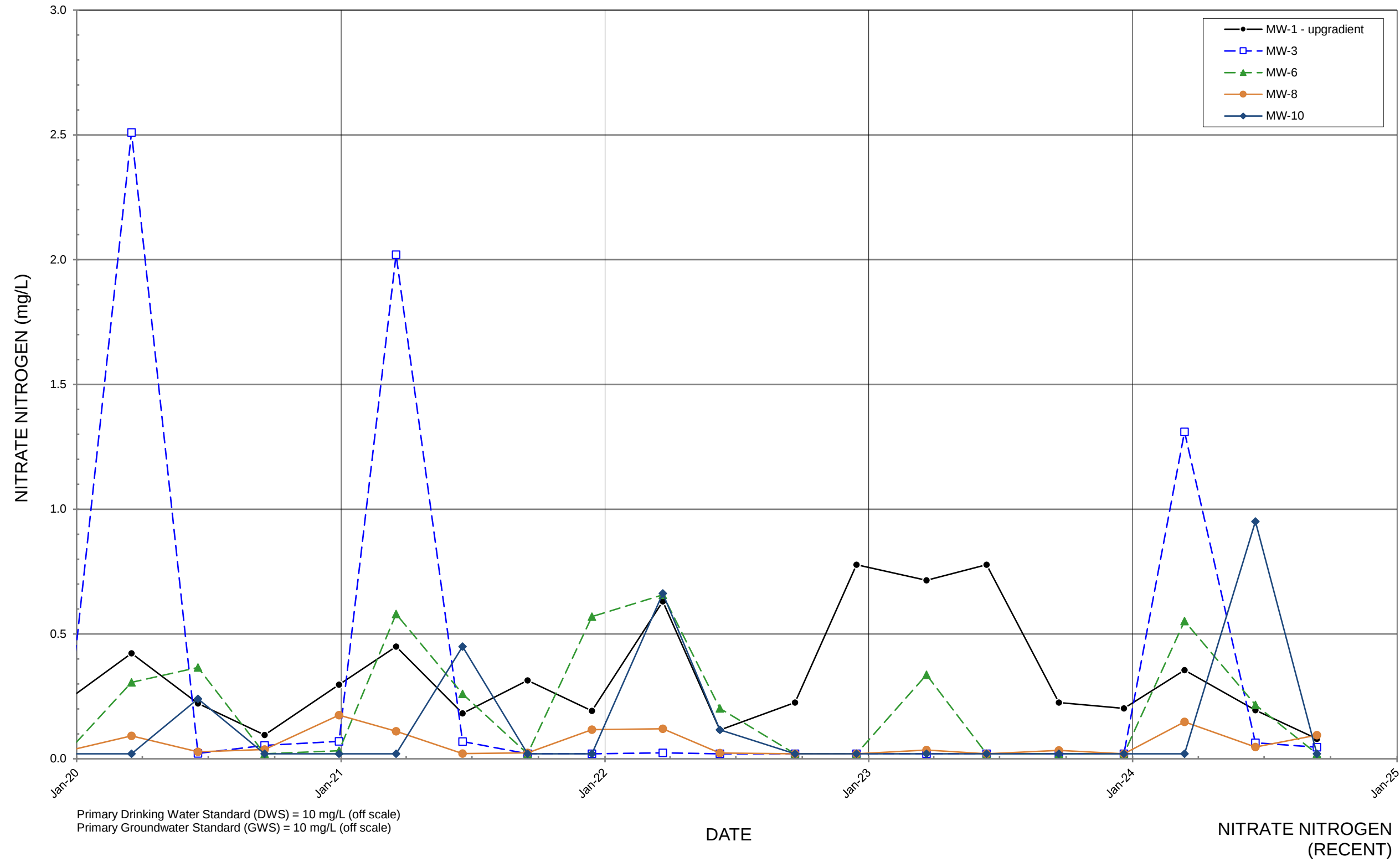
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Quarterly Monitoring Data (most recent five years)



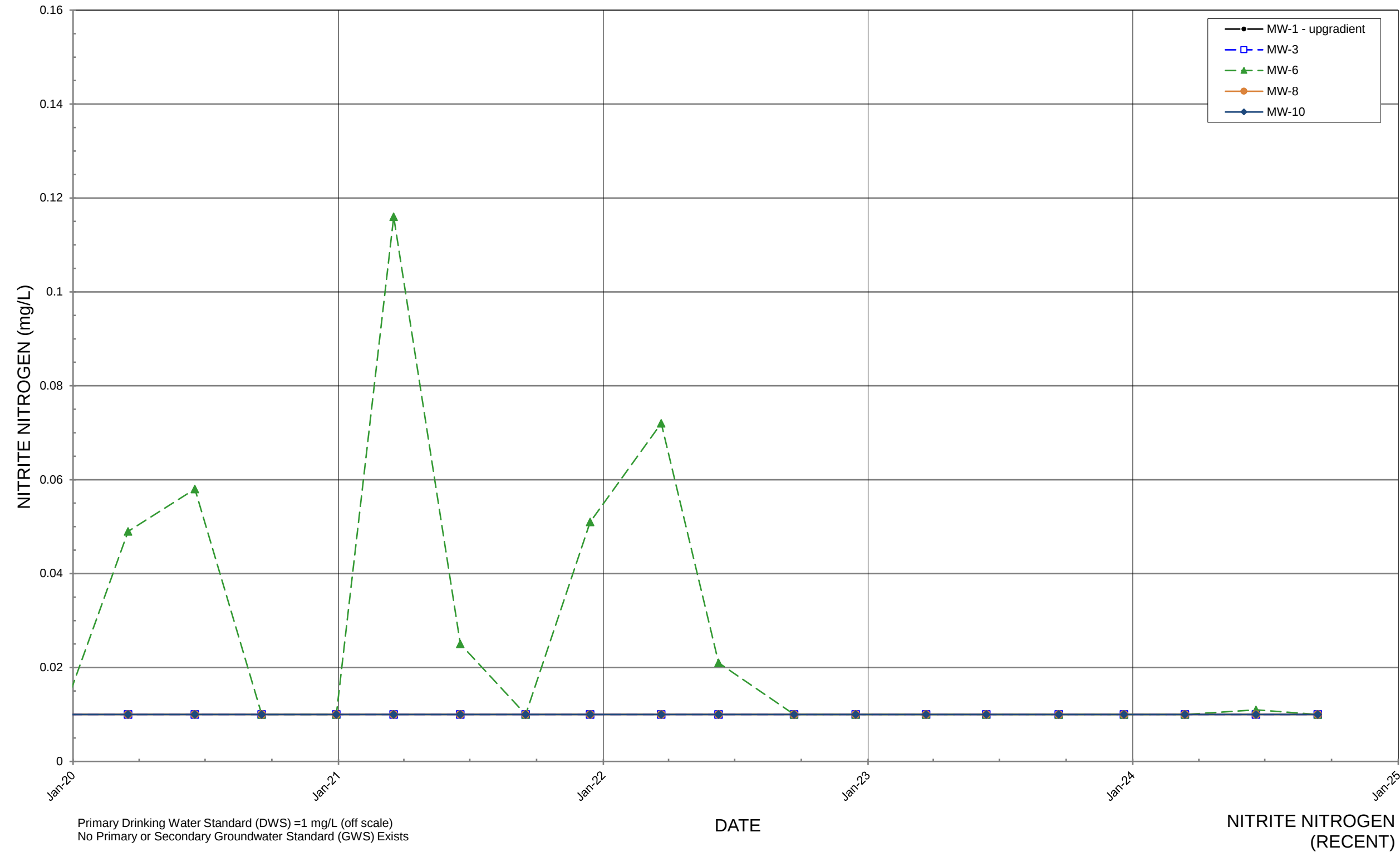
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Quarterly Monitoring Data (most recent five years)



