

COWLITZ COUNTY TENNANT WAY LANDFILL

GROUNDWATER AND SURFACE WATER
MONITORING

SECOND QUARTER REPORT FOR 2024

Prepared for
Cowlitz County Solid Waste

May 15, 2024

prepared by



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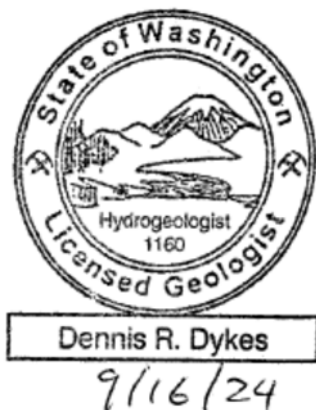
Linear Groundwater Velocity Calculations

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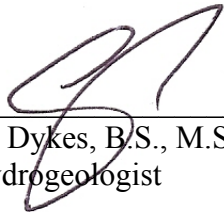
Cation-Anion Balance Calculation Table

The material and data in this report were prepared by or under the supervision and direction of the undersigned.

**Cowlitz County Tennant Way Landfill, Groundwater and Surface Water Monitoring,
Second Quarter Report for 2024**



Bright Fields Groundwater, Inc.



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CHECKLIST FOR GROUNDWATER REPORTING
Municipal Solid Waste Landfills
WAC 173-351-415

Include a signed, completed copy of this checklist with each quarterly and annual report.

Quarterly groundwater reports shall be submitted to the jurisdictional health department and Ecology within 60 days of receipt of analytical data. Annual groundwater reports shall be submitted to the jurisdictional health department and Ecology by April 1 of each year.

1 st _____ 2 nd <u>X</u> _____ 3 rd _____ 4 th _____ YEAR <u>2024</u>	Reference (section, subsection)	Included in this report	Location – page # or appendix #
Quarterly Groundwater Reports: 173-351-415 (2) plus the referenced section			
Statistical calculations and summaries			
Descriptive statistics	420, (1)	X	
Statistical tests	420, (2)	X	
Notification of statistical increase (if applicable)	420, (4)	☐	
Notification of concentrations above Chapter 173-200 WAC criteria (if any)	430, (4)	X	
Static water level readings	415, (2)	X	
Potentiometric surface elevation maps depicting flow direction	415, (2)	X	
Flow rate – calculated	415, (2)	X	
Cation-anion balances	430, (5a)	X	
Explanation of greater than 5% (or 10%) difference if needed	430, (5a)	X	
Trilinear diagrams	430, (5b)	X	
Leachate analyses (if sampled and tested)	415, (2)	X	
Data entered into EIM database (date entered: May 14, 2024)	415, (3)	X	
Complete copy of the lab report with chain of custody record.		X	
Annual Groundwater Reports: 173-351-415 (1)			
YEAR			
Summary of statistical results and trends	415, (1)	☐	
Summary of groundwater flow rate and direction for the year	415, (1)	☐	
Copy of all potentiometric maps for the year	415, (1)	☐	
Summary geochemical evaluation	415, (1)	☐	
For Quarterly and Annual Reports			
Stamped by a licensed professional	RCW 18.220	X	



Signature of Report Author

May 15, 2024

Date

Tennant Way Landfill

Landfill

1 INTRODUCTION

This is the second quarter 2024 report for the groundwater, surface water and leachate monitoring program at the Cowlitz County Tennant Way Landfill (CCTWL). This report is submitted in compliance with the Minimum Functional Standards for Solid Waste Handling (MFS) and Criteria for Municipal Solid Waste Landfills (CMSWL). The groundwater monitoring requirements are specified in Washington Administrative Code (WAC) Chapter 173-351-430 and are applied to Sites A and B of the landfill. Site A is a closed cell of the landfill regulated under WAC Chapter 173-304-490 but is monitored the same as for Site B for simplicity. Site A was monitored as specified in WAC173-304 prior to 1995. Monitoring of Site B pursuant to the CMSWL was initiated in November 1994 following installation of additional monitoring wells.

Revisions to WAC173-351 were adopted December 7, 2012. These revisions have been integrated in this report with slight modifications as agreed with the Cowlitz County Environmental Health Unit (EHU) and the Washington Department of Ecology (Ecology).

The sampling procedures and program are described in the approved *Sampling and Analysis Plan for the Cowlitz County Tennant Way Landfill March 2024 Revision* (SAP) (Bright Fields Groundwater, 2024a). The quarterly monitoring program described in the SAP includes groundwater, surface water, and leachate sampling. The groundwater flow rate and direction, statistical analyses of the analytical data, and a geochemical evaluation of the groundwater chemistry are specified for inclusion in each quarterly report.

Four projects that affect the detection monitoring program were completed last quarter. First, the SAP was updated and revised to include procedures for the periodic reevaluation of background. Second, background was reevaluated through a comprehensive statistical analysis of the data. Third, the approximate alignments of the underdrain and toe drain that surround Site A were identified from historic documents and in the field and added to the base map. Fourth, the measuring point elevations at the top of each well and piezometer were resurveyed. These elevations are used beginning with the first quarter 2024. Additionally, planning for the Port of Longview rail expansion project continues. This project will impact monitoring wells and piezometers. A work plan to address these impacts has been reviewed and will be implemented in the coming months. Each of these projects is described where appropriate in this report.

The CCTWL is located at 85 Tennant Way, Longview, Washington (Figure 1). The landfill is being monitored as the following three separate areas (Figure 2):

- Site A (closed landfill)
- Cells 1 and 2 of Site B (closed cells)
- Cell 3 of Site B (closed cell)

Site A was closed in 1992, Cells 1 and 2 of Site B were closed in 2000, and Cell 3 was closed in 2014. The CCTWL entered post closure care on July 1, 2017 following finalization of all closure requirements.

Water levels are measured in shallow and deep monitoring wells and piezometers located at the landfill. The monitoring points are screened in the upper (shallow) and lower (deep) parts of an alluvial sand aquifer (see EMCON, 1995b). The water level data were plotted, the hydraulic gradient estimated, and the horizontal linear groundwater velocity estimated as described in Section 2.

Groundwater samples representing the second quarter were collected in April 2024 from 12 shallow monitoring wells completed in the upper alluvial sand aquifer. The groundwater analytical results are described in Section 3.

Two surface water and three leachate samples were collected. The surface water and leachate analytical results are described in Section 4.

Water level measurements and elevations are included in Appendix A, with the water level contour plots. The groundwater quality data, statistical calculations, cation-anion balances and trilinear diagrams are included in Appendix B. The surface water and leachate quality data are included in Appendix C. Technical memoranda describing the sampling procedures and analytical data validation are included in Appendix D. The analytical data package is included with the validation memorandum.

2 GROUNDWATER LEVELS AND FLOW DIRECTIONS

The elevations of the measuring points on each well and piezometer used to adjust depth to water measurements to water level elevations were resurveyed on January 31, 2024 by the Cowlitz County Public Works surveyor. These measuring point elevations were used to adjust the measurements made beginning with the first quarter 2024. Measurements made prior to this year were adjusted using elevations surveyed in 2001 except at MW-2A and -2B (2008) and PZ-2 (1997). All elevations are relative to the NAVD88 datum as required by revisions to WAC173-351 that were adopted in December 2012.

2.1 Groundwater Levels

Water levels were measured in 12 monitoring wells and 15 piezometers during the monitoring round as specified in the SAP. Water levels were measured on April 2, 2024 at approximately low tide in the Cowlitz River. Water level contour plots for the shallow and deep zones are provided in Appendix A. The water level measurements and a hydrograph are also included in Appendix A.

The water levels were below average for this time of year across the site except at MW-2. This is likely because the river level was below average for this time of year and precipitation was about average the month before the measurement were made, although with week long dry periods. The water levels at the MW-2 well cluster continued a trend that started in 2017 of being higher than average. This suggests support for groundwater levels in this area. The MW-11 well cluster, which has shown groundwater mounding in the area the last several years in the wet season, showed mounding in the shallow zone but no mounding in the deep zone this quarter. Mounding at the MW-2, -5 and -11 well clusters may be related to the buildup of soil and grass in these areas slowing surface water flow allowing greater or more extended infiltration to the subsurface in these areas.

The data describe a flow pattern that discharges groundwater primarily to the slough located south of the landfill. This overall flow pattern is consistent with previous second quarter flow patterns with the gradient varying relative to average across the site. The mounding at MW-11B, when present, diverts flow to the east and west before it turns south toward the slough.

2.2 Hydraulic Gradients

The horizontal hydraulic gradient for each landfill area was estimated using the contour plots generated using the water level data. In the Site A area, the gradient was estimated to

be 0.0046 in the shallow and 0.0041 in the deep aquifer zones. In the Cells 1 and 2 of Site B area, the gradient was estimated to be 0.0023 in the shallow and 0.00165 in the deep aquifer zones. In the Cell 3 of Site B area, the gradient was estimated to be 0.00165 in the shallow and 0.00154 in the deep aquifer zones. The estimated gradients are shown on a table included in Appendix A.

2.3 Groundwater Flow

On April 2, 2024, groundwater flow was to the south in the shallow and deep aquifer zones in the Site A area curving from the southeast under the northern part of the area. Flow was to the south in the shallow and deep zones of the Cells 1 and 2 of Site B area although flow from the MW-11 mound in the shallow zone initially includes east and west components before curving to the south. This mounding is typically more pronounced in the wet season (primarily January and April). Groundwater flow under Cell 3 was to the southwest.

The linear velocity of groundwater in the shallow zone was estimated to be 8.0 feet per day under the Site A area and 4.0 feet per day under the Cells 1 and 2 of the Site B area. The linear velocity of groundwater in the deep zone was estimated to be 2.9 feet per day in the Site A area and 1.1 feet per day in the Cells 1 and 2 area of Site B area.

In the Cell 3 of Site B area, groundwater flow in the shallow and deep zones was to the southwest. The linear velocity of groundwater was estimated to be 2.9 feet per day in the shallow zone and 1.1 feet per day in the deep zone.

The estimated linear groundwater velocities were above average for this time of year in the shallow and deep zones of Site A. Flow in the shallow and deep zones of the Cells 1 and 2 area were also above average. Flow was also estimated to be above average in the Cell 3 area shallow and deep zones.

3 GROUNDWATER QUALITY

Groundwater samples were collected on April 1, 2024 from 12 monitoring wells completed in the shallow zone of the sand aquifer. Monitoring wells in each of the three landfill areas were sampled.

The groundwater samples were analyzed for:

- Chapter 173-351 WAC Appendix I parameters
- Chapter 173-351 WAC Appendix II parameters
- Field parameters (pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential, turbidity, static water level)
- Geochemical Indicator Parameters (Ca, Fe, Mg, Mn, K, Na, SO₄, NO₃, Cl, Alkalinity as CaCO₃, HCO₃ calculated from alkalinity)
- Leachate Indicators (NH₃-N, TOC, TDS, TSS)

The samples were analyzed by ALS Environmental Laboratories located in Kelso, Washington. ALS is accredited by Ecology for each type of analysis performed. Documentation of this is included in the laboratory report in Appendix D. Please note that the quarterly samples from July 2017 through April 2018 were analyzed by BSK Vancouver. ALS (formerly known as CAS) had historically analyzed the quarterly samples for more than 20 years. Some BSK detection and reporting limits differed from ALS.

Metals were analyzed using EPA Methods 200.7 and 200.8. The geochemistry metals (Fe, Mn, Ca, Mg, Na and K) were analyzed using Method 200.7. All other metals were analyzed using Method 200.8.

The samples were collected and analyzed as specified in the SAP. All six geochemical metals were analyzed as dissolved by agreement with the EHU and Ecology as described in the SAP although WAC 173-351 only specifies iron and manganese be analyzed as dissolved. The samples were filtered in the laboratory.

The water quality data summary tables, statistical calculations, and trilinear diagrams for the sampling event are included in Appendix B. The sampling procedures and data validation memoranda are included in Appendix D.

The groundwater chemistry data for the shallow aquifer zone under each of the three landfill areas were evaluated to determine whether downgradient groundwater quality differs from background groundwater quality. This was accomplished using the prediction limit method,

comparison of site data with promulgated maximum contaminant levels (MCL), statistical analysis of the data, and geochemical evaluation of the data. The prediction limit evaluations are discussed in Section 3.1. Detections of analyte concentrations above the MCLs are discussed in Section 3.2. Statistical analyses of the quarterly groundwater data are discussed in Section 3.3. Geochemical evaluation of the analytical results is discussed in Section 3.4.

Monitoring well MW-5B is upgradient of the Site A area. Monitoring wells MW-3B, MW-7B, and MW-11B are the downgradient wells for Site A and upgradient wells for the Cells 1 and 2 of Site B area. Monitoring wells MW-8B, MW-9B and MW-10B are the downgradient wells for the Cells 1 and 2 of Site B area. Monitoring well MW-16B is the upgradient well for the Cell 3 of the Site B area. Monitoring wells MW-12B, MW-13, MW-14B, and MW-15 are the downgradient wells for the Cell 3 of Site B area.

3.1 Prediction Limit Determination and Data Evaluation

Background was reevaluated last quarter using procedures included in the SAP. The reevaluation was documented separately from quarterly report. The reevaluation was completed use quarterly data generated from April 2013 through 2023. This period was used because consistent sampling and analytical procedures had been used including low flow sampling and total metals (except for geochemical metals). It is also after the substantial decline of parameter values in groundwater impacted by the Site A area appeared to have stabilized. The reevaluation determined that the upgradient and downgradient data samples were not statistically spatially stationary and therefore represent different statistical populations. The downgradient data samples were evaluated for intrawell background testing and acceptable look back periods identified. The distribution of the majority of the data samples also tested as non-normal indicating that a non-parametric test method should be used.

A non-parametric prediction limit method was selected as the statistical procedure used to evaluate the groundwater quality results. The non-parametric prediction limit is not affected by the distribution of data within the sample. It does however require a larger sample size to achieve an acceptable confidence level that a datum being tested is within the background data sample (null hypothesis accepted). In the selected procedure, the highest concentration of each parameter in a background data sample is selected as the prediction limit for that parameter. Downgradient data generated each quarter are tested relative to the appropriate prediction limit. If a value is below the prediction limit the null hypothesis is accepted. If it is above the prediction limit the null hypothesis is rejected and the parameter identified for evaluation as a statistically significant increase (SSI) in concentration. The evaluation of a potential SSI is described in the SAP and begins with retesting to determine whether it is confirmed or a possible outlier. Correlation with other parameters and evidence of trends in the data are also considered.

Inorganic parameters and metals were evaluated. VOCs were not evaluated because they were detected infrequently and do not appear to define a pattern. The following constituents were evaluated:

- Metals (Ba, Cr, Co, Ni, and V)
- Geochemical indicators (Ca, Mg, K, Na, alkalinity, Cl, SO₄,)
- Leachate indicators (TOC, and TDS)

Prediction limits for each constituent were determined from the background data samples for each downgradient well. This was completed for each of the three landfill areas. Cobalt and vanadium were not used for the Site A area because they were not at significantly higher concentrations in L-1 leachate sample.

Some data points are apparent outliers and not representative of background conditions. All data was evaluated to identify potential outliers during the initial part of the background reevaluation. An outlier for a particular background data sample was considered a data point greater or lesser than the first or third interquartile plus three times the interquartile range of the data. A datum close to these values and substantially different from preceding and succeeding data were also evaluated as an outlier.

Periodic review of the data for outliers will be completed and may result in removal of some data from the statistical and geochemical analysis. For parameters used for prediction limit testing, this will follow an evaluation of a potential SSI that is determined to not be an SSI. Other parameters that appear to be outliers will be tested following retesting that does not confirm the concentration.

3.1.1 Site A Data Evaluation

The water quality prediction limits for the shallow aquifer zone at Site A were exceeded for none of the 12 parameters evaluated (Table 1). This includes none of the 36 concentrations of these parameters measured in the 3 downgradient wells combined. This is lower than recent quarters where the previous prediction limits were used. Chromium was detected slightly above the prediction limit last quarter only in the sample from MW-3B but was not this quarter. Concentrations were generally similar to those measured during recent preceding quarters where prediction limits were exceeded. Parameters exceeding prediction limits will be retested using next quarters data when appropriate.

The Site A downgradient wells are located in a drainage way that receives runoff from both the Site A and Cells 1 and 2 of Site B area covers. The higher infiltration in the wet season in the vicinity of the wells can affect water quality by lowering concentrations or bringing constituents down to groundwater. Copper and nitrate concentrations have been attributed to infiltration of runoff from the landfill cover and MW-7B and -11B are located near where runoff from the cover enters the drainage way. Wet season groundwater level measurements at MW-11B over the last several years has defined a mound in its vicinity.

This indicates relatively higher groundwater recharge in this area which affects the groundwater flow pattern and groundwater quality.

Please note that the highest levels in the data record have been identified as outliers to the more recent data and are not included in the statistical calculations. The recent trends are likely the result of the effect of the interplay of geochemical variations in groundwater with the local affects of historic conditions on the aquifer matrix.

Acetone was detected in wells both upgradient and downgradient of this area. Iodomethane was detected in the sample from one well, MW-11B. The detected concentrations were below the MRLs. These compounds are occasionally detected at the site at low concentrations that are often identified in quality controls samples, although this was not the case this quarter.

3.1.2 Cells 1 and 2 of Site B Data Evaluation

Water quality prediction limits for the Cells 1 and 2 of Site B area were exceeded for two of the 14 analytes evaluated (Table 1). This included two of the 42 concentrations of these parameters measured in the 3 downgradient wells combined. This is less than recent quarters using the previous prediction limits. Potassium and nickel were detected at MW-9B and MW-10B, respectively, at concentration slightly above the prediction limit. These parameters were also above the respective prediction limits last quarter. The small number of parameters exceeding prediction limits and limited distribution suggest these are not the result of a release from the landfills. The parameters exceeding prediction limits will be retested using next quarters data.

Copper and nitrate concentrations have been attributed to infiltration of runoff from the landfill cover. MW-8B is located near where runoff from the cover enters the drainage way.

A long term declining trend is shown for concentrations of most metals and inorganic parameters at MW-9B.

The bicarbonate nature of the groundwater has shown substantial variability both spatially and over time particularly in wells near storm water ditches where higher infiltration is likely to occur. Bicarbonate and alkalinity are related parameters and were not above a prediction limit this quarter.

The lack of parameters in the shallow aquifer zone exceeding prediction limits and the typically small amounts that prediction limits were exceeded by indicates no impacts to groundwater quality from the Cells 1 and 2 of Site B area. The long term declining trend for several parameters at MW-9B is consistent with declining impacts from Site A on groundwater quality.

Acetone was detected in wells both upgradient and downgradient of this area. The detected concentrations were below the MRL. This compound is occasionally detected at the site at

low concentrations that are often identified in quality controls samples, although this was not the case this quarter.

3.1.3 Cell 3 of Site B Data Evaluation

The water quality prediction limits for the Cell 3 of Site B area were exceeded for 3 of the 14 analytes evaluated (Table 1). This includes only 4 of the 56 concentrations of the parameters evaluated in the four downgradient wells combined, which is similar to previous quarters using the previous prediction limits. Chromium and chloride were detected at MW-12B, chloride at MW-14B and potassium at MW-15 were detected above prediction limits. Cobalt, which was above the prediction at MW-12B last quarter, was not this quarter. The lack of parameter concentrations in the shallow aquifer zone exceeding prediction limits indicate no impacts to groundwater quality from the Cell 3 of Site B area. The parameters exceeding prediction limits will be retested using next quarters data.

Several parameters at the upgradient well (MW-16B) which in the past have shown generally rising trends have recently been at relatively stable concentrations or show falling trends. Concentrations of several parameters at MW-12B show similar trends to MW-16B although concentrations of arsenic, manganese, potassium, sodium, and chloride are higher than at the upgradient well. Chloride rose relatively sharply in concentration from April 2021 to July 2022 at MW-12B but has shown a declining trends since. Concentrations are, however, low so the actual change small. Chloride concentrations at MW-15 have followed a similar pattern albeit at lower concentrations than at MW-12B and at concentrations similar to before 2017.

Acetone was detected in wells both upgradient and downgradient of this area. Iodomethane was detected in samples from two wells, MW-14B and 15. The detected concentrations were below the MRLs. These compounds are occasionally detected at the site at low concentrations that are often identified in quality controls samples, although this was not the case this quarter..

Cis-1,2 DCE, which had been detected in the samples from MW-13 at an estimated concentrations below the MRL several times in the past, was not detected and has not been detected since the third quarter 2021.

Three VOCs were detected in the sample from the upgradient well MW-16B. Chlorobenzene (0.36 ppb), 1,4-dichlorobenzene (0.23T ppb) and 1,2-dichlorobenzene (0.20T ppb) were detected at low concentrations. Concentrations this quarter were similar to or slightly lower than recent quarters. Concentrations are a small fraction of the applicable MCLs. A plot of these data is included in Appendix B. The chlorobenzene concentration, which appeared to show a slight rising trend in 2011 and part of 2012 and a generally declining trend in 2013 and 2014, has since followed a gently declining trend. Some variability is also apparent. The concentrations of all three compounds are reported below the MRL and therefore estimated. 1,4-dichlorobenzene and 1,2 dichlorobenzene have been less than 1 ppb since 2013 and dichlorobenzene concentrations below this level since

2018. The CCTWL provided the EHU and Ecology an explanation of these VOC concentrations in a letter prepared by Bright Fields Groundwater, Inc. dated December 21, 2010. Concentrations have since declined substantially.

3.2 Detections Above Standards

Parameter concentrations were compared to Washington and federal water quality standards. Washington groundwater quality criteria specified in WAC 173-200 and the federal drinking water Maximum Contaminant Levels (MCLs) were used. One Washington standard was exceeded in the samples (see Table 2). Arsenic was detected at concentrations above the Washington criterion (0.05 µg/L) at each monitoring well. The arsenic concentration at no well was above the federal MCL (10 ug/L). Arsenic is commonly detected in the site vicinity at these concentrations. The concentration at MW-10B, which has been above the federal standard for 16 of the last 22 quarters, was detected at 0.9 ug/l this quarter and at 0.6 ug/l last quarter. Arsenic concentrations at this well will continue to be reevaluated in future quarters.

The CCTWL provided an explanation of the arsenic concentrations in groundwater in a letter prepared by Bright Fields Groundwater, Inc. dated December 21, 2010. Visual review of the arsenic concentration at the site wells suggests generally stable or falling trends around Site A and the Cells 1 and 2 of Site B areas, except at MW-10B mentioned above. Concentrations around the Cell 3 area appear relatively stable within the historic range although overall slight declining trends are apparent at MW-12B and -14B and slight rising trends apparent at MW-15 and -16B.

Recent arsenic concentrations at MW-3B show significant potentially seasonal variability which make evaluation of trends and correlations difficult. Iron concentrations have fallen and arsenic has fallen at a lower rate during the last several years. A similar trend occurred prior to 10 years ago and concentrations will be compared to this period in 2024. Arsenic can be bound in iron hydroxides. Iron hydroxides are likely to be marginally stable under site geochemical conditions and can remove or release arsenic to groundwater relatively quickly. Arsenic will be reevaluated during each quarterly sampling event. A plot of arsenic and iron concentrations for MW-3B is included in Appendix B.

3.3 Statistical Analysis

Groundwater quality data were evaluated using statistical procedures specified in Chapter 173-351-420 WAC. Statistics calculated for each parameter at each well are as follows:

- mean
- sample standard deviation
- variance
- coefficient of variation
- standard error

A statistical summary of each data set for each well are presented in the water quality data tables in Appendix B. The statistics were calculated using the available data for each inorganic parameter at each well excluding identified outliers. Statistics were not calculated for VOCs because of the lack of compound detections.

3.4 Geochemical Evaluation

Geochemical evaluation of the April 2024 analytical data included calculations of cation-anion balances and preparation of trilinear diagrams (Appendix B).

The cation-anion balance calculations for the April 2024 data for the monitoring wells were within the 5 and 10 percent criteria defined in Chapter 173-351-430 WAC at all wells. It is fairly common for the balance to be outside the criterion at the wells near storm water outfalls where infiltrating water can affect the bicarbonate nature of the groundwater during the wet season.

Trilinear diagrams were prepared for each shallow monitoring well (Appendix B). The data points generally appear to fall in relatively the same general area on each respective diagram creating clusters of the data that define the chemical character of the water at each well. The groundwater at the site generally plots in the left part of the diagram indicating a calcium/magnesium bicarbonate water. Some variability is apparent resulting primarily from variations in the bicarbonate and sulfate concentration ratio. The bicarbonate/sulfate variations tend to spread the plot points linearly up diagrams. This variability is apparent in both background and downgradient data. The data clusters for five wells (MW-9B, -12B, -13, -14B, and 15), however, are relatively tight showing relative stability at these locations over time.

The plotted locations for the second quarter data generally fall within the cluster of historic data points although MW-5B, -7B, -8B, -10B, -11B and -16B are near the lower end of elongate clusters indicating higher relative bicarbonate concentrations. The data for MW-8B and -11B, which have recently varied from the upper to lower parts of the data cluster, were in the lower middle part of the data clusters this quarter. Over the last several years most data points, including for the upgradient wells, have plotted on the lower left side of the data cluster reflecting a general shifting of the relative concentrations of bicarbonate and sulfate towards bicarbonate as well as towards calcium and magnesium from sodium and potassium. This year the data has plotted toward the center of the data clusters except as noted for MW-5B, -7B, -8B, -10B, -11B and -16B.

4 SURFACE WATER AND LEACHATE QUALITY

Two surface water and three leachate samples were collected and analyzed in April 2024. The samples were collected and analyzed as described in the revised SAP. Summary tables of the analytical results for surface water and leachate samples are included in Appendix C. Sample collection procedures were documented for the sampling event in a memorandum included in Appendix D.

4.1 Surface Water

Surface water samples were collected in the log pond lock (S-1 located west of the site) and at the storm water discharge culvert (RD-1) (Figure 2). The samples were analyzed for nitrate, total metals and field parameters. Surface water quality appears to meet primary and secondary MCLs where promulgated for the parameters tested when evaluated as allowed by the available data. The copper MCL cannot be calculated because alkalinity is not measured in surface water. Nitrate, which shows significant seasonal variability at the runoff discharge location, was missed in the analytical request and not analyzed this quarter. Concentrations of most metals were within the recent typical range. Concentrations of several metals which were somewhat elevated last winter were at more typical concentrations in this winter.

4.2 Leachate

Leachate samples were collected at three locations of the landfill's leachate collection system (see Figure 2). The leachate sampling location for Site A is in the northwestern corner of the landfill (L-1 sampling location). The leachate sampling location for Cells 1 and 2 of Site B is near the south central boundary of the landfill (L-2 sampling location). The L-2 sump receives leachate from the Cells 1 and 2 collection system and the leachate from the Cell 3 collection system. The leachate sampling location for Cell 3 of Site B is on the north side of Cell 3 and south of the landfill's scales. A liner was completed in Cell 3 during the summer of 2003. This area began receiving waste in August 2004 and was closed in 2014/15. Leachate from most of this area is conducted to the L-3 sampling location. Leachate from the other part of the lined area is directed to the sump at the L-2 sampling location. Each sampling location represents leachate discharged from the respective landfill area (Figure 2) except L-2 is a mix as described above.

Concentrations of bicarbonate, TDS, chloride, ammonia, TOC, barium, calcium, potassium, sodium and other metals were generally higher in leachate samples than in groundwater samples. Concentrations of parameters at L-1 were at typical levels this quarter. At L-2

concentrations of most parameters were similar to or lower than recent quarterly data. The apparent falling trends over time in the concentrations of several parameters (conductivity, alkalinity, temperature, arsenic, barium, chromium, vanadium, zinc) continued this quarter. Manganese, which had a rising trend the in previous years and fluctuated within the historic last this year, was lower this year. At L-3 concentrations of most parameters show slowly declining concentrations albeit with significant variations. Iron and manganese are exceptions that show rising concentrations over the last few years. Several parameters appear to follow a seasonal trend at L-2 and L-3 mostly with lower levels in the winter. Overall trends are difficult to discern but may include rising and falling trends over time. These changes appear typical for leachate following landfill closure.

Three volatile organic compounds were detected in the leachate sample from L-1 with two of these compounds at concentrations above the MRL. The number of detections were low for this location and consistent with the generally stable or improving water quality downgradient of Site A.

The L-1 sump receives water from the Site A perimeter underdrain as well as landfill gas condensate from the nearby gas collection header and a toe drain under the perimeter of the Site A cover. Gas condensate, which is likely to be a significant although variable source of VOCs, is also likely to have declined as gas production has declined. Concentrations were typical for this location in the second quarter sample.

One volatile organic compound was detected in the sample from L-2 and four were detected at L-3. The samples were not diluted before analysis in the lab. These samples were not preserved which reduced foaming. In the past, foaming in acid preserved bottles caused the laboratory to dilute the samples as much as ten times which raised the reporting limits commensurately.

5 DISCUSSION

5.1 Summary

In April 2024, the Cowlitz County Tennant Way Landfill completed the second quarterly sampling event of the calendar year. Sampling was consistent with the approved SAP and the samples were analyzed at the ALS in Kelso, Washington laboratory. The SAP was revised last quarter to update as needed and add a section detailing procedures for the periodic reevaluation of background. A comprehensive reevaluation of background was also completed last quarter using these procedures. The updated background prediction limits were used this quarter. The measuring point elevations for each well and piezometer were re-surveyed last quarter. Differential settlement of the wells was revealed. The January and April 2024 depth to water measurements were adjusted to groundwater level elevation using the resurveyed elevations. Previous depth to water elevations were adjusted using measuring point elevations surveyed in 2001 for most wells, 2008 for the MW-2 piezometers and 1997 for PZ-2. A comprehensive records review was also completed to delineate as well as possible the Site A underdrain and toe drain. The approximate locations were added to the site drawing. This was completed at the request of Ecology so the potential effect of these drains on groundwater levels may be assessed.

Planning for the Port of Longview rail expansion project continues. This project will impact the Site A upgradient wells and the MW-1 piezometers. A work plan to address these impacts has been reviewed and will be implemented in coming months.

Groundwater flow was determined to be generally to the south or southwest across each of the three landfill areas. The linear groundwater velocity was estimated for the shallow and deep aquifer zones at low river tide. The groundwater flow rate in the shallow zone was estimated to range from 2.9 to 8.0 feet per day. The groundwater flow rate in the deep zone was estimated to range from 1.1 to 2.9 feet per day. These rates are within the range of previous estimates for this time of year although above average in each zone of the Site A and Site B areas. Precipitation was about average the month before the measurements and the river level was lower than average for this time of year. These conditions and variations in the character of the aquifer across the site combined to cause the groundwater level conditions. The aquifer matrix under the northern area is finer grained and includes a drainage way, a combination of circumstances that tends to maintain higher groundwater levels in this area. The overall direction of flow at the site is consistent with previous quarters and indicate flow is toward the slough south of the site. Substantial mounding in the shallow zone which was present around the MW-11 well cluster. This mounding, which occurs primarily in the wet season, appears to divert flow under Cell 2 to the east and west before flow turns south to discharge to the slough. The estimated flow rates are not likely to represent the actual average flow rate because of variations in the hydraulic conductivity and gradient across the site and the influence of tides in the Cowlitz and Columbia Rivers on flow.

Groundwater quality data from the Site A and Site B areas were evaluated in this report. Impacts on groundwater quality by Site A have declined since closure and parameter concentrations appear to be relatively stable in the downgradient wells. No parameter was detected at a concentration above a prediction limit in the samples collected downgradient of the Site A area. This included none of the 36 concentrations tested. Please note that the highest levels in the data record have been identified as outliers to the more recent data and are not included in the statistical calculations. The recent concentrations are likely the result of the effect of the interplay of geochemical variations in groundwater with the local effects of historic conditions on the aquifer matrix. Two VOCs, acetone and iodomethane, were detected downgradient of Site A at concentrations below the MRLs.

Cells 1 and 2 of Site B do not appear to have affected groundwater quality with two parameters detected above a prediction limit downgradient of this area, representing only two of the 42 concentrations tested. Cell 3 of Site B also does not appear to have affected groundwater quality with only three parameters, mostly geochemical, detected above prediction limits in the four downgradient wells combined. This represents only four of the 56 concentrations tested for this area. These concentrations were measured at MW-12B, -14B and -15. The same two VOCs were detected downgradient of Site B as for Site A.

Arsenic was detected at every well including the upgradient wells at concentrations exceeding the Washington MCL but none exceeded the federal MCL. Naturally occurring arsenic is common in groundwater in this hydrogeologic environment.

Trends in the analytical data will be evaluated in the 2024 annual report, which will be combined with the fourth quarter report.

5.2 Discussion

The groundwater level and quality data generated during the second quarter 2024 appear to be within the range previously estimated or measured in each landfill area. Concentration trends and the distributions of these compounds will be evaluated in the 2024 annual report.

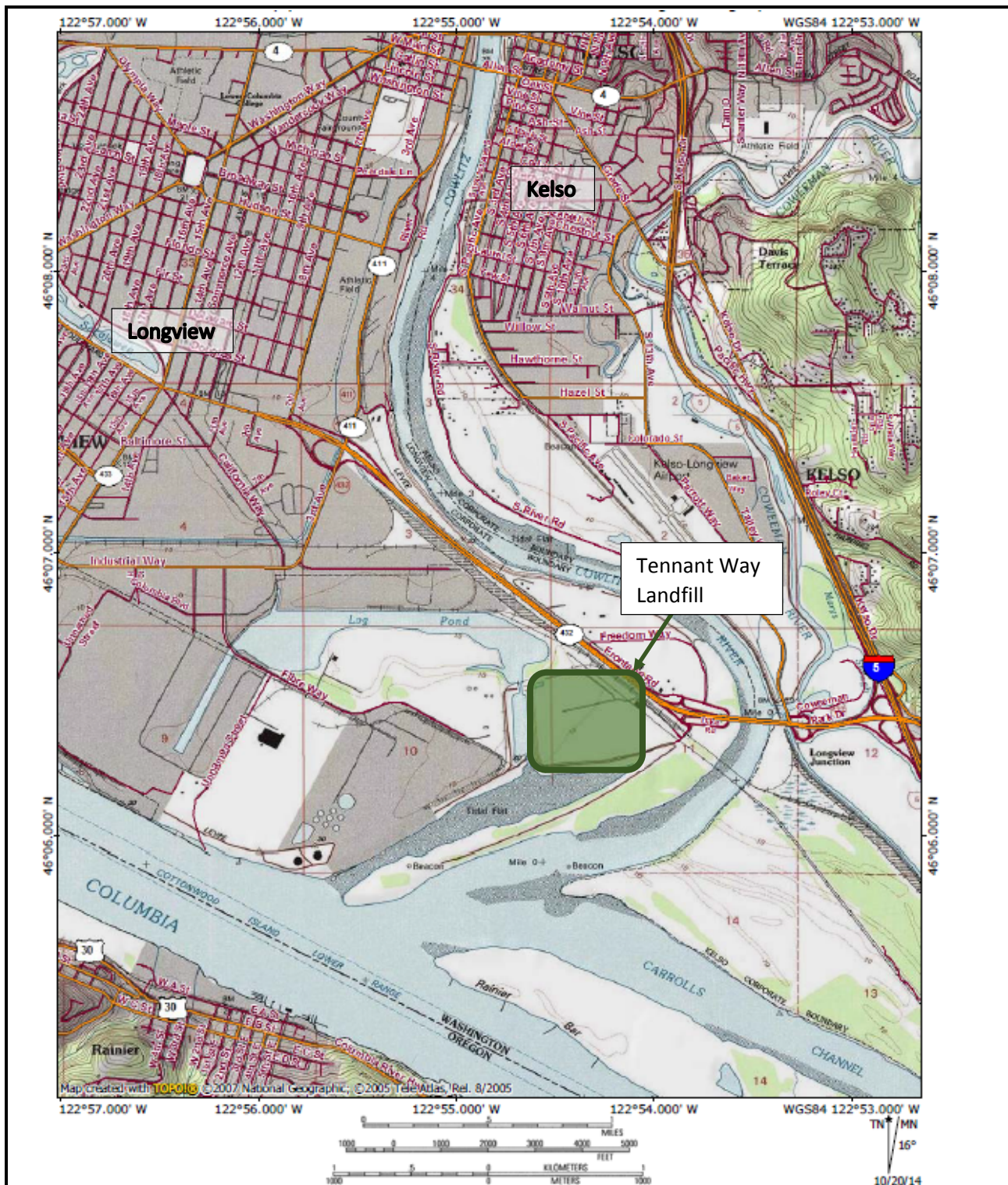
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LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.



Based Map: USGS through National Geographic

Bright Fields Groundwater, Inc.

Figure 1
Cowlitz County Tennant Way Landfill
Longview, Washington
Site Location Map

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Figure 2
Cowlitz County Tennant Way Landfill
Longview, Washington
Site Plan

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units	Barium ug/l	Chromium ug/l	Cobalt ug/l	Nickel ug/l	Vanadium ug/l	Geochemical Metals (Dissolved)				
						Calcium ug/l	Magnesium ug/l	Potassium ug/l	Sodium ug/l	
Site A										
MW-3B										
Prediction Limit	30.5	1.23		2.66		29,600	12,400	1,080	14,700	
3rd Quarter										
4th Quarter										
1st Quarter		1.25								
2nd Quarter										
MW-7B										
Prediction Limit	39.1	0.44		5.5		29,600	48,300	10,400	14,900	
3rd Quarter						48,300				
4th Quarter						32,000				
1st Quarter										
2nd Quarter										
MW-11B										
Prediction Limit	15.0	1.76		11.5		23,400	9,200	2,770	6,420	
3rd Quarter										
4th Quarter										
1st Quarter										
2nd Quarter										

Note: Prediction limits are the maximum values detected in the background data look back period for each well.

Metals concentrations are total except geochemical metals are dissolved.

J = Data qualifier assigned. The associated value is an estimate.

T = Detected below reporting limit. Value is an estimate.

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units	Alkalinity (as CaCO3) mg/l	Chloride mg/l	Sulfate mg/l	TOC mg/l	TDS mg/l
Site A					
MW-3B					
Prediction Limit	146	5.51	4.6	7.76	275
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					
MW-7B					
Prediction Limit	212	3.09	14.7	18.7	327
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					
MW-11B					
Prediction Limit	133	4.02	10.2	12.7	452
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					

Note: Prediction limits are the maximum values detected in the background data lot.
Metals concentrations are total except geochemical metals are dissolved.
J = Data qualifier assigned. The associated value is an estimate.
T = Detected below reporting limit. Value is an estimate.