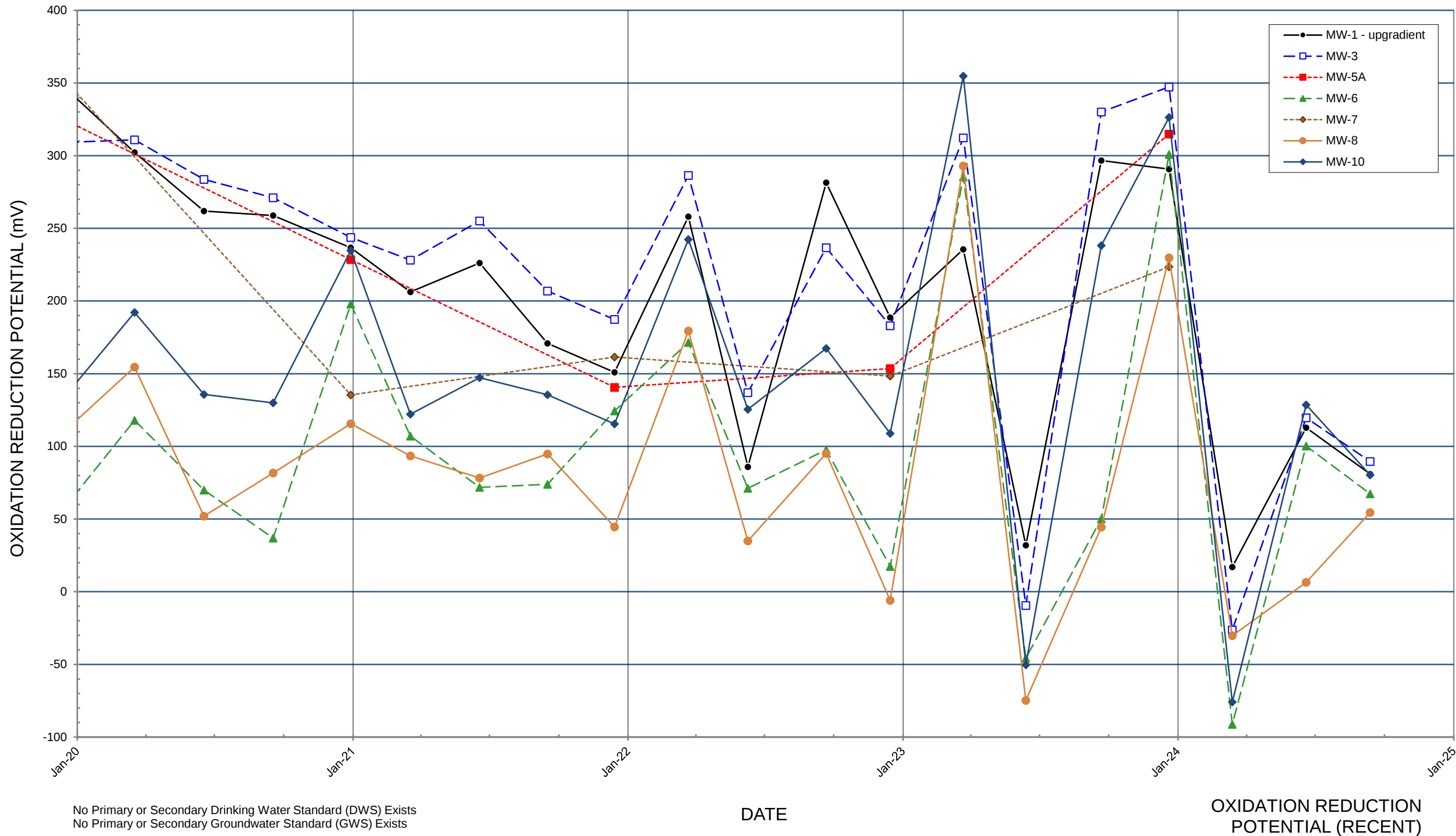
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



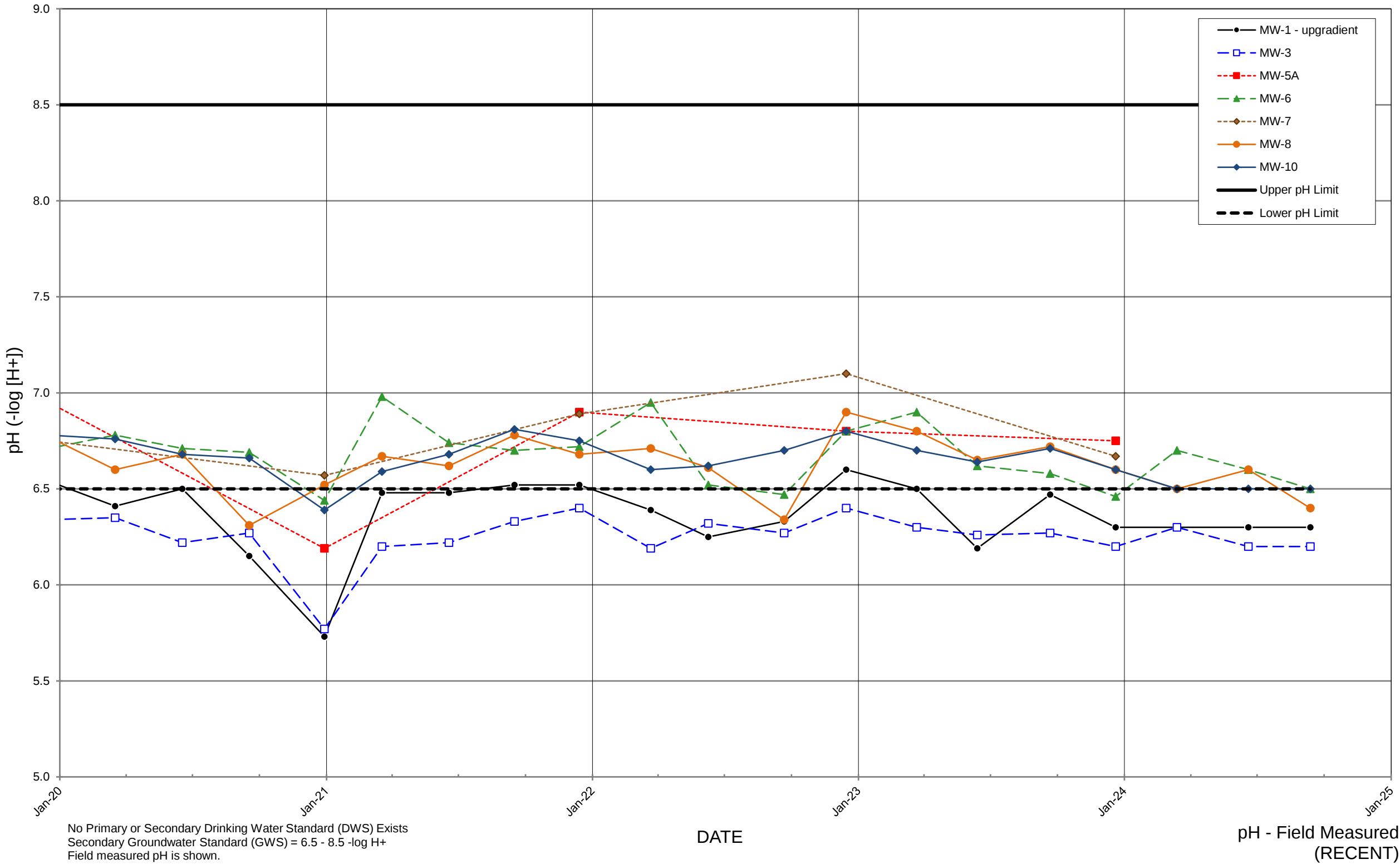
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Quarterly Monitoring Data (most recent five years)



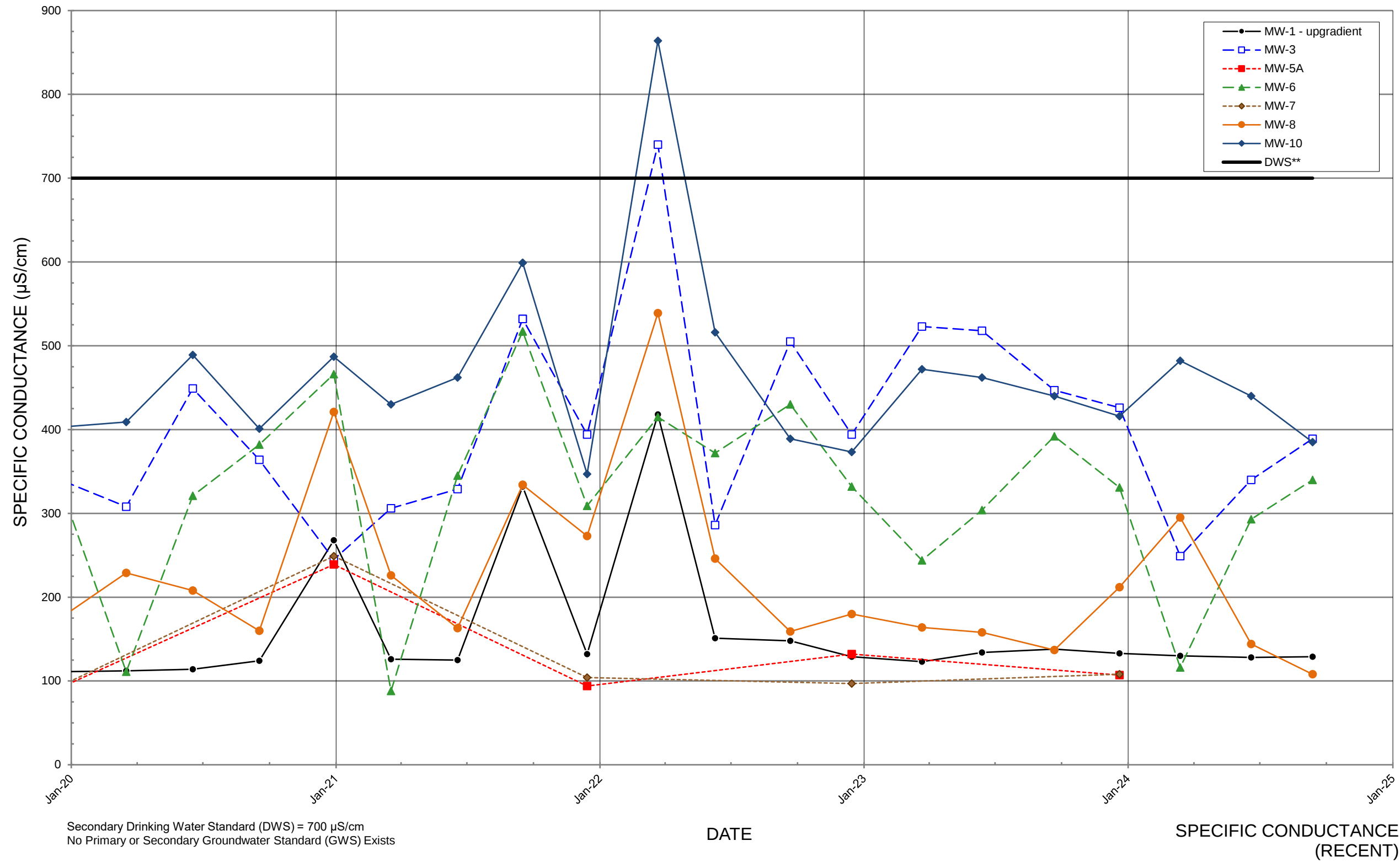
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Quarterly Monitoring Data (most recent five years)



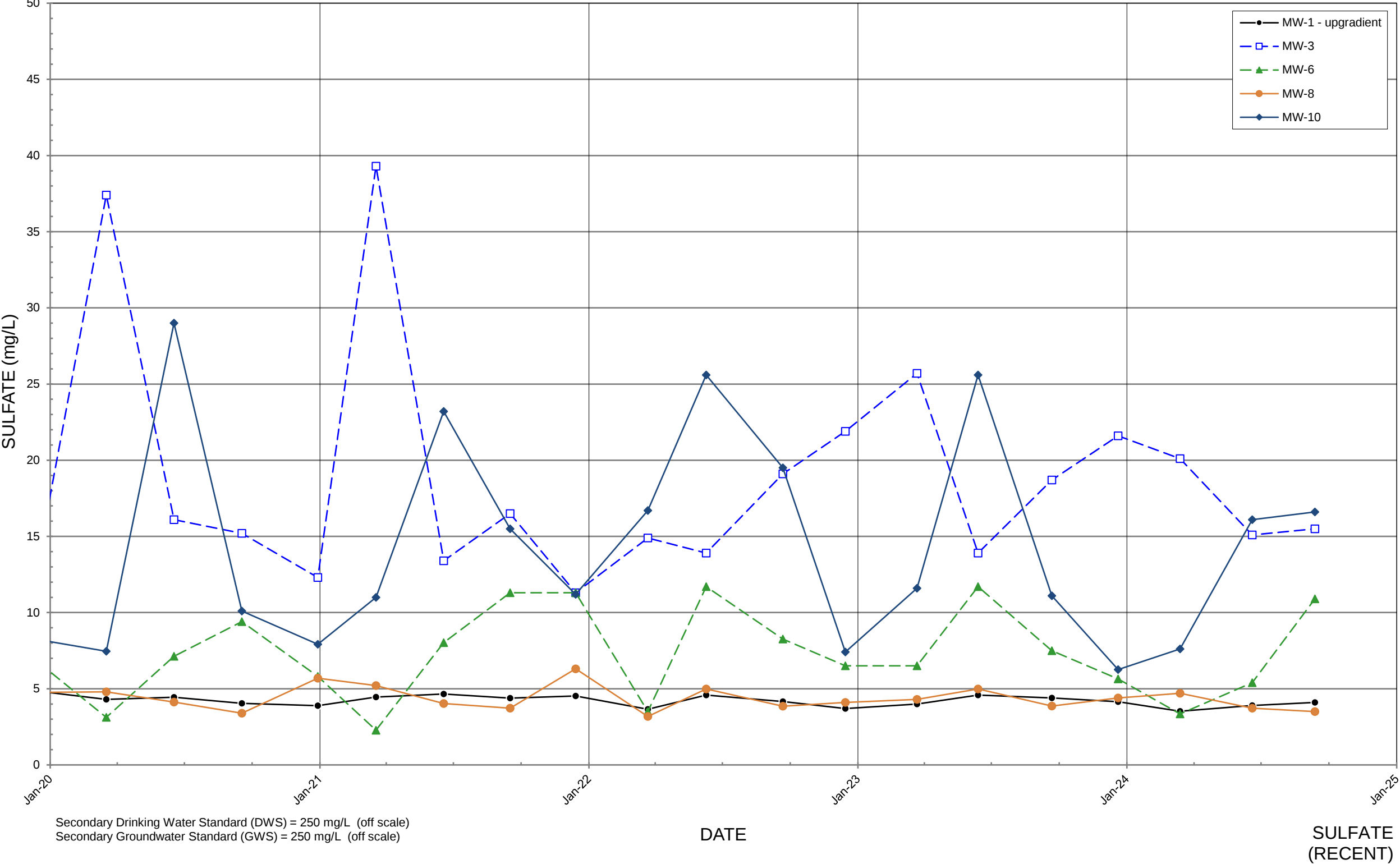
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Quarterly Monitoring Data (most recent five years)