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units						Geochemical Metals (Dissolved)			
						Barium ug/l	Chromium ug/l	Cobalt ug/l	Nickel ug/l
Cells 1 and 2 of Site B									
MW-8B									
Prediction Limit	20.4	0.97	0.60	8.44	5.6	48,100	10,400	2,280	6,800
3rd Quarter		1.00 J							
4th Quarter		1.21 J							
1st Quarter		1.30							
2nd Quarter									
MW-9B									
Prediction Limit	22.0	1.76	2.29	2.69	10.4	60,700	20,300	2,980	22,000
3rd Quarter								3,250	
4th Quarter								3,310	
1st Quarter								3,790	
2nd Quarter								3,290	
MW-10B									
Prediction Limit	36.8	1.42	10.1	9.8	21.1	73,900	25,100	4,000	9,400
3rd Quarter									
4th Quarter									
1st Quarter				9.9 J					
2nd Quarter				12.4					

Note: Prediction limits are the maximum values detected in the background data look back period for each well.
Metals concentrations are total except geochemical metals are dissolved.
J = Data qualifier assigned. The associated value is an estimate.
T = Detected below reporting limit. Value is an estimate.

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units	Alkalinity (as CaCO3) mg/l	Chloride mg/l	Sulfate mg/l	TOC mg/l	TDS mg/l
Cells 1 and 2 of S					
MW-8B					
Prediction Limit	116	3.03	17	26.6	265
3rd Quarter					
4th Quarter					
1st Quarter		3.17			
2nd Quarter					
MW-9B					
Prediction Limit	285	6.09	0.42	30.2	400
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					
MW-10B					
Prediction Limit	315	3.46	18.6	27.8	452
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					

Note: Prediction limits are the maximum values detected in the background data for
Metals concentrations are total except geochemical metals are dissolved.
J = Data qualifier assigned. The associated value is an estimate.
T = Detected below reporting limit. Value is an estimate.

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units						Geochemical Metals (Dissolved)			
						Barium ug/l	Chromium ug/l	Cobalt ug/l	Nickel ug/l
Cell 3 of Site B									
MW-12B									
Prediction Limit	44.4	0.72	0.57	1.66	4.7	93,000	30,800	5,740	31,700
3rd Quarter									
4th Quarter									
1st Quarter			0.63						
2nd Quarter		0.76							
MW-13									
Prediction Limit	45.4	1.01	0.44	0.54	5.9	75,000	27,800	3,290	25,400
3rd Quarter									
4th Quarter									
1st Quarter									
2nd Quarter									
MW-14B									
Prediction Limit	37.2	2.52	0.72	2.00	9.45	75,000	25,000	2,010	22,000
3rd Quarter									
4th Quarter									
1st Quarter									
2nd Quarter									
MW-15									
Prediction Limit	26.5	1.29	2.70	1.61	6.25	84,700	17,600	3,140	13,000
3rd Quarter									
4th Quarter								3,870	
1st Quarter								4,200	
2nd Quarter								3,680	

Note: Prediction limits are the maximum values detected in the background data look back period for each well.

Metals concentrations are total except geochemical metals are dissolved.

J = Data qualifier assigned. The associated value is an estimate.

T = Detected below reporting limit. Value is an estimate.

Table 1
Cowlitz County Tennant Way Landfill
Parameters Exceeding Prediction Limit in 2023/24

Parameter Units	Alkalinity (as CaCO3) mg/l	Chloride mg/l	Sulfate mg/l	TOC mg/l	TDS mg/l
Cell 3 of Site B					
MW-12B					
Prediction Limit	419	12.1	0.60	16.0	536
3rd Quarter		15.2			
4th Quarter		13.9			
1st Quarter		13.0			
2nd Quarter		14.1			
MW-13					
Prediction Limit	356	3.54	0.65	23.0	437
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					
MW-14B					
Prediction Limit	330	6.78	0.47	31.5	429
3rd Quarter					
4th Quarter					
1st Quarter		11.3			
2nd Quarter		7.5			
MW-15					
Prediction Limit	308	7.66	15.8	19.0	393
3rd Quarter					
4th Quarter					
1st Quarter					
2nd Quarter					

Note: Prediction limits are the maximum values detected in the background data
 Metals concentrations are total except geochemical metals are dissolved.
 J = Data qualifier assigned. The associated value is an estimate.
 T = Detected below reporting limit. Value is an estimate.

Table 2
Cowlitz County Tennant Way Landfill
Concentrations Above Standards
in 2023/24

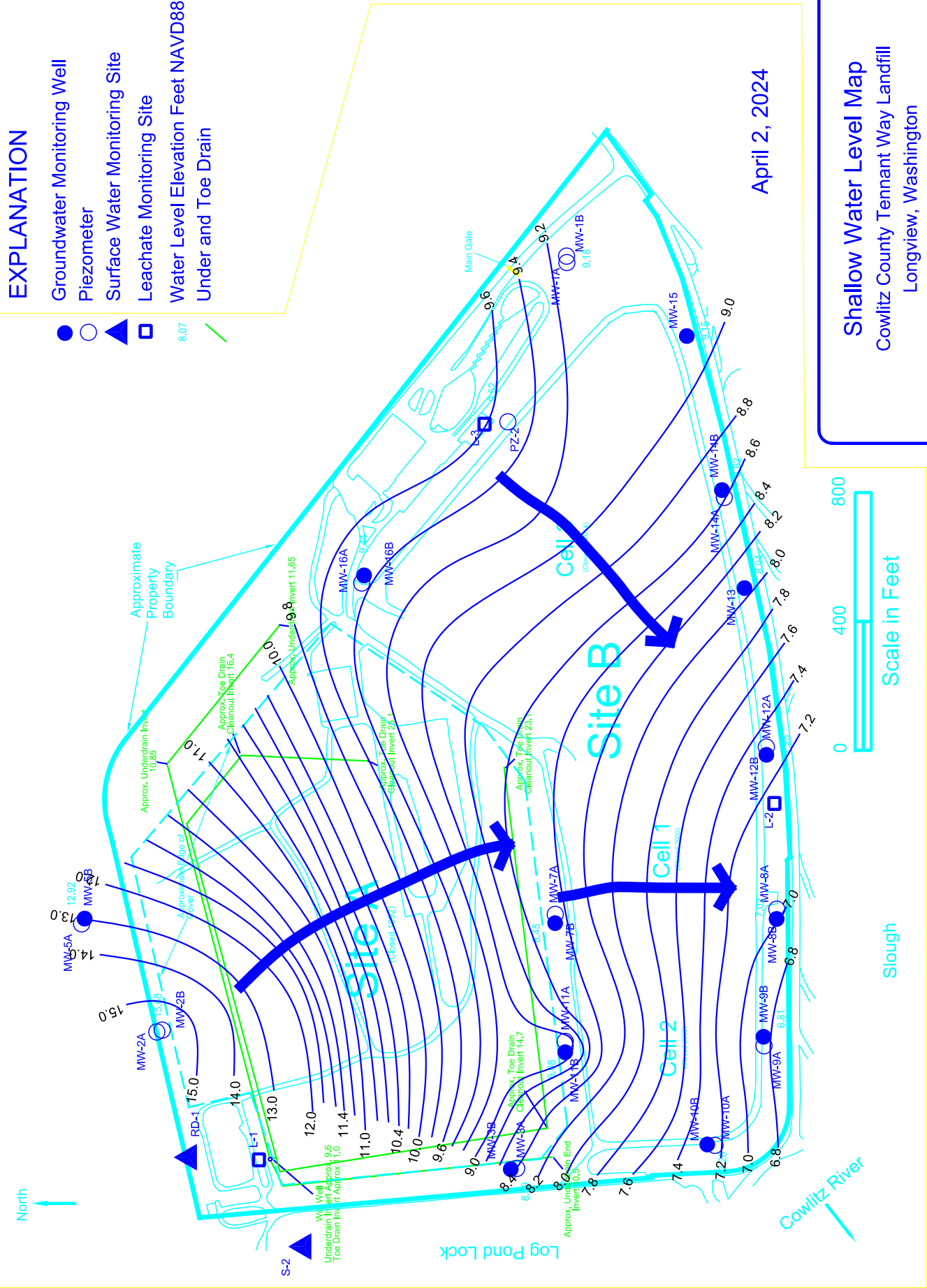
Location	Quarter	Parameter	Standards (ug/l)		Reporting Limit (ug/l)	Parameter Concentration (ug/l)
			Washington	Federal		
MW-3B	2nd	Arsenic	0.05	10	0.5	8.6
MW-5B	2nd	Arsenic	0.05	10	0.5	T
MW-7B	2nd	Arsenic	0.05	10	0.5	T
MW-8B	2nd	Arsenic	0.05	10	0.5	1.3
MW-9B	2nd	Arsenic	0.05	10	0.5	2.2
MW-10B	2nd	Arsenic	0.05	10	0.5	9.8
MW-11B	2nd	Arsenic	0.05	10	0.5	T
MW-12B	2nd	Arsenic	0.05	10	0.5	7.1
MW-13	2nd	Arsenic	0.05	10	0.5	1.8
MW-14B	2nd	Arsenic	0.05	10	0.5	7.8
MW-15B	2nd	Arsenic	0.05	10	0.5	3.1
MW-16B	2nd	Arsenic	0.05	10	0.5	1.2
MW-3B	3rd	Arsenic	0.05	10	0.5	8.5
MW-5B	3rd	Arsenic	0.05	10	0.5	T
MW-7B	3rd	Arsenic	0.05	10	0.5	0.5
MW-8B	3rd	Arsenic	0.05	10	0.5	1.1
MW-9B	3rd	Arsenic	0.05	10	0.5	2.5
MW-10B	3rd	Arsenic	0.05	10	0.5	13.2
MW-11B	3rd	Arsenic	0.05	10	0.5	0.4
MW-12B	3rd	Arsenic	0.05	10	0.5	7.5
MW-13	3rd	Arsenic	0.05	10	0.5	2.4
MW-14B	3rd	Arsenic	0.05	10	0.5	9.6
MW-15B	3rd	Arsenic	0.05	10	0.5	2.8
MW-16B	3rd	Arsenic	0.05	10	0.5	1.1
MW-3B	4th	Arsenic	0.05	10	0.5	8.0
MW-5B	4th	Arsenic	0.05	10	0.5	T
MW-7B	4th	Arsenic	0.05	10	0.5	0.6
MW-8B	4th	Arsenic	0.05	10	0.5	1.3
MW-9B	4th	Arsenic	0.05	10	0.5	1.9
MW-10B	4th	Arsenic	0.05	10	0.5	15.0
MW-11B	4th	Arsenic	0.05	10	0.5	0.9
MW-12B	4th	Arsenic	0.05	10	0.5	7.9
MW-13	4th	Arsenic	0.05	10	0.5	1.9
MW-14B	4th	Arsenic	0.05	10	0.5	4.4
MW-15B	4th	Arsenic	0.05	10	0.5	4.0
MW-16B	4th	Arsenic	0.05	10	0.5	1.2
MW-7B	4th	Nitrate	10 mg/l	10 mg/l	0.1	12.9 mg/l
MW-3B	1st	Arsenic	0.05	10	0.5	6.6
MW-5B	1st	Arsenic	0.05	10	0.5	T
MW-7B	1st	Arsenic	0.05	10	0.5	T
MW-8B	1st	Arsenic	0.05	10	0.5	1.3
MW-9B	1st	Arsenic	0.05	10	0.5	2.2
MW-10B	1st	Arsenic	0.05	10	0.5	0.6
MW-11B	1st	Arsenic	0.05	10	0.5	T
MW-12B	1st	Arsenic	0.05	10	0.5	7.3
MW-13	1st	Arsenic	0.05	10	0.5	1.3
MW-14B	1st	Arsenic	0.05	10	0.5	5.1
MW-15B	1st	Arsenic	0.05	10	0.5	3.1
MW-16B	1st	Arsenic	0.05	10	0.5	1.1
MW-3B	2nd	Arsenic	0.05	10	0.5	8.0
MW-5B	2nd	Arsenic	0.05	10	0.5	T
MW-7B	2nd	Arsenic	0.05	10	0.5	T
MW-8B	2nd	Arsenic	0.05	10	0.5	1.3
MW-9B	2nd	Arsenic	0.05	10	0.5	2.2
MW-10B	2nd	Arsenic	0.05	10	0.5	0.9
MW-11B	2nd	Arsenic	0.05	10	0.5	T
MW-12B	2nd	Arsenic	0.05	10	0.5	6.5
MW-13	2nd	Arsenic	0.05	10	0.5	1.7
MW-14B	2nd	Arsenic	0.05	10	0.5	8.1
MW-15B	2nd	Arsenic	0.05	10	0.5	3.8
MW-16B	2nd	Arsenic	0.05	10	0.5	1.1

Notes: T = detected above criterion and below reporting limit. Concentration is an estimate.
J = estimated concentration. Detection limit for arsenic varies but typically is 0.1 ug/l.
Washington standard is the Groundwater criteria in WAC173-200. Federal standard is the MCL for drinking water.

APPENDIX A

WATER LEVEL DATA AND CONTOUR PLOTS

Groundwater Monitoring Well
Piezometer
Surface Water Monitoring Site
Leachate Monitoring Site
Water Level Elevation Feet NAVD88
Under and Toe Drain



Shallow Water Level Map

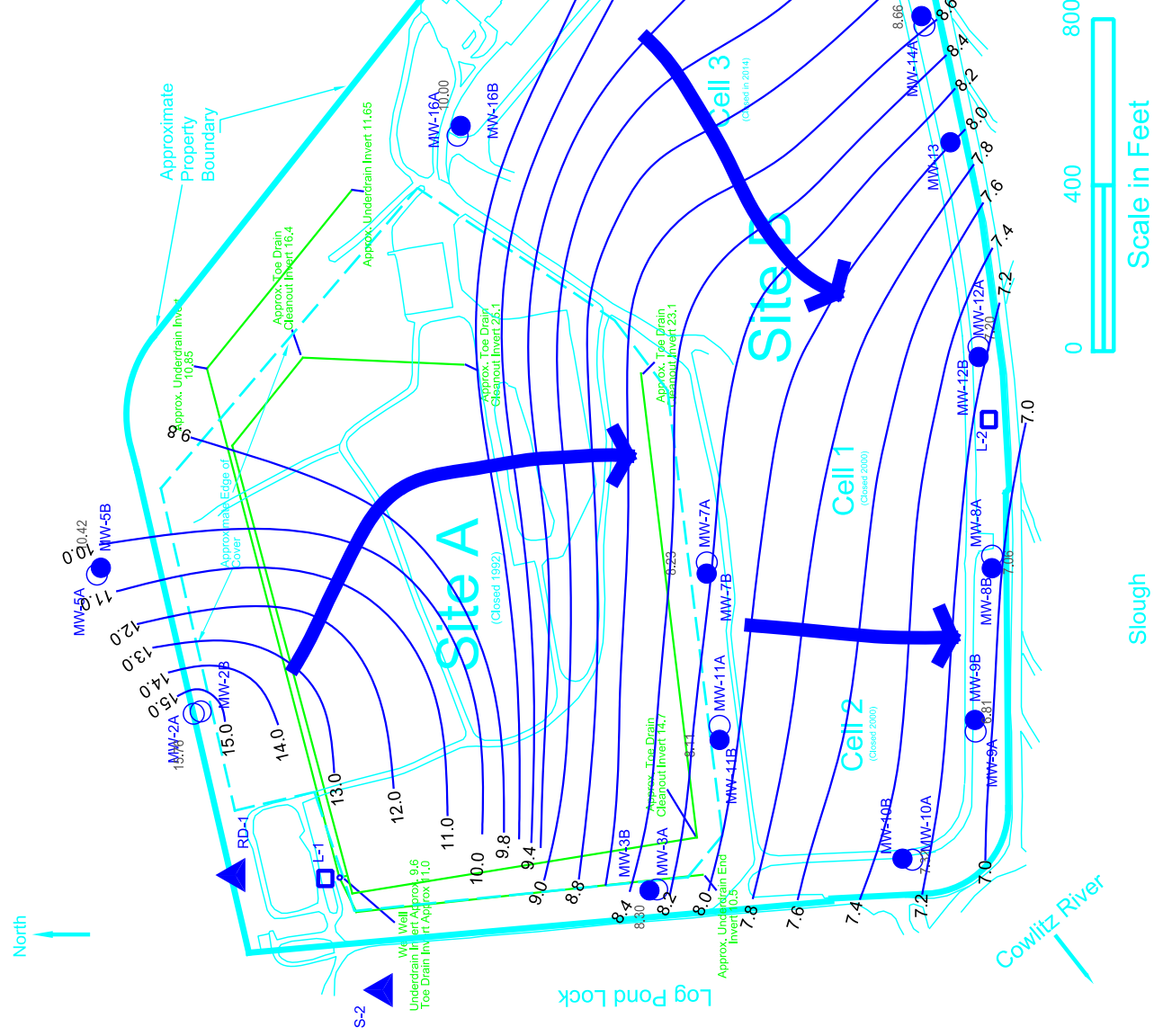
Cowlitz County Tennant Way Landfill

Longview, Washington

EXPLANATION

- Groundwater Monitoring Well
- Piezometer
- Surface Water Monitoring Site
- Leachate Monitoring Site
- Water Level Elevation Feet NAVD88
- Under and Toe Drain

- 8.07
-



Deep Water Level Map
Cowlitz County Tennant Way Landfill
Longview, Washington

Scale in Feet

Slough

April 2, 2024

Cowlitz County Tennant Way Landfill

Linear Groundwater Velocity Calculations

Date	Hydraulic Conductivity K (feet/minute)	Porosity n	Hydraulic Gradient I (feet/feet)	Linear Groundwater Velocity (feet/minute)	Linear Groundwater Velocity (feet/day)	Apparent Groundwater Flow Direction
Site A						
Upper Portion of Alluvial Sand Aquifer						
1/21/2020	0.3	0.25	0.0037	0.00449	6.5	south
4/13/2020	0.3	0.25	0.0053	0.00639	9.2	south
7/12/2020	0.3	0.25	0.0043	0.00511	7.4	south
10/15/2020	0.3	0.25	0.0036	0.00432	6.2	south
1/18/2021	0.3	0.25	0.0029	0.00352	5.1	south
4/11/2021	0.3	0.25	0.0048	0.00573	8.3	south
7/12/2021	0.3	0.25	0.0036	0.00432	6.2	south
10/26/2021	0.3	0.25	0.0040	0.00480	6.9	south
1/18/2022	0.3	0.25	0.0034	0.00405	5.8	south
4/6/2022	0.3	0.25	0.0046	0.00549	7.9	south
7/17/2022	0.3	0.25	0.0032	0.00384	5.5	south
10/9/2022	0.3	0.25	0.0034	0.00412	5.9	south
1/23/2023	0.3	0.25	0.0031	0.00372	5.4	south
4/4/2023	0.3	0.25	0.0048	0.00577	8.3	south
7/23/2023	0.3	0.25	0.0032	0.00389	5.6	south
10/30/2023	0.3	0.25	0.0031	0.00377	5.4	south
1/30/2024	0.3	0.25	0.0031	0.00369	5.3	south
4/2/2024	0.3	0.25	0.0046	0.00556	8.0	south
Lower Portion of Alluvial Sand Aquifer						
1/21/2020	0.12	0.25	0.0048	0.00232	3.3	south
4/13/2020	0.12	0.25	0.0050	0.00242	3.5	south
7/12/2020	0.12	0.25	0.0037	0.00179	2.6	south
10/15/2020	0.12	0.25	0.0045	0.00214	3.1	south
1/18/2021	0.12	0.25	0.0027	0.00131	1.9	south
4/11/2021	0.12	0.25	0.0044	0.00212	3.1	south
7/12/2021	0.12	0.25	0.0045	0.00218	3.1	south
10/26/2021	0.12	0.25	0.0038	0.00184	2.7	south
1/18/2022	0.12	0.25	0.0036	0.00172	2.5	south
4/6/2022	0.12	0.25	0.0049	0.00234	3.4	south
7/17/2022	0.12	0.25	0.0027	0.00130	1.9	south
10/9/2022	0.12	0.25	0.0030	0.00144	2.1	south
1/23/2023	0.12	0.25	0.0042	0.00199	2.9	south
4/4/2023	0.12	0.25	0.0042	0.00203	2.9	south
7/23/2023	0.12	0.25	0.0045	0.00214	3.1	south
10/30/2023	0.12	0.25	0.0033	0.00156	2.2	south
1/30/2024	0.12	0.25	0.0035	0.00166	2.4	south
4/2/2024	0.12	0.25	0.0041	0.00199	2.9	south

Cowlitz County Tennant Way Landfill

Linear Groundwater Velocity Calculations

Date	Hydraulic Conductivity K (feet/minute)	Porosity n	Hydraulic Gradient I (feet/feet)	Linear Groundwater Velocity (feet/minute)	Linear Groundwater Velocity (feet/day)	Apparent Groundwater Flow Direction
Cells 1 and 2 of Site B						
Upper Portion of Alluvial Sand Aquifer						
1/21/2020	0.3	0.25	0.00192	0.00231	3.3	south
4/13/2020	0.3	0.25	0.00112	0.00134	1.9	south
7/12/2020	0.3	0.25	0.00119	0.00142	2.1	south
10/15/2020	0.3	0.25	0.00074	0.00088	1.3	south
1/18/2021	0.3	0.25	0.00389	0.00467	6.7	south
4/11/2021	0.3	0.25	0.00172	0.00207	3.0	south
7/12/2021	0.3	0.25	0.00093	0.00112	1.6	south
10/26/2021	0.3	0.25	0.00077	0.00093	1.3	west
1/18/2022	0.3	0.25	0.00299	0.00359	5.2	south
4/6/2022	0.3	0.25	0.00173	0.00208	3.0	south
7/17/2022	0.3	0.25	0.00160	0.00192	2.8	south
10/9/2022	0.3	0.25	0.00089	0.00107	1.5	south
1/23/2023	0.3	0.25	0.00141	0.00169	2.4	south
4/4/2023	0.3	0.25	0.00070	0.00083	1.2	south
7/23/2023	0.3	0.25	0.00109	0.00131	1.9	south
10/30/2023	0.3	0.25	0.00077	0.00092	1.3	south
1/30/2024	0.3	0.25	0.00155	0.00186	2.7	south
4/2/2024	0.3	0.25	0.00232	0.00279	4.0	south
Lower Portion of Alluvial Sand Aquifer						
1/21/2020	0.12	0.25	0.00121	0.00058	0.8	south
4/13/2020	0.12	0.25	0.00137	0.00066	0.9	south
7/12/2020	0.12	0.25	0.00137	0.00066	0.9	south
10/15/2020	0.12	0.25	0.00075	0.00036	0.5	south
1/18/2021	0.12	0.25	0.00176	0.00085	1.2	south
4/11/2021	0.12	0.25	0.00164	0.00079	1.1	south
7/12/2021	0.12	0.25	0.00111	0.00053	0.8	south
10/26/2021	0.12	0.25	0.00039	0.00019	0.3	west
1/18/2022	0.12	0.25	0.00159	0.00076	1.1	south
4/6/2022	0.12	0.25	0.00175	0.00084	1.2	south
7/17/2022	0.12	0.25	0.00133	0.00064	0.9	south
10/9/2022	0.12	0.25	0.00086	0.00041	0.6	south
1/23/2023	0.12	0.25	0.00152	0.00073	1.0	south
4/4/2023	0.12	0.25	0.00115	0.00055	0.8	south
7/23/2023	0.12	0.25	0.00096	0.00046	0.7	south
10/30/2023	0.12	0.25	0.00061	0.00029	0.4	south
1/30/2024	0.12	0.25	0.00100	0.00048	0.7	south
4/2/2024	0.12	0.25	0.00165	0.00079	1.1	south

Cowlitz County Tennant Way Landfill

Linear Groundwater Velocity Calculations

Date	Hydraulic Conductivity K (feet/minute)	Porosity n	Hydraulic Gradient I (feet/feet)	Linear Groundwater Velocity (feet/minute)	Linear Groundwater Velocity (feet/day)	Apparent Groundwater Flow Direction
Cell 3 of Site B						
Upper Portion of Alluvial Sand Aquifer						
1/21/2020	0.3	0.25	0.00195	0.0023	3.4	west-southwest
4/13/2020	0.3	0.25	0.00152	0.0018	2.6	west-southwest
7/12/2020	0.3	0.25	0.00125	0.0015	2.2	southwest
10/15/2020	0.3	0.25	0.00099	0.0012	1.7	southwest
1/18/2021	0.3	0.25	0.00166	0.0020	2.9	southwest
4/11/2021	0.3	0.25	0.00154	0.0018	2.7	southwest
7/12/2021	0.3	0.25	0.00111	0.0013	1.9	southwest
10/26/2021	0.3	0.25	0.00078	0.0009	1.4	west
1/18/2022	0.3	0.25	0.00151	0.0018	2.6	southwest
4/6/2022	0.3	0.25	0.00260	0.0031	4.5	west-southwest
7/17/2022	0.3	0.25	0.00120	0.0014	2.1	southwest
10/9/2022	0.3	0.25	0.00108	0.0013	1.9	southwest
1/23/2023	0.3	0.25	0.00166	0.0020	2.9	southwest
4/4/2023	0.3	0.25	0.00143	0.0017	2.5	southwest
7/23/2023	0.3	0.25	0.00116	0.0014	2.0	southwest
10/30/2023	0.3	0.25	0.00095	0.0011	1.6	southwest
1/30/2024	0.3	0.25	0.00091	0.0011	1.6	southwest
4/2/2024	0.3	0.25	0.00165	0.0020	2.9	southwest
Lower Portion of Alluvial Sand Aquifer						
1/21/2020	0.12	0.25	0.00174	0.00084	1.2	southwest
4/13/2020	0.12	0.25	0.00136	0.00065	0.9	southwest
7/12/2020	0.12	0.25	0.00135	0.00065	0.9	southwest
10/15/2020	0.12	0.25	0.00089	0.00043	0.6	southwest
1/18/2021	0.12	0.25	0.00166	0.00079	1.1	southwest
4/11/2021	0.12	0.25	0.00150	0.00072	1.0	southwest
7/12/2021	0.12	0.25	0.00092	0.00044	0.6	southwest
10/26/2021	0.12	0.25	0.00075	0.00036	0.5	west
1/18/2022	0.12	0.25	0.00122	0.00059	0.8	southwest
4/6/2022	0.12	0.25	0.00138	0.00066	1.0	southwest
7/17/2022	0.12	0.25	0.00092	0.00044	0.6	southwest
10/9/2022	0.12	0.25	0.00084	0.00040	0.6	southwest
1/23/2023	0.12	0.25	0.00138	0.00066	1.0	southwest
4/4/2023	0.12	0.25	0.00136	0.00065	0.9	southwest
7/23/2023	0.12	0.25	0.00053	0.00025	0.4	southwest
10/30/2023	0.12	0.25	0.00089	0.00043	0.6	southwest
1/30/2024	0.12	0.25	0.00053	0.00025	0.4	southwest
4/2/2024	0.12	0.25	0.00154	0.00074	1.1	southwest

Notes:

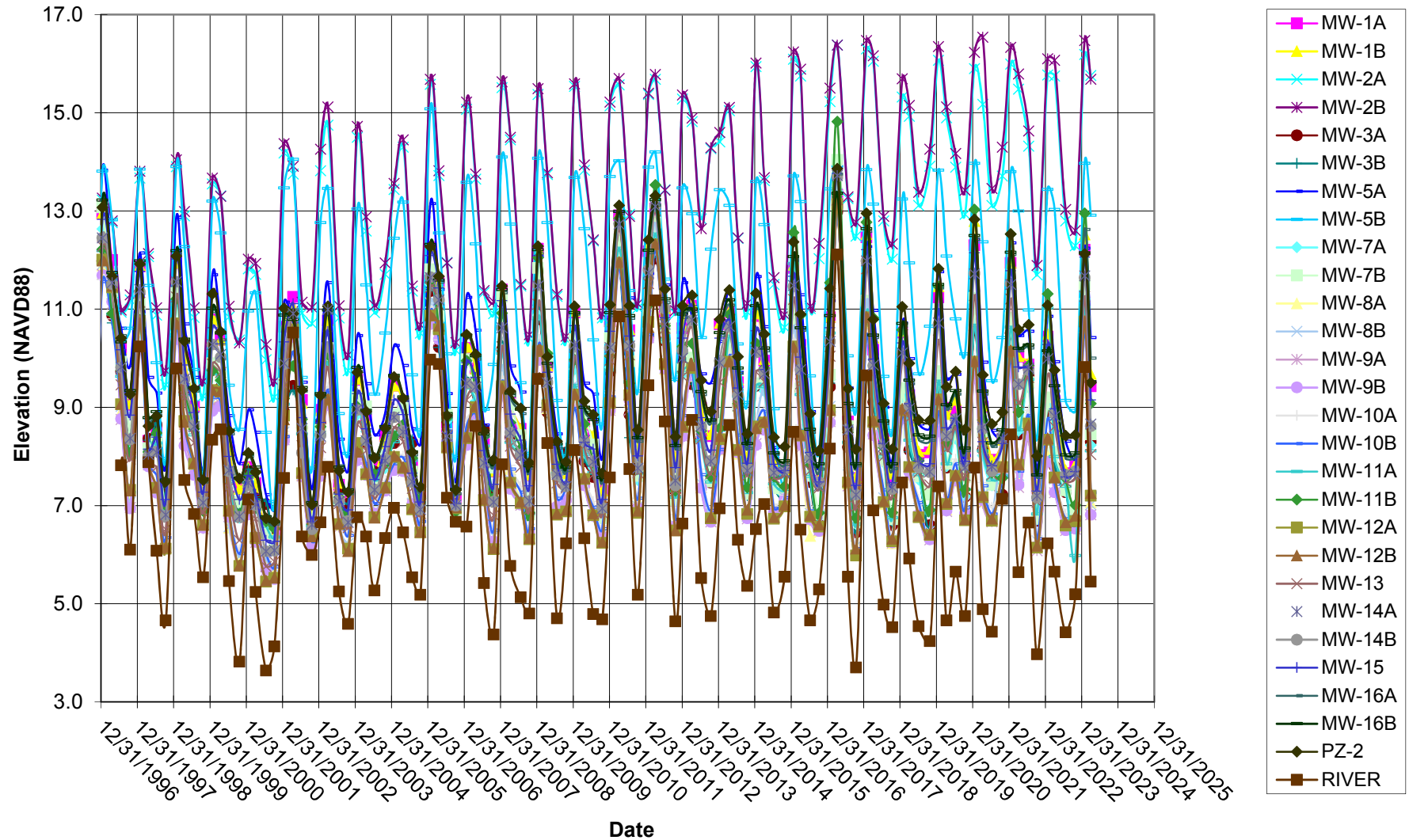
Hydraulic conductivity and porosity taken from EMCON, 1995.

Hydraulic gradient estimated using contour plots.

Linear groundwater velocity calculated as KI/n.

Apparent groundwater flow direction estimated as downgradient direction on the contour plots.

Cowlitz County Tennant Way Landfill Groundwater Levels Hydrograph



Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Depth to Water Measurements
(feet below reference point)

Date Measured	MW-1A	MW-1B	MW-2A	MW-2B	MW-3A	MW-3B	MW-5A	MW-5B	MW-7A	MW-7B
1/26/2016	14.32	14.14	7.03	6.94	8.39	8.29	3.51	1.81	18.00	17.67
4/4/2016	15.89	15.70	7.37	7.29	9.98	9.92	4.19	2.33	19.64	19.31
7/11/2016	17.93	17.78	12.11	12.12	11.83	11.79	6.57	5.88	21.31	21.09
10/9/2016	18.62	18.49	11.09	10.84	12.62	12.55	7.66	7.38	22.11	21.87
1/26/2017	15.33	15.20	7.89	7.68	9.89	9.81	4.31	2.07	19.34	19.03
4/10/2017	12.83	12.61	6.74	6.80	6.32	6.28	1.57	1.61	15.51	14.65
7/26/2017	17.45	17.31	9.87	9.89	11.12	11.12	6.09	5.47	20.65	20.07
10/16/2017	18.60	18.46	10.63	10.41	12.86	12.81	7.33	6.57	22.29	22.04
1/29/2018	13.70	13.51	6.82	6.71	8.75	8.64	3.21	1.68	17.86	17.52
4/6/2018	15.99	15.62	7.07	7.02	10.20	10.18	4.51	2.38	19.56	19.13
7/19/2018	17.80	17.56	10.32	10.29	11.33	11.26	6.48	5.89	21.03	20.78
10/15/2018	18.58	18.39	11.10	10.85	12.71	12.69	7.55	7.00	22.20	21.97
1/23/2019	15.64	15.48	7.80	7.49	10.44	10.41	4.76	2.28	19.70	19.30
4/4/2019	16.91	16.73	8.19	8.03	11.18	11.21	5.49	3.58	20.56	20.20
7/8/2019	18.13	17.94	10.01	9.80	11.71	11.68	6.82	5.84	21.38	21.10
10/28/2019	18.08	17.89	9.21	8.92	12.71	12.73	6.89	4.87	21.98	21.47
1/21/2020	14.92	14.58	7.05	6.83	10.01	9.94	3.72	1.69	19.26	18.95
4/13/2020	17.17	17.18	8.22	8.06	11.54	11.50	5.90	3.44	21.11	20.84
7/12/2020	17.23	16.89	9.23	9.01	10.72	10.68	5.81	4.72	20.55	20.24
10/15/2020	18.11	17.98	10.19	9.76	12.13	12.10	7.46	5.43	21.72	21.11
1/18/2021	13.86	13.25	7.22	6.95	8.74	8.65	3.06	1.55	18.18	17.46
4/11/2021	17.15	17.01	7.95	6.64	11.17	11.09	5.56	3.15	20.89	20.18
7/12/2021	18.23	18.11	10.01	9.72	11.88	11.85	6.95	5.98	21.50	21.27
10/26/2021	17.81	17.70	9.41	8.88	12.09	12.07	7.09	5.10	21.32	20.89
1/18/2022	14.22	14.10	7.13	6.85	8.80	8.75	3.13	1.72	18.24	17.87
4/6/2022	16.13	16.00	7.64	7.39	10.86	10.83	5.02	2.52	20.39	19.98
7/17/2022	16.29	16.14	8.80	8.55	9.68	9.62	4.93	4.54	19.51	19.18
10/9/2022	18.80	18.67	11.42	11.29	12.62	12.58	7.74	7.15	22.19	21.96
1/23/2023	15.72	15.55	7.35	7.08	10.40	10.29	4.63	2.08	19.84	19.49
4/4/2023	17.03	16.86	7.37	7.11	11.51	11.48	5.55	2.49	20.91	20.60
7/23/2023	18.50	18.32	10.32	10.15	12.04	12.02	7.17	6.38	21.63	21.38
10/30/2023	18.36	18.20	10.83	10.58	12.57	12.69	7.50	6.58	21.99	21.77
1/30/2024	13.65	13.25	6.67	6.44	8.25	8.14	3.12	1.42	17.42	16.91
4/2/2024	16.43	16.09	7.10	7.23	10.87	10.79	4.94	2.48	20.40	19.96

NOTES: NM = Not Measured

Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Depth to Water Measurements
(feet below reference point)

Date Measured	MW-8A	MW-8B	MW-9A	MW-9B	MW-10A	MW-10B	MW-11A	MW-11B	MW-12A	MW-12B
1/26/2016	26.84	25.92	28.39	27.96	32.14	33.12	14.02	13.43	24.89	24.74
4/4/2016	28.65	28.22	30.25	29.76	33.88	34.87	16.69	15.11	26.71	26.53
7/11/2016	30.51	29.73	31.73	31.28	35.53	36.51	18.36	18.17	28.36	28.17
10/9/2016	30.41	29.97	31.92	31.52	35.91	36.85	19.09	19.14	28.56	28.36
1/26/2017	28.14	27.55	29.71	29.31	33.52	34.50	15.44	14.45	26.19	26.02
4/10/2017	23.70	23.21	25.29	24.89	29.41	30.33	12.60	11.17	21.99	21.74
7/26/2017	29.45	28.94	31.02	30.52	34.75	35.74	17.66	17.50	27.66	27.47
10/16/2017	30.84	30.39	32.43	31.98	36.32	37.28	19.33	19.24	29.15	28.85
1/29/2018	26.33	25.41	27.93	27.51	32.01	32.96	15.03	13.22	24.30	24.13
4/6/2018	28.35	27.90	29.96	29.57	33.79	34.78	16.64	15.17	26.43	26.24
7/19/2018	29.86	29.41	31.39	30.91	35.10	36.08	17.96	17.81	28.06	27.88
10/15/2018	30.66	30.25	32.18	31.75	36.10	37.08	19.20	19.13	28.86	28.65
1/23/2019	28.05	27.58	29.68	29.22	33.65	34.58	15.78	15.41	26.19	26.00
4/4/2019	29.26	28.77	30.80	30.32	34.65	35.63	17.62	17.08	27.35	27.16
7/8/2019	30.08	29.63	31.64	31.18	35.40	36.34	18.32	18.08	28.37	28.18
10/28/2019	30.52	30.09	32.12	31.69	36.08	37.01	19.10	19.08	28.73	28.55
1/21/2020	28.02	27.39	29.65	29.49	33.54	34.49	16.42	14.53	25.97	25.81
4/13/2020	29.97	29.51	31.54	31.10	35.27	36.25	18.10	17.72	28.10	27.91
7/12/2020	29.40	28.96	30.91	30.49	34.58	35.55	17.42	17.26	27.53	27.35
10/15/2020	30.15	29.51	31.65	31.16	35.54	36.45	18.62	18.66	28.43	28.25
1/18/2021	27.22	26.55	28.83	28.35	32.53	33.44	15.28	12.96	25.20	25.03
4/11/2021	29.81	29.35	31.38	30.89	35.05	36.00	17.84	17.25	27.96	27.76
7/12/2021	30.20	29.76	31.75	31.31	35.56	36.57	18.43	18.32	28.44	28.24
10/26/2021	29.03	28.08	30.71	30.30	34.92	35.82	18.34	18.43	27.35	27.17
1/18/2022	27.04	26.54	28.71	28.24	32.46	33.41	15.32	13.46	25.00	24.81
4/6/2022	29.40	28.96	31.05	30.58	34.71	35.70	17.41	17.09	27.30	27.13
7/17/2022	28.46	28.07	30.09	29.57	33.58	34.57	16.38	16.14	26.46	26.33
10/9/2022	30.71	30.29	32.34	31.83	36.15	37.08	19.12	18.81	28.99	28.79
1/23/2023	28.87	28.29	30.52	30.11	34.18	34.63	14.92	14.68	26.79	26.60
4/4/2023	29.55	29.03	31.16	30.73	35.01	35.97	17.95	17.06	27.56	27.40
7/23/2023	30.34	29.90	31.93	31.50	35.69	36.67	18.56	18.43	28.54	28.31
10/30/2023	30.32	29.93	31.90	31.47	35.84	36.79	19.97	18.98	28.45	28.18
1/30/2024	25.86	25.34	27.45	27.03	31.46	32.38	14.51	12.59	23.85	23.68
4/2/2024	29.43	29.06	31.11	30.68	34.73	35.72	17.44	16.46	27.40	27.18