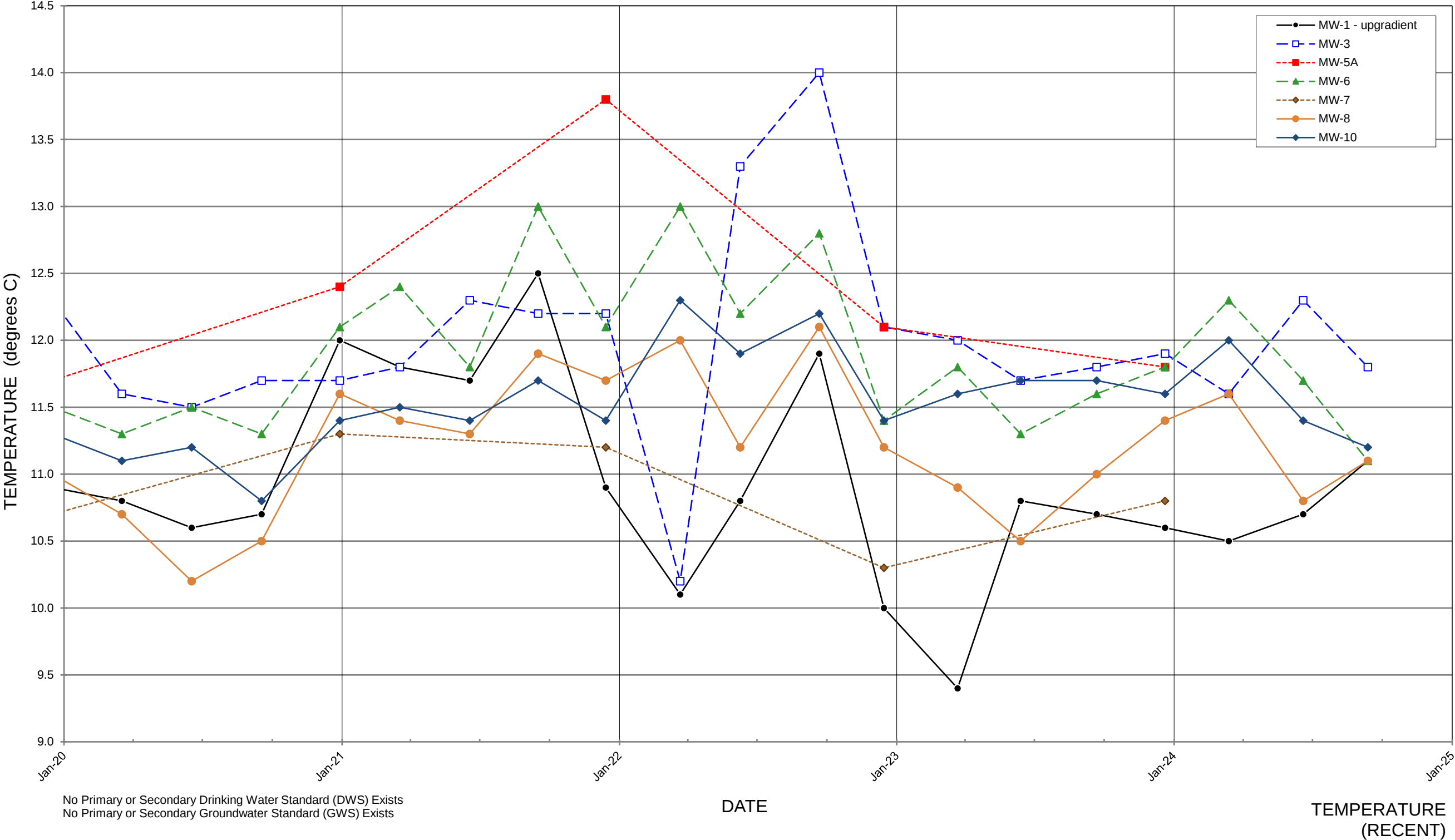
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Quarterly Monitoring Data (most recent five years)



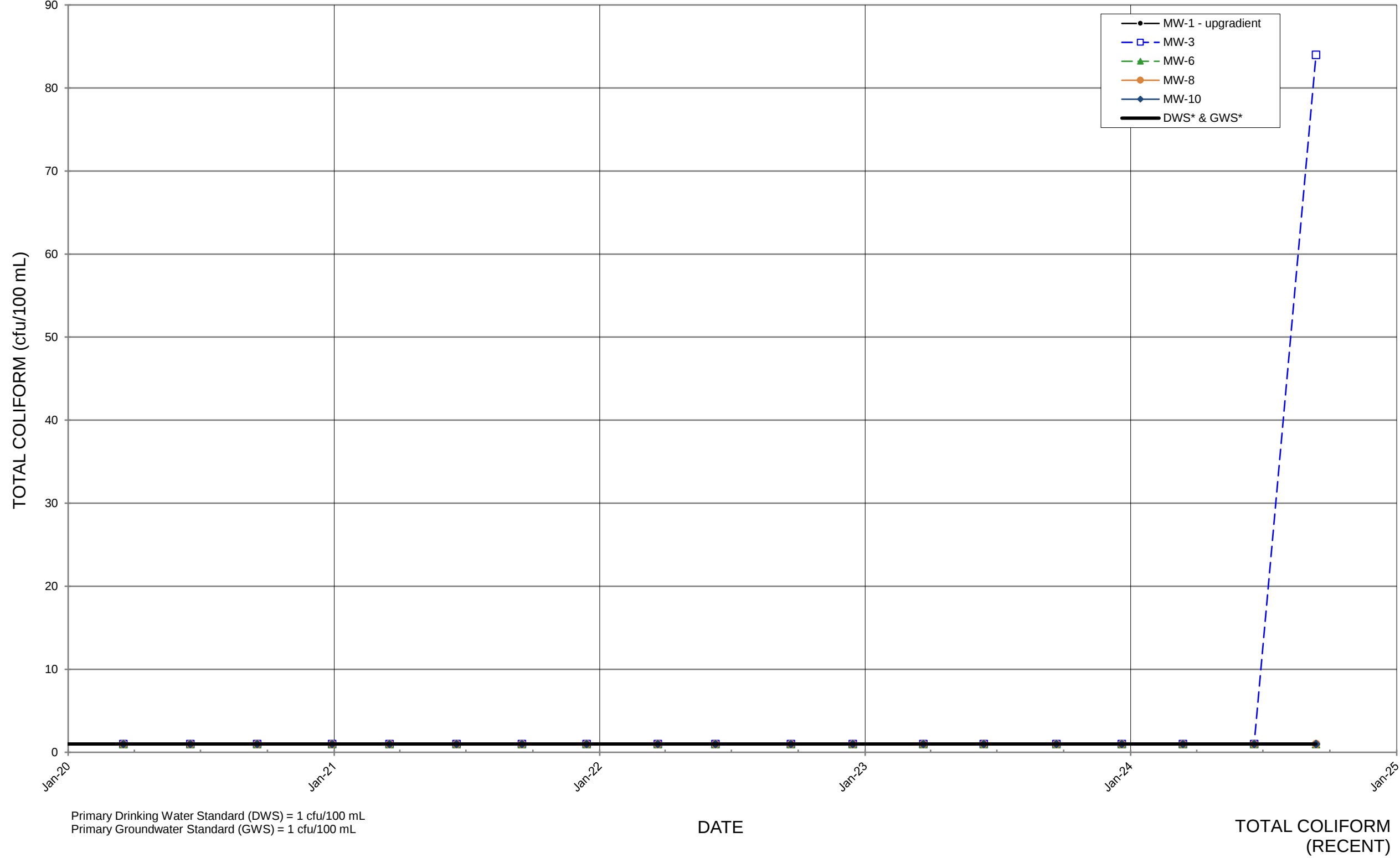
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