NOTES: NM = Not Measured

Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Depth to Water Measurements
(feet below reference point)

Date Measured	MW-13	MW-14A	MW-14B	MW-15	MW-16A	MW-16B	PZ-2	RIVER start	RIVER end
1/26/2016	26.40	24.10	23.58	22.61	13.85	13.63	27.33	23.07	22.96
4/4/2016	28.12	25.81	25.27	24.26	15.29	15.08	28.80	25.06	24.66
7/11/2016	29.89	27.61	27.07	26.20	17.37	17.15	30.83	26.91	26.61
10/9/2016	30.24	28.18	27.56	26.80	18.12	17.85	31.58	26.28	26.18
1/26/2017	27.56	25.24	24.70	23.66	14.60	14.83	28.28	23.41	23.82
4/10/2017	23.84	21.86	21.34	20.52	12.11	12.34	25.84	19.46	19.35
7/26/2017	29.22	27.04	26.48	25.68	16.84	16.62	30.32	26.02	26.10
10/16/2017	30.62	28.36	27.82	26.87	18.05	17.85	31.55	27.87	27.71
1/29/2018	25.78	23.60	23.06	22.07	13.28	13.06	26.75	21.92	20.90
4/6/2018	27.93	25.72	25.19	24.30	15.44	15.23	28.91	24.67	24.33
7/19/2018	29.60	27.37	26.79	26.02	17.19	16.98	30.62	26.59	26.37
10/15/2018	30.40	28.21	27.70	26.82	18.11	17.85	31.55	27.05	27.02
1/23/2019	27.66	25.47	24.93	23.97	15.21	14.99	28.65	24.10	23.40
4/4/2019	28.82	26.60	26.01	25.21	16.38	16.15	29.80	25.65	25.49
7/8/2019	29.92	27.72	27.27	26.38	17.52	17.26	30.96	27.03	26.88
10/28/2019	30.18	27.89	27.36	26.43	17.53	17.29	30.97	27.33	26.72
1/21/2020	27.23	24.86	24.35	23.28	14.43	14.20	27.88	24.18	23.27
4/13/2020	29.45	27.17	26.62	25.70	16.88	16.65	30.28	26.91	26.49
7/12/2020	29.01	26.81	26.28	25.50	16.59	16.36	29.97	25.92	26.08
10/15/2020	29.99	27.81	27.21	26.38	17.74	17.53	31.15	26.82	25.59
1/18/2021	26.32	23.86	23.31	22.13	13.44	13.20	26.87	23.80	23.76
4/11/2021	29.31	26.98	26.48	25.98	16.59	16.37	30.04	26.68	26.49
7/12/2021	29.97	27.78	27.34	26.47	17.66	17.43	31.04	27.14	26.41
10/26/2021	29.15	27.22	26.63	26.02	17.38	17.16	30.80	24.44	23.95
1/18/2022	26.39	24.08	23.52	22.50	13.75	13.54	27.17	23.12	22.48
4/6/2022	28.50	26.11	25.57	24.46	15.71	15.50	29.12	25.93	25.65
7/17/2022	27.99	25.78	25.28	24.48	15.65	15.43	29.02	24.92	24.86
10/9/2022	30.53	28.38	27.88	26.99	18.29	18.08	31.69	27.60	26.71
1/23/2023	27.95	25.59	25.05	24.00	15.72	15.55	28.62	25.34	24.59
4/4/2023	28.99	26.76	26.17	25.31	16.53	16.26	29.94	25.92	25.92
7/23/2023	30.11	27.94	27.41	26.70	17.90	17.67	31.28	27.15	26.73
10/30/2023	30.02	27.93	27.34	26.59	17.85	17.63	31.26	26.38	26.04
1/30/2024	25.40	23.26	22.72	21.82	13.24	13.02	26.64	21.73	21.78
4/2/2024	28.62	26.28	25.74	24.73	15.86	15.65	29.26	26.10	25.78

NOTES: NM = Not Measured

Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Groundwater Level Elevations
(feet NAVD88)

Date	Ref. Elev. to 2023	MW-1A	MW-1B	MW-2A	MW-2B	MW-3A	MW-3B	MW-5A	MW-5B	MW-7A	MW-7B
	Measured	26.16	26.04	23.12	23.18	19.31	19.30	15.48	15.52	28.91	28.69
	Ref. Elev. 2024	25.86	25.77	22.86	22.91	19.17	19.18	15.36	15.39	28.63	28.41
1/26/2017		10.83	10.84	15.23	15.50	9.42	9.49	11.17	13.45	9.57	9.66
4/10/2017		13.33	13.43	16.38	16.38	12.99	13.02	13.91	13.91	13.40	14.04
7/26/2017		8.71	8.73	13.25	13.29	8.19	8.18	9.39	10.05	8.26	8.62
10/16/2017		7.56	7.58	12.49	12.77	6.45	6.49	8.15	8.95	6.62	6.65
1/29/2018		12.46	12.53	16.30	16.47	10.56	10.66	12.27	13.84	11.05	11.17
4/6/2018		10.17	10.42	16.05	16.16	9.11	9.12	10.97	13.14	9.35	9.56
7/19/2018		8.36	8.48	12.80	12.89	7.98	8.04	9.00	9.63	7.88	7.91
10/15/2018		7.58	7.65	12.02	12.33	6.60	6.61	7.93	8.52	6.71	6.72
1/23/2019		10.52	10.56	15.32	15.69	8.87	8.89	10.72	13.24	9.21	9.39
4/4/2019		9.25	9.31	14.93	15.15	8.13	8.09	9.99	11.94	8.35	8.49
7/8/2019		8.03	8.10	13.11	13.38	7.60	7.62	8.66	9.68	7.53	7.59
10/28/2019		8.08	8.15	13.91	14.26	6.60	6.57	8.59	10.65	6.93	7.22
1/21/2020		11.24	11.46	16.07	16.35	9.30	9.36	11.76	13.83	9.65	9.74
4/13/2020		8.99	8.86	14.90	15.12	7.77	7.80	9.58	12.08	7.80	7.85
7/12/2020		8.93	9.15	13.89	14.17	8.59	8.62	9.67	10.80	8.36	8.45
10/15/2020		8.05	8.06	12.93	13.42	7.18	7.20	8.02	10.09	7.19	7.58
1/18/2021		12.30	12.79	15.90	16.23	10.57	10.65	12.42	13.97	10.73	11.23
4/11/2021		9.01	9.03	15.17	16.54	8.14	8.21	9.92	12.37	8.02	8.51
7/12/2021		7.93	7.93	13.11	13.46	7.43	7.45	8.53	9.54	7.41	7.42
10/26/2021		8.35	8.34	13.71	14.30	7.22	7.23	8.39	10.42	7.59	7.80
1/18/2022		11.94	11.94	15.99	16.33	10.51	10.55	12.35	13.80	10.67	10.82
4/6/2022		10.03	10.04	15.48	15.79	8.45	8.47	10.46	13.00	8.52	8.71
7/17/2022		9.87	9.90	14.32	14.63	9.63	9.68	10.55	10.98	9.40	9.51
10/9/2022		7.36	7.37	11.70	11.89	6.69	6.72	7.74	8.37	6.72	6.73
1/23/2023		10.44	10.49	15.77	16.10	8.91	9.01	10.85	13.44	9.07	9.20
4/4/2023		9.13	9.18	15.75	16.07	7.80	7.82	9.93	13.03	8.00	8.09
7/23/2023		7.66	7.72	12.80	13.03	7.27	7.28	8.31	9.14	7.28	7.31
10/30/2023		7.80	7.84	12.29	12.60	6.74	6.61	7.98	8.94	6.92	6.92
1/30/2024		12.21	12.52	16.19	16.47	10.92	11.04	12.24	13.97	11.21	11.50
4/2/2024		9.43	9.68	15.76	15.68	8.30	8.39	10.42	12.91	8.23	8.45

NOTES: NM = Not Measured

Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Groundwater Level Elevations
(feet NAVD88)

		MW-8A	MW-8B	MW-9A	MW-9B	MW-10A	MW-10B	MW-11A	MW-11B	MW-12A	MW-12B
Date	Ref. Elev. to 2023	36.89	36.57	38.42	38.00	42.52	43.40	25.95	25.99	35.13	34.97
Measured	Ref. Elev. 2024	36.49	36.08	37.92	37.49	42.05	42.98	25.55	25.54	34.6	34.43
1/26/2017		8.75	9.02	8.71	8.69	9.00	8.90	10.51	11.54	8.94	8.95
4/10/2017		13.19	13.36	13.13	13.11	13.11	13.07	13.35	14.82	13.14	13.23
7/26/2017		7.44	7.63	7.40	7.48	7.77	7.66	8.29	8.49	7.47	7.50
10/16/2017		6.05	6.18	5.99	6.02	6.20	6.12	6.62	6.75	5.98	6.12
1/29/2018		10.56	11.16	10.49	10.49	10.51	10.44	10.92	12.77	10.83	10.84
4/6/2018		8.54	8.67	8.46	8.43	8.73	8.62	9.31	10.82	8.70	8.73
7/19/2018		7.03	7.16	7.03	7.09	7.42	7.32	7.99	8.18	7.07	7.09
10/15/2018		6.23	6.32	6.24	6.25	6.42	6.32	6.75	6.86	6.27	6.32
1/23/2019		8.84	8.99	8.74	8.78	8.87	8.82	10.17	10.58	8.94	8.97
4/4/2019		7.63	7.80	7.62	7.68	7.87	7.77	8.33	8.91	7.78	7.81
7/8/2019		6.81	6.94	6.78	6.82	7.12	7.06	7.63	7.91	6.76	6.79
10/28/2019		6.37	6.48	6.30	6.31	6.44	6.39	6.85	6.91	6.40	6.42
1/21/2020		8.87	9.18	8.77	8.51	8.98	8.91	9.53	11.46	9.16	9.16
4/13/2020		6.92	7.06	6.88	6.90	7.25	7.15	7.85	8.27	7.03	7.06
7/12/2020		7.49	7.61	7.51	7.51	7.94	7.85	8.53	8.73	7.60	7.62
10/15/2020		6.74	7.06	6.77	6.84	6.98	6.95	7.33	7.33	6.70	6.72
1/18/2021		9.67	10.02	9.59	9.65	9.99	9.96	10.67	13.03	9.93	9.94
4/11/2021		7.08	7.22	7.04	7.11	7.47	7.40	8.11	8.74	7.17	7.21
7/12/2021		6.69	6.81	6.67	6.69	6.96	6.83	7.52	7.67	6.69	6.73
10/26/2021		7.86	8.49	7.71	7.70	7.60	7.58	7.61	7.56	7.78	7.80
1/18/2022		9.85	10.03	9.71	9.76	10.06	9.99	10.63	12.53	10.13	10.16
4/6/2022		7.49	7.61	7.37	7.42	7.81	7.70	8.54	8.90	7.83	7.84
7/17/2022		8.43	8.50	8.33	8.43	8.94	8.83	9.57	9.85	8.67	8.64
10/9/2022		6.18	6.28	6.08	6.17	6.37	6.32	6.83	7.18	6.14	6.18
1/23/2023		8.02	8.28	7.90	7.89	8.34	8.77	11.03	11.31	8.34	8.37
4/4/2023		7.34	7.54	7.26	7.27	7.51	7.43	8.00	8.93	7.57	7.57
7/23/2023		6.55	6.67	6.49	6.50	6.83	6.73	7.39	7.56	6.59	6.66
10/30/2023		6.57	6.64	6.52	6.53	6.68	6.61	5.98	7.01	6.68	6.79
1/30/2024		10.63	10.74	10.47	10.46	10.59	10.60	11.04	12.95	10.75	10.75
4/2/2024		7.06	7.02	6.81	6.81	7.32	7.26	8.11	9.08	7.20	7.25

NOTES: NM = Not Measured

Cowlitz County Tennant Way Landfill
Groundwater Level Monitoring Data
Groundwater Level Elevations
(feet NAVD88)

Date	Ref. Elev. to 2023	MW-13	MW-14A	MW-14B	MW-15	MW-16A	MW-16B	PZ-2	RIVER	RIVER
	Measured	37.60	35.58	35.04	34.28	25.86	25.70	39.70	31.57	31.57
	Ref. Elev. 2024	36.66	34.94	34.36	33.88	25.41	25.17	38.76	31.55	31.55
1/26/2017		10.04	10.34	10.34	10.62	11.26	10.87	11.42	8.16	7.75
4/10/2017		13.76	13.72	13.70	13.76	13.75	13.36	13.86	12.11	12.22
7/26/2017		8.38	8.54	8.56	8.60	9.02	9.08	9.38	5.55	5.47
10/16/2017		6.98	7.22	7.22	7.41	7.81	7.85	8.15	3.70	3.86
1/29/2018		11.82	11.98	11.98	12.21	12.58	12.64	12.95	9.65	10.67
4/6/2018		9.67	9.86	9.85	9.98	10.42	10.47	10.79	6.90	7.24
7/19/2018		8.00	8.21	8.25	8.26	8.67	8.72	9.08	4.98	5.20
10/15/2018		7.20	7.37	7.34	7.46	7.75	7.85	8.15	4.52	4.55
1/23/2019		9.94	10.11	10.11	10.31	10.65	10.71	11.05	7.47	8.17
4/4/2019		8.78	8.98	9.03	9.07	9.48	9.55	9.90	5.92	6.08
7/8/2019		7.68	7.86	7.77	7.90	8.34	8.44	8.74	4.54	4.69
10/28/2019		7.42	7.69	7.68	7.85	8.33	8.41	8.73	4.24	4.85
1/21/2020		10.37	10.72	10.69	11.00	11.43	11.50	11.82	7.39	8.30
4/13/2020		8.15	8.41	8.42	8.58	8.98	9.05	9.42	4.66	5.08
7/12/2020		8.59	8.77	8.76	8.78	9.27	9.34	9.73	5.65	5.49
10/15/2020		7.61	7.77	7.83	7.90	8.12	8.17	8.55	4.75	5.98
1/18/2021		11.28	11.72	11.73	12.15	12.42	12.50	12.83	7.77	7.81
4/11/2021		8.29	8.60	8.56	8.30	9.27	9.33	9.66	4.89	5.08
7/12/2021		7.63	7.80	7.70	7.81	8.20	8.27	8.66	4.43	5.16
10/26/2021		8.45	8.36	8.41	8.26	8.48	8.54	8.90	7.13	7.62
1/18/2022		11.21	11.50	11.52	11.78	12.11	12.16	12.53	8.45	9.09
4/6/2022		9.10	9.47	9.47	9.82	10.15	10.20	10.58	5.64	5.92
7/17/2022		9.61	9.80	9.76	9.80	10.21	10.27	10.68	6.65	6.71
10/9/2022		7.07	7.20	7.16	7.29	7.57	7.62	8.01	3.97	4.86
1/23/2023		9.65	9.99	9.99	10.28	10.14	10.15	11.08	6.23	6.98
4/4/2023		8.61	8.82	8.87	8.97	9.33	9.44	9.76	5.65	5.65
7/23/2023		7.49	7.64	7.63	7.58	7.96	8.03	8.42	4.42	4.84
10/30/2023		7.58	7.65	7.70	7.69	8.01	8.07	8.44	5.19	5.53
1/30/2024		11.26	11.68	11.64	12.06	12.62	12.15	12.12	9.82	9.77
4/2/2024		8.04	8.66	8.62	9.15	10.00	9.52	9.50	5.45	5.77

NOTES: NM = Not Measured

APPENDIX B

**GROUNDWATER QUALITY DATA, STATISTICAL
CALCULATIONS, CATION-ANION BALANCES, AND TRILINEAR
DIAGRAMS**

Cowlitz County Tennant Way Landfill
Cation-Anion Balance Calculations
April 2024

Well	Ion	Equivalent Weight	Concentration (mg/L)	Equivalents per million Cations	Equivalents per million Anions	Difference (meq/L)	Difference (%)
MW-3B	Calcium	20.04	9.1	0.45			
	Magnesium	12.16	4.1	0.34			
	Potassium	39.10	0.6	0.02			
	Sodium	22.99	4.8	0.21			
	Iron	55.85	0.9	0.02			
	Bicarbonate	61.02	61.0		1.00		
	Chloride	35.45	1.6		0.04		
	Sulfate	48.03	2.8		0.06		
Total				1.03	1.10	-0.07	-3.29
MW-5B	Calcium	20.04	48.2	2.41			
	Magnesium	12.16	23.3	1.92			
	Potassium	39.10	1.4	0.04			
	Sodium	22.99	20.5	0.89			
	Iron	55.85	0.0	0.00			
	Bicarbonate	61.02	301.1		4.94		
	Chloride	35.45	3.9		0.11		
	Sulfate	48.03	13.6		0.28		
Total				5.25	5.33	-0.08	-0.76
MW-7B	Calcium	20.04	10.8	0.54			
	Magnesium	12.16	3.0	0.25			
	Potassium	39.10	1.6	0.04			
	Sodium	22.99	2.9	0.13			
	Iron	55.85	0.0	0.00			
	Bicarbonate	61.02	46.1		0.76		
	Chloride	35.45	0.9		0.03		
	Sulfate	48.03	1.8		0.04		
Total				0.96	0.82	0.14	7.76
MW-8B	Calcium	20.04	15.8	0.79			
	Magnesium	12.16	3.9	0.32			
	Potassium	39.10	1.1	0.03			
	Sodium	22.99	3.4	0.15			
	Iron	55.85	0.0	0.00			
	Bicarbonate	61.02	58.0		0.95		
	Chloride	35.45	1.2		0.03		
	Sulfate	48.03	3.5		0.07		
Total				1.28	1.06	0.23	9.64

Cowlitz County Tennant Way Landfill
Cation-Anion Balance Calculations
April 2024

Well	Ion	Equivalent Weight	Concentration (mg/L)	Equivalents per million Cations	Equivalents per million Anions	Difference (meq/L)	Difference (%)
MW-9B	Calcium	20.04	35.2	1.76			
	Magnesium	12.16	10.3	0.85			
	Potassium	39.10	3.3	0.08			
	Sodium	22.99	11.6	0.50			
	Iron	55.85	0.3	0.01			
	Bicarbonate	61.02	197.5		3.24		
	Chloride	35.45	2.3		0.06		
	Sulfate	48.03	0.14		0.00		
	Total			3.20	3.30	-0.11	-1.64
MW-10B	Calcium	20.04	26.3	1.31			
	Magnesium	12.16	7.6	0.62			
	Potassium	39.10	1.5	0.04			
	Sodium	22.99	6.2	0.27			
	Iron	55.85	1.5	0.03			
	Bicarbonate	61.02	130.5		2.14		
	Chloride	35.45	1.8		0.05		
	Sulfate	48.03	0.8		0.02		
	Total			2.27	2.21	0.07	1.46
MW-11B	Calcium	20.04	10.9	0.54			
	Magnesium	12.16	3.5	0.29			
	Potassium	39.10	1.7	0.04			
	Sodium	22.99	3.9	0.17			
	Iron	55.85	0.1	0.00			
	Bicarbonate	61.02	54.0		0.89		
	Chloride	35.45	2.0		0.06		
	Sulfate	48.03	3.0		0.06		
	Total			1.05	1.00	0.04	2.17
MW-12B	Calcium	20.04	63.6	3.17			
	Magnesium	12.16	24.6	2.02			
	Potassium	39.10	4.4	0.11			
	Sodium	22.99	27.7	1.20			
	Iron	55.85	3.4	0.06			
	Bicarbonate	61.02	395.0		6.47		
	Chloride	35.45	14.1		0.40		
	Sulfate	48.03	0.10		0.00		
	Total			6.57	6.87	-0.30	-2.23

Cowlitz County Tennant Way Landfill
Cation-Anion Balance Calculations
April 2024

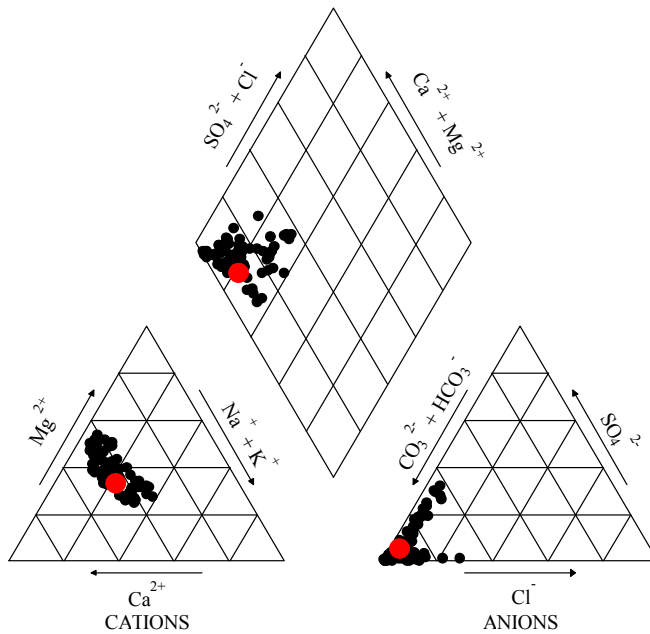
Well	Ion	Equivalent Weight	Concentration (mg/L)	Equivalents per million Cations	Equivalents per million Anions	Difference (meq/L)	Difference (%)
MW-13	Calcium	20.04	43.1	2.15			
	Magnesium	12.16	15.0	1.23			
	Potassium	39.10	2.9	0.07			
	Sodium	22.99	11.9	0.52			
	Iron	55.85	4.4	0.08			
	Bicarbonate	61.02	257.3		4.22		
	Chloride	35.45	2.3		0.06		
	Sulfate	48.03	0.1		0.00		
Total				4.05	4.28	-0.23	-2.74
MW-14B	Calcium	20.04	48.3	2.41			
	Magnesium	12.16	16.8	1.38			
	Potassium	39.10	1.8	0.05			
	Sodium	22.99	18.2	0.79			
	Iron	55.85	4.2	0.08			
	Bicarbonate	61.02	290.2		4.76		
	Chloride	35.45	7.5		0.21		
	Sulfate	48.03	0.14		0.00		
Total				4.71	4.97	-0.26	-2.72
MW-15	Calcium	20.04	68.1	3.40			
	Magnesium	12.16	13.0	1.07			
	Potassium	39.10	3.7	0.09			
	Sodium	22.99	10.1	0.44			
	Iron	55.85	0.5	0.01			
	Bicarbonate	61.02	292.6		4.80		
	Chloride	35.45	7.4		0.21		
	Sulfate	48.03	7.4		0.15		
Total				5.01	5.16	-0.15	-1.46
MW-16B	Calcium	20.04	74.6	3.72			
	Magnesium	12.16	36.1	2.97			
	Potassium	39.10	3.9	0.10			
	Sodium	22.99	22.5	0.98			
	Iron	55.85	13.1	0.23			
	Bicarbonate	61.02	516.9		8.47		
	Chloride	35.45	7.2		0.20		
	Sulfate	48.03	2.7		0.06		
Total				8.00	8.73	-0.73	-4.36

mg/L = milligrams per litre (parts per million)

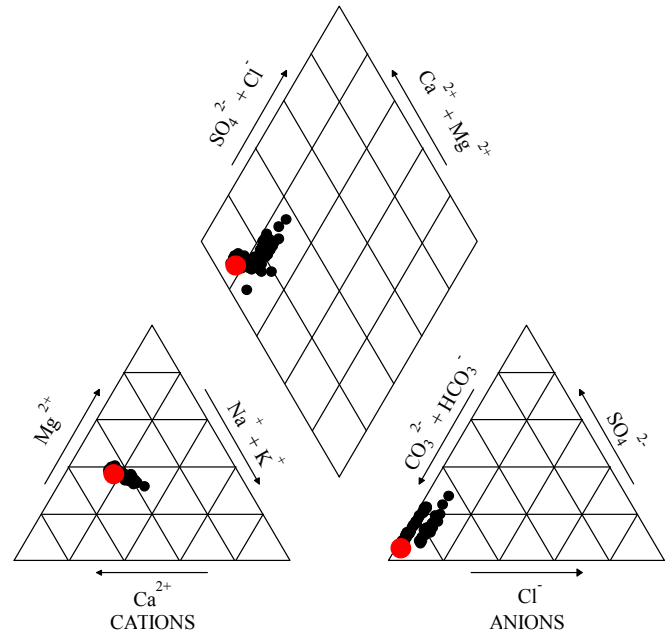
meq/L = milliequivalents per litre

Cowlitz County Tennant Way Landfill
Piper Trilinear Diagrams
April 2024 Data Point is Larger

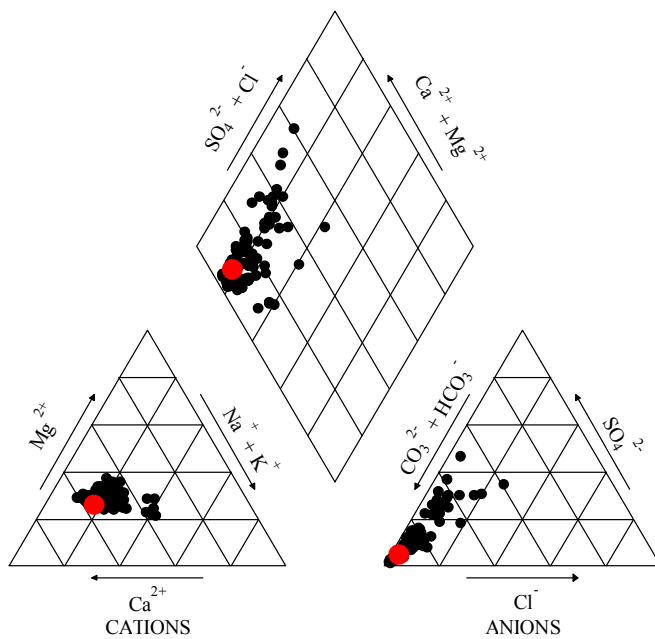
MW-3B



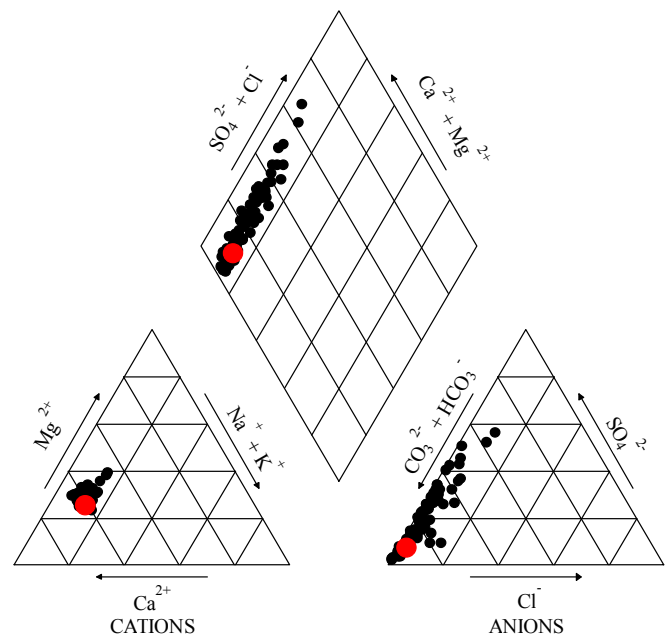
MW-5B



MW-7B

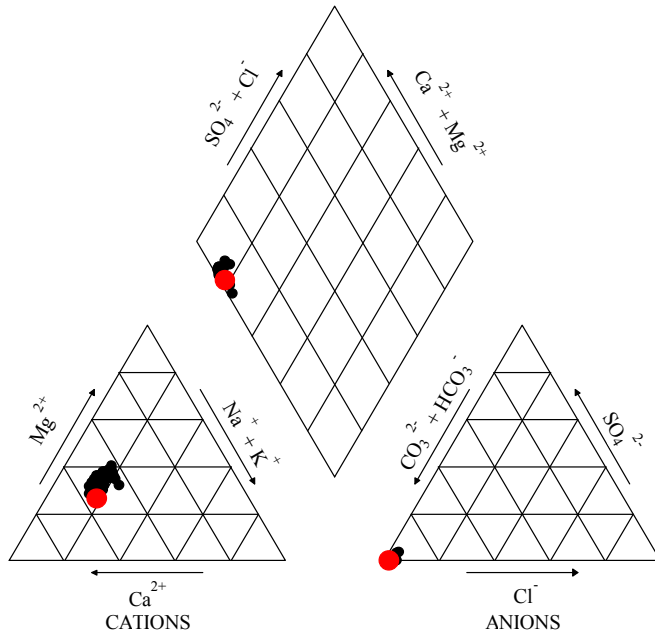


MW-8B

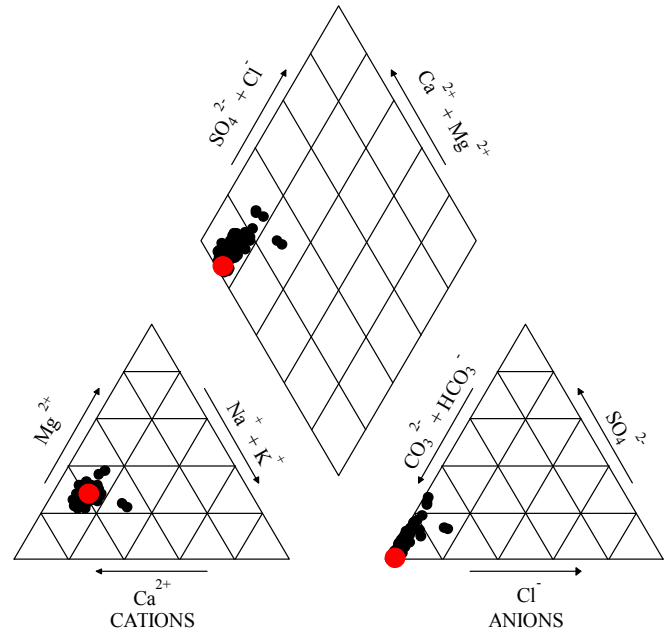


Cowlitz County Tennant Way Landfill
Piper Trilinear Diagrams
April 2024 Data Point is Larger

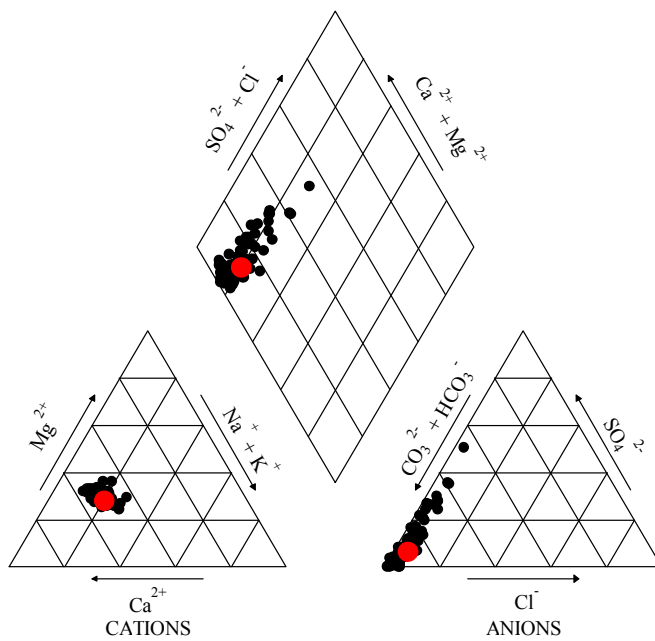
MW-9B



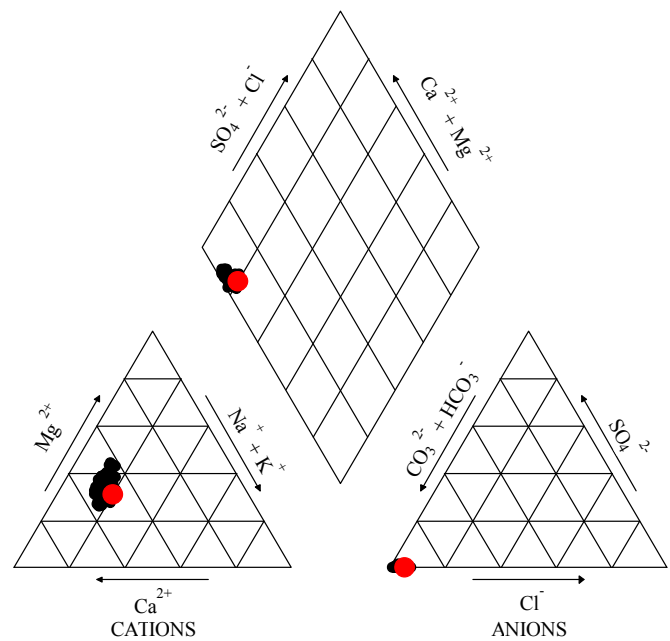
MW-10B



MW-11B

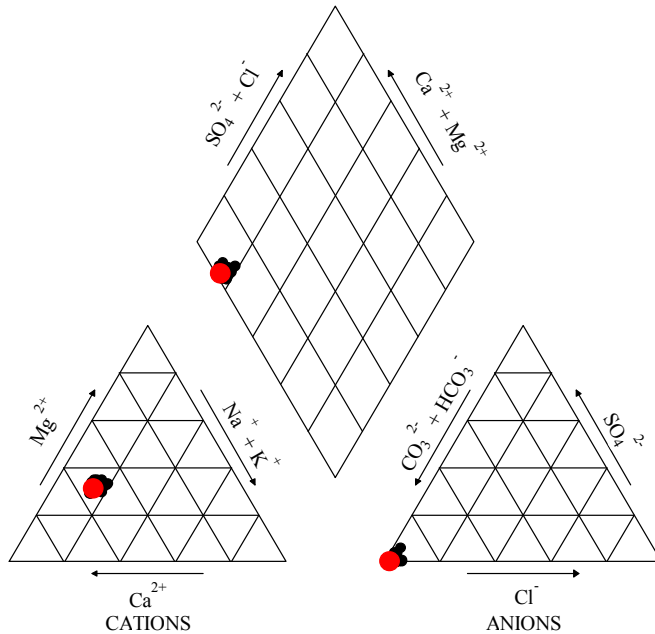


MW-12B

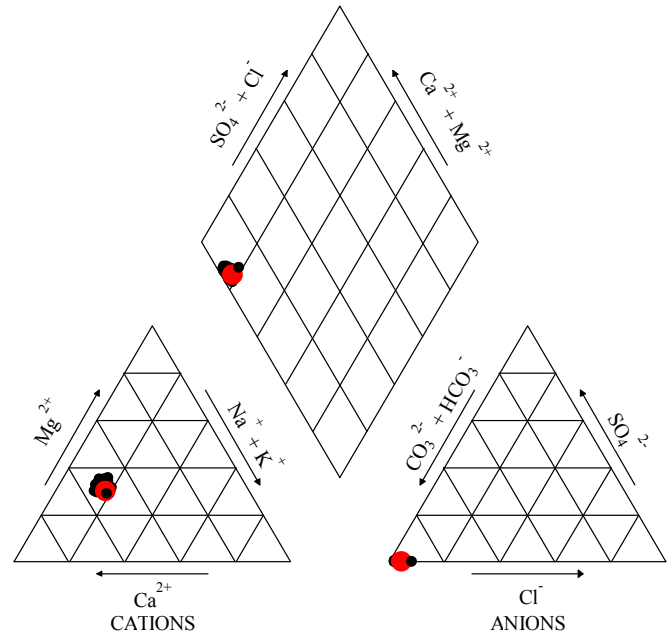


Cowlitz County Tennant Way Landfill
Piper Trilinear Diagrams
April 2024 Data Point is Larger

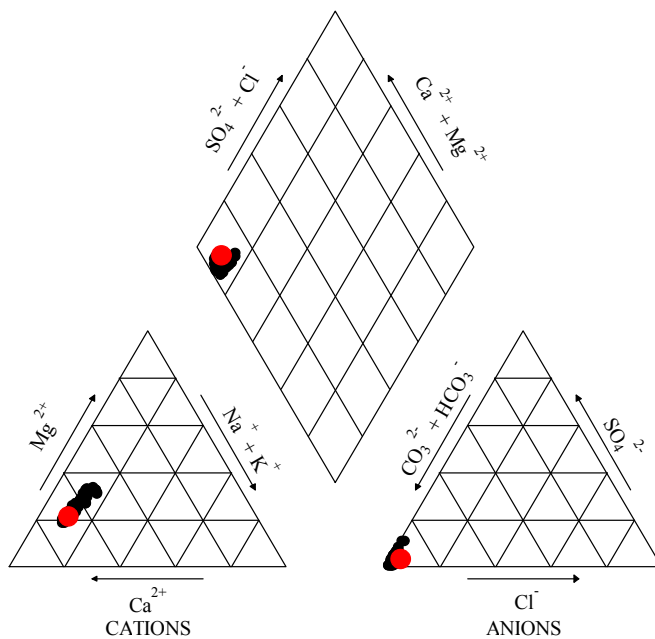
MW-13



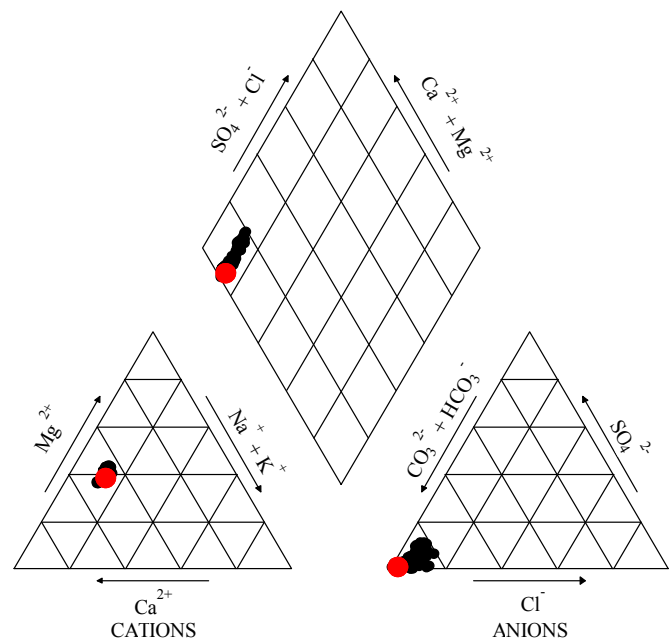
MW-14B



MW-15



MW-16B



Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-3B	04/11/13	244*	200*	2.7	0.31	0.1* U	4.6	10.6	35	294*	6.5	510*	11.9	0.6	0.0	-121
	07/12/13	389*	319*	3.1	0.33	0.1* U	0.6	18.2*	114*	400*	6.3	750*	12.2	0.5	0.0	-100
	10/15/13	379*	311*	2.6	0.32	0.1* U	3.3	19.4*	119*	394*	6.4	727*	13.9	1.5	0.11	-105
	10/15/13	385*	316*	2.6	0.30	0.1* U	3.2	19.1*	105*	421*						
	01/13/14	382*	313*	1.5	0.30	0.1* U	0.6	19.3*	98*	359*	6.5	682*	12.5	0.6	0.0	-94
	04/21/14	98	80	1.7	0.14	0.1* U	4.0	17.8*	5* U	205	6.4	221	10.7	1.4	0.0	-64
	07/15/14	109	89	2.8	0.20	0.1* U	3.6	13.4	29	188	6.0	223	12.5	3.7	0.0	-43
	10/19/14	79	65	2.6	0.40 T	0.1* U	4.5	12.9	5* U	184	6.4	179	12.7	1.9	0.0	-62
	01/13/15	76	62	2.3	0.20 T	0.1* U	5.2	10.0	7	181	6.4	164	11.3	1.4	0.0	-32
	04/08/15	71	58	2.8	0.20 T	0.1* U	7.7	6.8	5* U	147	6.5	159	10.6	5.9	0.0	12
	07/12/15	77	63	2.2	1* B1	0.1* U	5.6	7.3	5* U	130	6.4	157	12.3	0.9	0.0	-21
	10/26/15	76	62	2.2	0.20 T	0.1* U	5.0	8.0	5* U	151	6.9	168	12.1	1.0	0.0	5
	01/25/16	48	39	2.1	0.26 JT	0.1* U	3.7	3.7	5* U	96	6.3	113	9.6	0.7	0.68	26
	04/03/16	56	46	2.3	2.7*	0.1* U	4.2	3.1	5* U	105	7.0	125	10.6	4.1	0.08	-2
	07/10/16	90	74	4.1	1* U	0.1* U	2.4	5.7	32	155	6.9	189	11.4	2.8	0.99	4
	10/09/16	90	74	5.0	0.30 T	0.1* U	0.2* U	7.6	5* U	155	6.8	181	12.2	0.9	0.0	11
	01/23/17	66	54	0.7	1* U	0.1* U	5.0	2.9	9	110	6.5	135	10.5	3.8	0.0	24
	04/09/17	68	56	0.9	0.40 T	0.1* U	3.0	2.7	7	100	7.0	131	10.0	6.8	0.0	-2
	07/27/17	67	55	0.9 T	0.13	0.05 T	1.5 T	2.7	5* U	120	7.0	129	11.7	5.9	0.45	0
	10/16/17	73	60	1.0 T, B	0.17	0.5* U	2.0 T	3.2	6	140	7.2	139	12.7	6.0	0.0	-7
	01/29/18	62	51	1.8 JT	0.08 T	0.03 T	4.6 T	1.8	5	140	6.6	137	10.8	7.3	0.0	15
	04/03/18	102	84	4.4 T	0.46	0.03 T	1.0 T	3.8	5 T	160	7.1	208	10.9	2.2	0.0	-14
	07/19/18	88	72	3.1	0.35	0.1* U	0.7	2.9	29	136 J	6.1	173	12.6	11.1	0.0	3
	10/14/18	90	74	3.5	0.19	0.1* U	0.9	2.3	24	122	6.5	178	13.4	4.7	0.0	-16
	01/15/19	80	66	2.3	0.21 T	0.1* U	1.8	1.7	20	115	6.2	150	12.5	0.6	0.0	1
	04/02/19	178	146	13.9*	0.48	0.1* U	1.1	5.1	29	236	6.5	367	12.0	0.7	0.0	-12
	07/09/19	77	63	4.0	0.30	0.1* U	1.4	2.5	17	158	6.6	160	12.5	1.4	0.0	-14
	10/27/19	140	115	12.8*	0.62	0.1* U	0.2 T	4.5	34	218	6.3	297	13.6	1.3	0.0	7
	01/20/20	118	97	11.3*	0.24 J	0.1* U	3.3	3.4	12	196	6.3	267	11.8	2.4	0.0	4
	04/13/20	158	130	35.2*	0.40	0.5	1.9	7.8	31	275	6.2	380	12.3	0.3	0.0	8
	07/12/20	56	46	2.3	0.17 J	0.1* U	3.2	2.3	5* U	146	6.6	117	12.9	1.4	0.0	-14
	10/14/20	78	64	8.1	0.31	0.03 T	1.2	3.8	16	163	6.4	170	13.7	0.8	0.0	1
	01/18/21	63	52	2.2 J	0.22	0.27	3.2	1.8	10	132	6.4	126	11.8	0.5	0.0	-3
	04/11/21	156	128	24.8*	0.48	0.1* U	2.0	7.5	25	246	6.2	315	11.3	4.9	0.0	10
	07/13/21	130	107	7.6	1.17* J	0.1* U	1.0	4.2	20	183	6.2	218	12.2	5.3	0.0	6
	10/25/21	122	100	7.9	0.59	0.1* U	0.1 T	5.4	7 J	187	6.5	229	13.0	1.3	0.0	5
	01/17/22	77	63	2.9 J	0.27	0.1* U	1.7 J	2.2	5* U	120	6.5	148	11.6	5.3	0.0	5
	04/06/22	114	93	8.6	0.52	0.1* U	0.8	4.3	5* U	179	6.6	220	11.8	10.0	0.0	4
	07/17/22	66	55	3.0	0.45	0.1* U	1.0	2.7	5* U	120	6.7	130	12.6	9.8	0.0	-2
	10/09/22	72	59	2.4	0.10	0.1* U	1.3	1.9	7	120	7.0	139	14.4	11.9	0.0	-22
	01/23/23	99	81	5.5	0.04 JT	0.1* U	1.4	2.3	29	139	6.5	199	12.0	15.7	0.0	10
	04/03/23	79	65	5.4	0.21	0.1* U	2.6	2.0	18	133	6.5	162	11.6	4.2	0.0	5
	07/23/23	57	47	3.5	0.14	0.1* U	1.8	1.5	5* U	117	6.7	118	12.7	2.6	0.0	-1
	10/29/23	64	53	3.6	0.17	0.1* U	0.8	1.9	5* U	117	6.6	120	13.6	0.6	0.1	2
	01/28/24	64	52	1.6	1.42	0.1* U	3.3	1.7	5	106	7.0	120	11.2	0.6	MF	-138
	04/01/24	61	50	1.6	0.17 J	0.10 U	2.8	2.0	5 U	106	6.9	119	11.6	1.4	0.0	-133
count		41	41	41	41	7	45	41	27	41		41	45	45		
max		178.0	146.0	8.6	1.42	0.5	7.7	13.4	35	275		380	14.4	15.7		
min		47.5	39.0	0.7	0.04 JT	0.0 U	0.1	1.5	5	96		113	9.6	0.3		
non-detects		0	0	0	3	40	1	0	16	0		0	0	0		
average		87.7	71.9	3.2	0.3	0.1	2.5	4.5	17.3	152.1		180.0	12.0	3.5		
sample stdev		30.5	25.0	2.0	0.2	0.2	1.7	3.1	10.6	42.2		65.7	1.0	3.6		
variance		928	625	4	0	0	3	10	113	1,784		4,318	1	13		
coeff. of variation		0.3	0.3	0.6	0.7	1.2	0.7	0.7	0.6	0.3		0.4	0.1	1.0		
standard error		4.8	3.9	0.3	0.0	0.1	0.3	0.5		6.6						

Cowlitz County Tennant Way Landfill
Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-5B	04/11/13	291	239	2.1	0.05* U	0.1* U	30.9	3.5	5* U	318	6.5	462	9.7	0.6	0.0	93
	07/12/13	295	242	2.4	0.021 T	0.1* U	28.4	8.4*	5* U	303	6.4	479	11.6	0.9	0.0	56
	10/15/13	319	262	2.4	0.05* B1	0.90	30.5	3.7	5* U	341	6.5	516	13.8	1.4	0.28	117
	01/14/14	299	245	2.3	0.05* U	2.2	31.3	4.2	5* U	332	6.5	471	10.5	0.7	0.0	163
	04/21/14	291	239	2.5	0.05* U	0.40	29.7	4.0	5* U	307	6.5	400	9.9	2.0	0.0	14
	07/16/14	326	267	2.8	0.05* U	0.1* U	28.9	3.2	5* U	337	6.1	495	13.1	1.1	0.0	81
	10/19/14	329	270	2.9	0.20 T	0.1* U	27.1	3.2	5* U	338	6.3	527	14.9	1.7	0.0	-47
	01/14/15	316	259	2.5	1* U	0.28	28.5	3.4	5* U	328	6.5	497	11.0	0.8	0.0	64
	01/14/15	312	256	2.5	1* U	0.28	28.7	3.3	5* U	327						
	04/08/15	332	272	2.6	0.08 T	0.1 T	27.5	3.6	5* U	317	6.4	420	10.8	1.2	0.0	76
	07/12/15	322	264	2.2	1* B1	0.1* U	26.6	3.3	5* U	302	6.2	497	13.5	1.5	0.0	1
	10/26/15	343	281	2.3	0.20 T	0.1* U	23.9	3.6	9	314	6.4	508	16.3	5.0	0.0	10
	01/26/16	293	240	2.1	0.12 J	2.0	30.0	3.5	5* U	320	6.5	420	11.2	2.1	1.5	24
	04/04/16	300	246	2.6	1* U	0.89	21.6	3.2	5* U	304	6.5	420	11.2	2.1	1.5	24
	07/10/16	345	283	3.0	1* U	0.1* U	24.7	3.6	5* U	338	6.5	527	13.2	0.8	1.9	24
	10/09/16	333	273	2.8	1* U	0.1* U	26.3	3.5	7	326	6.5	470	15.1	2.7	0.58	24
	01/23/17	351	288	2.6	1* U	0.1* U	25.6	4.1	5* U	339	6.4	437	10.4	1.7	0.0	28
	04/09/17	333	273	2.3	0.4* T	0.1* U	20.1	4.7	5* U	332	6.6	516	10.3	1.3	0.0	18
	07/27/17	354	290	2.6 T	0.07 T	0.1* U	19.0 T	3.8	5	340	6.4	523	13.8	1.9	0.0	28
	10/15/17	390	320	2.4 T	0.06 T	0.1* U	16.0 T	3.6	5 T	390	6.4	523	13.8	1.9	0.33	28
	01/29/18	317	260	3.5 JT	0.1* U	0.04 T	20.0 T	3.6	5	330	6.6	518	11.6	1.2	0.0	16
	04/03/18	329	270	3.7 T	0.1* U	0.5 U	17.0 T	3.8	5 T	350	7.0	365	10.2	2.1	0.0	-8
	07/19/18	326	267	3.6	0.07	0.1* U	16.5	3.6	8	334 J	6.2	499	13.5	0.8	0.0	2
	10/14/18	379	311	4.1	0.04 T	0.1* U	17.2	4.0	9	362	6.1	493	13.8	0.7	0.0	4
	01/15/19	330	271	3.7	0.4* U	1.1	23.8	3.6	5* U	301	6.0	520	10.9	1.7	0.46	12
	04/02/19	327	268	3.3	0.05* U	0.12	20.7	4.3	5* U	317	6.3	365	10.5	1.9	0.0	4
	07/09/19	361	296	3.5	0.07	0.1* U	21.4	3.7	5* U	370	6.5	450	13.2	1.9	0.0	-14
	10/27/19	397	326	3.1	0.05* B1	0.2	17.7	4.2	5* U	388	6.2	588	14.3	1.6	0.0	7
	01/20/20	296	243	2.9	0.05* U	2.3	23.8	4.3	5* U	300	6.6	455	10.6	2.0	0.0	-15
	04/13/20	335	275	2.6	0.05* U	1.2	19.4	4.5	5* U	365	6.3	518	10.2	1.7	0.0	4
	07/12/20	360	295	2.8	0.05* U	0.1* U	20.9	4.0	5* U	347	6.3	536	13.0	0.9	0.0	2
	10/14/20	388	318	2.9	0.05* B1	0.1* U	26.1 J	3.5	5* U	1640*	6.3	504	14.5	0.7	0.11	4
	01/18/21	302	248	2.7 J	0.05* B1	0.08	23.1 J	4.7	5* U	299	6.2	420	11.7	2.6	0.0	8
	04/11/21	311	255	2.6	0.05* B1	0.1* U	20.2 J	4.4	5* U	329	6.7	447	10.4	0.9	0.03	-18
	07/13/21	350	287	2.9	0.05* B1	0.1* U	23.3 J	3.7	5* U	344	6.4	470	12.9	1.0	0.11	-3
	10/25/21	382	313	2.8	0.27*	0.14 J	22.1 J	5.3	5* UJ	360	6.4	490	14.2	1.3	1.2	10
	01/17/22	316	259	2.2 J	0.05* B1	0.1* UJ	19.2 J	4.3	5* U	300	7.1	409	10.4	1.3	0.0	-27
	04/06/22	293	240	2.4	0.05* B1	0.1* U	18.5 J	5.1	5* U	305	6.7	389	10.6	1.6	0.0	-7
	07/17/22	333	273	2.2	0.09	0.1* U	16.2 J	4.7	5* U	304	6.8	465	13.0	1.3	0.0	-8
	10/09/22	368	302	2.9	0.05* U	0.1* U	18.5 J	4.5	5* U	342	6.7	530	14.1	0.8	0.05	-3
	01/23/23	279	229	2.6	0.05* UJ	0.1* U	15.0 J	4.7	5* U	270	7.2	314	10.8	1.6	0.0	-31
	04/03/23	300	246	2.6	0.05* B1	0.1* U	16.2 J	4.2	5* U	299	7.1	442	9.7	1.9	0.0	-26
	07/23/23	302	248	2.6	0.05	0.1* U	14.1 J	4.0	5* U	295	6.5	394	12.8	1.5	0.0	8
	10/29/23	378	310	3.2	0.07	0.1* U	15.0 J	3.8	5* U	351	7.1	392	13.5	1.3	0.20	-26
	01/28/24	315	258	3.7	0.05	0.1* U	16.7 J	5.2	5* U	316	6.7	407	11.0	0.9	0.30	117
	04/01/24	301	247	3.9	0.05 B1	0.0 T	13.6 J	5.7	5 U	290	6.5	355	10.9	1.6	0.00	-47
count		46	46	46	15	18	46	45	9	45		45	45	45		
max		397.5	326.0	4.07	0.2	2.27	31.3	5.7	9	390		588	16.3	5.0		
min		279.2	229.0	2.11	0.02 T	0.01 T	13.6	3.2	5	270		314	9.7	0.6		
non-detects		0	0	0	30	29	0	0	38	0		0	0	0.0		
average		329.3	270.1	2.8	0.1	0.7	22.2	4.0	6.3	327.1		463	12.1	1.5		
sample stdev		30.4	24.9	0.5	0.1	0.8	5.2	0.6	1.7	25.8		59	1.7	0.7		
variance		924	622	0	0	1	27	0	3	668		3,489	3.0	0.6		
coeff. of variation		0.1	0.1	0.2	0.6	1.1	0.2	0.2	0.3	0.1		0.1	0.1	0.5		
standard error		4.5	3.7	0.1	0.0	0.2	0.8	0.1		3.9						

Cowlitz County Tennant Way Landfill
Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO ₃)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-7B	04/11/13	70	57	1.2	0.19		1.5	25*	5* U	151	5.8	128	10.7	9.1	0.0	74
	07/12/13	123	101	1.8	0.55	0.7	2.8	3.2	5* U	145	5.9	199	13.6	1.7	0.0	125
	10/15/13	42	34	3.1	0.05* B1	4.9	10.5	10.0	5* U	151	5.8	138	15.4	2.7	0.07	84
	01/14/14	34	28	2.4	0.05* U	9.7	9.7	16.3	6	161	6.0	149	9.9	7.8	7.6	231
	01/14/14	39	32	2.4	0.05* U	9.7	9.7	16.6	5.5	148						
	04/21/14	45	37	2.8	0.05* U	0.5	4.7	8.4	7	94	5.8	101	11.0	5.5	0.0	10
	04/21/14	45	37	2.7	0.032 T	0.5	4.6	8.6	5	94						
	07/16/14	258	212	2.7	1.46*	1.7	3.1	7.2	5* U	265	6.1	411	13.3	4.3	0.0	-25
	10/19/14	68	56	8.3*	0.90 T	18.5*	27.5*	5.9	5* U	327	6.2	366	14.2	3.8	4.3	-51
	01/13/15	93	76	1.7	1* U	3.8	5.8	7.4	5* U	155	5.9	184	9.8	2.2	0.99	23
	04/08/15	67	55	1.4	1* B1	0.03 T	2.6	5.4	6	94	5.8	108	11.5	4.4	0.0	73
	07/12/15	163	134	2.3	1.10 J	0.69	5.2	4.1	5* U	152	5.9	271	13.8	1.8	1.6	21
	10/26/15	123	101	2.6	0.40 T	0.22	13.1	7.7	5* U	172	6.0	232	13.6	3.3	0.0	33
	01/25/16	35	29	1.6	0.57 J	8.79	4.9	8.2	5* U	115	6.4	140	11.8	0.4	0.86	30
	04/03/16	60	49	0.8	0.30 T	4.08	3.2	8.2	5* U	88	6.4	140	11.8	0.4	0.9	30
	07/10/16	201	165	2.2	1* U	4.04	4.4	5.9	6	241	6.7	358	12.8	3.3	6.5	16
	10/10/16	29	24	1.1	1* U	17.6*	11.2	18.7	5* U	175	6.3	243	14.9	1.6	7.8	36
	01/23/17	29	24	0.8	1* U	3.5	3.9	13.1	5* U	93	5.9	94	7.5	1.7	5.7	58
	04/09/17	57	47	0.3	1* U	0.2	1.3	8.4	5* U	66	6.3	93	10.6	0.9	0.0	37
	07/27/17	122	100	0.9 T	0.1* U	1.8	2.4 T	8.6	5* U	150	6.4	185	13.1	3.6	0.86	31
	10/16/17	104	85	5.8* T	0.1* U	7.4	8.6 T	7.9	5 T	220	6.3	274	13.5	1.6	0.13	43
	01/29/18	34	28	1.1 JT	0.1* U	3.4	3.2 T	13.0	5	120	6.6	88	10.2	1.0	3.9	13
	04/03/18	44	36	1.1 T	0.1* U	0.7	2.0 T	11.0	5* U	97 T	6.7	91	9.7	1.3	3.2	21
	07/19/18	201	165	2.1	0.20	3.1	5.0	6.6	6	215 J	6.1	349	12.9	3.1	0.0	7
	10/14/18	121	99	2.8	0.05* U	9.7	8.6	7.5 J	5	169	6.3	293	13.5	2.1	0.95	-6
	01/15/19	37	30	1.3	0.4* U	3.5	5.0	9.5	5* U	94	5.7	103	10.6	2.9	2.3	26
	04/02/19	79	65	1.1	0.14	0.9	2.5	7.3	5* U	114	6.1	135	9.2	1.1	2.3	14
	07/09/19	198	162	1.4	0.06	2.2	3.2	5.3	5* U	235	6.3	320	12.0	4.9	2.4	2
	10/27/19	35	29	1.9	0.08	12.0	11.3	21.5*	5* U	224	5.9	188	15.6	1.2	5.0	23
	01/20/20	39	32	1.2	0.05* U	3.1	3.2	11.9	5* U	114	6.0	99	10.2	2.8	5.3	20
	04/13/20	71	58	0.7	0.03 T	0.7	2.3	7.0	10	111	6.0	121	11.2	9.1	1.5	20
	07/12/20	150	123	1.5	0.01 JT	1.6	3.7	8.1	6	203	6.2	256	12.0	6.9	2.2	9
	10/14/20	67	55	6.16*	0.05* U	19.8* J	13.9	16.0	5	309	5.7	256	16.8	0.8	7.5	35
	01/18/21	29	24	1.5 J	0.05* B1	3.7	3.0	11.4	5* U	109	5.8	88	10.3	1.6	5.4	28
	04/11/21	60	49	1.4	0.05	0.7	1.9	7.1	5* U	118	5.9	102	9.9	2.0	1.3	23
	07/13/21	190	156	2.2	0.06 J	2.0	3.8	4.4	9	198	6.2	302	12.4	10.3	5.1	11
	10/25/21	21	18	8.15*	0.08	26.3* J	14.7	15.0	5* UJ	290	6.0	325	14.8	0.2	7.5	37
	01/17/22	34	28	0.9 J	0.05* B1	1.3 J	1.2 J	6.8	5* U	71	6.1	72	8.9	1.8	6.4	26
	04/06/22	62	51	0.8	0.05* U	1.3	2.0	9.1	5* U	103	6.3	114	10.3	1.9	3.2	19
	07/17/22	112	92	1.0	0.19	0.7	2.0	5.2	6	127	6.1	174	12.6	6.5	0.0	29
	10/09/22	224	184	2.1	0.05* U	0.6	6.1	5.5	10	220	6.6	345	14.0	10.5	0.98	3
	01/23/23	41	34	1.8	0.01 JT	4.8	2.7	6.7	5* U	99	6.1	111	9.7	1.3	3.8	30
	04/03/23	62	51	2.0	0.05* B1	1.7	2.0	4.6	5* U	93	6.2	114	8.8	1.0	3.8	30
	07/23/23	246	202	2.5	0.05* B1	2.0	2.4	4.2	6	244	6.4	374	13.0	1.8	2.9	23
	10/29/23	90	74	2.0	0.05* B1	12.9*	9.5	12.6	9	228	6.2	262	13.2	8.1	6.6	24
	01/28/24	32	27	2.7	0.04 T	4.0	2.4	7.0	5* U	101	6.6	94	8.8	1.2	MF	132
	04/01/24	46	38	0.9	0.05 B1	1.2	1.8	7.9	5 U	79	6.3	85	10.5	1.2	2.3	84
count		46	46	42	20	40	45	44	18	46		44	44	44		
max		258.5	212	3.09	1.1	12.0	14.7	18.7	10	327		411	16.8	10.5		
min		21.3	18	0.30	0.01 T	0.03 T	1.2	3.2	5	66		72	7.5	0.2		
non-detects		0	0	0	25	0	0	0	28	0		0	0	0.0		
average		88.9	72.9	1.7	0.2	3.1	5.1	8.7	6.4	157.9		195	11.9	3.3		
sample stdev		65.2	53.5	0.7	0.3	3.1	3.7	3.7	1.7	66.5		100	2.1	2.8		
variance		4,250	2,859	1	0	10	14	14	3	4,421		10,009	4.5	8.0		
coeff. of variation		0.7	0.7	0.4	1.2	1.0	0.7	0.4	0.3	0.4		0.5	0.2	0.9		
standard error		9.6	7.9	0.1	0.07	0.5	0.6	0.6		9.8						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-8B	04/12/13	80	66	1.5	1.14*	4.2	10	24.4	5* U	213	6.0	194	13.2	6.3	0.0	169
	07/11/13	80	66	1.5	0.05* U	1.6	10	20.6	5* U	171	6.0	169	15.1	4.4	0.0	73
	10/15/13	45	37	4.56*	0.05* B1	25*	15	14.5	5* U	344*	5.8	329	15.0	3.6	0.02	72
	01/13/14	45	37	1.3	0.05* U	12.0	15	26.6	5* U	213	5.8	220	15.3	8.6	2.2	167
	04/18/14	50	41	3.0	0.05* U	7.1	15	22.1	6	186	5.9	190	14.2	10.2	0.0	12
	07/15/14	80	66	2.3	0.05* U	1.7	14	21.1	5* U	194	5.5	183	14.9	3.9	0.0	18
	10/19/14	90	74	3.0	0.30 T	2.3	17	19.6	5* U	204	5.9	202	15.3	5.4	1.3	-19
	01/13/15	55	45	1.7	1* U	12.1	19	21.3	5* U	247	6.0	248	13.6	4.5	0.77	23
	04/08/15	141	116	2.9	0.10 T	2.7	25	18.3	8	265	6.0	330	15.3	3.9	0.0	51
	07/12/15	60	49	1.8	0.25 J	12.2	7.1	17.4	17	193	6.6	204	12.9	9.0	1.2	23
	10/26/15	79	65	0.7	0.30 T	7.3	6.4	18.9	6	164	6.6	204	12.9	9.0	1.2	23
	01/26/16	79	65	0.6	1* U	5.1	7.8	15.7	6	180	6.5	182	13.9	4.6	5.1	26
	04/04/16	104	85	0.7	1* U	1.8	6.9	16.8	9	185	6.5	186	14.6	14.5	0.21	27
	07/10/16	51	42	0.5	1* U	4.1	6.0	20.2	5* U	119	6.7	132	13.0	6.7	3.3	14
	10/09/16	78	64	0.1 T	0.30 T	0.3	1.4	23.2	12	130	6.9	125	11.5	21.6	2.3	6
	01/23/17	89	73	20* B1	0.1* U	0.09 T	2.4 T	18.0	5* U	150	6.3	140	12.8	4.7	1.6	37
	04/09/17	98	80	0.2 T	0.1* U	0.5* B1	2.1 T	18.0	5 T	170	6.2	149	13.6	2.5	0.0	46
	07/27/17	46	38	0.9 T	0.1* U	4.1	5.0 T	25.0	9	150	6.6	136	11.9	8.7	1.9	13
	10/15/17	63	52	0.4 T	0.1* U	0.6	2.7 T	20.0	7	190	6.9	121	11.8	23.7	2.9	-2
	01/29/18	78	64	0.5	0.05* U	0.3	4.1	18.2	11	142 J	5.8	140	12.9	7.0	3.6	21
	04/03/18	80	66	0.4	0.05* U	0.1 T	3.7	14.2	11	111	6.1	137	13.6	9.0	0.85	8
	07/19/18	55	45	0.7	0.4* U	3.6	7.2	19.8	5* U	121	5.7	138	13.4	7.3	3.3	27
	10/14/18	76	62	1.0	0.05* U	2.0	6.8	18.5	9	153	6.3	152	13.2	9.7	1.5	4
	01/15/19	80	66	0.7	0.05* B1	0.3	7.2	17.6	6	178	6.1	147	13.6	5.8	13.6	12
	04/02/19	83	68	3.0	0.05* B1	15.6*	12.0	16.2	7	241	5.9	286	14.2	4.5	3.5	23
	07/09/19	40	33	1.4	0.11 J	3.1	4.3	20.9	13	136	6.2	109	12.6	18.3	4.3	8
	10/27/19	83	68	3.0	0.05* B1	15.6*	12.0	16.2	7	241	6.2	109	12.6	18.3	4.3	8
	01/20/20	40	33	1.4	0.11 J	3.1	4.3	20.9	13	136	6.2	109	12.6	18.3	4.3	8
	04/13/20	76	62	0.9	0.05	1.2	4.9	14.5	7.5* U	149	6.0	138	12.9	6.9	2.7	17
	07/12/20	89	73	0.8	0.05* U	0.3	5.0	13.3	8	174	6.0	152	13.6	9.6	0.70	20
	10/14/20	89	73	5.72*	0.05* B1	25.7* J	12.3	10.8	20	379*	5.9	379	14.2	14.5	5.6	25
	01/18/21	48	39	1.1 J	0.05* B1	3.3	3.8	19.5	11	149	6.1	117	12.3	16.4	3.4	12
	04/11/21	57	47	0.7	0.07	1.6	3.8	14.8	17	149	6.1	114	12.5	20.3	2.6	14
	07/13/21	67	55	1.0	0.05* B1	0.6	5.6	14.9	13	138	6.1	121	13.6	20.7	2.1	13
	10/25/21	61	50	7.91*	0.05* B1	47.1* J	17.0	13.0	16 J	460*	6.2	551	13.0	16.4	5.2	24
	01/17/22	34	28	2.6 J	0.05* B1	5.1 J	3.1 J	12.1	15	123	6.5	127	11.9	18.9	5.4	6
	04/06/22	59	49	1.5	0.05* U	3.7	4.1	14.2	11	133	6.7	136	12.0	22.2	4.7	0
	07/17/22	94	77	1.5	0.05* B1	2.3	5.2	10.3	9	146	6.3	177	12.9	13.2	3.1	20
	10/09/22	122	100	1.4	0.05	0.1 T	3.5	17.5	14	177	6.4	191	15.3	14.1	0.33	14
	01/23/23	32	26	1.4	0.02 JT	11.1	6.4	15.0	14	163	6.4	167	13.0	23.5	3.5	11
	04/03/23	38	32	1.7	0.05* B1	7.4	6.2	19.1	25	168	6.5	141	12.4	32.4	4.1	9
	07/23/23	128	105	1.8	0.05* B1	2.6	4.8	15.2	8	196	6.2	214	14.0	11.4	0.54	25
	10/29/23	205*	168*	2.0	0.05* B1	0.4	2.6	24.2	5* U	249	6.4	297	13.4	5.8	0.58	12
	01/28/24	29	23	3.2	0.04 T	3.7	2.8	15.4	15	120	6.5	91	12.3	27.6	7.47	127
	04/01/24	58	48	1.2	0.05 B1	1.3	3.5	18.3	7	125	6.2	105	13.1	15.6	2.57	91
	count	44	44	41	13	39	45	45	33	42		45	45	45		
	max	141.4	116	3.2	0.30	12.2	24.8	26.6	25	265		551	15.3	32.4		
	min	28.5	23	0.1 T	0.02 T	0.1 T	1.4	10.3	5 T	111		91	11.5	2.5		
	non-detects	0	0	1	32	1	0	0	12	0		0	0	0.0		
	average	70.7	58.0	1.4	0.1	3.5	7.6	17.9	10.8	170.0		182	13.4	12.1		
	sample stdev	25.4	20.8	0.9	0.1	3.5	5.3	3.7	4.6	39.6		86	1.0	7.4		
	variance	645	434	1	0	12	28	14	21	1,571		7,414	1.1	54.4		
	coeff. of variation	0.4	0.4	0.6	0.8	1.0	0.7	0.2	0.4	0.2		0.5	0.1	0.6		
	standard error	3.8	3.1	0.1	0.0	0.6	0.8	0.6		6.1						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

LocationDate		mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-9B	04/12/13	301	247	3.0	1.13	0.1* U	0.3	21.2	56	346	6.6	520	19.0	3.0	0.0	-124
	07/11/13	363	298	4.1	1.02	0.1* U	0.2	19.1	78	380	6.4	582	20.4	2.6	0.0	-125
	10/14/13	254	208	6.1	0.81	0.1* U	0.2 T	20.6	18	314	6.6	444	20.5	3.0	0.21	-113
	01/13/14	288	236	3.6	0.98	0.1* U	0.4	21.3	70	301	6.5	5	19.6	2.7	0.0	-96
	04/18/14	346	284	4.7	0.82	0.1* U	0.1 T	28.5	39	368	6.3	613	19.2	3.9	0.0	-93
	07/15/14	300	246	4.9	1.10	0.1* U	0.2* U	23.6	71	342	6.3	539	20.4	6.5	0.0	-92
	10/19/14	341	280	4.9	0.90 T	0.1* U	0.2* U	23.2	46	337	6.3	576	20.3	10.2	0.0	-66
	01/13/15	276	226	4.2	1.00	0.1* U	0.2* U	22.3	16	363	6.5	481	19.2	4.2	0.0	-51
	04/08/15	319	262	4.4	1.10	0.1* U	0.3	24.3	37	359	6.4	536	18.9	5.5	0.0	-23
	07/12/15	324	266	3.2	1* B1	0.1* U	0.2	22.7	48	320	6.3	527	20.4	2.0	0.0	-12
	10/26/15	248	203	3.5	0.90 T	0.1* U	0.1 T	22.4	5	319	6.4	445	20.0	4.9	0.0	18
	01/25/16	267	219	3.8	0.66 JT	0.1* U	0.1 T	20.8	8	331	6.4	466	19.5	1.0	0.62	-1
	04/03/16	254	208	4.5	0.90 T	0.1* U	0.3	21.0	7	316	6.6	454	20.5	1.1	1.5	24
	07/10/16	313	257	3.9	1.20	0.1* U	0.3	25.9	68	383	6.6	562	20.3	1.0	NM	23
	10/09/16	347	285	3.7	1.90	0.1* U	0.2 T	30.2	102	368	6.6	634	19.5	5.2	0.0	23
	01/23/17	319	262	4.5	1.00	0.1* U	0.2* U	24.0	64	364	6.6	562	19.3	6.9	0.4	21
	04/09/17	324	266	4.3	1.20	0.1* U	0.2* U	27.0	75	366	6.5	573	17.6	2.6	0.13	25
	07/27/17	317	260	4.8 T	1.40	0.5* U	50* B1	27.0	31	370	6.7	538	18.4	2.0	2.0	18
	10/16/17	293	240	4.6 T	1.50	0.5* U	50* U	25.0	46	400	6.8	513	18.5	3.2	0.99	16
	01/29/18	293	240	4.0 T	1.80	0.03 T	0.08 T	26.0	58	380	6.6	545	17.9	235.0	0.0	15
	04/03/18	280	230	3.3 T	1.00	0.5* U	0.78* T	23.0	5 T	380	6.7	516	18.0	3.9	0.0	8
	07/19/18	304	249	3.9	1.03	0.1* U	0.12 T	25.0	55	358 J	6.2	537	18.1	1.0	0.0	2
	10/14/18	262	215	3.2	1.03	0.1* U	0.10 T	19.6	49	266	6.5	474	18.9	1.8	0.0	-15
	01/15/19	299	245	4.0	1.03	0.1* U	0.27	22.4	29	348	6.0	524	17.4	1.2	0.0	14
	04/02/19	266	218	3.2	0.81	0.1* U	0.42	25.5	24	344	6.5	460	18.0	0.8	0.0	-9
	07/09/19	248	203	2.3	1.09	0.17	2.54*	22.6	20	359	6.6	443	18.0	1.5	0.0	-13
	10/27/19	313	257	2.3	1.57	0.1* U	0.26 T	25.6	66	374	6.3	531	18.0	2.9	0.0	1
	01/20/20	260	213	2.0	1.15 J	0.1* U	1.51*	25.0	11	351	6.3	455	17.0	3.7	0.0	4
	04/13/20	311	255	2.1	1.40	0.1* U	0.26 T	28.1	75	370	6.3	539	18.3	2.8	0.0	4
	07/12/20	229	188	1.4	0.70 J	0.1* U	0.4* U	21.1	28	323	6.3	382	18.3	5.9	0.00	6
	10/14/20	251	206	1.7	1.26	0.1* U	0.31 T	23.9	19	332	6.2	420	18.5	4.4	0.04	9
	01/18/21	317	260	2.0 J	1.45	0.05* U	0.36 T	27.4	67	348	6.2	524	17.2	6.0	0.00	10
	04/11/21	266	218	1.8	1.26	0.1* U	0.23 T	22.6	37	327	6.2	440	18.4	9.6	0.12	12
	07/13/21	240	197	1.8	0.05* B1	0.1* U	0.4* B1	19.2	33	290	6.2	399	18.8	6.5	0.17	10
	10/25/21	204	167	1.4	1.01	0.1* U	0.20 T	18.0	5* UJ	264	6.5	317	17.3	3.5	0.02	10
	01/17/22	238	195	1.6 J	1.56	0.1* U	0.07 JT	22.4	5* U	296	6.3	402	17.1	1.1	0.02	19
	04/06/22	223	183	2.2	1.58	0.1* U	0.08 T	21.0	42	301	6.6	397	18.0	3.9	0.02	2
	07/17/22	304	249	2.2	2.10	0.1* U	0.2* U	25.7	28	334	6.4	445	17.3	6.6	0.0	15
	10/09/22	233	191	2.2	2.03	0.1* U	0.2* U	17.3	10	285	6.6	380	18.8	9.2	0.10	0
	01/23/23	205	168	2.4	1.86 J	0.1* U	0.4* U	16.8	5* U	253	6.3	334	17.2	7.6	0.0	18
	04/03/23	182	149	2.3	2.06	0.1* U	0.71*	15.3	5* U	256	6.3	304	17.3	13.8	0.0	19
	07/23/23	206	169	2.6	1.78	0.1* U	0.4* U	15.1	5* U	280	6.4	337	18.6	12.3	0.0	15
	10/29/23	169	139	2.4	1.49	0.1* U	0.4* U	14.3	5* U	243	6.3	277	17.5	6.1	0.22	17
	01/28/24	226	185	2.7	2.06	0.1* U	0.4* U	16.5	24	276	6.7	360	17.0	9.4	0.30	-120
	04/01/24	198	162	2.3	2.10 J	0.10 U	0.14 T	17.5	10	265	6.4	320	17.5	13.1	0.15	-119
count	45	45	45	43	3	26	45	39	45		45	45	45			
max	363.3	298	6.1	2.10	0.17	0.42	30.2	102	400		634	20.5	235.0			
min	169.5	139	1.4	0.66 JT	0.03 T	0.07	14.3	5 T	243		5	17.0	0.8			
non-detects	0	0	0	2	43	15	0	6	0		0	0	0.0			
average	273.8	224.5	3.2	1.3	0.1	0.2	22.4	40.2	330.0		458	18.6	9.9			
sample stdev	47.5	38.9	1.2	0.4	0.1	0.1	3.8	25.0	41.4		112	1.1	34.5			
variance	2,255	1,517	1	0	0	0	14	623	1,710		12,573	1.2	1189.1			
coeff. of variation	0.2	0.2	0.4	0.3	0.7	0.5	0.2	0.6	0.1		0.2	0.1	3.5			
standard error	7.1	5.8	0.2	0.1	0.0	0.0	0.6		6.2							