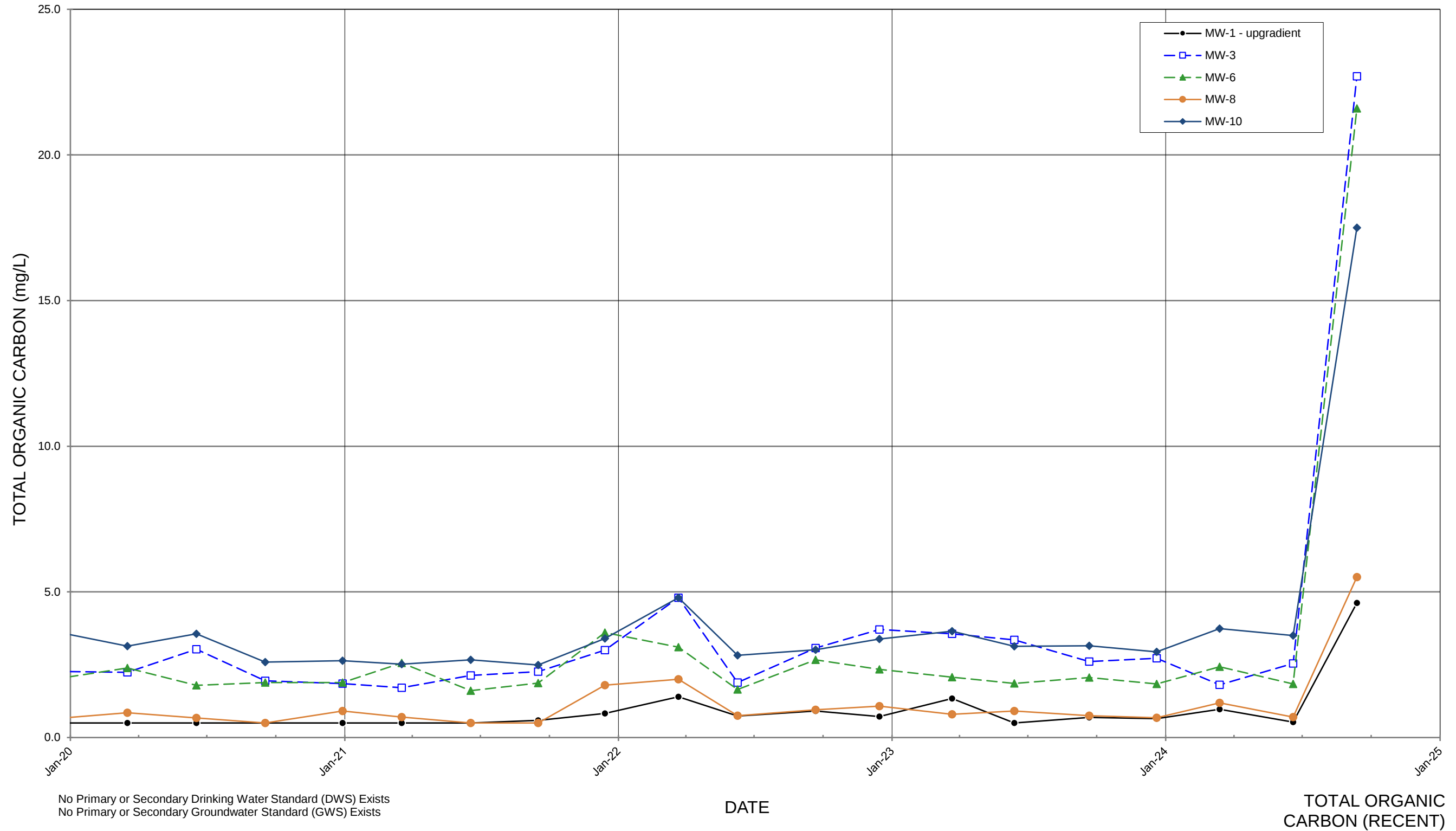


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Quarterly Monitoring Data (most recent five years)



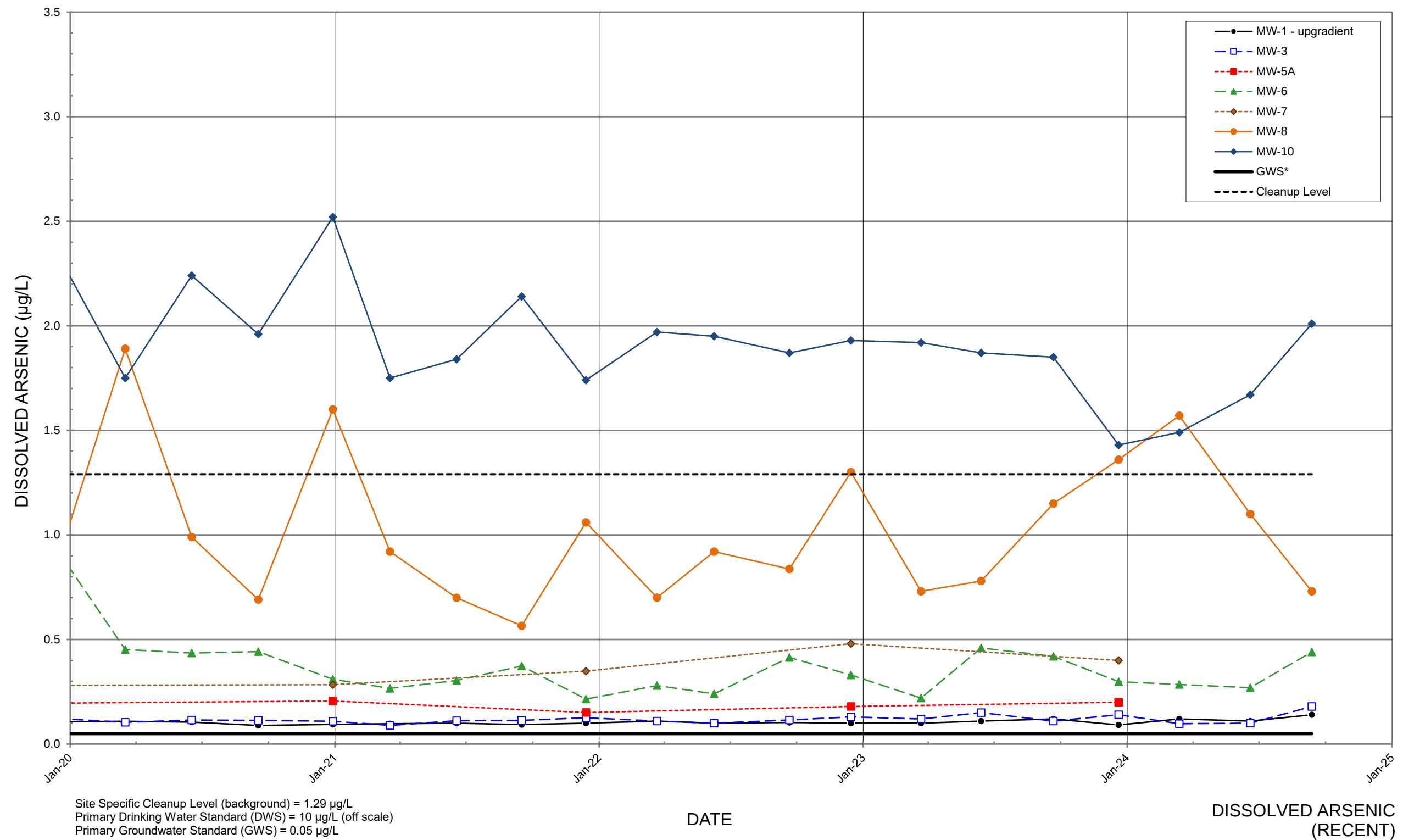
OLALLA LANDFILL

Quarterly Monitoring Data (most recent five years)