Cowlitz County Tennant Way Landfill
Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO ₃)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-10B	04/11/13	176	144	1.6	0.85	0.1* U	10.1	10.4	6	266	6.2	377	13.0	1.0	0.0	-76
	07/11/13	190	156	1.9	0.87	0.1* U	3.2	14.4	68	236	6.2	385	14.4	0.8	0.0	-74
	10/15/13	178	146	1.6	0.66	0.7	9.8	9.5	62	240	6.3	380	13.7	1.7	0.0	-49
	01/13/14	187	153	1.7	0.92	0.1* U	9.2	11.7	82	258	6.5	451	13.0	2.5	0.0	-89
	04/18/14	111	91	3.2	0.03 T	1.0	7.3	7.2	5* U	164	6.1	209	13.2	4.4	0.0	-21
	07/15/14	230	189	1.7	0.46	0.1* U	9.0	11.8	5* U	288	5.7	402	15.0	4.7	0.0	-23
	10/19/14	168	138	3.2	0.80 T	0.1* U	11.8	11.0	5* U	223	6.2	387	13.7	3.2	0.0	-51
	01/13/15	127	104	1.5	1* U	6.26*	14.6	5.5	5* U	232	5.9	278	13.2	7.5	0.0	-9
	04/08/15	210	172	3.5	0.50 T	0.3	10.6	9.4	6	279	6.0	358	14.0	0.9	0.0	20
	07/12/15	166	136	2.1	1* B1	0.1* U	16.5	10.9	34	228	6.1	397	14.2	1.0	0.0	-8
	10/26/15	141	116	2.0	0.80 T	0.1* U	13.5	10.3	112	238	6.1	412	14.3	5.5	0.0	44
	01/25/16	130	107	1.7	0.15 J	0.8	9.6	5.3	5* U	181	6.0	239	13.7	3.9	0.6	32
	04/03/16	109	89	2.2	0.30 T	2.4	6.8	5.5	5* U	161	6.2	208	15.2	3.6	1.3	41
	07/10/16	138	113	2.4	0.60 T	0.1* U	12.6	8.2	27	247	6.4	313	15.6	1.0	2.1	33
	10/09/16	151	124	2.6	0.90 T	0.1* U	15.4	8.6	35	238	6.4	368	14.2	4.6	0.0	32
	01/23/17	117	96	0.8	1* U	1.1	7.3	6.9	5* U	152	6.3	192	14.5	2.0	0.0	35
	04/09/17	105	86	1.0	1* U	0.10 T	2.5	7.9	5* U	132	6.2	162	13.2	5.6	0.0	41
	07/27/17	256	210	2.6 T	1.0	0.5* U	4.5 T	15.0	90	270	6.5	534	14.5	2.9	1.7	27
	10/16/17	183	150	1.3 T	0.7	0.5* B1	11.0 T	13.0	5 T	310	6.6	387	14.4	5.8	0.5	23
	01/29/18	122	100	1.4 JT	0.1* U	0.38 T	3.0 T	6.0	5	130	6.5	214	14.2	4.3	0.0	20
	04/03/18	134	110	1.5 T	0.2	0.22 T	3.0 T	6.3	5* U	190	6.7	248	14.6	2.2	0.0	12
	07/19/18	351	288	2.8	1.6	0.1* U	2.0	27.8	164	389 J	6.5	727	16.1	1.4	0.0	-16
	10/14/18	258	212	1.5	1.2	0.1* U	2.4	25.1	101	275	6.3	582	15.7	7.5	0.0	-9
	01/15/19	278	228	2.2	1.2	1.2	6.3	20.9	115	347	5.9	611	14.6	1.0	0.0	18
	04/02/19	328	269	1.9	1.2	0.1* U	1.3	26.0	106	366	6.3	652	15.3	1.4	0.0	5
	07/09/19	278	228	1.3	1.6	0.1* U	1.9	20.0	82	382	6.5	598	16.1	1.2	0.0	-9
	10/27/19	343	281	2.1	2.2	0.1* U	0.9	25.3	136	423	6.4	690	15.9	2.2	0.0	-4
	01/20/20	138	113	1.3	0.5 J	0.7	6.3	7.2	5* U	186	6.0	221	14.0	5.4	0.0	21
	04/13/20	257	211	1.5	0.9	0.1* U	5.4	13.9	42	324	6.1	459	15.6	1.4	0.0	13
	07/12/20	384	315	2.1	1.4 J	0.1* U	0.8	25.4	81	452	6.2	681	16.5	3.8	0.0	10
	10/14/20	271	222	1.8	2.0	0.1* U	3.6	16.4	115	368	6.3	548	15.9	16.2	0.05	5
	01/18/21	128	105	1.8 J	0.05* B1	1.1	5.6	6.2	11	187	5.8	208	14.5	10.8	0.0	29
	04/11/21	133	109	2.0	0.9	0.1* U	15.9	8.3	26	274	6.0	335	15.0	1.9	0.07	17
	07/13/21	146	120	2.0	1.4 J	0.1* U	18.6	9.8	95	248	6.1	401	15.8	5.4	0.08	13
	10/25/21	212	174	2.2	1.4	0.1* U	5.5	15.0	140 J	229	6.4	494	14.5	0.8	0.0	15
	01/17/22	122	100	1.4 J	0.05* B1	0.6 J	3.2 J	6.8	5* U	159	6.2	201	13.9	4.7	0.05	24
	04/06/22	152	125	2.8	0.5	0.1* U	7.9	7.7	5* U	236	6.3	299	14.9	1.6	0.0	19
	07/17/22	349	286	2.8	2.9	0.1* U	0.3	26.9	118	351	6.4	646	15.7	1.9	0.0	12
	10/09/22	150	123	1.5	1.6	0.1* U	3.8	10.8	144	193	6.8	400	15.9	4.4	0.0	-11
	01/23/23	151	124	2.2	0.02 JT	1.4	5.3	5.7	5* U	187	6.2	249	14.0	2.4	0.0	24
	04/03/23	146	120	1.2	1.1	0.1* U	15.4	7.1	54	233	6.4	374	13.9	0.9	0.0	15
	07/23/23	154	126	2.1	0.9	0.1* U	11.5	8.0	119	242	6.4	425	16.2	4.9	0.0	13
	10/29/23	148	121	2.9	1.0	0.1* U	7.0	9.1	91	221	6.5	420	14.8	2.1	0.17	11
	01/28/24	126	103	1.5	0.1	0.2	3.2	7.8	5* U	165	6.5	186	14.5	9.3	0.24	80
	04/01/24	130	107	1.8	0.1 J	0.1 U	0.8	8.6	5 U	163	6.4	186	14.9	2.1	0.10	-54
count		45	45	45	38	16	45	45	31	45		45	45	45		
max		384.1	315	3.46	2.90	2.39	18.60	27.8	164	452		727	16.5	16.2		
min		104.9	86	0.77	0.02 JT	0.10 T	0.32	5.3	5 T	130		162	13.0	0.8		
non-detects		0	0	0	7	29	0	0	15	0		0	0	0.0		
average		188.0	154.2	2.0	0.9	0.8	7.2	12.0	73.3	250.3		389	14.7	3.6		
sample stdev		75.6	62.0	0.6	0.6	0.6	5.0	6.6	48.2	78.6		157	0.9	3.0		
variance		5,717	3,846	0	0	0	25	44	2,326	6,174		24,608	0.9	9.2		
coeff. of variation		0.4	0.4	0.3	0.7	0.8	0.7	0.6	0.7	0.3		0.4	0.1	0.8		
standard error		11.3	9.2	0.1	0.1	0.1	0.7	1.0		11.7						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-11B	04/11/13	64	52	1.0	0.37	0.1* U	0.2	11.5	7	136	6.6	151	13.0	5.1	0.0	-117
	07/12/13	89	73	0.8	0.67	0.1* U	0.2	12.5	31	140	6.2	207	13.8	5.9	0.0	-72
	10/15/13	100	82	0.9	0.57	0.1* U	16*	10.2	65*	156	6.1	272	14.3	6.6	0.0	-54
	01/13/14	157	129	0.9	0.80	0.1* U	0.6	9.8	7	203	6.1	273	14.6	3.9	0.0	-24
	04/21/14	66	54	3.5	0.33	0.1* U	4.2	11.6	22	126	6.3	181	13.4	19.0	0.0	-42
	07/15/14	98	80	3.1	0.61	0.1* U	0.1 T	12.9	49	169	6.0	244	15.1	32.2	0.0	-50
	10/19/14	99	81	3.0	0.90 T	0.1* U	0.3	13.4	18	187	6.3	255	15.6	7.1	0.0	-69
	01/13/15	85	70	2.8	0.10 T	2.3	17.5*	6.6	5 U	176	5.7	184	13.6	4.2	0.0	11
	04/08/15	68	56	2.3	0.20 T	0.10 T	6.6	7.3	6	102	5.8	126	14.0	10.3	0.0	59
	07/12/15	152	125	3.2	1.30 J	0.1* U	1.9	15.0	26	181	6.0	274	15.0	6.8	0.0	4
	10/26/15	162	133	3.7	0.60 T	0.1* U	0.6	16.3	5* U	244	6.1	309	15.5	2.7	0.0	23
	01/25/16	37	30	2.2	0.27 J	3.2	10.2	6.8	5* U	106	5.6	119	12.4	4.9	1.0	57
	04/03/16	37	30	1.7	0.30 T	0.7	3.9	6.6	5* U	88	5.9	80	14.0	17.8	0.85	58
	07/10/16	57	47	1.7	0.30 T	0.1* U	4.7	10.9	19	134	6.0	124	15.5	13.5	1.7	52
	10/09/16	80	66	3.1	0.20 T	0.1* U	6.2	13.7	22	153	6.0	159	15.3	12.8	0.0	57
	01/23/17	57	47	0.4	1* U	0.1* U	4.1	10.0	7	94	6.0	103	13.5	16.1	0.25	54
	04/09/17	49	40	0.8	1* U	0.1* U	1.3	10.6	12	79	6.0	93	12.3	17.9	0.0	50
	07/27/17	71	58	20* B1	0.1	0.0 T	2.2 T	7.5	12	110	6.3	120	14.3	5.1	0.88	40
	10/16/17	85	70	1.2 T, B	0.2	0.5* U	0.5 T	11.0	25	150	6.4	140	15.4	24.8	0.0	35
	01/29/18	57	47	1.7 JT	0.1* U	1.6	8.4 T	7.9	5	120	6.0	139	12.9	5.3	0.0	45
	04/03/18	48	39	1.0 T	0.1* U	0.8	3.5 T	7.3	5 T	100	6.4	100	12.7	9.3	0.0	28
	07/19/18	62	51	1.8	0.1	2.5 R	1.9	8.4	12	149 J	5.9	119	15.8	6.2	0.0	19
	10/14/18	80	66	1.5	0.1	0.1* U	2.3	12.0	10	127	5.9	133	16.6	8.9	0.0	20
	01/15/19	61	50	1.3	0.4* U	2.7	15.9*	6.0	5* U	124	5.2	152	14.2	2.0	1.1	59
	04/02/19	56	46	1.0	0.05* U	0.3	5.6	7.5	5* U	110	5.5	103	14.5	4.4	0.92	49
	07/09/19	68	56	0.9	0.1	0.1* U	3.6	8.2	5* U	148	5.9	115	15.2	4.5	0.0	28
	10/27/19	100	82	1.9	0.2	0.1* U	1.7	9.9	5* U	163	5.8	165	15.7	5.6	1.2	33
	01/20/20	67	55	1.4	0.05* U	3.5	11.3*	9.2	5* U	155	5.5	157	13.1	3.6	0.27	48
	04/13/20	46	38	0.7	0.02 T	0.3	3.0	8.1	5* U	107	5.5	85	14.6	5.3	0.31	45
	07/12/20	63	52	0.9	0.05* U	0.1* U	3.3	8.7	5* U	144	5.4	108	14.8	5.2	0.0	49
	10/14/20	72	59	1.2	0.15	0.1* U	2.4	9.8	5* U	146	5.5	124	15.5	6.7	0.05	48
	01/18/21	57	47	2.7 J	0.05* B1	2.2	7.8	7.9	5* U	134	5.4	134	13.0	2.9	0.0	52
	04/11/21	48	39	1.1	0.05* B1	0.4	2.8	7.6	5* U	127	5.5	84	14.0	5.8	1.2	47
	07/13/21	61	50	1.9	0.64 J	0.1* U	2.5	8.1	5* U	120	5.4	101	15.1	8.1	0.13	50
	10/25/21	81	67	1.8	0.15	0.1* U	1.3	22*	5* UJ	131	5.8	136	14.9	5.8	0.0	46
	01/17/22	61	50	1.8 J	0.05* B1	0.1 J	4.3 J	7.7	5* U	108	6.0	117	13.1	2.5	0.0	37
	04/06/22	57	47	1.0	0.05* U	0.2	2.5	7.5	5* U	100	6.0	101	14.7	3.0	0.58	35
	07/17/22	67	55	0.3	0.05* B1	0.1 T	2.3	7.5	7	106	5.8	109	14.7	7.2	0.09	48
	10/09/22	70	58	1.3	0.06	0.1* U	1.1	8.7	6	126	6.1	122	16.9	7.1	0.47	31
	01/23/23	75	61	4.0	0.05* UJ	1.3	9.8	6.6	5* U	131	5.8	158	13.4	4.2	0.08	45
	04/03/23	63	52	2.5	0.05* B1	1.5	7.6	6.1	7	114	5.8	131	13.5	5.4	0.28	46
	07/23/23	74	61	2.6	0.05* B1	0.1* U	2.8	8.3	6	131	5.8	124	15.3	9.3	0.00	45
	10/29/23	92	75	2.8	0.11	0.1* U	1.3	11.9	15	139	5.9	150	15.3	5.5	0.17	43
	01/28/24	71	58	1.5	0.07 J	0.1 T	6.5	9.1	5	119	6.1	123	13.6	8.5	0.39	90
	04/01/24	54	44	2.0	0.05 B1	0.1 T	3.0	0.5	5 U	96	6.0	93	14.5	4.2	0.42	42
count		45	45	44	29	21	41	44	26	45		45	45	45		
max		162.2	133	4.02	1.30	3.47	10.20	16.3	49.3	244		309	16.9	32.2		
min		36.6	30	0.32	0.02 T	0.03 T	0.10	0.5	5	79		80	12.3	2.0		
non-detects		0	0	1	17	24	0	0	20	0		0	0	0.0		
average		73.9	60.6	1.8	0.3	1.1	3.4	9.2	13.4	133.5		147	14.4	8.1		
sample stdev		27.5	22.5	0.9	0.3	1.2	2.7	2.8	10.7	32.0		57	1.1	6.1		
variance		756	508	1	0	1	7	8	114	1,023		3,219	1.2	37.6		
coeff. of variation		0.4	0.4	0.5	0.9	1.0	0.8	0.3	0.8	0.2		0.4	0.1	0.8		
standard error		4.1	3.4	0.1	0.1	0.3	0.4	0.4		4.8						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-12B	04/09/13	478	392	10.1	1.13	0.1* U	0.3	13.0	66	462	6.6	822	18.9	1.2	0.00	-139
	07/11/13	352	289	10.8	0.98	0.1* U	0.2 T	8.7	78	353	6.4	619	19.9	1.2	0.00	-123
	10/14/13	411	337	9.9	0.95	0.1* U	0.2* U	10.8	85	431	6.4	744	19.5	2.6	0.43	-122
	01/13/14	345	283	9.6	0.73	0.1* U	0.1 T	7.2	51	333	6.5	576	19.3	1.2	0.00	-81
	04/18/14	363	298	9.3	1.00	0.1* U	0.1 T	9.0	69	365	6.2	668	19.3	1.7	0.00	-92
	07/15/14	367	301	9.4	1.01	0.1* U	0.2* U	8.7	65	387	6.3	642	19.6	1.3	0.00	-90
	10/19/14	367	301	9.9	0.80 T	0.1* U	0.2* U	8.7	50	378	6.3	649	19.2	2.5	0.00	-45
	01/13/15	366	300	10.0	1.00 T	0.1* U	0.2* U	8.5	33	376	6.5	620	18.6	1.4	0.00	-32
	04/08/15	382	313	11.0	1.00	0.1* U	0.3	9.1	73	390	6.4	634	19.8	1.5	0.00	-37
	07/12/15	436	358	9.4	1* B1	0.1* U	0.1 T	11.1	64	403	6.3	694	20.4	2.1	0.03	1
	10/26/15	389	319	8.8	0.80 T	0.1* U	0.1 T	8.3	58	394	6.4	664	19.2	3.0	0.16	43
	01/25/16	388	318	8.6	1.00 J	0.1* U	0.2 T	9.7	53	394	6.5	692	19.0	1.5	1.3	5
	04/03/16	454	372	9.3	1.00 T	0.1* U	0.4	12.0	80	444	6.5	770	20.6	1.0	2.6	26
	07/10/16	405	332	8.7	0.90 T	0.1* U	0.3	11.2	80	406	6.6	719	19.8	1.2	2.4	24
	10/09/16	422	346	8.1	1.00	0.1* U	0.2 U	10.5	75	407	6.6	721	19.5	1.8	0.14	23
	01/23/17	440	361	8.7	0.80 T	0.1* U	0.2 U	11.7	65	447	6.5	716	19.4	1.0	0.91	25
	04/09/17	436	358	9.2	1.10	0.1* U	0.2 U	12.9	49	425	6.6	723	18.8	3.8	0.27	23
	07/27/17	463	380	9.5 T	1.20	0.5* U	50* B1	16.0	87	450	6.6	758	20.4	1.9	0.53	23
	10/15/17	463	380	8.0 T	1.00	0.03 T	0.1 T	14.0	59	490	6.8	828	19.6	1.1	0.00	5
	01/29/18	465	381	8.8	1.09	0.1* U	0.3	13.5	87	482	6.3	812	19.8	1.2	0.00	-3
	04/03/18	483	396	8.7	1.17	0.49	0.1 T	12.4	69	482	6.2	812	19.6	1.4	0.00	1
	07/19/18	450	369	10.0	1.10	0.39	0.4	9.7	76	410	6.0	788	18.9	1.3	0.00	14
	10/14/18	435	357	8.4	1.19	0.1* U	0.4	11.0	64	433	6.2	751	19.8	1.2	0.02	11
	01/15/19	486	399	9.1	0.66	0.1* U	0.3 T	12.6	57	510	6.4	793	19.9	0.8	0.00	-6
	04/02/19	441	362	8.7	1.45	0.1* U	0.3 T	9.9	60	423	6.2	731	19.4	1.5	0.00	7
	07/09/19	511	419	12.1	1.33 J	0.1* U	0.4	13.1	47	536	6.2	824	19.1	2.9	0.00	7
	10/27/19	441	362	8.7	1.45	0.1* U	0.3 T	9.9	60	423	6.2	731	19.4	1.5	0.00	7
	01/20/20	511	419	12.1	1.33	0.1* U	0.4	13.1	47	536	6.1	714	19.7	1.2	0.08	14
	04/13/20	447	367	10.3	1.33	0.1* U	0.3 T	11.6	53	476	6.2	743	19.9	0.6	0.00	12
	07/12/20	461	378	9.5	1.29 J	0.1* U	0.4 U	11.5	59	491	6.2	769	19.8	1.0	0.17	12
	10/14/20	438	359	10.1	1.15	0.1* U	0.4	9.9	57	475	6.1	714	19.7	1.2	0.08	14
	01/18/21	461	378	9.7 J	1.21	0.05* U	0.1 T	11.0	62	475	6.1	743	19.4	1.1	0.12	16
	04/11/21	474	389	9.7	1.21	0.1* U	0.3 T	12.0	57	526	6.1	743	20.1	1.8	0.43	15
	07/13/21	458	376	9.8	1.46 J	0.1* U	0.6	10.9	68	459	6.1	724	20.2	1.7	0.44	17
	10/25/21	454	372	13.0	1.20	0.1* UJ	0.2 T	11.0	58 J	429	6.3	751	19.3	1.1	0.18	19
	01/17/22	428	351	13.3 J	1.42	0.1* U	0.2 JT	10.6	51	438	6.4	732	19.3	1.2	0.22	12
	04/06/22	424	348	17.2	1.41	0.1* U	0.1 T	10.9	56	451	6.5	718	19.9	1.1	0.12	8
	07/17/22	399	327	19.0	1.43	0.1* U	0.1 T	11.9	65	433	6.3	743	19.8	2.4	0.04	19
	10/09/22	418	343	15.8	1.29	0.1* U	0.2 U	10.5	73	419	6.6	713	20.3	1.2	0.17	5
	01/23/23	428	351	16.9	1.03 J	0.1* U	0.4 U	12.1	60	431	6.3	736	19.3	0.9	0.12	19
	04/03/23	421	345	15.7	0.99	0.1* U	0.2 T	10.8	53	445	6.3	711	19.8	0.6	0.06	18
	07/23/23	394	323	15.2	1.02	0.1* U	0.4 U	10.0	68	419	6.3	666	20.3	1.3	0.00	19
	10/29/23	407	334	13.9	0.94	0.1* U	0.1 T	10.0	57	404	6.4	660	19.2	0.7	0.28	16
	01/28/24	408	335	13.0	0.91	0.1* U	0.2 T	11.4	68	402	6.6	647	19.3	0.8	0.37	-119
	04/01/24	395	324	14.1	0.87 J	0.1 U	0.1 T	11.3	47	387	6.4	600	19.7	0.9	0.26	-129
count		45	45	45	44	4	40	45	45	45		45	45	45		
max		510.9	419	19.0	1.46 J	0.49	0.60	16.0	87	536		828	20.6	3.8		
min		345.0	283	8.0	0.66	0.03 T	0.08 T	7.2	33	333		576	18.6	0.6		
non-detects		0	0	0	1	42	12	0	0	0		0	0	0.0		
average		428.1	351.2	10.9	1.1	0.3	0.3	11.0	62.5	434.0		718	19.6	1.5		
sample stdev		40.7	33.4	2.8	0.2	0.2	0.1	1.7	11.7	46.9		61	0.5	0.7		
variance		1,660	1,117	8	0	0	0	3	137	2,202		3,739	0.2	0.5		
coeff. of variation		0.1	0.1	0.3	0.2	0.9	0.5	0.2	0.2	0.1		0.1	0.0	0.5		
standard error		6.1	5.0	0.4	0.0	0.1	0.0	0.3		7.0						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-13	04/09/13	305	250	6.9	0.82	0.1* U	0.2 T	14.9	32	321	6.6	482	17.4	0.9	0.0	-119
	07/11/13	283	232	7.3	0.92	0.1* U	0.2 T	14.1	56	294	6.4	494	18.2	0.9	0.0	-118
	10/14/13	300	246	6.8	0.77	0.1* U	0.2* U	14.7	47	332	6.4	517	18.0	0.9	0.29	-86
	01/13/14	316	259	7.0	0.64	0.1* U	0.1 T	14.6	14	345	6.5	514	18.2	1.6	0.0	-74
	04/18/14	307	252	6.6	0.61	0.1* U	0.1 T	16.6	9	335	6.4	542	18.3	1.7	0.0	-79
	07/15/14	322	264	7.4	1.46	0.1* U	0.2* U	16.6	74	337	6.3	569	18.3	3.1	0.0	-88
	10/19/14	369	303	8.2	1.20	0.1* U	0.2* U	15.0	48	368	6.4	652	17.8	1.9	0.0	-54
	01/13/15	306	251	10.4	0.60 T	0.1* U	0.2* U	14.1	18	371	6.4	513	17.5	1.5	0.0	-12
	04/08/15	291	239	11.1	0.90 T	0.1* U	0.3	13.2	55	328	6.4	634	19.8	1.5	0.0	-37
	07/12/15	434	356	7.9	1.90 J	0.1* U	0.1 T	21.5	76	427	6.2	715	18.8	2.5	0.10	38
	10/26/15	413	339	8.3	1.90	0.1* U	0.1 T	21.6	128	431	6.4	742	18.3	2.7	0.27	61
	01/25/16	250	205	9.0	0.69 J	0.1* U	0.5	13.3	12	319	6.3	465	17.5	1.1	0.66	17
	04/03/16	363	298	8.7	0.80 T	0.1* U	0.7	15.1	53	337	6.5	559	18.7	1.1	2.3	28
	07/10/16	328	269	8.0	1.20	0.1* U	0.3	15.9	73	359	6.5	593	19.2	1.6	2.3	26
	10/09/16	308	253	8.0	1.40	0.1* U	0.2 U	15.0	77	326	6.5	564	18.5	2.5	0.17	25
	01/23/17	421	345	7.6	0.50 T	0.1* U	0.2 U	16.0	52	437	6.5	675	17.9	1.3	0.75	27
	04/09/17	433	355	7.4	2.00	0.1* U	0.1 T	29.6*	78	429	6.5	753	17.4	3.3	0.56	26
	07/27/17	329	270	5.5 T	0.71 T	0.5* U	50* B1	17.0	46	350	6.6	558	18.8	1.9	0.42	23
	10/15/17	329	270	2.6 T	0.90	0.5* U	0.1 T	19.0	31	420	6.7	671	17.0	4.2	0.0	11
	01/29/18	391	321	2.5	1.06	0.04 T	0.2 T	15.1	76	391 J	6.4	674	17.5	1.3	0.0	-12
	04/03/18	428	351	3.0	1.00	0.48	0.2 U	19.8	63	395	6.1	705	17.3	2.2	0.0	5
	07/19/18	399	327	1.8	0.71	0.42	0.4	12.6	58	368	5.9	651	16.6	1.8	1.2	16
	10/14/18	374	307	1.8	1.14	0.1* U	0.4	15.8	63	385	6.1	638	17.0	2.0	0.0	13
	01/15/19	349	286	2.2	1.07	0.1* U	0.3 T	14.8	49	402	6.3	6	17.4	6.1	0.0	2
	04/02/19	350	287	2.0	1.51	0.1* U	0.3 T	17.6	72	352	6.2	592	17.1	2.5	0.0	7
	07/09/19	338	277	1.8	1.40 J	0.1* U	0.3 T	29.6*	38	350	6.2	558	16.6	1.7	0.0	8
	10/27/19	350	287	2.0	1.51	0.1* U	0.3 T	17.6	72	352	6.2	592	17.1	2.5	0.0	7
	01/20/20	338	277	1.8	1.40	0.1* U	0.3 T	29.6*	38	350	6.1	580	17.6	1.9	0.0	13
	04/13/20	363	298	2.0	1.26	0.1* U	0.3 T	18.8	56	407	6.1	611	17.4	1.3	0.0	14
	07/12/20	340	279	1.7	1.08 J	0.1* U	0.4 U	19.2	58	434	6.1	585	17.4	1.1	0.12	13
	10/14/20	322	264	2.4	1.62	0.1* U	0.4 T	16.7	76	421	6.1	580	17.6	1.9	0.04	13
	01/18/21	326	267	1.5 J	1.23	0.05* U	0.1 T	14.7	70	344	6.1	555	16.8	2.0	0.04	17
	04/11/21	327	268	2.0	1.43	0.1* U	0.3 T	15.7	66	382	6.1	564	17.3	2.7	0.12	14
	07/13/21	278	228	2.7	1.50 J	0.1* U	1.81*	12.5	70	306	6.1	496	18.1	4.8	0.14	15
	10/25/21	422	346	3.5	2.92*	0.04 JT	0.2 T	23.0	120 J	356	6.3	737	17.2	3.4	0.11	20
	01/17/22	300	246	1.3 J	1.35	0.1* U	0.1 JT	12.8	54	317	6.5	528	16.8	1.3	0.10	11
	04/06/22	230	189	1.4	1.29	0.1* U	0.4 U	12.8	57	292	6.6	437	17.4	3.1	0.02	4
	07/17/22	239	196	1.1	1.20	0.1* U	0.2 U	12.4	57	266	6.3	403	17.6	1.7	0.02	17
	10/09/22	306	251	2.2	2.44	0.1* U	0.1 T	17.1	113	318	6.3	573	17.4	2.0	0.08	17
	01/23/23	274	225	2.4	1.06 J	0.1* U	0.4 U	13.9	65	296	6.3	503	16.7	2.1	0.00	20
	04/03/23	278	228	2.2	1.22	0.1* U	0.2 T	14.4	80	325	6.3	515	17.0	1.7	0.00	17
	07/23/23	246	202	2.1	1.42	0.1* U	0.4 U	13.5	83	290	6.3	474	18.0	1.5	0.00	18
	10/29/23	258	212	2.2	1.31	0.1* U	0.4 T	15.0	85	273	6.4	479	17.3	1.5	0.23	15
	01/28/24	248	203	2.8	0.95	0.1* U	0.1 T	12.7	87	265	6.6	441	16.8	1.9	0.26	-135
	04/01/24	257	211	2.3	1.05 J	0.1 U	0.1 T	14.2	79	262	6.4	440	17.3	2.3	0.17	-143
count		45	45	45	44	5	39	42	45	45		45	45	45		
max		434.0	356	11.1	2.44	0.48	0.65	23.0	128	437		753	19.8	6.1		
min		230.4	189	1.1	0.50 T	0.04 JT	0.08 T	12.4	9	262		6	16.6	0.9		
non-detects		0	0	0	0	41	13	0	0	0		0	0	0.0		
average		327.5	268.6	4.4	1.2	0.2	0.2	15.7	61.7	350.3		558	17.6	2.1		
sample stdev		55.6	45.6	3.0	0.4	0.2	0.1	2.6	25.2	49.1		121	0.7	1.0		
variance		3,089	2,078	9	0	0	0	7	637	2,406		14,696	0.5	1.1		
coeff. of variation		0.2	0.2	0.7	0.3	1.0	0.6	0.2	0.4	0.1		0.2	0.0	0.5		
standard error		8.3	6.8	0.4	0.1	0.1	0.0	0.4		7.3						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-14B	04/09/13	385	316	6.9	1.68	0.1* U	0.3	27.6	74	390	6.6	696	17.0	0.8	0.0	-137
	07/11/13	395	324	6.5	2.18	0.1* U	0.2 T	28.4	148	401	6.4	734	17.9	1.0	0.0	-137
	10/14/13	307	252	6.1	1.48	0.1* U	0.1 T	22.8	110	340	6.5	600	17.7	1.9	0.40	-119
	01/13/14	355	291	5.8	1.26	0.1* U	0.1 T	23.1	84	363	6.5	608	17.3	1.0	0.02	-100
	04/18/14	335	275	5.4	1.52	0.1* U	0.1 T	25.4	100	356	6.4	637	17.3	1.6	0.0	-109
	07/15/14	358	294	5.0	1.95	0.1* U	0.2* U	21.7	105	379	6.3	625	17.6	3.5	0.0	-89
	10/19/14	337	276	5.6	1.50	0.1* U	0.2* U	23.6	67	366	6.4	622	17.4	2.3	0.0	-13
	01/13/15	383	314	6.8	1.60	0.1* U	0.2* U	26.3	55	429	6.5	676	16.5	8.2	0.0	9
	04/08/15	384	315	7.1	3.00	0.1* U	0.3	32.0	180*	406	6.4	741	16.9	5.6	0.0	-55
	04/08/15	386	317	7.0	2.90	0.1* U	0.4	29.9	180*	407						
	07/12/15	321	263	8.0	1.70 J	0.1* U	0.2 T	23.5	78	328	6.3	593	17.2	1.5	0.0	74
	10/26/15	294	241	7.6	1.50	0.1* U	0.1 T	23.2	93	334	6.2	539	16.5	0.7	0.89	84
	01/25/16	322	264	6.2	1.29 J	0.1* U	0.4	24.9	92	338	6.2	621	16.6	3.3	0.80	17
	04/03/16	283	232	7.1	1.50	0.1* U	0.4	21.4	103	321	6.5	550	16.9	3.1	2.1	25
	07/10/16	269	221	7.1	3.00	0.1* U	0.4	23.6	79	322	6.6	598	16.6	1.9	2.0	20
	10/09/16	246	202	8.5	1.10	0.1* U	0.2* U	16.8	72	295	6.7	464	16.7	3.3	0.0	17
	01/23/17	335	275	7.0	1.20	0.1* U	0.2* U	22.8	94	365	6.5	612	15.8	3.7	0.40	23
	04/09/17	337	276	6.7	1.90	0.1* U	0.1 T	29.2	100	345	6.6	632	15.1	1.8	2.7	20
	07/27/17	305	250	6.7 T	2.30	0.5* U	50* B1	23.0	110	310	6.6	569	17.3	2.0	0.44	19
	10/15/17	402	330	5.9 T	2.40	0.03 T	0.1 T	30.0	120	420	6.8	770	15.0	9.0	0.0	2
	01/29/18	347	285	6.2	2.53	5* R	0.2	27.4	87	736* J	6.2	690	15.8	2.0	0.0	2
	04/03/18	323	265	9.1	1.29	0.1* U	0.2 T	22.3	96	320	6.2	605	14.9	0.9	0.48	-1
	07/19/18	356	292	7.9	1.66	0.39	0.4	24.5	112	360	6.0	673	14.7	2.2	0.0	13
	10/14/18	350	287	5.8	2.90	0.1* U	0.5	31.5	143	398	6.4	669	15.1	3.4	0.0	-1
	01/15/19	315	258	5.5	2.13	0.1* U	0.3 T	26.7	105	399	6.5	634	15.2	1.7	0.0	-10
	04/02/19	282	231	4.5	1.91	0.1* U	0.3 T	21.1	101	324	6.4	541	15.0	1.9	0.0	-1
	07/09/19	340	279	5.4	2.24 J	0.1* U	0.4 T	16.4	88	398	6.3	634	14.7	3.3	0.0	3
	10/27/19	282	231	4.5	1.91	0.1* U	0.3 T	21.1	101	324	6.4	541	15.0	1.9	0.0	-1
	01/20/20	340	279	5.4	2.24	0.1* U	0.4 T	16.4	88	398	6.3	519	15.1	1.1	0.0	5
	04/13/20	299	245	5.1	2.42	0.1* U	0.4 T	27.8	120	357	6.2	300	15.1	2.2	0.0	9
	07/12/20	290	238	4.9	1.89 J	0.1* U	0.4* U	25.7	98	393	6.3	565	15.1	1.4	0.0	5
	10/14/20	273	224	5.0	1.59	0.1* U	0.3 T	23.5	93	389	6.3	519	15.1	1.1	0.0	5
	01/18/21	282	231	4.5 J	1.82	0.1* U	0.3 T	22.0	104	310	6.2	521	14.6	1.4	0.0	10
	04/11/21	323	265	4.2	2.66	0.1* U	0.3 T	28.4	87	396	6.2	597	14.7	2.2	0.13	10
	07/13/21	287	235	4.0	2.30 J	0.09 T	0.4	22.2	103	319	6.2	535	15.3	2.7	0.07	7
	10/25/21	278	228	4.4	1.29	0.1* UJ	0.2 T	20.0	81 J	346	6.4	507	15.0	3.3	0.0	12
	01/17/22	272	223	3.8 J	1.72	0.1* U	0.1 JT	19.1	82	311	6.6	507	14.4	3.6	0.0	2
	04/06/22	274	225	4.8	2.28	0.1* U	0.1 T	26.0	122	362	6.7	534	15.4	13.2	0.0	-1
	07/17/22	257	211	4.0	2.41	0.1* U	0.2* U	21.7	110	293	6.3	501	15.8	2.3	0.0	16
	10/09/22	240	197	6.8	2.46	0.1* U	0.2* U	21.8	18	330	6.4	478	15.9	2.1	0.02	12
	01/23/23	217	178	5.1	1.51 J	0.1* U	0.1 T	16.2	74	250	6.4	398	14.8	4.4	0.0	14
	04/03/23	284	233	6.0	2.40	0.1* U	0.1 T	23.3	104	342	6.4	549	14.8	2.4	0.0	13
	07/23/23	268	220	5.5	2.85	0.1* U	0.4* U	23.1	15	306	6.4	534	15.8	2.0	0.0	16
	10/29/23	184	151	17.5*	1.34	0.1* U	0.4* U	17.8	6	304	6.5	401	14.8	0.7	0.15	9
	01/28/24	217	178	11.3	1.40	0.1* U	0.2 T	19.5	84	279	6.7	425	14.7	4.7	0.25	-167
	04/01/24	290	238	7.5	2.44 J	0.1 U	0.1 T	27.7	128	302	6.5	533	14.9	4.6	0.12	-168
count		45	45	44	45	4	34	45	43	44		44	44	44		
max		402.3	330	11.30	3.00	0.39	0.47	32.0	148	429		770	17.9	13.2		
min		184.1	151	3.76	1.10	0.03 T	0.08 T	16.2	6	250		300	14.4	0.7		
non-detects		0	0	0	0	41	11	0	0	0		0	0	0.0		
average		307.2	252.0	6.1	2.0	0.2	0.3	23.7	92.0	348.5		570	15.8	2.9		
sample stdev		49.0	40.2	1.5	0.5	0.2	0.1	4.0	28.6	41.9		93	1.0	2.4		
variance		2,399	1,614	2	0	0	0	16	820	1,753		8,725	1.1	5.5		
coeff. of variation		0.2	0.2	0.2	0.3	1.1	0.5	0.2	0.3	0.1		0.2	0.1	0.8		
standard error		7.3	6.0	0.2	0.08	0.1	0.0	0.6		6.3						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location	Date	mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-15	04/09/13	345	283	4.2	0.59	0.1* U	5.7	12.9	5* U	384	6.5	533	13.3	0.4	0.50	-84
	07/11/13	324	266	2.7	1.21	0.2	5.7	11.8	5* U	352	6.4	493	14.0	0.6	0.0	-43
	10/14/13	349	286	2.1	0.63	0.1* U	6.6	10.8	5* U	370	6.5	516	13.7	1.5	0.29	-25
	01/13/14	376	308	6.1	0.48	0.1* U	2.7	15.3	5* U	372	6.5	479	13.1	0.5	0.0	-17
	04/18/14	340	279	4.3	0.69	0.1* U	6.3	14.3	5* U	370	6.5	536	13.1	1.1	0.0	-49
	07/15/14	360	295	3.4	0.86	0.1* U	4.0	13.5	5* U	351	6.1	449	13.9	0.6	0.0	28
	10/19/14	357	293	4.6	0.60 T	0.1* U	3.3	12.8	5* U	367	6.5	465	13.2	0.9	0.0	64
	01/13/15	330	271	5.1	0.60 T	0.1* U	4.8	15.1	5* U	383	6.4	461	12.9	0.4	0.0	58
	04/08/15	299	245	6.5	0.70 T	0.1* U	4.3	14.5	5* U	351	6.5	459	13.3	0.4	0.0	-56
	07/12/15	330	271	4.0	1* B1	0.1* U	2.6	15.9	5* U	358	6.4	472	14.3	0.7	0.0	111
	10/26/15	351	288	4.4	0.70 T	0.1* U	3.0	15.0	8	388	6.4	538	13.4	0.1	0.10	99
	01/25/16	266	218	3.3	0.47 J	0.1* U	6.6	12.7	5* U	313	6.2	437	13.0	0.8	0.22	47
	04/03/16	245	201	2.2	0.60 T	0.1* U	10.5	10.9	5* U	278	6.6	403	13.9	0.4	1.8	23
	07/10/16	284	233	2.4	0.90 T	0.1* U	7.3	11.9	5* U	311	6.5	448	14.1	0.6	1.7	24
	10/09/16	299	245	3.7	0.70 T	0.1* U	7.3	13.8	5* U	331	6.6	481	14.2	0.7	0.0	20
	01/23/17	290	238	3.4	0.40 T	0.1* U	9.4	17.4	5* U	330	6.7	457	13.2	0.6	0.0	17
	04/09/17	268	220	2.0	1.20	0.1* U	15.8	14.5	13	314	6.8	447	13.4	0.7	0.0	13
	07/27/17	280	230	1.8 T	1.20	0.5* U	7.0 T	12.0	5* U	320	6.2	440	15.3	1.4	0.58	40
	10/15/17	268	220	1.1 T	0.55	0.5* U	9.9 T	9.7	5* U	320	6.8	454	13.2	0.5	0.0	5
	01/29/18	294	241	1.3	2.23*	0.1* U	8.0	11.7	5* U	314	6.1	458	14.1	0.4	0.0	7
	04/03/18	308	253	1.4	0.49	0.1* U	7.5	10.8	8	303	6.2	425	13.2	0.3	0.0	3
	07/19/18	288	236	1.9	0.41	0.1* U	10.2	10.3	5* U	284	6.0	456	12.7	0.3	1.3	13
	10/14/18	291	239	2.1	0.54	0.1* U	8.3	12.3	5* U	317	6.4	443	13.6	0.4	0.0	-2
	01/15/19	307	252	2.0	0.79	0.1* U	5.3	14.4	5* U	365	6.5	435	13.8	0.4	0.0	-10
	04/02/19	372	305	2.7	0.55	0.1* U	6.7	13.8	11	389	6.3	563	13.1	0.8	0.69	2
	07/09/19	339	278	3.8	0.05* U	0.1* U	4.8	16.8	11	372	6.4	513	13.1	1.2	0.0	0
	10/27/19	372	305	2.7	0.55	0.1* U	6.7	13.8	11	389	6.3	563	13.1	0.8	0.7	2
	01/20/20	339	278	3.8	0.05* U	0.1* U	4.8	16.8	11	372	6.3	539	13.7	0.4	0.1	4
	04/13/20	321	263	2.6	0.52	0.1* U	18*	15.0	6	367	6.2	511	13.5	0.2	0.0	10
	07/12/20	327	268	2.3	0.73 J	0.1* U	12.5	14.2	5* U	392	6.3	511	13.8	0.2	0.22	8
	10/14/20	351	288	5.0	0.82	0.1* U	7.4	18.5	18	526*	6.3	539	13.7	0.4	0.14	4
	01/18/21	310	254	4.3 J	0.48	0.05* U	3.5	16.9	5* U	347	6.1	461	13.2	0.5	0.0	12
	04/11/21	282	231	1.7	0.58	0.1* U	14.0	13.2	5* U	343	6.2	414	13.5	0.7	0.03	9
	07/13/21	315	258	3.5	0.85 J	0.1 T	6.6	12.4	5* U	338	6.2	457	14.1	0.6	0.02	7
	10/25/21	361	296	5.9	0.86	0.1* UJ	3.5	19.0	5* UJ	393	6.4	560	13.9	0.9	0.0	15
	01/17/22	261	214	5.1 J	0.80	0.1* UJ	5.6 J	14.2	5* U	302	6.5	413	13.2	0.7	0.0	8
	04/06/22	267	219	7.7	0.71	0.1* U	3.0	14.7	5* U	326	6.6	421	13.1	0.7	0.0	1
	07/17/22	323	265	1.9	0.67	0.1* U	8.7	9.8	5* U	306	6.3	443	14.1	1.0	0.0	18
	10/09/22	301	247	4.7	0.84	0.1* U	4.7	13.8	5* U	327	6.5	463	14.0	0.4	0.0	8
	01/23/23	244	200	2.9	0.41 J	0.1* U	9.7	13.9	5* U	283	6.6	381	13.1	0.4	0.0	3
	04/03/23	244	200	2.8	0.59	0.1* U	7.5	13.2	5* U	301	6.5	386	13.2	0.4	0.0	6
	07/23/23	273	224	4.0	0.90	0.1* U	4.5	11.9	5* U	310	6.4	402	14.5	0.7	0.0	15
	10/29/23	327	268	6.1	1.05	0.1* U	2.8	14.8	5* U	344	6.5	486	13.2	0.3	0.12	4
	01/28/24	284	233	5.7	0.80	0.1* U	9.0	16.1	5* U	342	6.7	460	13.6	0.3	0.19	-254
	04/01/24	293	240	7.4	0.76 J	0.1 U	7.4	14.7	5 U	340	6.5	433	13.6	0.2	0.02	-125
count		45	45	45	41	3	44	45	10	44		45	45	45		
max		375.5	308	7.66	1.21	0.18	15.80	19.0	17.5	393		563	15.3	1.5		
min		243.8	200	1.10	0.40	0.09 T	2.56 T	9.7	5.0	278		381	12.7	0.1		
non-detects		0	0	0	3	43	0	0	36	0		0	0	0.0		
average		310.1	254.3	3.6	0.7	0.1	6.7	13.8	9.9	341.6		469	13.6	0.6		
sample stdev		36.6	30.0	1.7	0.2	0.0	3.0	2.2	3.7	32.5		48	0.5	0.3		
variance		1,342	903	3	0	0	9	5	14	1,057		2,271	0.3	0.1		
coeff. of variation		0.1	0.1	0.5	0.3	0.4	0.4	0.2	0.4	0.1		0.1	0.0	0.5		
standard error		5.5	4.5	0.2	0.0	0.0	0.5	0.3		4.9						

Cowlitz County Tennant Way Landfill

Inorganic Groundwater Quality Data and Statistics

Location Date		mg/L									Field Measurements					
		Bicarbonate	Alkalinity (as CaCO3)	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Suspended Solids	Total Dissolved Solids	pH	Specific Conduct.	Temp.	Turbidity	Dissolved Oxygen	Eh
		MCL>		250 (2ndary)		10.0	250 (2ndary)			500 (2ndary)		(umhos/cm)	(C)	(NTU)	(mg/l)	(mV)
MW-16B	01/15/19	522	428	7.5	1.10	0.40	1.0	10.3	63	493	5.9	871	13.4	3.5	0.0	16
	01/15/19	525	431	7.6	1.10	0.48	1.2	10.4	59	493						
	04/02/19	525	431	7.0	1.11	0.1* U	1.2	12.8	60	531	6.3	884	14.0	4.5	0.0	2
	04/02/19	524	430	7.0	1.09	0.1* U	1.2	12.5	63	530						
	07/09/19	524	430	7.0	1.07	0.1* U	1.5	11.8	73	553	6.4	861	14.5	7.5	0.0	-2
	07/09/19	528	433	6.9	1.11	0.1* U	1.5	12.0	74	550						
	10/27/19	522	428	6.6	1.34	0.1* U	1.1	12.3	77	542	6.2	849	14.2	5.8	0.0	6
	10/27/19	522	428	1.2	1.34	0.1* U	1.4	12.3	79	530						
	01/20/20	521	427	6.8	1.61 J	0.1* U	3.2	14.2	49	557	6.1	845	13.2	6.9	0.0	12
	01/20/20	518	425	6.7	2.06 J	0.1* U	3.1	14.1	59	558						
	04/13/20	528	433	6.8	1.90	0.1* U	1.4	14.3	75	520	6.2	829	14.5	5.3	0.0	10
	04/13/20	529	434	6.8	1.99	0.1* U	1.4	14.1	53	534						
	07/12/20	519	426	6.5	0.05* U	0.1* U	1.1	14.4	63	571	6.2	834	14.5	6.6	0.0	10
	07/12/20	525	431	6.6	1.95 J	0.1* U	1.1	14.3	77	554						
	10/14/20	507	416	6.8	1.89	0.1* U	2.0	12.8	102	547	6.1	833	14.3	8.4	0.03	13
	10/14/20	578	474	6.8	2.01	0.1* U	2.0	13.3	99	563						
	01/18/21	505	414	0.2* U	2.41	0.1* U	8.85*	13.2	88	530	6.1	809	13.2	5.8	0.03	14
	01/18/21	511	419	7.2 J	2.49	0.1* U	9.9*	13.2	80	529						
	04/11/21	512	420	6.7	2.25	0.1* U	2.2	13.5	64	569	6.1	791	14.1	4.3	0.07	17
	04/11/21	513	421	6.6	2.45	0.1* U	2.2	13.6	61	592						
	07/13/21	525	431	6.5	0.05* B1	0.1* U	2.0	13.0	91	514	6.1	806	15.1	8.0	0.95	16
	07/13/21	521	427	6.3	2.63 J	0.1 T	1.9	13.0	93	513						
	10/25/21	505	414	6.3	2.45	0.1* U	2.1	13.0	123 J	447	6.3	843	13.5	4.9	0.0	19
	10/25/21	527	432	6.4	2.53	0.1* U	2.2	13.0	100 J	488						
	01/17/22	502	412	5.9 J	2.86	0.04 JT	2.7 J	12.8	64	486	6.2	798	13.2	5.6	0.0	23
	01/17/22	500	410	5.5 J	2.77	0.1* U	2.5 J	13.0	66	480						
	04/06/22	486	399	7.2	2.80	0.1* U	2.9	13.2	97	482	6.5	812	14.2	5.7	0.0	6
	04/06/22	488	400	7.1	2.84	0.1* U	2.9	13.1	90	482						
	07/17/22	463	380	6.8	2.95	0.1* U	1.5	13.5	66	464	6.3	795	14.5	7.8	0.0	17
	07/17/22	430	353	6.8	3.00	0.1* U	1.5	13.6	65	459						
	10/09/22	502	412	7.1	3.07	0.1* U	2.0	13.3	99	483	6.5	818	14.5	6.4	0.07	8
	10/09/22	500	410	7.1	3.20	0.1* U	1.9	13.0	104	489						
	01/23/23	480	394	7.2	0.05* UJ	0.1* U	3.3	12.6	108	466	6.3	800	13.5	17.7	0.0	19
	01/23/23	483	396	7.2	2.53 J	0.1* U	3.0	12.5	87	468						
04/03/23	484	397	7.2	2.68	0.1* U	2.8	12.1	69	481	6.3	799	14.2	6.4	0.4	21	
04/03/23	484	397	7.2	2.76	0.1* U	2.7	12.4	60	480							
07/23/23	484	397	7.0	2.27	0.1* U	1.3	12.1	116	497	6.6	749	15.4	7.9	0.0	2	
07/23/23	485	398	7.0	2.39	0.1* U	1.3	12.4	104	501							
10/29/23	485	398	6.8	2.45	0.1* U	1.9	11.5	73	464	6.3	776	14.3	5.1	0.2	17	
10/29/23	484	397	6.8	2.39	0.1* U	2.0	11.0	74	466							
01/28/24	517	424	7.2	2.27	0.1* U	2.7	13.5	103	489	6.6	769	13.7	5.0	0.3	-146	
01/28/24	510	418	7.2	2.47	0.1* U	2.6	14.3	98	491							
04/01/24	497	408	7.3	11.40 J	0.1 U	2.0	13.7	96	457	6.2	771	14.8	6.1	0.1	-118	
04/01/24	501	411	7.3	2.79 J	0.1 U	2.0	13.6	87	463							
count		83	83	82	79	16	81	83	82	82		45	45	45		
max		577.9	474	8.29	11.40	0.60	3.27	14.4	149	592		884	15.4	17.7		
min		430.4	353	1.17	0.70	0.02 T	0.31	0.5	45	367		689	12.3	1.2		
non-detects		0	0	1	4	70	0	0	0	0		0	0	0.0		
average		500.0	410.1	6.8	1.8	0.2	1.7	11.3	81.5	489.4		809	13.7	6.0		
sample stdev		21.1	17.3	0.8	1.3	0.2	0.7	2.3	20.4	41.7		41	0.8	3.2		
variance		445	299	1	2	0	1	5	415	1,736		1,691	0.6	10.2		
coeff. of variation		0.0	0.0	0.1	0.7	1.2	0.4	0.2	0.2	0.1		0.1	0.1	0.5		
standard error		2.3	1.9	0.1	0.1	0.1	0.1	0.2		4.6						

U = Not detected. Method Reporting Limit shown.

T = Detected below reporting limit. Value is an estimate.

UB1 = Detected in blank below MRL. MRL shown.

* = outlier data point or other not used in statistical calculations.

J = The associated value is a qualified estimate.

HCO3 calculated from Alkalinity (as CaCO3) divided by 0.8202 as described in USGS WSP 2254a (Hem, 1985).

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-3B	04/11/13	T/Dis	0.031 T	12.6	33.5*	0.012 T	0.02* U	0.42	16.2*	0.23	2* U	4.55*	5* U
	07/12/13	T/Dis	0.05* U	11.5	41*	0.017 T	0.007 T	0.85	19.9*	0.70	0.005 T	6.06*	1* U
	10/15/13	T/Dis	0.028 T	14.3	42.3*	0.023	0.02* U	0.68	21*	0.49	0.015 T	6.26*	1* U
	10/15/13	T/Dis	0.022 T	14.2	43*	0.022	0.02* U	0.70	21.3*	0.50	0.02* U	6.38*	0.40 T
	01/13/14	T/Dis	0.033 T	13.6	37*	0.021	0.005 T	0.80	17.5*	0.55	0.006 T	5.15* J	0.40 T
	04/21/14	T/Dis	0.064	11.6	10.3	0.039	0.018 T	0.99	4.0	0.55	0.008 T	2.4	0.40 T
	07/15/14	T/Dis	0.040 T	12.5	10.8	0.028	0.014 T	1.00	4.5	0.38	0.018 T	2.1	0.50 T
	10/19/14	T/Dis	0.019 T	11.9	9.5	0.023	0.008 T	0.91 J	3.6 J	0.40 J	0.008 JT	2.0	1* U
	01/13/15	T/Dis	0.029 T	12.8	7.6	0.020 T	0.009 T	0.79 J	3.4	0.40	0.010 T	1.6	0.30 T
	04/08/15	T/Dis	0.012 T	14.4	8.2	0.017 T	0.02* U	0.67	3.6	0.35 J	0.006 T	1.4	1* U
	07/12/15	T/Dis	0.015 T	13.3	8.0	0.017 T	0.02* U	0.68	3.2	0.11	0.003 T	1.2	1* U
	10/26/15	T/Dis	0.015 T	13.3	8.8	0.021	0.010 T	0.60	3.1 J	0.29	0.019 JT	1.3	1* U
	01/25/16	T/Dis	0.012 T	12.2	5.4	0.008 T	0.02* U	0.38	2.1	0.39	0.008 T	0.7	1* U
	04/03/16	T/Dis	0.1* U	12.5	6.5	0.032	0.015 T	0.33	2.2	0.40	0.018 T	0.6	1* U
	07/10/16	T/Dis	0.025 T	10.8	11.3	0.012 T	0.02* U	0.43	3.4	0.22	0.011 T	1.0	1* U
	10/09/16	T/Dis	0.05* U	10.2	12.1	0.013 T	0.011 JT	0.60	2.4	0.38	0.02* B1	0.8	1* U
	01/23/17	T/Dis	0.011 T	11.8	7.3	0.02* U	0.02* U	0.24	2.1	0.44	0.021	0.6	1* U
	04/09/17	T/Dis	0.011 T	12.0	7.8	0.008 T	0.02* U	0.25 J	2.3	0.26	0.01* B1	0.6	1* U
	07/27/17	T/Dis	0.5* U	9.2	8.1	0.5* U	0.25* U	0.29 T	1.7	0.43 T	0.1* U	0.6 T	0.32 T
	10/16/17	T/Dis	0.5* U	9.4	9.0	0.5* U	0.25* U	0.31 T, B	1.8 B	0.66 B	0.1* B1	0.8 T	1* B1
	01/29/18	T/Dis	1* U	10.0	6.6	0.5* U	0.25* U	0.25 T	1.9	0.58	0.1* U	0.73	0.30 T
	04/03/18	T/Dis	1* U	5.1	12.0	0.5* U	0.25* T	0.6	2.9	0.73	0.1* U	1.3	1* U
	07/19/18	T/Dis	0.03 T	9.7	13.2	0.01 T	0.006 T	0.34	2.12	0.50 J	0.02 T	0.97	1* U
	10/14/18	T/Dis	0.32	10.6	14.5	0.02	0.117 J	0.34	1.87	0.46 J	0.40 J	0.71 J	1* U
	01/15/19	T/Dis	0.05* U	10.0	7.8	0.01 T	0.02* U	0.18 T	1.64	0.44	0.02* B1	0.38	1* U
	04/02/19	T/Dis	0.05* U	4.7	23.9	0.01 T	0.02* U	0.27	3.41	0.13	0.02* U	1.07	1* U
	07/09/19	T/Dis	0.05* U	8.4	9.7	0.02* U	0.02* U	0.36	1.07	0.25	0.01 T	0.43	1* U
	10/27/19	T/Dis	0.05* U	10.1	30.5	0.01 T	0.02* U	0.43	1.39	0.44	0.02	0.82	1* U
	01/20/20	T/Dis	0.05* U	9.8	19.00	0.02* U	0.02* U	0.22	2.48	0.22	0.01 T	0.82	1* U
	04/13/20	T/Dis	0.05* U	6.7	27.3	0.01 T	0.02* U	0.32	3.59	0.17	0.01 JT	1.8	1* U
	07/12/20	T/Dis	0.05* U	8.3	7.0	0.01 T	0.02* U	0.25	0.308	0.23	0.02 J	0.18 T	1* U
	10/14/20	T/Dis	0.05* U	9.9	21.3	0.01 T	0.02* U	0.55 J	0.806	0.58	0.03	0.85	1* U
	01/18/21	T/Dis	0.05* U	8.6	6.4	0.02* U	0.02* U	0.46	1.06	0.24 J	0.02* B1	0.27	1* U
	04/11/21	T/Dis	0.05* U	5.8	24.2	0.01 T	0.02* U	0.45	3.24	0.28 J	0.01 T	2.32	1* U
	07/13/21	T/Dis	0.05* U	4.9 J	15.2	0.02* U	0.02* U	1.23 J	1.58	0.23 J	0.01 T	20.4* J	1* U
	10/25/21	T/Dis	0.05* U	5.9	15.6	0.01 T	0.02* U	1.92*	1.18	0.34	0.02 T	1.6	1* U
	01/17/22	T/Dis	0.05* U	8.7	9.4	0.02* U	0.02* U	3.19*	2.25	0.58	0.02 T	0.9	1* U
	04/06/22	T/Dis	0.05* U	5.3	15.0	0.01 T	0.02* U	0.68	2.04	0.24	0.01 JT	2.66	1* U
	07/17/22	T/Dis	0.05* U	5.5	8.0	0.01 T	0.02* U	0.7	0.927	0.3	0.01 T	1.77	1* U
	10/09/22	T/Dis	0.05* U	10.2	9.6	0.02* U	0.02* U	2.75*	0.988	0.39	0.02 T	0.77	1* U
	01/23/23	T/Dis	0.05* U	10.0	13.2	0.01 T	0.02* U	0.31	3.45	0.09 JT	0.01 T	1.04	1* U
	04/03/23	T/Dis	0.05* U	8.6	10.4	0.01 T	0.02* U	0.57	2.52	0.27	0.01 T	0.66	1* U
	07/23/23	T/Dis	0.05* U	8.5	7.6	0.02* U	0.02* U	0.59 J	1.04	0.19	0.01 T	0.38	1* U
	10/29/23	T/Dis	0.05* U	8.0	8.1	0.01 T	0.02* U	1.37* J	0.836	0.32	0.02 JT	0.61	1* U
	01/28/24	T/Dis	0.05* U	6.6	7.0	0.02* U	0.02* U	1.25	1.66	0.25	0.01 T	0.54 J	1* U
	04/01/24	T/Dis	0.05 U	8.0	7.0	0.02 U	0.02 U	0.45	1.95	0.25	0.01 T	0.57	1 U
count			18	46	41	33	12	42	41	46	35	40	8
max			0.32	14.4	30.5	0.039	0.117 J	1.25 J	4.54	0.73	0.40 J	2.66	1.0
min			0.011 T	3.7	5.35	0.006 T	0.005 T	0.18 T	0.308	0.09 JT	0.003 T	0.18 T	0.30 T
non-detects			29	0	0	14	34	0	0	0	11	0	39
average			0.042	9.83	11.71	0.015	0.020	0.541	2.229	0.366	0.024	1.04	0.45
sample stdev			0.071	2.74	6.07	0.008	0.031	0.271	1.019	0.156	0.065	0.62	0.23
variance			0.005	7.48	36.88	0.000	0.001	0.073	1.039	0.024	0.004	0.38	0.05
coeff. of variation			1.67	0.28	0.52	0.55	1.55	0.50	0.46	0.43	2.70	0.59	0.51
standard error			0.0	0.4	0.9	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-3B	Total Below					Dissolved Below					
	04/11/13	0.02* U	0.8* T	3.5	0.76	36900*	57200*	23000*	2600*	905	8,770
	07/12/13	0.006 T	0.003 T	6.0	0.74	55500*	79700*	35000*	4200*	996	7,540
	10/15/13	0.02* U	0.02* U	7.3	0.70	59000*	71300*	37000*	3740*	1,080	7,950
	10/15/13	0.02* U	0.02* U	7.3	0.70	58000*	69700*	36000*	3640*	1,000	7,730
	01/13/14	0.02* U	0.02* U	7.5	0.60	53600*	65600*	32400*	3450*	951	7,100
	04/21/14	0.02* B1	0.02* U	11.1*	0.30 T	17,500	23,200	10,100	1,330	442	3,390
	07/15/14	0.02* U	0.02* U	9.38*	0.53	18,100	23,500	10,500	1,290	528	3,650
	10/19/14	0.02* U	0.02* U	8.2 J	0.50 J	14,200	16,100	7,650	969	446	3,380
	01/13/15	0.02* U	0.02* U	5.5	0.5* U	14,000	14,600	7,150	862	413	3,270
	04/08/15	0.02* U	0.02* U	5.3	0.22 T	13,600	12,000	6,830	804	430	3,170
	07/12/15	0.02* U	0.02* U	5.1	0.80	14,100	12,400	6,610	846	390	3,250
	10/26/15	0.02* U	0.02* U	4.7	1.4 J	14,200	12,200	6,530	798	380	3,860
	01/25/16	0.02* U	0.02* U	3.2	0.49 JT	9,290	7,470	4,260	530	410	4,000
	04/03/16	0.02* U	0.02* U	2.5	1.2	10,000	8,670	4,740	638	430	4,000
	07/10/16	0.02* U	0.02* U	2.9	0.77	16,000	12,200	7,120	905	600	5,630
	10/09/16	0.02* U	0.02* U	4.5	0.5* B1	13,900	12,200	6,650	814	680	7,480
	01/23/17	0.02* U	0.003 T	1.4	0.30 T	10,200	8,940	5,170	645	400	4,080
	04/09/17	0.02* U	0.02* U	1.1	0.30	10,100	7,680	5,080	619	330	4,230
	07/27/17	0.02* U	1* U	1.7	1* U	9,500	350	5,300	590	460 T	4,300
	10/16/17	0.02* U	1* U	1.9	1* U	10,000	320	5,900	630	520 T	4,600
	01/29/18	0.02* U	0.36* U	1.2	1* U	10,000	57	5,500	640	1000* U	4,200
	04/03/18	0.02* U	0.36* U	2.2	1* U	16,000	23	9,300	1,000	600 T	8,000
	07/19/18	0.02* U	0.02* U	2.3	0.60 T	12,500	401	7,030	855	690	4,930
	10/14/18	0.03	0.105	2.0	3.6* J	13,600	348	7,650	902	530	5,610
	01/15/19	0.02* U	0.02* U	1.4	2* U	11,600	145	6,460	778	500	4,420
	04/02/19	0.02* U	0.02* U	1.6	2* U	27,200	21* U	15800*	1,130	860	12,200
	07/09/19	0.02* U	0.02* U	1.6	2* U	11,600	122	6,650	391	450	4,670
	10/27/19	0.02* U	0.02* U	2.6	2* U	21,400	11,700	14300*	1,570	910	10,600
	01/20/20	0.02* U	0.02* U	1.3	2* U	21,600	51	12,400	1,620	720	8,020
	04/13/20	0.02* U	0.02* U	1.9	2* U	29,600	4,480	17600*	2440*	620	13,500
	07/12/20	0.02* U	0.02* U	1.8	2* U	7,390	2,050	4,770	543	450	4,930
	10/14/20	0.02* U	0.02* U	3.0	0.50 T	13,600	181	7,970	956	430	6,470
	01/18/21	0.02* U	0.02* U	0.8	2* U	9,090	2,150	4,710	755	450	4,650
	04/11/21	0.02* U	0.02* U	2.3	2* U	21,700	64	12,400	1,410	970	24,000*
	07/13/21	0.02* U	0.02* U	2.0 J	1.30 JT	15,700	189	9,070	995	1,020	18,400*
10/25/21	0.02* U	0.02* U	2.5	2* U	15,300	287 J	7,840	1,110	760	14,700	
01/17/22	0.02* U	0.02* U	1.2	2* U	12,500	1,020	5,880	999	560	6,570	
04/06/22	0.02* U	0.02* U	1.9	2* U	15,600	971	7,500	731	930	17,600*	
07/17/22	0.02* U	0.02* U	1.5	2* U	8,250	3,080 J	4,640	679	680	7,030	
10/09/22	0.02* U	0.02* U	1.0	0.50 T	10,300	942	5,230	769	470	5,550	
01/23/23	0.02* U	0.02* U	0.9	3.1* J	15,500	87	6,440	1,250	590	6,910	
04/03/23	0.02* U	0.010 T	0.9	2* U	13,300	168 J	6,190	1,100	520	6,320	
07/23/23	0.02* U	0.02* U	0.8	2* U	8,690	2,710 J	4,440	718	470	4,950	
10/29/23	0.02* U	0.02* U	0.9	2* U	9,630	1,120	4,820	710	520	5,460	
01/28/24	0.02* U	0.02* U	0.5	1.70 T	9,100	1,790	4,420	805	560	4,780	
04/01/24	0.02 U	0.02 U	0.6	2.00 U	9,060	861	4,100	771	610	4,840	
count		3	5	44	22	41	40	38	40	45	43
max		0	0.105	8.2	2.00	29,600	23,500	12,400	1,620	1,080	14,700
min		0.006 T	0.003 T	0.47	0.22 T	6,660	23	2,980	391	330	3,170
non-detects		44	41	0	23	0	1	0	0	1	0
average		0.017	0.0	2.74	0.77	13,768	5,170.7	6,710.5	886.4	614.7	6,062.6
sample stdev		0.010	0.0	2.08	0.47	4,953	6,600.3	2,104.1	281.2	211.9	2,695.0
variance		0.000	0.0	4.33	0.22	24,527,305	43,564,276	4,427,162	79,095	44,917	7,262,834
coeff. of variation		0.58	1.54	0.76	0.61	0.36	1.28	0.31	0.32	0.34	0.44
standard error		0.0	0.0	0.3	0.1	773	1,044	341	44	32	411

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-5B	04/11/13	T/Dis	0.064	1.5* T	46	0.006 T	0.09	0.08 T	1.23	1.3	2* U	2.90	5* U
	07/12/13	T/Dis	0.05* U	0.26 T	40	0.005 T	0.03	0.35	1.21	1.0	0.02	3.70	1* U
	10/15/13	T/Dis	0.031 T	0.30 T	49	0.02* U	0.14	0.05 T	0.58	1.9	0.007 T	3.40	1* U
	01/14/14	T/Dis	0.032 T	0.30 T	44	0.008 T	0.11	0.15 T	0.84	2.3	0.013 T	3.60 J	1* U
	04/21/14	T/Dis	0.054	0.40 T	43	0.009 T	0.13	0.05 T	0.97	2.2	0.02	3.10	0.30 T
	07/16/14	T/Dis	0.040 T	0.41 T	43	0.009 T	0.09	0.13 T	1.43	1.1	0.02 T	3.00	1* U
	10/19/14	T/Dis	0.023 T	0.50 T	46	0.010 T	0.04	0.17 JT	1.21 J	1.0 J	0.04 J	4.00	0.30 T
	01/14/15	T/Dis	0.041 T	0.40 T	43	0.02* U	0.11	0.54 J	0.62	1.8	0.01 T	3.10	3* U
	01/14/15	T/Dis	0.053	0.40 T	43	0.006 T	0.10	0.40 J	0.63	1.8	0.01 T	3.06	3* U
	04/08/15	T/Dis	0.031 T	0.38 T	46	0.02* U	0.13	0.14 T	0.90	2.0 J	0.02 T	3.16	1* U
	07/12/15	T/Dis	0.039 T	0.38 T	46	0.02* U	0.08	0.08 T	1.59	1.0	0.02	2.97	1* U
	10/26/15	T/Dis	0.048 T	0.41 T	54	0.011 T	0.02	0.27	2.01 J	1.4	0.09 J	3.01	1* U
	01/26/16	T/Dis	0.045 T	0.43 T	48	0.02* U	0.18	0.08 T	0.37	3.0	0.02	3.13	1* U
	04/04/16	T/Dis	0.021 T	0.40 T	47	0.008 T	0.17	0.09 T	0.73	3.0	0.06	3.35	1* U
	07/10/16	T/Dis	0.116*	0.42 T	55	0.02* U	0.19	0.07 T	2.35	2.2	0.02 T	3.61	1* U
	10/09/16	T/Dis	0.035 T	0.39 T	51	0.012 T	0.03	0.28	2.56	1.2	0.08	3.27	1* U
	01/23/17	T/Dis	0.030 T	0.46 T	46	0.02* U	0.04	0.2* U	0.97	1.2	0.02* B1	3.41	0.40 T
	04/09/17	T/Dis	0.034 T	0.44 T	47	0.007 T	0.03	0.16 JT	1.47	1.4	0.02	3.97	1* U
	07/27/17	T/Dis	0.5* U	0.79*	48	0.5* U	0.03 T	0.24 T	1.80	1.3	0.04 T	4.20	0.35 T
	10/15/17	T/Dis	0.5* U	0.81*	49	0.5* U	0.25* B1	0.50 B1	1.50 B	1.4 B	0.1* B1	4.50	1* B1
	01/29/18	T/Dis	1.0* U	0.55	42	0.5* U	0.05 T	0.5* U	1.20	1.6	0.1* U	4.10	1* U
	04/03/18	T/Dis	1.0* U	0.59	43	0.5* U	0.25* B1	0.5* U	1.20	1.6	0.04 T	4.40	1* U
	07/19/18	T/Dis	0.04 T	0.52	45	0.01 T	0.02	0.04 T	1.44	0.67 J	0.03	2.55	1* U
	10/14/18	T/Dis	0.05* U	0.46 T	47	0.02* U	0.01 JT	0.06 T	1.30	0.56 J	0.04 J	2.52 J	1* U
	01/15/19	T/Dis	0.06	0.43 T	47	0.01 T	0.14 J	0.2* U	0.492	2.08	0.03 J	2.99	1* U
	04/02/19	T/Dis	0.04 T	0.42 T	46	0.02* U	0.15	0.12 T	0.937	2.13	0.02	2.62	1* U
	07/09/19	T/Dis	0.07	0.43 T	50	0.02* U	0.10	0.09 T	2.54	1.24	0.04	3.03	1* U
	10/27/19	T/Dis	0.06	0.46 T	60	0.01 T	0.18	0.12 T	1.86	1.58	0.04	4.07	1* U
	01/20/20	T/Dis	0.05 T	0.45 T	46	0.01 T	0.12	0.14 T	0.679	3.14	0.02 T	3.37	1* U
	04/13/20	T/Dis	0.06	0.50	47	0.01 T	0.14	0.11 T	1.25	2.53	0.04 J	3.48	1* U
	07/12/20	T/Dis	0.07	0.36 T	54	0.01 T	0.12	0.11 T	1.44	1.72	0.02 T	3.03	1* U
	10/14/20	T/Dis	0.05	0.41 T	59	0.01 T	0.07	0.18 T	2.29	1.14	0.02	3.89	1* U
	01/18/21	T/Dis	0.06	0.38 T	40	0.01 T	0.11	0.29	1.02	2.64 J	0.03	2.94	1* U
	04/11/21	T/Dis	0.06	0.41 T	46	0.01 T	0.05	0.08 T	2.81	1.23 J	0.03	3.01	1* U
	07/13/21	T/Dis	0.03 T	0.45 JT	46	0.02* U	0.03	0.07 JT	1.86	0.83 J	0.03	3.50 J	1* U
	10/25/21	T/Dis	0.04 T	0.46 T	49	0.01 T	0.05	0.12 T	1.25	1.85	0.02	3.67	1* U
	01/17/22	T/Dis	0.03 T	0.40 T	39	0.01 T	0.03	0.08 T	0.948	1.03	0.02 T	2.93	1* U
	04/06/22	T/Dis	0.04 T	0.48 T	42	0.01 T	0.04 J	0.18 T	1.17	1.32	0.03 J	3.08	0.2* U
	07/17/22	T/Dis	0.03 T	0.41 T	39	0.01 T	0.02 T	0.29	1.19	0.66	0.03	2.92	1* U
	10/09/22	T/Dis	0.03 T	0.46 T	43	0.02* U	0.03 J	0.22	1.37	0.67	0.05 J	3.11	1* U
	01/23/23	T/Dis	0.03 T	0.44 T	32	0.01 T	0.02 T	0.10 T	0.938	1.42 J	0.02	2.91	1* U
	04/03/23	T/Dis	0.04 T	0.43 T	37	0.01 T	0.02	0.21	1.17	1.03	0.02 T	2.76	1* U
	07/23/23	T/Dis	0.03 T	0.39 T	38	0.01 T	0.01 T	0.39 J	1.27	0.53	0.02	2.97	1* U
	10/29/23	T/Dis	0.04 T	0.46 T	45	0.01 T	0.01 T	0.23 J	0.99	0.63	0.01 JT	2.63	1* U
	01/28/24	T/Dis	0.04 T	0.4 T	41	0.01 T	0.07 J	0.18 T	1.43	1.39	0.02	2.73 J	1* U
	04/01/24	T/Dis	0.03 T	0.47 T	38	0.01 T	0.03	0.2	1.62	1.56	0.05	2.87	1 U
count			39	43	53	31	44	44	50	52	42	51	8
max			0.073	0.590	60.2	0.100	0.194	0.700	2.810	3.140	0.086	4.500	1.400
min			0.021	0.260 T	31.9	0.005 T	0.009 JT	0.040 T	0.372	0.530	0.007 T	0.900 T	0.300 T
non-detects			6	0	0	16	2	5	0	0	4	0	42
average			0.042	0.426	45.0	0.011	0.076	0.199	1.342	1.574	0.029	3.110	0.631
sample stdev			0.014	0.060	5.5	0.017	0.054	0.155	0.553	0.660	0.016	0.728	0.401
variance			0.000	0.004	29.7	0.000	0.003	0.024	0.306	0.436	0.000	0.530	0.161
coeff. of variation			0.32	0.14	0.12	1.56	0.71	0.78	0.41	0.42	0.57	0.23	0.63
standard error			0.0	0.0	0.7	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date					Geochemical Metals					
		Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-5B	Total Below					Dissolved Below					
	04/11/13	0.02* U	2.5* U	2.6	0.99	48,400	39	25,000	945	898	27,400
	07/12/13	0.02* U	0.007 T	1.3	1.1	44,400	225	23,500	1,060	869	26,700
	10/15/13	0.02* U	0.02* U	6.1	1.0	50,700	21	26,800	945	1,060	29,900
	01/14/14	0.02* U	0.02* U	4.2	0.90	47,200	20* U	24,900	877	1,010	25,800
	04/21/14	0.02* UB1	0.005 T	3.4	0.80	48,900	8 T	24,300	978	879	25,200
	07/16/14	0.02* U	0.009 T	1.9	0.95	50,300	23	26,100	1,130	951	27,500
	10/19/14	0.02* U	0.02* U	1.3 J	1.2 J	49,600	119	25,900	1,230	979	27,900
	01/14/15	0.02* U	0.008 T	3.7	0.80	49,700	20* U	25,900	1,010	803	25,900
	01/14/15	0.02* U	0.008 T	3.7	0.90	48,900	6 T	25,300	994	800	25,400
	04/08/15	0.02* U	0.006 T	3.8	1.0	50,800	10	26,700	1,080	870	25,200
	07/12/15	0.02* U	0.004 T	1.6	0.88	50,700	31	24,700	1,260	740	24,500
	10/26/15	0.02* U	0.02* U	1.2	2.85* J	49,700	1,550	25,300	1,440	870	26,300
	01/26/16	0.02* U	0.02* U	5.1	1.3 J	51,600	13 T	27,400	950	880	24,900
	04/04/16	0.007 T	0.02* U	4.7	3.09*	49,700	13	26,900	1,070	850	26,000
	07/10/16	0.02* U	0.008 T	3.8	1.2	52,800	6 T	28,000	1,400	980	25,200
	10/09/16	0.006 T	0.010 T	1.8	1.2	51,700	251	26,900	1,340	2580*	26,200
	01/23/17	0.009 T	0.013 T	1.0	0.90 T	55,500	58	28,700	1,130	810	23,300
	04/09/17	0.009 T	0.009 T	1.3	1.1 T	49,600	166	24,700	1,270	730	20,900
	07/27/17	0.25* U	1.0* U	1.4	1.2	55,000	9 T	30,000	1,600	1,000	26,000
	10/15/17	0.25* U	1.0* U	1.1	1.0 T	63,000	8 T	32,000	1,500	1,200	25,000
	01/29/18	0.2* U	0.097 T	1.6	0.94 T	54,000	7 T	26,000	800	850 T	22,000
	04/03/18	0.2* U	0.36* U	1.5	0.80 T	58,000	7 T	28,000	1,000	780 T	23,000
	07/19/18	0.017 T	0.022	1.1	2* B1	50,400	10	26,000	1,300	940	21,600
	10/14/18	0.02* U	0.02* U	0.9	2.9* J	61,100	172	29,700	1,590	1,060	23,200
	01/15/19	0.013 T	0.041 J	6.3	0.6 T	52,600	21* U	25,700	887	1,080	21,700
	04/02/19	0.02* U	0.043	4.3	0.9 T	50,200	21* U	27,300	275	790	22,200
	07/09/19	0.02* U	0.026	2.4	1.0 T	56,700	21* U	29,800	1,480	900	23,000
	10/27/19	0.02* U	0.061	7.0	1.0 T	60,000	21* U	32,400	1,630	980	25,400
	01/20/20	0.02* U	0.026	4.7	0.8 T	50,700	14 T	27,000	956	820	20,600
	04/13/20	0.02* U	0.018 T	4.5	1.1 T	52,400	28	29,100	985	760	22,400
	07/12/20	0.02* U	0.012 T	2.4	0.5 T	57,700	21* U	32,600	1,620	890	24,500
	10/14/20	0.02* U	0.016 T	1.7	0.8 T	64,200	21* U	31,900	1,540	880	22,900
01/18/21	0.02* U	0.017 T	3.6	2* B1	47,600	21* U	25,500	344	790	20,200	
04/11/21	0.01 T	0.019 T	2.0	0.7 T	49,500	21* U	27,100	181	850	21,300	
07/13/21	0.02* U	0.012 T	1.4 J	0.6 JT	59,900	11 T	29,000	1,460	950	22,500	
10/25/21	0.02* U	0.024	1.7	0.9 T	62,700	21* U	31,900	1,600	980	23,500	
01/17/22	0.02* U	0.016 T	1.3	0.8 T	54,500	28	27,500	980	850	20,600	
04/06/22	0.02* U	0.015 T	2.3	0.5 T	53,000	8* U	26,200	530	930	20,700	
07/17/22	0.02* U	0.016 T	1.5	0.6 T	48,400	14 JT	26,600	1,270	980	20,200	
10/09/22	0.02* U	0.084 J	1.5	0.7 T	58,900	395	28,400	1,560	980	22,200	
01/23/23	0.02* U	0.009 T	1.9	7.4 J	46,500	13 T	22,300	846	910	18,400	
04/03/23	0.02* U	0.019 T	1.5	0.7 T	48,200	10 JT	24,000	1,050	830	19,900	
07/23/23	0.02* U	0.019 T	1.6	0.7 T	46,300	9 JT	23,200	1,280	930	19,700	
10/29/23	0.02* U	0.02* U	1.2	2* U	59,700	9	32,200	1,490	1,060	23,200	
01/28/24	0.17	0.016 T	2.3	5.3	49,900	21* U	25,700	615	1,360	20,200	
04/01/24	0.09	0.029	1.6	0.7 T	48,200	21 U	23,300	836	1,390	20,500	
count		9	34	52	47	118	110	118	125	63	120
max		0	0.097 U	7.700	10.000	64,200	7,740	32,600	1,630	1,390	43,100
min		0.01 U	0.004 T	0.850	0.500	23,700	6 U	12,100	181	694	18,400
non-detects		36	12	0	3	0	14	0	0	0	0
average		0.0	0.022	2.886	1.391	46,687	1,157	23,964	1,045	927	27,829
sample stdev		0.1	0.021	1.839	1.729	8,693	1,566	4,546	300	130	5,164
variance		0.0	0.000	3.382	2.990	75,575,649	2,451,713	20,669,857	90,103	16,822	26,665,277
coeff. of variation		1.55	0.97	0.64	1.24	0.19	1.35	0.19	0.29	0.14	0.19
standard error		0.0	0.0	0.3	0.3	800	149	419	27	16	471