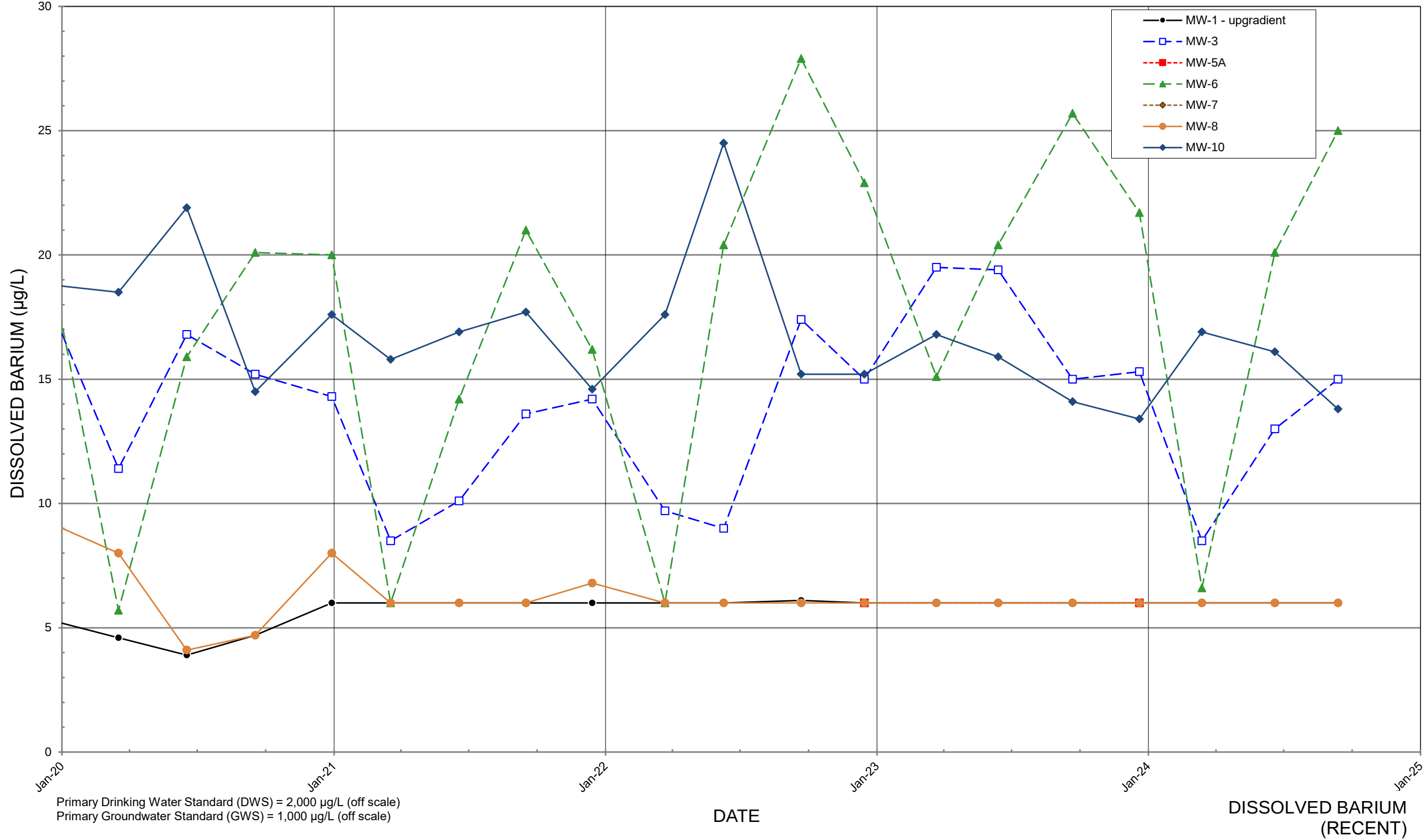


OLALLA LANDFILL

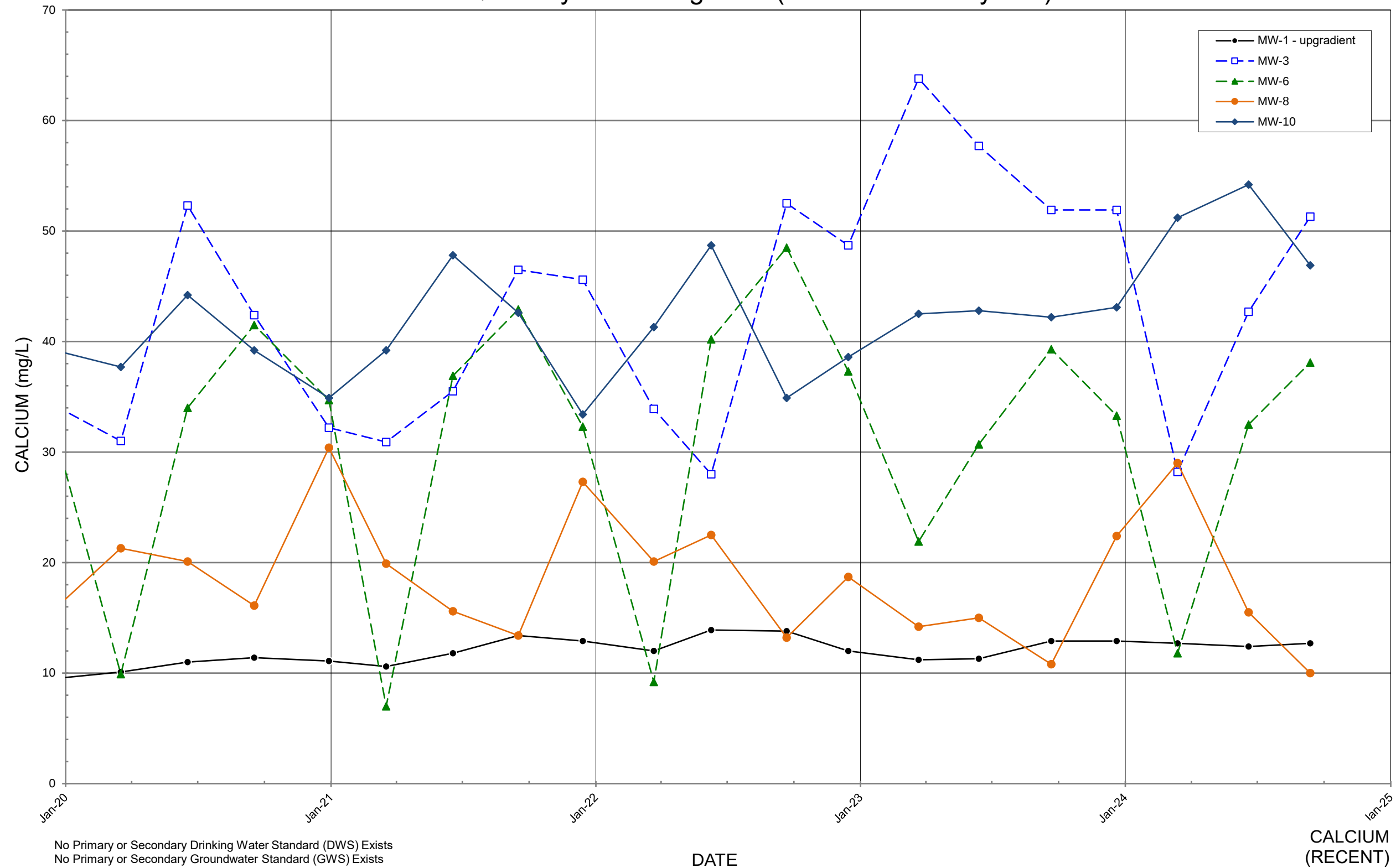
Quarterly Monitoring Data (most recent five years)



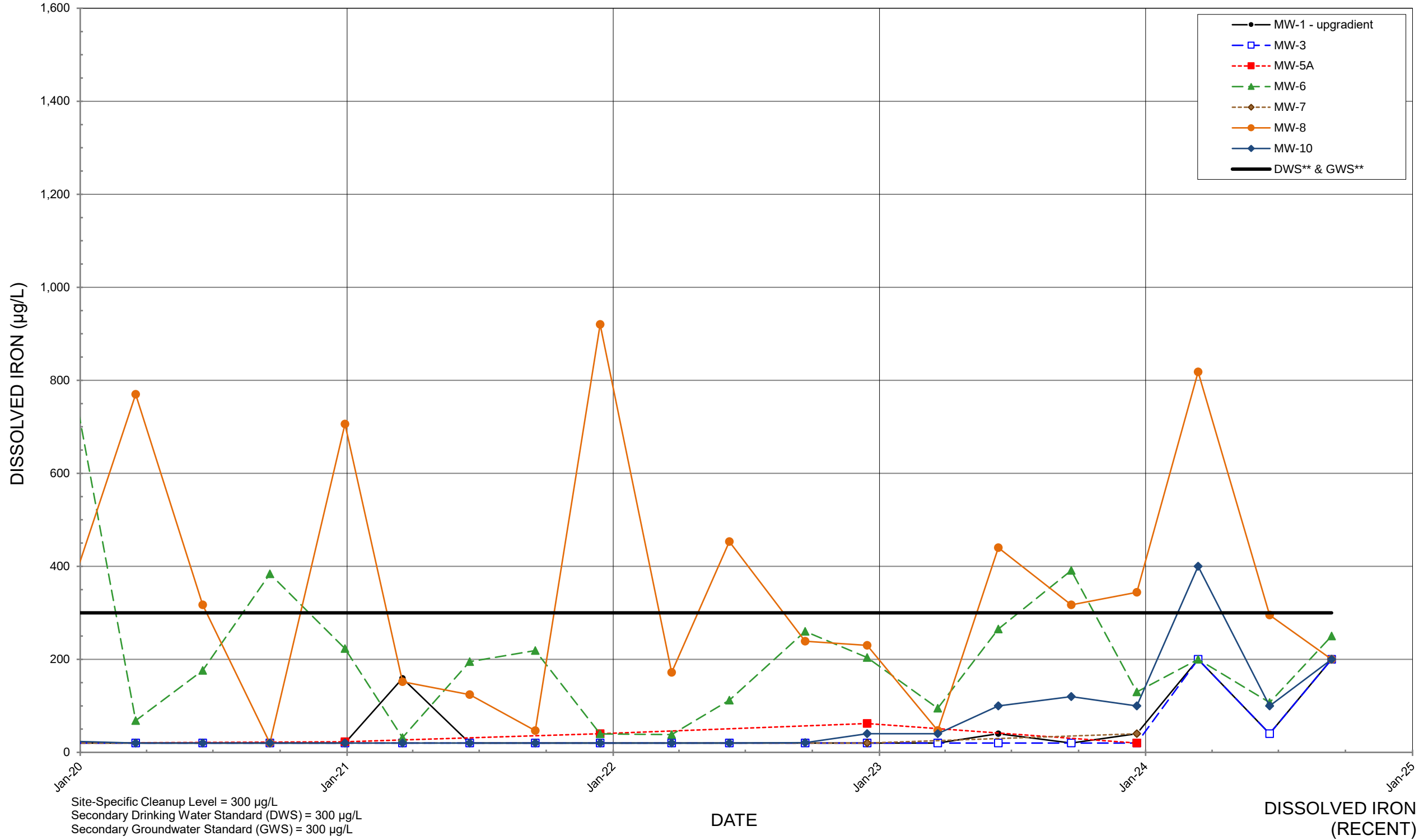
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