Cowlitz County Tennant Way Landfill
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Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-7B	04/11/13	T/Dis	0.36	1.5* T	22	0.052*	0.081*	1.06*	7.51*	99.9*	2* U	13*	5* U
	07/12/13	T/Dis	0.14	0.83	24	0.020	0.057	0.63*	3.89*	33.7	0.04	8.14*	1* U
	10/15/13	T/Dis	0.26	0.50 T	18	0.014 T	0.055	0.32	0.43	35.8	0.02 T	6.03*	1* U
	01/14/14	T/Dis	0.30	0.60	17	0.030	0.031	0.57*	0.62	49.9	0.10	6.65* J	1* U
	01/14/14	T/Dis	0.30	0.60	18	0.032	0.029	0.6*	0.71	49.8	0.12	6.67* J	1* U
	04/21/14	T/Dis	0.25	0.70	11	0.022	0.049	0.29	0.58	30.3	0.08	4.5	1* U
	04/21/14	T/Dis	0.23	0.70	11	0.020	0.045	0.34	0.57	30.4	0.07	4.5	1* U
	07/16/14	T/Dis	0.18	0.68	36	0.013 T	0.065	0.25	2.35*	26.8	0.03	6.77*	1* U
	10/19/14	T/Dis	0.14	0.50	39	0.008 T	0.021	0.25 J	0.54 J	19.9 J	0.03 J	3.1	1* U
	01/13/15	T/Dis	0.23	0.60	15	0.008 T	0.030	0.44 J	0.26	28.7	0.01 T	4.3	1* U
	04/08/15	T/Dis	0.18	0.55	13	0.015 T	0.045	0.23	0.85	21.6 J	0.04	3.3	1* U
	07/12/15	T/Dis	0.08	0.47 T	25	0.009 T	0.019 T	0.30	0.39	12.8	0.02 T	2.3	1* U
	10/26/15	T/Dis	0.19	0.76	23	0.013 T	0.034	0.39	1.16 J	26.6	0.04 J	4.0	1* U
	01/25/16	T/Dis	0.27	0.51	12	0.02* U	0.028	0.19 T	0.13	33.8	0.02* U	4.2	1* U
	04/03/16	T/Dis	0.37	0.57	11	0.009 T	0.036	0.17 T	0.13	34.9	0.01 T	4.0	1* U
	07/10/16	T/Dis	0.15	0.57	26	0.02* U	0.016 T	0.33	0.54	21.5	0.04	3.5	1* U
	10/10/16	T/Dis	0.29	0.59	21	0.012 T	0.035	0.24	0.21	54.7	0.02* B1	5.4	1* U
	01/23/17	T/Dis	0.30	0.61	6.9	0.009 T	0.027	0.31	0.17	51.9	0.02	5.0	0.50 T
	04/09/17	T/Dis	0.26	0.54	7.3	0.011 T	0.036	0.34 J	0.16	35.3	0.02	3.8	1* U
	07/27/17	T/Dis	0.5* U	0.72	18	0.5* U	0.039 T	0.40 T	1.7*	30.0	0.06 T	5.5	0.47 T
	10/16/17	T/Dis	0.5* U	0.55	20	0.5* U	0.25* B1	0.5* B1	0.48 B	23.0	0.1* B1	3.4	1* B1
	01/29/18	T/Dis	0.33 T	0.52	7.4	0.5* U	0.25* U	0.37 T	0.16 T	48.0	0.1* U	4.8	0.50 T
	04/03/18	T/Dis	0.37 T	0.56	7.2	0.5* U	0.25* B1	0.32 T	0.15 T	44.0	0.05 T	4.3	1* U
	07/19/18	T/Dis	0.16	0.64	27	0.01 T	0.026	0.20 T	0.62	23.4 J	0.03	4.15	1* U
	10/14/18	T/Dis	0.20	0.52	20	0.01 T	0.017 JT	0.33	0.56	25.5 J	0.08 J	3.13 J	1* U
	01/15/19	T/Dis	0.30	0.72	8.7	0.02 T	0.024 J	0.29	0.16	42.6	0.04 J	3.57	1* U
	04/02/19	T/Dis	0.22	0.61	11	0.01 T	0.028	0.27	0.15	28.4	0.02	3.38	1* U
	07/09/19	T/Dis	0.15	0.54	25	0.01 T	0.036	0.29	0.70	18.3	0.05	2.61	1* U
	10/27/19	T/Dis	0.40	0.80	17	0.01 T	0.036	0.36	0.22	58.6	0.02 T	5.25	0.4 T
	01/20/20	T/Dis	0.34	0.77	9.0	0.02 T	0.033	0.33	0.30	51.0	0.03	4.5	0.3 T
	04/13/20	T/Dis	0.22	0.72	13	0.02	0.042	0.38	1.59*	30.4	0.12 J	3.51	1* U
	07/12/20	T/Dis	0.23	0.70	26	0.02 T	0.065	0.39	1.7*	28.7	0.09 J	3.82	1* U
	10/14/20	T/Dis	0.35	0.61	27	0.01 T	0.041	0.26 J	0.18	42.9	0.02* U	4.33	0.3 T
	01/18/21	T/Dis	0.34	0.68	7.3	0.01 T	0.027	0.36	0.18	50.4 J	0.03	4.27	0.3 T
	04/11/21	T/Dis	0.29	0.63	8.4	0.01 T	0.028	0.24	0.15	32.4 J	0.02	3.57	1* U
	07/13/21	T/Dis	0.17	0.61 J	22	0.01 T	0.057	0.26 J	1.32	16.6 J	0.08	2.52 J	1* U
	10/25/21	T/Dis	0.32	0.46 T	29	0.01 T	0.049	0.22	0.15	33.8	0.02* U	3.66	1* U
	01/17/22	T/Dis	0.31	0.64	6.1	0.01 T	0.02 T	0.29	0.12	39.1	0.02	3.52	1* U
	04/06/22	T/Dis	0.27	0.52	9.7	0.01 T	0.02 JT	0.37	0.12	36.5	0.02 J	3.5	0.2 T
	07/17/22	T/Dis	0.20	0.64	18	0.02 T	0.098*	0.33	0.91	22.7	0.07	3.5	1* U
	10/09/22	T/Dis	0.22	0.75	26	0.01 T	0.027 J	0.40	1.17	19.1	0.07 J	2.71	1* U
	01/23/23	T/Dis	0.20	0.44 T	9.5	0.01 T	0.022	0.13 T	0.2	26.3 J	0.01 T	2.65	1* U
	04/03/23	T/Dis	0.11	0.36 T	9.0	0.01 T	0.013 T	0.28	0.14	17.8	0.01 T	1.95	1* U
	07/23/23	T/Dis	0.17	0.51	26	0.02 T	0.046	0.35 J	0.82	14.9	0.08	2.43	1* U
	10/29/23	T/Dis	0.21	0.55	23	0.02	0.043	0.74* J	1.15	33.3	0.08 J	3.7	0.2 T
	01/28/24	T/Dis	0.21	0.39 T	7.2	0.01 T	0.022 J	0.31	0.182	29.6	0.02 T	2.7 J	1* U
	04/01/24	T/Dis	0.24	0.49 T	6.9	0.01 T	0.018 T	0.33	0.108	32.9	0.05	2.92	1 U
count			45	46	47	40	42	41	41	46	40	41	10
max			0.402	0.830	39.1	0.032	0.065	0.44	1.320	58.6	0.118	5.50	1.00 T
min			0.084	0.360 T	6.06	0.006 T	0.013 T	0.13 T	0.108 T	12.8	0.006 T	1.95	0.20 T
non-detects			2	0	0	6	3	1	0	0	7	0	38
average			0.244	0.598	17.0	0.013	0.034	0.304	0.435	32.578	0.045	3.699	0.417
sample stdev			0.076	0.107	8.44	0.006	0.013	0.068	0.347	11.481	0.031	0.861	0.234
variance			0.006	0.011	71.17	0.000	0.000	0.005	0.120	131.812	0.001	0.742	0.055
coeff. of variation			0.31	0.18	0.50	0.46	0.39	0.22	0.80	0.35	0.68	0.23	0.56
standard error			0.0	0.0	1.2	0.0	0.0	0.0	0.1	1.7	0.0	0.1	0.1

Cowlitz County Tennant Way Landfill
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Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
Total Below						Dissolved Below					
MW-7B	04/11/13	0.103*	2.5* U	5.19*	3.87*	15,600	1740*	4,870	363*	2,620	4,200
	07/12/13	0.051	0.036	5.75*	1.9	22,200	395*	7,720	381*	4,680	7,240
	10/15/13	0.009 T	0.045	2.2	2.2	14,300	75	4,030	24	3,010	4,880
	01/14/14	0.037	0.032	3.6	2.0	14,100	83	4,100	3.6	2,910	4,390
	01/14/14	0.041	0.033	3.8	2.1	14,500	83	4,230	3.9	2,790	4,370
	04/21/14	0.032	0.043	2.8	1.6	10,500	201	3,100	58	1,840	4,690
	04/21/14	0.034	0.043	2.7	1.9	10,300	171	3,050	58	1,760	4,600
	07/16/14	0.015 T	0.058	2.7	1.4	42,700	164	16,400	296*	8,350	14,900
	10/19/14	0.009 T	0.017 T	2.0 J	1.1 J	33,300	61	11,900	19	10,400	9,570
	01/13/15	0.02* U	0.030	2.4	1.0	21,900	32	7,480	1.1	2,360	5,930
	04/08/15	0.015 T	0.029	2.6	1.6	11,900	63	4,380	108*	2,010	4,090
	07/12/15	0.011 T	0.005 T	2.1	0.74	26,700	78	10,100	18	9,390	10,200
	10/26/15	0.015 T	0.032	2.8	1.8 J	23,000	243*	9,560	112*	8,250	8,270
	01/25/16	0.02* U	0.026	2.4	1.4 J	15,800	40	5,030	1.6	1,750	4,350
	04/03/16	0.02* U	0.018 T	3.1	2.9	16,500	37	5,290	4.1	1,700	4,390
	07/10/16	0.012 T	0.014 T	2.8	1.1	35,200	13 T	15,700	0.4 T	6,630	12,600
	10/10/16	0.061*	0.062	3.4	1.4	21,700	53	8,670	1.1	4,410	5,390
	01/23/17	0.010 T	0.060	2.6	1.0 T	9,380	97	3,360	2.5	1,340	2,820
	04/09/17	0.020 T	0.029	2.3	2.0 T	10,100	45	3,720	14.3	1,210	2,660
	07/27/17	0.25* U	1* U	3.5	1.3	23,000	40	9,200	85*	2,600	6,400
	10/16/17	0.25* U	1* U	2.5	1.1	25,000	12	11,000	4.3	6,400	8,400
	01/29/18	0.2* U	0.36* U	2.5	1.3	11,000	53	3,600	1.1	1,500	3,200
	04/03/18	0.2* U	0.36* U	2.7	1.1	11,000	52	3,400	2.3	1,300	3,100
	07/19/18	0.014 T	0.035	3.0	2* B1	35,200	30	14,400	20.7	6,210	10,200
	10/14/18	0.011 T	0.01 JT	2.9	5.5* J	27,900	10 T	11,000	8.6	6,310	9,180
	01/15/19	0.012 T	0.036 J	3.6	1.1 T	10,700	35	3,380	1.2	1,550	2,750
	04/02/19	0.02* U	0.061	2.7	1.2 T	15,500	54	5,040	30.1	2,580	3,980
	07/09/19	0.02* U	0.022	3.0	1.3 T	35,400	21* U	13,800	1.8	7,570	10,200
	10/27/19	0.02* U	0.058	5.62*	1.7 T	21,800	52	6,380	1.6	2,400	3,810
	01/20/20	0.02* U	0.051	3.3	1.3 T	11,400	76	3,580	4.7	1,620	2,850
	04/13/20	0.024	0.036	4.0	1.6 T	12,900	57	4,410	50.8	2,900	3,840
	07/12/20	0.014 T	0.04	3.8	0.9 T	28,200	37	11,800	270*	7,510	8,320
	10/14/20	0.02* U	0.048	2.9	2.1	28,000	16 T	8,190	3	3,470	3,940
	01/18/21	0.01 T	0.051	3.2	2* B1	9,750	115	2,740	2	1,240	2,820
	04/11/21	0.01 T	0.03	2.9	1.5 T	12,300	79	3,670	14	1,720	3,650
	07/13/21	0.02* U	0.019 T	3.1 J	1.7 JT	35,000	21* U	11,900	51	7,570	10,100
	10/25/21	0.02* U	0.037	2.8	2.6	36,800	29 J	10,500	1	3,640	4,880
	01/17/22	0.02* U	0.039	3.0	1.4 T	9,130	110	2,610	2	1,180	2,540
	04/06/22	0.01 T	0.036	2.5	1.3 T	14,600	74	4,370	4	2,540	3,420
	07/17/22	0.02	0.051	3.2	2.5	21,400	71 J	6,640	166*	3,480	5,080
	10/09/22	0.02 T	0.015 JT	3.5	1.6 T	41,100	39	14,100	195*	9,050	10,200
	01/23/23	0.02* U	0.028	2.1	4.6* J	13,300	17 T	3,730	3	1,840	3,030
	04/03/23	0.02* U	0.032	1.7	1.1 T	14,200	19 JT	4,180	5	2,740	3,330
	07/23/23	0.01 T	0.024	2.9	2.4	48,300	10 JT	14,800	14	7,100	11,400
	10/29/23	0.01 T	0.021	4.1	2.0	32,000	23	10,300	24	4,620	6,780
	01/28/24	0.02 T	0.034	2.0	1.7 T	11,000	29	3,230	3	1,690	2,840
	04/01/24	0.02 U	0.033	2.2	1.4 T	10,800	35	3,010	2	1,620	2,930
count		28	42	44	42	47	42	47	38	47	47
max		0.051	0.062	4.07	2.87	48,300	201	16,400	57.7	10,400	14,900
min		0.009 T	0.005 T	1.74	0.74 T	9,130	10	2,610	0.4	1,180	2,540
non-detects		18	5	0	2	0	2	0	0	0	0
average		0.019	0.035	2.856	1.579	20,774	58.8	7,184	12.2	3,859	5,802
sample stdev		0.011	0.014	0.562	0.492	10,545	43.2	4,143	16.6	2,653	3,125
variance		0.000	0.000	0.316	0.242	111,200,111	1,863.2	17,160,529	274.3	7,038,329	9,765,092
coeff. of variation		0.58	0.41	0.20	0.31	0.51	0.73	0.58	1.36	0.69	0.54
standard error		0.0	0.0	0.1	0.1	1,538	7	604	3	387	436

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Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-8B	04/12/13	T/Dis	0.495	1.6 T	8.7	0.039	0.034	0.71	0.44	77	2* U	8.9	5* U
	07/11/13	T/Dis	0.370	1.0	6.6	0.030	0.025	0.83	0.39	66	0.058	7.6	0.4 T
	10/15/13	T/Dis	0.294	0.8	12.3	0.018 T	0.026	0.38	0.32	40	0.057	4.6	1* U
	01/13/14	T/Dis	0.568	1.2	10.4	0.043	0.036	0.82	0.45	71	0.126	6.8 J	0.4 T
	04/18/14	T/Dis	0.417	1.2	8.3	0.042	0.037	0.59	0.42	68	0.130	8.0	0.6 T
	07/15/14	T/Dis	0.450	1.1	6.9	0.038	0.038	0.49	0.36	64	0.034	8.1	0.7 T
	10/19/14	T/Dis	0.370	1.1	8.1	0.030	0.026	0.69 J	0.44 J	64 J	0.083 J	8.0	0.7 T
	01/13/15	T/Dis	0.406	1.1	9.5	0.023	0.030	0.54 J	0.37	61	0.054	7.5	0.5 T
	04/07/15	T/Dis	0.385	1.3	8.9	0.026	0.020 T	0.44	0.37	55 J	0.088	6.4	0.5 T
	07/12/15	T/Dis	0.349	1.2	11.0	0.022	0.026	0.52	0.38	52	0.030	7.1	0.4 T
	10/26/15	T/Dis	0.354	1.2	13.7	0.026	0.029	0.61	0.43 J	52	0.055 J	7.2	0.5 T
	01/25/16	T/Dis	0.453	1.91*	10.6	0.036	0.027	0.79	0.58	61	0.257	5.8	1* U
	04/03/16	T/Dis	0.432	1.7	7.7	0.024	0.032	0.52	0.41	63	0.091	5.6	0.5 T
	07/10/16	T/Dis	0.401	1.4	8.0	0.021	0.017 T	0.55	0.39	57	0.110	5.6	0.5 T
	10/09/16	T/Dis	0.337	1.4	7.9	0.025	0.034	0.62	0.43	59	0.105	6.6	0.5 T
	01/23/17	T/Dis	0.415	1.6	5.2	0.034	0.013 T	0.63	0.32	70	0.097	5.6	0.5 T
	04/09/17	T/Dis	0.592	1.91*	6.6	0.032	0.026	0.91 J	0.49	90	0.214	6.6	0.3 T
	07/27/17	T/Dis	0.5* U	1.4	5.4	0.5* U	0.25* U	0.49 T	0.36 T	59	0.1* U	6.8	0.7 T
	10/15/17	T/Dis	0.5* U	1.4	6.0	0.5* U	0.25* B1	0.53 B	0.32 T, B	57	0.10 B	6.9	1* B1
	01/29/18	T/Dis	0.430 T	1.5	5.8	0.5* U	0.25* U	0.84	0.38 T	73	0.15	5.8	0.72 T
	04/03/18	T/Dis	0.470 T	1.4	5.2	0.5* U	0.25* B1	0.72	0.33 T	70	0.12	5.6	0.47 T
	07/19/18	T/Dis	0.429	1.3	7.1	0.031	0.024	0.69	0.42	61 J	0.19	5.4	0.5 T
	10/14/18	T/Dis	0.372	1.4	6.9	0.031	0.034 J	0.71	0.42	65 J	0.21 J	6.1 J	0.5 T
	01/15/19	T/Dis	0.439	1.4	6.2	0.033	0.02* B1	0.63	0.35	74	0.12 J	5.8	0.4 T
	04/02/19	T/Dis	0.370	1.2	6.9	0.025	0.016 T	0.55	0.32	53	0.12	4.7	0.4 T
	07/09/19	T/Dis	0.335	1.2	6.3	0.022	0.015 T	0.60	0.31	59	0.09	5.1	0.5 T
	10/27/19	T/Dis	0.290	0.9	10.4	0.016 T	0.026	0.42	0.26	40	0.08	3.8	0.4 T
	01/20/20	T/Dis	0.482	1.6	8.0	0.051	0.029	0.89	0.47	78	0.29	6.8	0.5 T
	04/13/20	T/Dis	0.349	1.2	6.8	0.030	0.017 T	0.60	0.39	48	0.16 J	4.5	0.5 T
	07/12/20	T/Dis	0.334	1.2	8.0	0.030	0.022	0.58	0.39	42	0.18 J	4.3	0.4 T
	10/14/20	T/Dis	0.330	0.9	16.4	0.032	0.02	0.64 J	0.51	31	0.27	3.6	0.3 T
	01/18/21	T/Dis	0.506	1.6	7.9	0.051	0.022	0.97	0.49	79 J	0.28	6.9	0.5 T
	04/11/21	T/Dis	0.439	1.4	8.5	0.044	0.023	0.93	0.60	58 J	0.33	5.5	0.5 T
	07/13/21	T/Dis	0.412	1.2 J	8.1	0.036	0.019 T	0.81 J	0.47	59 J	0.28	5.9 J	0.5 T
	10/25/21	T/Dis	0.323	0.9	20.4	0.029	0.036	0.64	0.46	30	0.25	3.5	0.2 T
	01/17/22	T/Dis	0.423	1.3	8.9	0.048	0.022	0.90	0.54	59	0.34	5.4	0.3 T
	04/06/22	T/Dis	0.413	1.2	8.6	0.042	0.016 JT	1.00	0.50	52	0.30 J	4.8	0.4 T
	07/17/22	T/Dis	0.341	1.1	8.5	0.028	0.016 T	0.87	0.36	38	0.19	3.9	0.5 T
	10/09/22	T/Dis	0.305	1.2	9.7	0.032	0.023 J	1.07	0.49	61	0.20 J	6.6	0.5 T
	01/23/23	T/Dis	0.389	1.0	8.7	0.038	0.023	0.56	0.40	53 J	0.19	4.7	0.3 T
	04/03/23	T/Dis	0.548	1.3	10.4	0.062	0.022	1.32	0.704*	66	0.452*	6.0	0.3 T
	07/23/23	T/Dis	0.348	1.1	10.2	0.035	0.019 T	1.00 J	0.44	51	0.20	5.9	0.4 T
	10/29/23	T/Dis	0.378	1.3	10.6	0.033	0.038	1.21 J	0.38	67	0.04 J	8.4	0.6 T
	01/28/24	T/Dis	0.417	1.3	7.9	0.06	0.02 J	1.30	0.474	62	0.32	5.8 J	0.30 T
	04/01/24	T/Dis	0.443	1.3	7.2	0.04	0.019 T	0.96	0.378	62	0.21	6.2	0.50 T
count			43	43	45	41	40	45	44	45	42	45	41
max			0.592	1.69	20.4	0.062	0.038	1.32	0.599	90.3	0.337	8.87	0.72
min			0.290	0.80	5.2	0.016 T	0.013 T	0.38	0.256	29.7 U	0.030	3.51	0.2 T
non-detects			2	0	0	4	5	0	0	0	2	0	4
average			0.405	1.255	8.70	0.034	0.025	0.735	0.414	59.49	0.161	6.015	0.466
sample stdev			0.070	0.199	2.84	0.010	0.007	0.228	0.074	12.36	0.091	1.303	0.118
variance			0.005	0.039	8.08	0.000	0.000	0.052	0.005	152.83	0.008	1.698	0.014
coeff. of variation			0.17	0.16	0.33	0.30	0.28	0.31	0.18	0.21	0.56	0.22	0.25
standard error			0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.8	0.0	0.2	0.0

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Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-8B	Total Below					Dissolved Below					
	04/12/13	0.013 T	2.5* U	4.0	1.3	26,200	61	6,990	7	1,380	4,430
	07/11/13	0.009 T	0.020	3.5	0.88	22,000	63	6,120	8	1,180	4,220
	10/15/13	0.02 U	0.020	2.4	1.0	37,900	46	10,700	37	1,870	6,290
	01/13/14	0.017 T	0.028	4.2	1.2	26,400	77	6,160	12	1,610	4,520
	04/18/14	0.02* B1	0.030	3.4	1.3	23,600	85	6,090	6.9	1,260	4,350
	07/15/14	0.007 T	0.021	3.2	0.78	24,500	62	6,440	28	1,290	4,710
	10/19/14	0.010 T	0.014 T	3.6 J	1.0 J	27,200	50	7,240	25	1,350	5,110
	01/13/15	0.009 T	0.038	2.8	0.80	29,700	54	6,990	13	1,870	8160*
	04/07/15	0.010 T	0.026	3.5	0.84	28,600	38	7,380	3.9	1,750	7,140
	07/12/15	0.018 T	0.016 T	3.5	0.71	38,800	28	9,970	4.8	1,650	6,770
	10/26/15	0.02* U	0.016 T	3.6	1.4 J	43,100	34	11,900	7.2	1,930	7,940
	01/25/16	0.021	0.045	5.3	1.9 J	28,500	60	7,530	4.5	1,420	6,470
	04/03/16	0.010 T	0.031	4.4	1.5	24,900	45	6,870	27	1,330	6,000
	07/10/16	0.012 T	0.028	4.3	0.96	22,900	40	6,420	7.2	1,310	5,700
	10/09/16	0.008 T	0.026	4.4	1.3	23,800	36	6,750	14	1,520	6,130
	01/23/17	0.017 T	0.051	4.6	1.4 T	16,500	90	4,590	4.1	900	3,450
	04/09/17	0.026	0.080	5.6	1.4 T	17,200	85	4,830	2.4	910	3,160
	07/27/17	0.25* U	1* U	4.0	1* U	19,000	48	5,400	37	1,100	4,500
	10/15/17	0.25* U	1* U	3.8	0.83 T	21,000	33	6,000	12	1,200	4,700
	01/29/18	0.2* U	0.36* U	5.0	1.2	18,000	73	4,800	13	1,000	3,400
	04/03/18	0.2* U	0.36* U	4.6	0.87 T	17,000	53	4,700	14	890 T	3,300
	07/19/18	0.012 T	0.03	4.6	2* B1	17,800	51	4,930	14	1,030	3,590
	10/14/18	0.018 T	0.037 J	4.5	2.7 J	18,400	40	5,020	11	1,150	3,960
	01/15/19	0.011 T	0.055 J	4.6	0.9 T	17,100	27	4,670	9	1,000	3,070
	04/02/19	0.010 T	0.036	3.8	1.4 T	19,900	37	5,350	15	1,020	3,590
	07/09/19	0.02* U	0.027	4.3	0.9 T	19,600	39	5,480	8	1,110	3,810
	10/27/19	0.02* U	0.051	3.1	0.8 T	34,300	34	10,400	9	1,570	4,870
	01/20/20	0.035	0.073*	5.5	1.9 T	14,300	161*	3,860	16	1,210	3,160
	04/13/20	0.012 T	0.031	3.7	1.1 T	17,400	54	4,950	15	960	3,650
	07/12/20	0.011 T	0.026	4.0	0.7 T	20,900	28	5,660	16	1,170	4,320
	10/14/20	0.022	0.031	3.8	2.2	45,900	8 U	13,100*	17	1,690	4,920
	01/18/21	0.045*	0.054	5.6	2.1	14,900	184*	3,880	20	1,060	3,070
	04/11/21	0.028	0.043	5.1	2.0	15,300	117	4,170	46	1,030	3,260
	07/13/21	0.014 T	0.028	5.1 J	1.6 JT	18,100	77	4,770	38	1,000	3,440
	10/25/21	0.019 T	0.03	3.5	2.1	66,700*	14 JT	19,000*	28	2,280	5,410
	01/17/22	0.031	0.048	5.5	1.8 T	16,500	81	4,400	29	1,030	2,870
	04/06/22	0.020	0.035	4.8	1.6 T	18,700	45	5,050	23	1,120	3,490
	07/17/22	0.012 T	0.028	3.9	1.7 T	23,200	27 J	6,420	14	1,250	3,520
	10/09/22	0.023	0.023 J	4.3	1.8 T	29,700	38	7,850	13	1,420	4,450
	01/23/23	0.02* U	0.037	4.0	5.4* J	21,100	32	5,260	21	1,220	3,470
	04/03/23	0.024	0.07*	5.5	3.9*	18,900	39 J	4,900	28	1,120	2,760
	07/23/23	0.013 T	0.027	4.1	1.3 T	33,500	25 J	9,040	20	1,590	4,880
	10/29/23	0.02* U	0.016 T	4.7	1.2 T	48,100	30	14,200*	17	1,990	6,800
	01/28/24	0.043	0.05	5.3	2.3	12,000	66	3,000	21	1,040	2,530
04/01/24	0.018 T	0.044	4.7	1.6 T	15,800	48	3,910	15	1,090	3,350	
count						44	43	42	45	45	44
max						48,100	117,000	11,900	45,500	2,280	7,940
min						12,000	8,000	3,000	2,400 U	890	2,530
non-detects						0	1	0	0	0	0
average						23,822.7	49,221	6,115	16,678	1,308	4,421
sample stdev						8,643.3	22,193	1,969	10,096	332	1,325
variance						74,707,378	492,525	3,876,596	101,919	110,297	1,754,834
coeff. of variation						0.36	0.45	0.32	0.61	0.25	0.30
standard error						1,303	3	304	2	50	200

Cowlitz County Tennant Way Landfill
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Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-9B	04/12/13	T/Dis	0.05	11.1	20	0.029	0.02* U	1.2	2.4	0.13	2* U	3.1	5* U
	07/11/13	T/Dis	0.05* U	9.8	22	0.032	0.004 T	1.8	2.2	0.41 J	0.008 T	3.5	1* U
	10/14/13	T/Dis	0.011 T	6.6	16	0.024	0.02* U	1.0	1.3	0.16	0.02* U	2.2	0.40 T
	01/13/14	T/Dis	0.039 T	9.7	17	0.026	0.02* U	1.3	1.9	0.21	0.02* U	3.3 J	1* U
	04/18/14	T/Dis	0.05* B1	7.7	21	0.035	0.02* U	1.2	1.8	0.29	0.006 T	3.0	0.40 T
	07/15/14	T/Dis	0.030 T	11.5	18	0.033	0.012 T	1.1	1.9	0.14	0.009 T	2.7	0.40 T
	10/19/14	T/Dis	0.018 T	8.0	22	0.031	0.02* U	1.2 J	1.8 J	0.21 J	0.02* U	3.1	0.30 T
	01/13/15	T/Dis	0.032 T	7.2	18	0.030	0.02* U	1.4 J	1.5	0.23	0.005 T	2.5	0.30 T
	04/07/15	T/Dis	0.019 T	8.9	20	0.032	0.02* U	1.3	1.8	0.13 J	0.004 T	2.6	1* U
	07/12/15	T/Dis	0.027 T	7.6	22	0.035	0.008 T	1.1	1.5	0.13	0.007 T	2.3	1* U
	10/26/15	T/Dis	0.036 T	8.4	19	0.037	0.02* U	1.4	1.4 J	0.19	0.019 JT	2.6	1* U
	01/25/16	T/Dis	0.034 T	5.2	19	0.031	0.02* U	1.0	1.3	0.11	0.003 T	2.2	1* U
	04/03/16	T/Dis	0.1* U	4.1	18	0.033	0.006 T	1.2	1.2	0.17	0.014 T	2.3	1* U
	07/10/16	T/Dis	0.033 T	7.3	24	0.040	0.02* U	1.4	1.9	0.08 T	0.004 T	2.7	1* U
	10/09/16	T/Dis	0.05* U	11.6	27	0.036	0.02* U	1.5	2.3	0.10 T	0.02* B1	3.3	1* U
	01/23/17	T/Dis	0.03 T	7.1	21	0.035	0.02* U	0.9	1.8	0.28	0.02* B1	2.8	1* U
	04/09/17	T/Dis	0.05	7.2	19	0.027	0.02* U	1.0 J	1.8	0.81	0.02* B1	3.7	1* U
	07/27/17	T/Dis	0.5* U	8.0	19	0.5* U	0.25* U	1.6	1.6	0.64	0.1* U	4.2	0.47 T
	10/16/17	T/Dis	0.5* U	8.5	20	0.5* U	0.25* U	1.4 B	1.5 B	0.85 B	0.1* U	3.8	1* B1
	01/29/18	T/Dis	1* U	8.5	18	0.5* U	0.25* U	1.2	1.6	0.53	0.1* U	3.5	0.47 T
	04/03/18	T/Dis	1* U	6.1	19	0.5* U	0.25* T	1.2	1.3	0.70	0.1* U	3.1	1* U
	07/19/18	T/Dis	0.02 T	6.3	20	0.032	0.02* U	1.4	1.6	0.14 J	0.02* U	2.5	0.20 T
	10/14/18	T/Dis	0.05* U	5.3	17	0.029	0.02* U	0.9	1.2	0.09 JT	0.02* B1	2.0 J	1* U
	01/15/19	T/Dis	0.02 T	5.5	19	0.033	0.02* U	1.1	1.4	0.15	0.02* U	2.2	1* U
	04/02/19	T/Dis	0.05* U	4.3	15	0.032	0.02* U	1.0	1.2	0.08 T	0.02* U	2.1	0.20 T
	07/09/19	T/Dis	0.05* U	4.6	16	0.028	0.02* U	0.9	1.2	0.09 T	0.02* U	1.7	1* U
	10/27/19	T/Dis	0.02 T	7.2	20	0.036	0.02* U	1.6	1.6	0.16	0.013 T	2.7	0.20 T
	01/20/20	T/Dis	0.02 T	6.1	17	0.032	0.02* U	1.0	1.3	0.1	0.007 T	2.1	0.20 T
	04/13/20	T/Dis	0.05* U	7.7	20	0.041	0.02* U	1.2	1.7	0.12	0.02* U	2.7	0.20 T
	07/12/20	T/Dis	0.02 T	4.3	15	0.032	0.02* U	1.0	0.9	0.11	0.011 T	2.3	1* U
	10/14/20	T/Dis	0.03 T	4.8	18	0.037	0.02* U	1.0 J	1.2	0.1	0.008 T	1.9	0.20 T
	01/18/21	T/Dis	0.04 T	6.6	22	0.041	0.02* U	1.2	1.5	0.11 J	0.02* B1	2.5	0.30 T
	04/11/21	T/Dis	0.03 T	4.0	20	0.034	0.02* U	1.0	1.1	0.18 JT	0.013 T	1.8	1* U
	07/13/21	T/Dis	0.03 T	4.2 J	17	0.028	0.02* U	0.8 J	1.0	0.15 J	0.02* U	1.8 J	1* U
	10/25/21	T/Dis	0.03 T	2.9	13	0.030	0.024	0.8	0.7	0.18	0.025	1.6	1* U
	01/17/22	T/Dis	0.03 T	3.0	18	0.038	0.02* U	1.0	1.1	0.24	0.007 T	2.0	1* U
	04/06/22	T/Dis	0.03 T	3.5	17	0.030	0.02* U	1.1	1.0	0.16	0.015 JT	2.0	1* U
	07/17/22	T/Dis	0.03 T	4.1	20	0.040	0.02* U	1.1	1.2	0.11	0.013 T	2.2	0.20 T
	10/09/22	T/Dis	0.05* U	2.9	17	0.028	0.02* U	0.8	0.8	0.13	0.02* U	1.6	1* U
	01/23/23	T/Dis	0.03 T	2.5	17	0.033	0.02* U	0.7	0.7	0.09 JT	0.02* U	2.0	1* U
	04/03/23	T/Dis	0.06	2.2	16	0.037	0.02* U	0.9	0.6	0.17	0.013 T	1.3	1* U
	07/23/23	T/Dis	0.04 T	2.5	18	0.030	0.02* U	0.8 J	0.7	0.08 T	0.02* U	1.3	1* U
	10/29/23	T/Dis	0.05* U	1.9	14	0.028	0.02* U	0.9 J	0.5	0.14	0.02* U	1.2	1* U
	01/28/24	T/Dis	0.04 T	2.2	18	0.030	0.02* U	0.9	0.75	0.11	0.01 T	1.5 J	1* U
	04/01/24	T/Dis	0.03 T	2.2	16	0.029	0.02 U	0.8	0.70	0.16	0.01 T	1.5	1 U
count			31	45	45	41	6	45	45	45	22	45	16
max			0.056	11.6	26.9	0.041	0.024	1.76	2.43	0.85	0.025	4.20	1.00
min			0.011 T	1.9	13.3	0.024	0.004 T	0.66	0.49	0.08	0.003 T	1.23	0.20 T
non-detects			14	0	0	4	39	0	0	0	18	0	29
average			0.031	6.02	18.56	0.033	0.01	1.111	1.4	0.214	0.010	2.42	0.34
sample stdev			0.010	2.659	2.67	0.004	0.008	0.248	0.461	0.19	0.005	0.717	0.204
variance			549.610	11.28	307.59	6.022	3.10	3.654	19.5	23.886	0.846	75.73	6.23
coeff. of variation			0.32	0.44	0.14	0.13	0.65	0.22	0.34	0.89	0.53	0.30	0.60
standard error			0.0	0.4	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-9B	Total Below					Dissolved Below					
	04/12/13	0.02* U	2.5* U	10.0	0.5* U	54,400	33,400	20,000	3,320	2,270	17,700
	07/11/13	0.006 T	0.003 T	9.6	0.5	60,100	32,200	23,000	4,000	2,320	19,600
	10/14/13	0.02* U	0.02* U	6.5	0.4 T	43,600	22,200	16,900	3,010	2,250	17,300
	01/13/14	0.02* U	0.02* U	7.8	0.3 T	50,300	31,400	18,600	3,060	2,070	15,000
	04/18/14	0.02* U	0.02* U	7.7	0.4 T	60,700	32,700	22,400	4,140	2,350	20,100
	07/15/14	0.02* U	0.02* U	8.6	0.5* B1	51,100	33,500	18,400	3,620	2,210	17,500
	10/19/14	0.02* U	0.02* U	7.4 J	0.4 JT	59,000	28,000	20,300	4,390	2,290	17,800
	01/13/15	0.02* U	0.02* U	6.8	0.3 T	46,300	27,400	16,400	3,470	2,090	16,200
	04/07/15	0.02* U	0.02* U	9.1	0.28 T	53,600	31,100	19,900	3,990	2,310	17,700
	07/12/15	0.02* U	0.02* U	7.9	0.39 T	56,500	26,000	19,600	4,270	2,100	16,900
	10/26/15	0.02* U	0.02* U	8.7	1.24* J	42,400	22,700	15,700	3,200	1,940	16,700
	01/25/16	0.02* U	0.02* U	6.9	0.23 JT	50,100	21,000	17,900	3,690	2,320	18,400
	04/03/16	0.02* U	0.02* U	6.6	2.14*	46,200	17,600	16,600	3,770	2,280	17,000
	07/10/16	0.02* U	0.02* U	9.0	0.42 T	53,600	27,200	19,200	4,340	2,590	19,600
	10/09/16	0.02* U	0.02* U	10.4	0.5* B1	56,900	40,700	20,300	4,910	2,980	22,000
	01/23/17	0.004 T	0.003 T	6.5	0.6 T	55,500	31,400	19,300	4,340	2,260	16,500
	04/09/17	0.02* U	0.006 T	6.0	0.4 T	56,500	32,000	19,300	4,380	1,720	14,700
	07/27/17	0.25* U	1* U	10.0	1* U	57,000	450 T	20,000	3,400	2,000	18,000
	10/16/17	0.25* U	1* U	8.4	1* U	52,000	410	18,000	4,200	2,200	16,000
	01/29/18	0.2* U	0.36* U	8.3	1* U	54,000	470	17,000	4,200	2,200	17,000
	04/03/18	0.2* U	0.36* U	7.5	1* U	53,000	150	17,000	3,900	2,000	17,000
	07/19/18	0.02* U	0.02* U	8.0	2* B1	52,300	934	17,800	3,870	2,040	15,500
	10/14/18	0.02* U	0.02* U	6.0	0.7 JT	47,600	903	15,200	3,580	2,030	14,600
	01/15/19	0.02* U	0.02* U	7.0	2* U	51,900	745	16,700	3,890	2,060	15,400
	04/02/19	0.02* U	0.013 T	6.3	0.6 T	46,100	1,320	15,800	3,700	1,880	14,400
	07/09/19	0.02* U	0.02* U	6.6	2* U	45,300	1,350	15,300	3,660	1,950	13,800
	10/27/19	0.02* U	0.02* U	8.2	2* U	54,400	4,550	18,300	4,560	2,350	16,000
	01/20/20	0.02* U	0.02* U	7.2	2* U	45,600	3,550	15,400	3,690	2,050	14,500
	04/13/20	0.02* U	0.02* U	7.8	2* U	52,200	1,720	18,000	4,490	2,080	16,000
	07/12/20	0.02* U	0.02* U	6.5	2* U	42,200	725	15,200	3,390	1,880	13,600
	10/14/20	0.02* U	0.02* U	6.6	2* U	46,100	1,250	14,000	3,770	2,040	12,600
	01/18/21	0.02* U	0.02* U	8.0	2* U	54,600	2,480	17,500	5,030	2,460	16,600
	04/11/21	0.02* U	0.02* U	6.2	0.8 T	46,600	848	15,400	4,010	2,550	15,600
	07/13/21	0.02* U	0.02* U	5.6 J	2* U	45,300	1,120	13,200	3,540	2,260	13,900
10/25/21	0.02* U	0.02* U	6.1	1.6* T	34,500	2,470 J	10,600	2,860	2,320	11,500	
01/17/22	0.02* U	0.02* U	6.9	2* U	46,000	2,580	13,400	3,770	2,710	14,100	
04/06/22	0.02* U	0.02* U	6.0	0.5* U	43,000	642	12,900	3,560	2,760	14,400	
07/17/22	0.02* U	0.02* U	7.2	2* U	45,000	1,180 J	14,300	3,960	3,060	14,300	
10/09/22	0.02* U	0.02* U	5.2	2* U	41,500	383	11,700	3,410	2,970	13,300	
01/23/23	0.02* U	0.02* U	5.4	2.5* J	36,100	815	10,600	2,930	3,170	11,300	
04/03/23	0.02* U	0.014 T	5.2	0.7 T	32,800	424 J	9,610	2,840	3,170	10,500	
07/23/23	0.02* U	0.02* U	5.3	2* U	36,000	201 J	10,400	3,200	3,250	11,300	
10/29/23	0.02* U	0.02* U	4.9	2* U	30,300	517	9,550	2,470	3,310	10,200	
01/28/24	0.07	0.02* U	5.2	0.5 T	40,600	286	11,900	3,610	3,790	12,000	
04/01/24	0.02 U	0.02 U	5.5	0.7 T	35,200	289	10,300	3,090	3,290	11,600	
	count	4	6	45	18	45	45	45	45	45	45
	max	0.072	0.020	10.4	0.80	60,700	40,700	23,000	5,030	3,790	22,000
	min	0.004 T	0.003 T	4.9	0.23 T	30,300	150	9,550	2,470	1,720	10,200
	non-detects	42	40	0	20	0	0	0	0	0	0
	average	0.03	0.010	7.16	0.48	48,088.9	11,628.0	16,196.9	3,744.0	2,404.0	15,460.0
	sample stdev	0.032	0.007	1.426	0.168	7,622.3	14,027.132	3,470	555.867	474	2,655
	variance	10.02	2.104	8.89	98.88	405,449,660	531,776,058.6	136,984,584.5	1,347,121.1	282,873.1	68,357,137.2
coeff. of variation	1.25	0.70	0.20	0.35	0.16	1.21	0.21	0.15	0.20	0.17	
standard error	0.0	0.0	0.2	0.0	1,136	2,091	517	83	71	396	