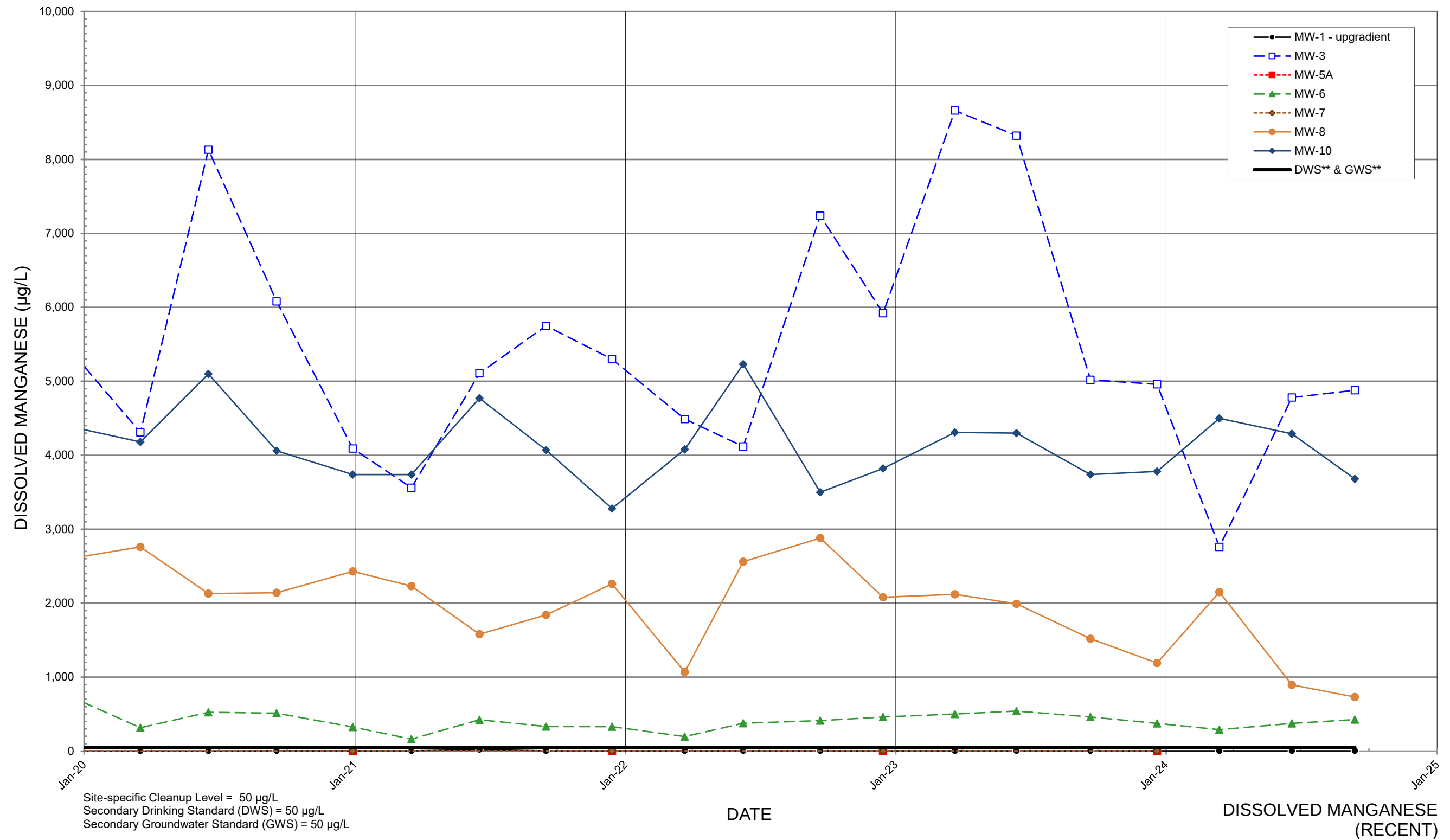


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Quarterly Monitoring Data (most recent five years)

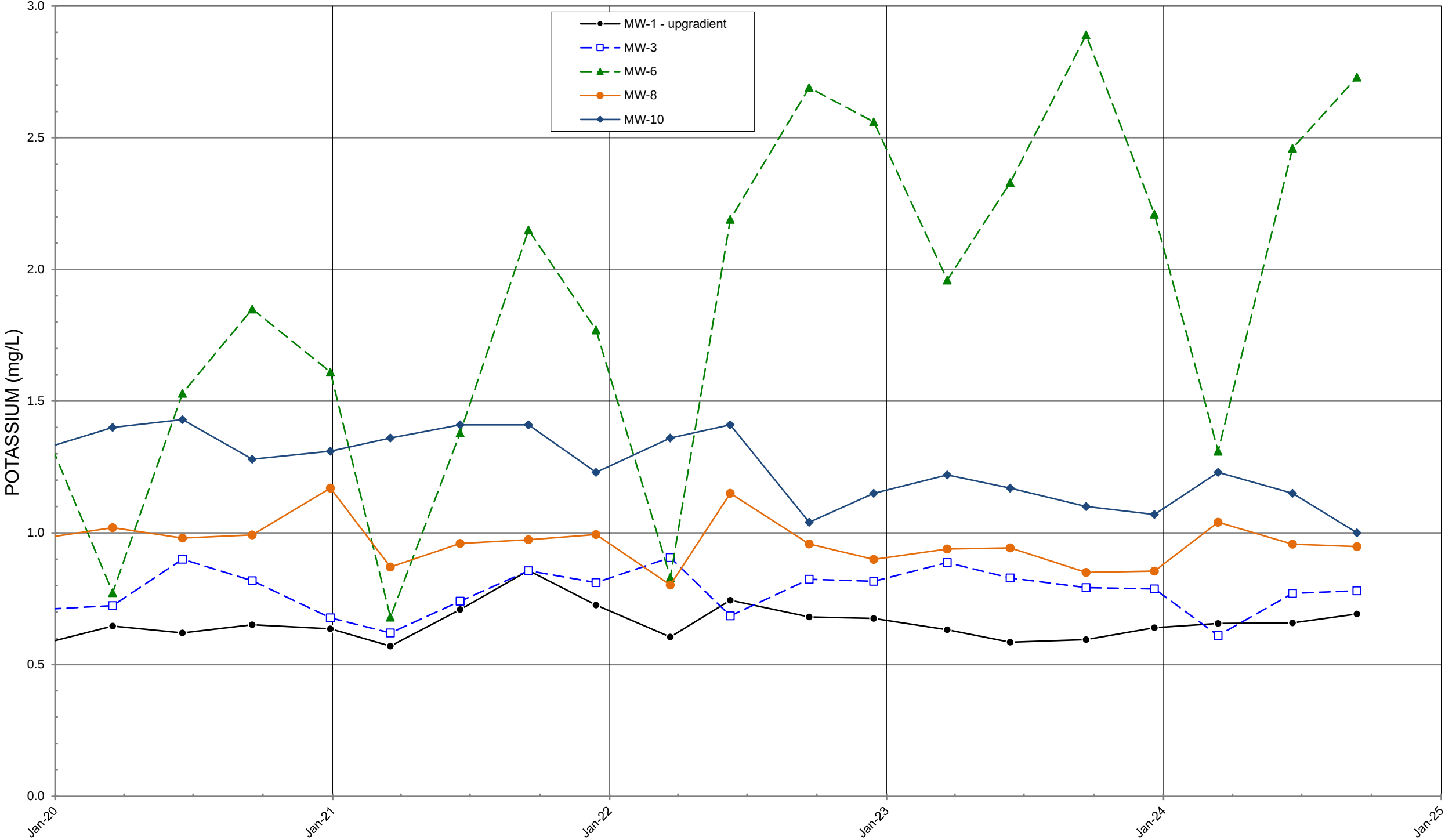


OLALLA LANDFILL

Quarterly Monitoring Data (most recent five years)



OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

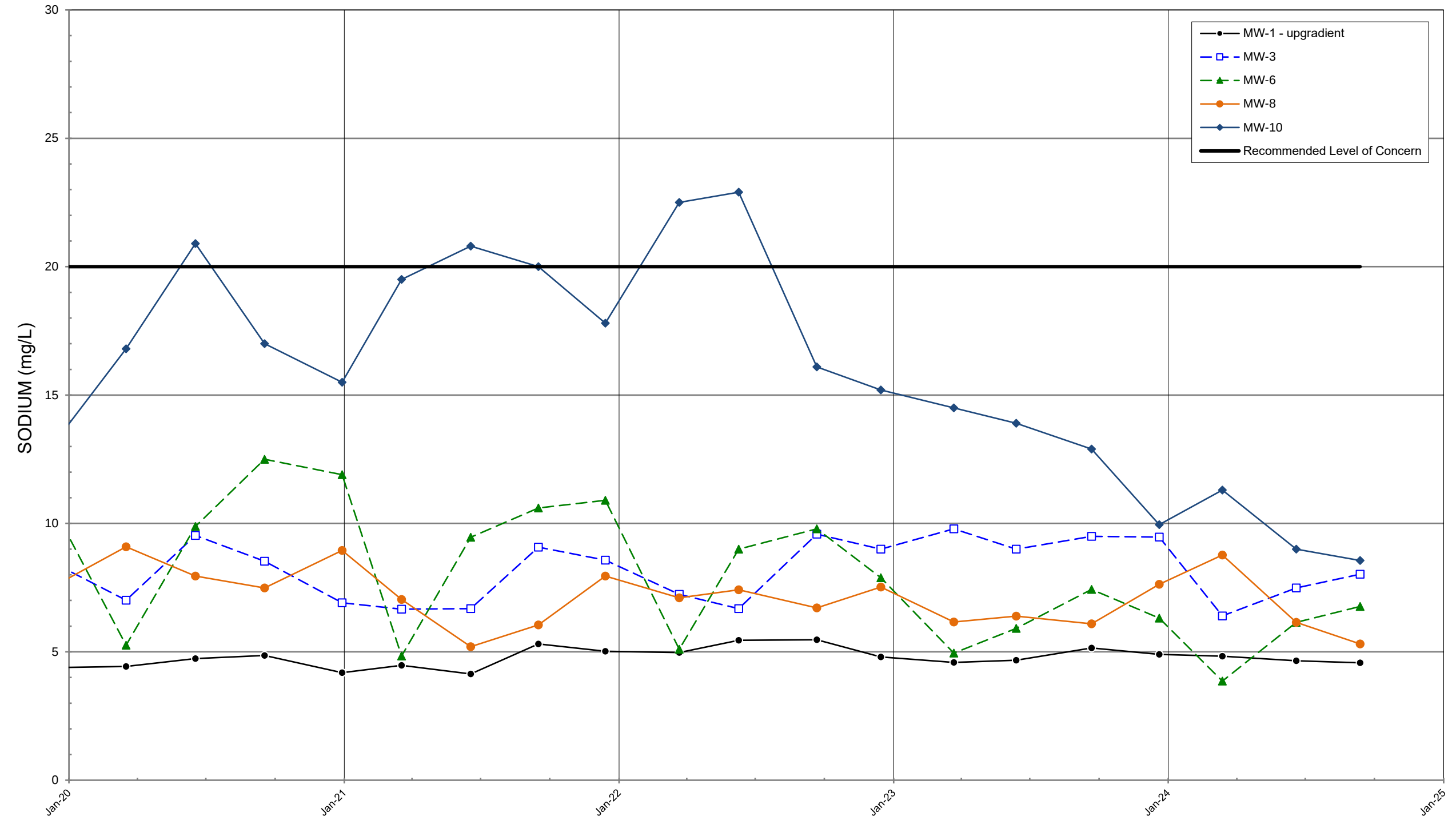


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

POTASSIUM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

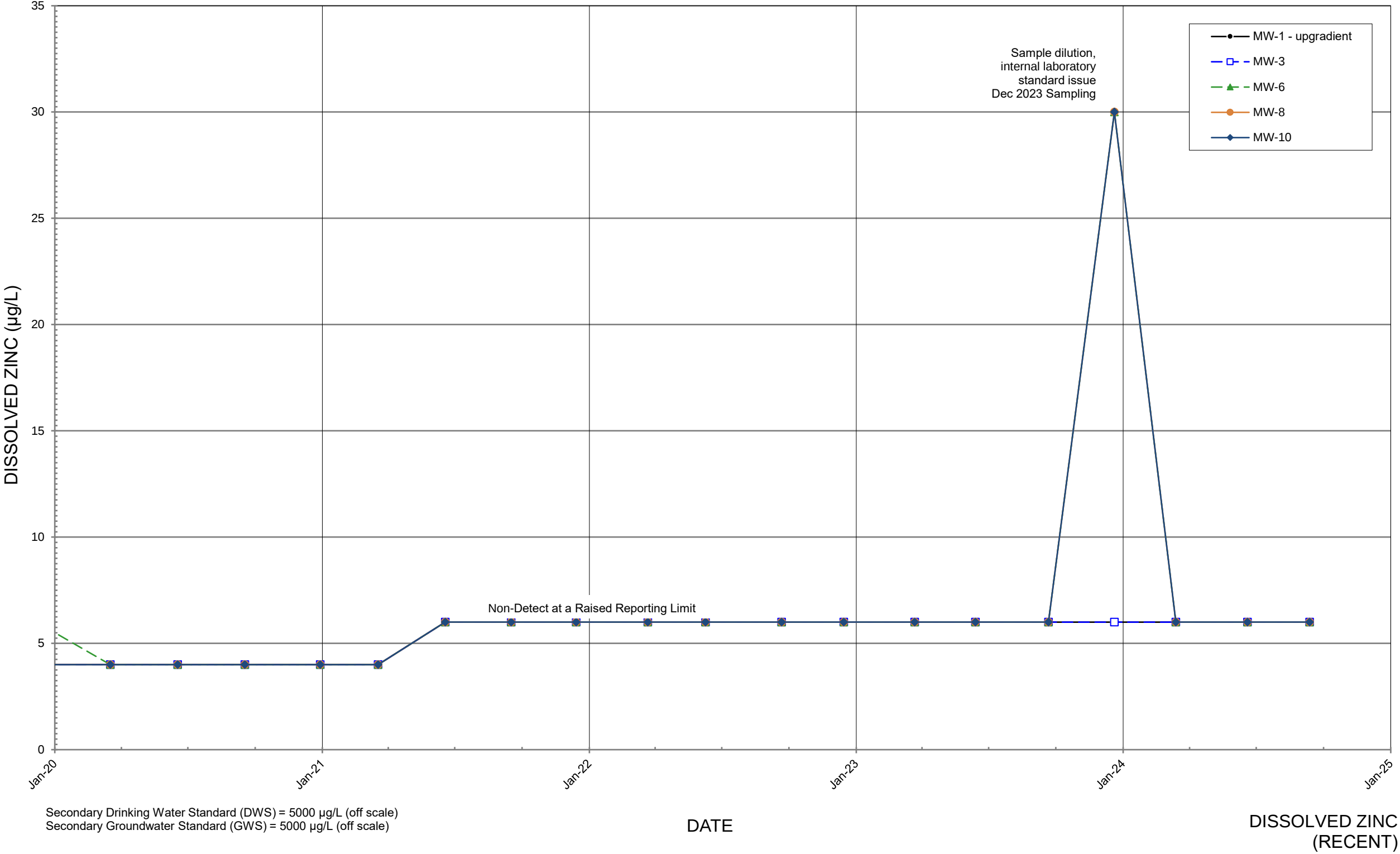


No Primary or Secondary Drinking Water Standard (DWS) Exists. Recommended level of concern for consumers with restricted daily sodium intake is 20 mg/L
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

SODIUM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