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
		Total Below											
MW-10B	04/11/13	T/Dis	0.059	2.1 T	22	0.022	0.019 T	0.60	6.8	2.4	2* U	7.5	5* U
	07/11/13	T/Dis	0.040 T	2.4	20	0.023	0.010 T	1.07	5.6	1.7	0.020	4.7	1* U
	10/15/13	T/Dis	0.036 T	6.4	20	0.014 T	0.005 T	0.40	6.9	3.2	0.012 T	4.2	1* U
	01/13/14	T/Dis	0.051	9.0	19	0.015 T	0.012 T	0.65	6.4	2.4	0.118*	2.7 J	1* U
	04/18/14	T/Dis	0.074	0.40 T	9.5	0.019 T	0.021	0.48	0.85	9.9	0.030	9.6	1* U
	07/15/14	T/Dis	0.070	1.0	19	0.022	0.107*	0.52	5.4	4.0	0.033	13.5	1* U
	10/19/14	T/Dis	0.051	2.3	19	0.020	0.020 T	0.63 J	6.1 J	1.9 J	0.018 JT	5.8	1* U
	01/13/15	T/Dis	0.090	0.40 T	13	0.011 T	0.039	0.45 J	0.38	9.9	0.024	6.5	1* U
	04/07/15	T/Dis	0.053	0.35 T	20	0.013 T	0.056	0.45	6.8	5.5	0.002 T	8.7	1* U
	07/12/15	T/Dis	0.058	2.5	20	0.023	0.037	0.68	9.6	1.3	0.006 T	3.3	1* U
	10/26/15	T/Dis	0.058	5.2	20	0.018 T	0.009 T	0.52	10 J	1.1	0.027 J	2.5	1* U
	01/25/16	T/Dis	0.082	0.31 T	12	0.012 T	0.026	0.21	0.58	15.0	0.020	6.1	1* U
	04/03/16	T/Dis	0.054	0.30 T	10	0.012 T	0.030	0.22	0.28	14.2	0.030	6.6	1* U
	07/10/16	T/Dis	0.052	0.7	15	0.020	0.024	0.50	5.0	3.3	0.009 T	7.0	1* U
	10/09/16	T/Dis	0.023 T	1.1	16	0.016 T	0.013 JT	0.50	6.4	2.2	0.02* B1	5.1	1* U
	01/23/17	T/Dis	0.071	0.22 T	8.7	0.013 T	0.020	0.15 T	0.63	11.3	0.02* B1	7.7	1* U
	04/09/17	T/Dis	0.072	0.41 T	8.0	0.020 T	0.019 T	0.37 J	0.89	8.6	0.047	9.0	1* U
	07/27/17	T/Dis	0.5* U	5.0	21	0.5* U	0.25* U	0.81	6.3	1.8	0.1* U	7.8	0.54 T
	10/16/17	T/Dis	0.5* U	4.8	18	0.5* U	0.25* B1	0.8 B	4.4 B	1.8 B	0.1* B1	4.3	1* B1
	01/29/18	T/Dis	1* U	0.54	8.5	0.5* U	0.25* U	0.28 T	0.61 T	13	0.1* U	8.2	1* U
	04/03/18	T/Dis	1* U	1.6	10	0.5* U	0.25* B1	0.31 T	0.79 T	9.5	0.1* U	9.8	1* U
	07/19/18	T/Dis	0.066	32	31	0.030	0.010 T	1.39	8.3	1.7 J	0.02* U	7.9	0.40 T
	10/14/18	T/Dis	0.061	27	26	0.031	0.008 JT	1.16	5.7	1.4 J	0.027 J	3.1 J	0.30 T
	01/15/19	T/Dis	0.095	24	28	0.028	0.02* B1	0.89	6.2	5.0	0.02* B1	5.5	0.30 T
	04/02/19	T/Dis	0.075	22	28	0.026	0.027	1.01	6.5	2.4	0.012 T	6.9	0.40 T
	07/09/19	T/Dis	0.052	23	30	0.025	0.02* U	1.04	6.3	1.0	0.014 T	3.1	0.20 T
	10/27/19	T/Dis	0.055	28	39.8*	0.031	0.02* U	1.32	7.1	1.1	0.026	2.5	0.30 T
	01/20/20	T/Dis	0.096	0.52	12	0.017 T	0.023	0.34	0.7	17.2	0.108*	6.1	1* U
	04/13/20	T/Dis	0.034 T	10	18	0.019 T	0.02* U	0.62	3.3	1.6	0.018 JT	5.3	1* U
	07/12/20	T/Dis	0.061	21	37	0.032	0.02* U	1.16	5.1	1.9	0.063* J	3.7	0.30 T
	10/14/20	T/Dis	0.052	18	32	0.038	0.02* U	1.16 J	3.1	4.2	0.185*	1.7	0.30 T
	01/18/21	T/Dis	0.074	0.38 T	11	0.020 T	0.020 T	0.39	0.8	11.9 J	0.138*	6.1	1* U
	04/11/21	T/Dis	0.041 T	10	13	0.012 T	0.016 T	0.50	4.3	1.4 J	0.015 T	4.5	1* U
	07/13/21	T/Dis	0.037 T	14 J	16	0.016 T	0.02* U	0.87 J	4.8	1.3 J	0.024	2.6 J	1* U
	10/25/21	T/Dis	0.021 T	19	19	0.025	0.02* U	0.97	3.2	0.7	0.015 T	2.0	0.20 T
	01/17/22	T/Dis	0.081	0.44 T	9	0.018 T	0.018 T	0.29	0.9	10.7	0.016 T	8.4	1* U
	04/06/22	T/Dis	0.038 T	4.1	13	0.011 T	0.011 JT	0.62	2.3	1.4	0.010 JT	5.9	1* U
	07/17/22	T/Dis	0.052	21	30	0.035	0.02* U	1.42	4.7	1.2	0.018 T	4.5	0.30 T
	10/09/22	T/Dis	0.036 T	17	16	0.019 T	0.02* U	1.37	3.5	1.6	0.022 J	1.5	1* U
	01/23/23	T/Dis	0.053	0.49 T	11	0.014 T	0.009 T	0.18 T	0.6	7.5 J	0.014 T	7.4	1* U
	04/03/23	T/Dis	0.042 T	9.82	14	0.016 T	0.02* U	0.61	5.3	0.5	0.009 T	3.5	1* U
	07/23/23	T/Dis	0.036 T	13.20	13	0.015 T	0.02* U	0.64 J	5.5	0.6	0.012 T	3.1	1* U
	10/29/23	T/Dis	0.050 U	15.00	15	0.018 T	0.02* U	0.90 J	4.4	0.4	0.02* U	2.1	1* U
	01/28/24	T/Dis	0.074	0.58	8	0.02	0.02 JT	0.5	1.2	8.5	0.08	9.9 J	1* U
	04/01/24	T/Dis	0.051	0.85	8	0.02	0.02 U	0.4	1.3	3.2	0.05	12.4	1 U
count			41	45	44	41	27	45	45	45	30	45	12
max			0.096	31.90	36.8	0.038	0.056	1.42	10.10	17.20	0.076	13.5	1.00 T
min			0.021 T	0.22 T	7.8	0.011 T	0.005 T	0.15 T	0.28 T	0.37	0.002 T	1.5	0.20 T
non-detects			5	0	0	4	18	0	0	0	10	0	34
average			0.057	8.374	17.355	0.020	0.020	0.673	4.132	4.720	0.022	5.783	0.378
sample stdev			0.018	9.394	7.432	0.007	0.011	0.353	2.721	4.634	0.015	2.846	0.216
variance			0.000	88.245	55.235	0.000	0.000	0.125	7.403	21.478	0.000	8.099	0.047
coeff. of variation			0.32	1.12	0.43	0.34	0.56	0.52	0.66	0.98	0.67	0.49	0.57
standard error			0.0	1.4	1.1	0.0	0.0	0.1	0.4	0.7	0.0	0.4	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-10B		Total Below				Dissolved Below					
	04/11/13	0.02* U	0.6* T	5.2	2.1	37,600	34,300	9,150	3,620	2,760	7,390
	07/11/13	0.004 T	0.02* U	6.2	1.0	37,800	33,200	9,320	4,380	2,490	6,300
	10/15/13	0.02* U	0.02* U	4.6	1.3	36,400	32,200	9,830	3,140	2,430	7,250
	01/13/14	0.004 T	0.02* U	5.7	0.90	36,400	55,700	9,200	4,090	2,340	6,380
	04/18/14	0.02* U	0.005 T	2.8	0.70	25,000	57	7,130	432	1,580	6,650
	07/15/14	0.02* U	0.015 T	3.9	2.8	48,300	13,900	12,800	2,950	2,530	7,130
	10/19/14	0.02* U	0.02* U	4.9 J	1.7 J	36,900	33,700	7,890	4,390	2,410	6,730
	01/13/15	0.02* U	0.011 T	1.3	0.90	33,200	70	9,290	316	2,080	8,120
	04/07/15	0.02* U	0.006 T	2.2	2.7	43,700	23,600	11,500	3,040	2,720	7,390
	07/12/15	0.02* U	0.02* U	4.4	2.2	35,600	49,200	7,040	4,140	1,920	6,610
	10/26/15	0.02* U	0.02* U	3.9	2.3 J	32,000	57,800	6,630	3,590	1,880	7,450
	01/25/16	0.02* U	0.02* U	2.1	3.2 J	30,800	75	8,860	355	1,880	7,420
	04/03/16	0.006 T	0.02* U	1.8	2.5	25,600	62	7,160	164	1,890	7,460
	07/10/16	0.02* U	0.02* U	3.2	2.1	30,900	21,100	7,670	1,700	2,500	6,360
	10/09/16	0.02* U	0.02* U	3.2	1.4	32,000	31,000	7,920	2,480	2,620	6,570
	01/23/17	0.004 T	0.007 T	1.5	0.9 T	24,700	73	6,960	273	1,570	6,280
	04/09/17	0.004 T	0.007 T	2.4	0.7 T	20,400	741	5,850	355	1,290	5,260
	07/27/17	0.25* U	1* U	8.9	1.2	49,000	52	16,000	2,200	2,700	9,400
	10/16/17	0.25* U	1* U	7.1	1.0 T	38,000	300	9,200	2,000	2,600	8,800
	01/29/18	0.2* U	0.36* U	2.5	0.7 T	27,000	82	7,400	240	1,500	6,700
	04/03/18	0.2* U	0.36* U	3.0	1* U	31,000	3,300	9,600	270	1,700	7,000
	07/19/18	0.02* U	0.02* U	21	2* B1	63,200	77	19,300	3,410	3,430	13600*
	10/14/18	0.02* U	0.02* U	19	1.4 JT	47,500	552	14,100	2,510	3,210	13000*
	01/15/19	0.02* U	0.02* U	16	1.5 T	48,800	3,320	16,300	2,290	3,100	14700*
	04/02/19	0.02* U	0.013 T	14	2.1	57,100	385	20,300	3,030	3,520	15800*
	07/09/19	0.02* U	0.02* U	13	1.3 T	48,300	91	15,800	3,610	2,980	11,100
	10/27/19	0.02* U	0.02* U	15	0.7 T	59,500	22,500	19,300	5,020	3,570	15700*
	01/20/20	0.01 T	0.02* U	3.1	1.3 T	29,400	97	9,070	338	2,100	7,190
	04/13/20	0.02* U	0.02* U	7.3	1.3 T	46,400	2,390	15,600	2,000	2,590	10400*
	07/12/20	0.02* U	0.02* U	14	0.5 T	73,900	1,640	25,100	4,180	4,000	16300*
	10/14/20	0.01 T	0.02* U	13	1.1 T	53,200	92	15,100	4,250	3,130	8,950
	01/18/21	0.01 T	0.009 T	2.4	1.9 T	26,100	28	7,440	284	1,850	6,720
	04/11/21	0.02* U	0.02* U	4.5	2.1	27,600	19 T	7,130	1,620	2,400	6,630
	07/13/21	0.02* U	0.02* U	6.8 J	0.8 JT	31,800	6,250	7,910	2,520	2,190	6,630
	10/25/21	0.02* U	0.02* U	10	0.9 T	38,400	230 J	9,560	2,830	2,620	8,380
	01/17/22	0.02* U	0.02* U	3.1	0.9 T	26,400	59	8,010	304	1,840	6,750
	04/06/22	0.02* U	0.02* U	3.9	1.1 T	34,300	3,190	9,700	1,260	2,270	7,060
	07/17/22	0.02* U	0.02* U	15	0.9 T	59,800	1,220 J	17,500	3,930	3,740	14800*
	10/09/22	0.02* U	0.02* U	9.2	0.5 T	28,800	7,710	7,560	2,510	2,090	6,160
	01/23/23	0.02* U	0.02* U	2.7	4.8 J	33,400	149	10,600	153	1,970	7,240
	04/03/23	0.02* U	0.012 T	4.1	1.7 T	29,800	8,790 J	7,460	2,270	2,030	5,850
	07/23/23	0.02* U	0.02* U	6.1	1.3 T	29,600	4,160 J	8,610	2,290	2,060	6,730
	10/29/23	0.02* U	0.02* U	6.1	0.8 T	28,900	21 U	8,950	2,220	2,070	6,770
	01/28/24	0.01 T	0.02* U	5.1	1.2 T	26,000	44	7,790	565	1,590	6,060
04/01/24	0.02 U	0.02 U	4.2	0.8 T	26,300	1,530	7,570	530	1,470	6,220	
	count	10	10	45	43	45	45	45	45	45	37
	max	0.020 T	0.020	21.10	4.80	73,900	57,800	25,100	5,020	4,000	11,100
	min	0.004 T	0.005 T	1.33	0.50 T	20,400	19 T	5,850	153	1,290	5,260
	non-detects	36	35	0	2	0	1	0	0	0	0
	average	0.008	0.011	6.622	1.471	37,484	10,112	10,715	2,179	2,382	7,111
	sample stdev	0.005	0.005	4.999	0.844	12,056	16,247	4,455	1,491	649	1,092
	variance	0.000	0.000	24.987	0.713	145,345,889	263,973,190	19,843,462	2,222,925	421,214	1,191,766
	coeff. of variation	0.62	0.45	0.75	0.57	0.32	1.61	0.42	0.68	0.27	0.15
	standard error	0.0	0.0	0.7	0.1	1,797	2,422	664	222	97	179

Cowlitz County Tennant Way Landfill
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Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
		Total Below											
MW-11B	04/11/13	T/Dis	0.089	3.2 T	5.9	0.040	0.02* U	1.12	1.41	3.0	2* U	2.5	5* U
	07/12/13	T/Dis	0.050 T	2.5	7.8	0.042	0.010 T	1.50	0.56	3.3	0.129	2.0	1* U
	10/15/13	T/Dis	0.044 T	2.7	11.5	0.032	0.02* U	1.00	2.84	2.9	0.086	4.2	1* U
	01/13/14	T/Dis	0.066	1.6	14.6	0.033	0.014 T	0.81	1.02	3.4	0.057	3.7 J	1* U
	04/21/14	T/Dis	0.085	3.2	6.3	0.030	0.02* U	1.08	1.67	1.0	0.013 T	2.7	1* U
	07/16/14	T/Dis	0.070	4.3	8.3	0.040	0.02* U	1.18	0.48	0.9	0.020	1.6	1* U
	10/19/14	T/Dis	0.041 T	3.8	9.4	0.035	0.005 T	1.58 J	0.64 J	1.3 J	0.034 J	1.6	1* U
	01/13/15	T/Dis	0.377*	0.9	11.9	0.025	0.043	0.69 J	3.57	11.5	0.024	14.9*	0.20 T
	04/08/15	T/Dis	0.104	2.5	7.9	0.027	0.020	1.02	2.85	15.4 J	0.038	10.1	1* U
	07/12/15	T/Dis	0.083	13.8*	13.3	0.041	0.014 T	1.44	4.43	3.5	0.051	9.4	1* U
	10/26/15	T/Dis	0.124	12.6*	15.0	0.055	0.020 T	2.4*	1.54 J	2.7	0.092 J	5.1	1* U
	01/25/16	T/Dis	0.195	0.5	10.0	0.028	0.059	0.44	1.49	56.2	0.067	6.4	1* U
	04/03/16	T/Dis	0.189	0.7	9.3	0.047	0.058	0.62	2.07	55.3	0.288	5.4	1* U
	07/10/16	T/Dis	0.192	3.3	12.6	0.060	0.029	1.10	7.47	37.8	0.460	13.5*	1* U
	10/09/16	T/Dis	0.301	5.69*	13.7	0.055	0.048	10.7*	10.00	17.1	0.296	27.3*	1* U
	01/23/17	T/Dis	0.123	1.2	6.4	0.047	0.012 T	1.33	2.93	8.4	0.074	7.4	1* U
	04/09/17	T/Dis	0.100	1.2	5.9	0.029	0.022	0.83 J	2.83	6.7	0.130	6.8	1* U
	07/27/17	T/Dis	0.5* U	1.0	7.9	0.5* U	0.25* U	1.10	1.10	6.6	0.140	4.1	0.39 T
	10/16/17	T/Dis	0.5* U	3.9	10.0	0.5* U	0.25* B1	1.40 T, B	0.56 T, B	11.0 B	0.1* B1	4.0	1* B1
	01/29/18	T/Dis	1* U	0.39	8.5	0.5* U	0.070 T	0.56	1.80	52.0	0.074 T	6.1	0.34 T
	04/03/18	T/Dis	1* U	0.36	6.4	0.5* U	0.25* B1	0.99	0.53 T	47.0	0.085 T	5.0	1* U
	07/19/18	T/Dis	0.117	2.0	8.3	0.035	0.020 T	1.31	7.66	18.3 J	0.186	7.0	0.20 T
	10/14/18	T/Dis	0.417*	2.4	11.0	0.040	0.055 J	1.19	8.56	18.9 J	0.315 J	11.5 J	0.20 T
	01/15/19	T/Dis	0.159	0.3 T	10.8	0.027	0.065 J	0.73	0.75	45.6	0.059 J	5.9	1* U
	04/02/19	T/Dis	0.210	0.4 T	7.5	0.028	0.036	0.64	1.24	48.5	0.117	4.7	1* U
	07/09/19	T/Dis	0.135	0.8	8.6	0.031	0.075	0.93	4.59	47.0	0.129	7.8	1* U
	10/27/19	T/Dis	0.254	2.2	13.0	0.028	0.071	1.76	8.96	27.3	0.169	14.7*	1* U
	01/20/20	T/Dis	0.207	0.4 T	11.7	0.028	0.050	0.55	0.71	51.8	0.051	6.7	1* U
	04/13/20	T/Dis	0.169	0.4 T	7.1	0.029	0.034	0.55	0.80	51.8	0.110 J	4.7	1* U
	07/12/20	T/Dis	0.202	0.6	11.2	0.045	0.072	0.90	9.57	53.0	0.152 J	6.6	1* U
	10/14/20	T/Dis	0.197	1.1	10.0	0.047	0.021	1.00 J	6.05	37.5	0.195	8.6	0.20 T
	01/18/21	T/Dis	0.173	0.3 T	8.6	0.028	0.054	0.40	2.68	39.9 J	0.065	5.7	1* U
	04/11/21	T/Dis	0.152	0.4 T	7.1	0.029	0.028	0.55	0.53	46.4 J	0.104	4.7	1* U
	07/13/21	T/Dis	0.154	0.6 J	10.8	0.047	0.033	0.82 J	3.74	51.9 J	0.226	7.0 J	1* U
	10/25/21	T/Dis	0.143	0.9	8.7	0.043	0.027	0.98	4.68	35.1	0.119	9.4	0.20 T
	01/17/22	T/Dis	0.163	0.3 T	7.4	0.025	0.040	0.37	2.94	31.4	0.030	5.7	1* U
	04/06/22	T/Dis	0.083	0.3 T	6.2	0.023	0.024 J	0.58	0.46	34.9	0.037 J	5.5	1* U
	07/17/22	T/Dis	0.074	0.5 T	6.5	0.031	0.011 T	0.98	2.26	16.0	0.045	5.9	1* U
	10/09/22	T/Dis	0.125	1.0	8.6	0.037	0.014 JT	1.30	5.87	27.3	0.138 J	6.8	0.20 T
	01/23/23	T/Dis	0.138	0.3 T	7.7	0.022	0.027	0.27	0.82	15.3 J	0.019 T	6.6	1* U
	04/03/23	T/Dis	0.127	0.3 T	7.3	0.020 T	0.024	0.83	0.78	29.3	0.085	6.0	1* U
	07/23/23	T/Dis	0.124	0.4 T	8.7	0.039	0.049	0.82 J	6.25	41.6	0.098	8.7	1* U
	10/29/23	T/Dis	0.124	0.9	10.5	0.045	0.027	1.46 J	8.73	29.5	0.146 J	11.1	1* U
	01/28/24	T/Dis	0.123	0.4 T	6.5	0.024	0.043 J	0.48	2.86	21.2	0.032	5.8 J	1* U
	04/01/24	T/Dis	0.098	0.3 T	5.1	0.020	0.028	0.47	0.69	23.4	0.045	5.1	1 U
		count	39	42	45	41	38	43	45	45	43	41	9
		max	0.301	4.26	15.0	0.060	0.075	1.76	10.00	56.20	0.460	11.5 J	1.00 T
		min	0.041 T	0.26 T	5.1	0.020 T	0.005 T	0.27	0.46	0.94	0.013 T	1.6	0.20 T
		non-detects	4	0	0	4	7	0	0	0	2	0	37
		average	0.136	1.296	9.143	0.035	0.036	0.922	3.199	26.439	0.112	5.984	0.326
		sample stdev	0.058	1.189	2.507	0.010	0.020	0.366	2.872	18.667	0.092	2.361	0.263
		variance	0.003	1.413	6.288	0.000	0.000	0.134	8.246	348.468	0.009	5.573	0.069
		coeff. of variation	0.42	0.92	0.27	0.29	0.56	0.40	0.90	0.71	0.82	0.39	0.81
		standard error	0.009	0.183	0.374	0.002	0.003	0.056	0.428	2.783	0.014	0.369	0.088

Cowlitz County Tennant Way Landfill
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Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-11B	Total Below					Dissolved Below					
	04/11/13	0.026	2.5* U	20	1.1	11,600	18100*	4,410	229	1,580	3,670
	07/12/13	0.030	0.005 T	19	1.6	14,700	23500*	5,600	340	1,830	4,120
	10/15/13	0.009 T	0.02* U	14	1.0	19,900	30200*	8,040	491	2,130	6,200
	01/13/14	0.014 T	0.02* U	10	1.7	23,400	19900*	9,200	579	2,700	6,130
	04/21/14	0.02* B1	0.02* U	11	0.30 T	13,600	20300*	4,680	278	1,710	3,750
	07/16/14	0.02* U	0.02* U	18	0.5* B1	17,600	28900*	6,120	358	2,070	4,620
	10/19/14	0.008 T	0.02* U	20 J	0.50 JT	17,200	30400*	5,940	368	2,170	4,920
	01/13/15	0.008 T	0.018 T	9	1.3	22,300	124	7,000	213	2,540	5,330
	04/08/15	0.019 T	0.010 T	11	3.1	14,400	603	4,800	77	1,950	4,020
	07/12/15	0.022	0.02* U	27	2.3	30000*	11,400	10100*	455	2,410	5,180
	10/26/15	0.012 T	0.02* U	33.7*	2.7 J	32500*	18100*	11700*	501	2,770	6,420
	01/25/16	0.017 T	0.025	6	2.3 J	12,900	106	3,690	60	1,950	4,560
	04/03/16	0.038	0.022	6	3.8	7,740	242	2,360	70	1,650	4,110
	07/10/16	0.182*	0.018 T	14	2.9	11,500	5,220	3,520	225	1,940	4,410
	10/09/16	0.081	0.017 T	16	2.6	15,100	5,350	4,910	233	2,530	5,860
	01/23/17	0.015 T	0.008 T	11	1.3 T	10,500	1,090	3,480	105	1,670	3,870
	04/09/17	0.018 T	0.015 T	11	1.4 T	8,600	3,420	2,910	108	1,390	3,260
	07/27/17	0.25* U	1* U	13	1* U	11,000	1,700	4,300	120	2,000	4,300
	10/16/17	0.25* U	1* U	15	1.3	15,000	1,900	5,600	160	2,200	4,800
	01/29/18	0.2* U	0.36* U	5.9	1.3	16,000	21	4,800	170	2,100	4,500
	04/03/18	0.2* U	0.36* U	5.4	1.2	11,000	35	3,400	26	1,500	4,000
	07/19/18	0.048	0.010 T	11	2* B1	11,800	2,830	3,790	239	1,750	3,720
	10/14/18	0.075	0.018 JT	12	6.8* J	15,600	573	5,030	296	2,340	5,340
	01/15/19	0.013 T	0.02* B1	4.3	1.6 T	16,000	28	5,060	6	2,080	4,550
	04/02/19	0.022	0.025	4.3	2.2	11,000	15 T	3,370	16	1,690	3,730
	07/09/19	0.097	0.049*	5.6	1.4 T	13,000	279	4,280	140	2,030	4,340
	10/27/19	0.032	0.048*	11	1.3 T	18,800	2,000	6,160	230	2,550	6,160
	01/20/20	0.020 T	0.020 T	4.9	1.6 T	18,800	35	5,850	22	2,440	4,790
	04/13/20	0.021	0.019 T	4.0	1.1 T	8,810	92	2,720	10	1,590	3,570
	07/12/20	0.177*	0.040	4.3	1.1 T	12,900	593	3,870	192	1,950	4,590
	10/14/20	0.068	0.022	4.4	1.4 T	14,700	776	4,520	133	1,980	4,590
	01/18/21	0.029	0.029	4.0	2* B1	14,600	37	4,450	104	2,050	4,570
	04/11/21	0.020	0.015 T	3.6	1.2 T	9,040	74	2,870	15	1,670	3,850
	07/13/21	0.128*	0.026	3.8 J	1.4 JT	12,200	325	3,840	129	1,860	4,490
	10/25/21	0.035	0.016 T	5.2	1.2 T	15,900	752 J	5,100	126	2,130	5,060
	01/17/22	0.025	0.017 T	2.7	1.2 T	13,500	83	4,430	99	2,070	4,690
	04/06/22	0.02* U	0.016 T	2.7	0.8 T	11,700	38	3,940	4	1,950	4,180
	07/17/22	0.016 T	0.009 T	11	1.1 T	11,400	86 J	4,140	69	1,930	4,040
	10/09/22	0.049	0.014 JT	12	2.1	12,900	1,740	4,540	223	2,010	4,990
	01/23/23	0.02* U	0.016 T	6.3	2.9 J	17,200	26	5,790	36	2,020	4,910
	04/03/23	0.024	0.022	5.4	1.3 T	15,300	17 JT	5,200	13	1,820	4,430
	07/23/23	0.058	0.027	4.9	1.7 T	14,700	382 J	4,920	407	1,920	4,930
	10/29/23	0.050	0.009 T	9.0	2.3	18,000	1,020	5,980	456	2,230	5,600
	01/28/24	0.018 T	0.023	5.8	1.4 T	15,000	66	4,980	202	2,140	4,590
04/01/24	0.012 T	0.016 T	5.4	1.0 T	10,900	61	3,520	20	1,680	3,940	
count						43	37	43	45	45	45
max						23,400	11,400	9,200	579	2,770	6,420
min						7,740	15 T	2,360	4	1,390	3,260
non-detects						0	0	0	0	0	0
average						14,135	1,166	4,723	186	2,015	4,615
sample stdev						3,498	2,196	1,358	154	316	751
variance						12,232,992	4,824,043	1,843,552	23,789	99,744	563,862
coeff. of variation						0.25	1.88	0.29	0.83	0.16	0.16
standard error						553.3/4	361.081	207.059	22.992	47.080	111.939

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-12B	04/09/13	T/Dis	0.013 T	17.3*	33	0.016 T	0.02* U	0.62	0.45	0.11	2* U	0.9	5* U
	07/11/13	T/Dis	0.05* U	10.3	24	0.014 T	0.006 T	0.93*	0.40	0.41 J	0.024	1.6	1* U
	10/14/13	T/Dis	0.05* U	13.3	29	0.014 T	0.02* U	0.49	0.47	0.23	0.032	1.2	0.40 T
	01/13/14	T/Dis	0.05* U	5.3	24	0.014 T	0.02* U	0.45	0.32	0.34	0.062*	1.1 J	1* U
	04/18/14	T/Dis	0.05* B1	10.1	28	0.019 T	0.02* U	0.55	0.40	0.30	0.023	1.3	1* U
	07/15/14	T/Dis	0.020 T	10.6	25	0.017 T	0.02* U	0.44	0.32	0.10 T	0.025	0.7	1* U
	10/19/14	T/Dis	0.05* U	9.5	27	0.016 T	0.02* U	0.47 J	0.40 J	0.27 J	0.035 J	1.4	1* U
	01/13/15	T/Dis	0.017 T	9.2	26	0.014 T	0.02* U	1* J	0.31	0.21	0.024	1.1	3* U
	04/08/15	T/Dis	0.05* U	11.3	28	0.015 T	0.02* U	0.50	0.31	0.10 J	0.021	0.8	1* U
	07/12/15	T/Dis	0.013 T	12.7	32	0.018 T	0.013 T	0.58	0.41	0.14	0.030	1.0	1* U
	10/26/15	T/Dis	0.017 T	5.6	35	0.018 T	0.016 T	0.44	0.31 J	0.22	0.032 J	0.8	1* U
	01/25/16	T/Dis	0.015 T	10.7	34	0.016 T	0.02* U	0.53	0.36	0.15	0.027	1.0	1* U
	04/03/16	T/Dis	0.1* U	10.9	36	0.016 T	0.005 T	0.58	0.44	0.21	0.032	0.9	1* U
	07/10/16	T/Dis	0.018 T	13.4	32	0.018 T	0.02* U	0.54	0.41	0.11	0.017 T	1.0	1* U
	10/09/16	T/Dis	0.05* U	7.2	30	0.014 T	0.02* U	0.35	0.31	0.08 T	0.021	0.8	1* U
	01/23/17	T/Dis	0.011 T	8.6	34	0.017 T	0.02* U	0.43	0.44	0.27	0.02* B1	1.4	1* U
	04/09/17	T/Dis	0.021 T	9.1	34	0.018 T	0.02* U	0.50 J	0.51	0.34	0.032	1.7	0.30 T
	07/27/17	T/Dis	0.5* U	15.0	33	0.5* U	0.02* U	0.72	0.57 T	0.66	0.1* U	3.1*	0.46 T
	10/15/17	T/Dis	0.5* U	10.0	31	0.5* U	0.02* U	0.53 B	0.45 T, B	0.97 B	0.1* B1	2.9*	1* B1
	01/29/18	T/Dis	1* U	15.0	37	0.5* U	0.02* U	0.66	0.50 T	0.80	0.1* U	2.9*	0.45 T
	04/03/18	T/Dis	1* U	11.0	39	0.5* U	0.25 T	0.59	0.53 T	0.93	0.1* U	3*	1* U
	07/19/18	T/Dis	0.05* U	10.8	38	0.017 T	0.02* U	0.44	0.51	0.16 J	0.029	0.9	1* U
	10/14/18	T/Dis	0.05* U	8.9	38	0.017 T	0.02* U	0.42	0.49	0.29 J	0.053 J	0.9 J	1* U
	01/15/19	T/Dis	0.05* U	10.7	37	0.02 T	0.02* U	0.39	0.42	0.18	0.042 J	0.9	1* U
	04/02/19	T/Dis	0.05* U	9.6	35	0.017 T	0.02* U	0.47	0.39	0.68	0.024	0.8	1* U
	07/09/19	T/Dis	0.05* U	10.9	40	0.015 T	0.02* U	0.51	0.42	0.08 T	0.009 T	1.0	1* U
	10/27/19	T/Dis	0.05* U	9.2	36	0.011 T	0.02* U	0.46	0.38	0.17	0.024	0.8	1* U
	01/20/20	T/Dis	0.05* U	9.8	44	0.018 T	0.02* U	0.48	0.52	0.17	0.027	1.1	1* U
	04/13/20	T/Dis	0.05* U	8.3	36	0.014 T	0.02* U	0.41	0.36	0.20	0.009 JT	0.8	1* U
	07/12/20	T/Dis	0.05* U	8.8	40	0.017 T	0.02* U	0.50	0.45	0.07 T	0.021 J	0.7	0.2 T
	10/14/20	T/Dis	0.05* U	5.3	38	0.019 T	0.02* U	0.43 J	0.37	0.13	0.031	0.8	1* U
	01/18/21	T/Dis	0.05* U	7.8	37	0.017 T	0.02* U	0.39	0.47	0.11 J	0.02* B1	0.8	1* U
	04/11/21	T/Dis	0.05* U	7.1	38	0.019 T	0.02* U	0.41	0.45	0.20 J	0.024	0.9	1* U
	07/13/21	T/Dis	0.05* U	8.6 J	35	0.019 T	0.02* U	0.40 J	0.45	0.06 JT	0.011 T	0.8 J	1* U
	10/25/21	T/Dis	0.05* U	3.4	35	0.016 T	0.02* U	0.35	0.39	0.11	0.022	0.7	1* U
	01/17/22	T/Dis	0.05* U	8.8	37	0.023	0.02* U	0.41	0.60	0.26	0.025	0.8	1* U
	04/06/22	T/Dis	0.05* U	7.9	35	0.018 T	0.02* U	0.41	0.53	0.12	0.01 JT	0.8	1* U
	07/17/22	T/Dis	0.05* U	8.8	35	0.019 T	0.02* U	0.53	0.60	0.10 T	0.012 T	0.8	1* U
	10/09/22	T/Dis	0.05* U	7.0	30	0.013 T	0.02* U	1.56*	0.51	0.12	0.015 JT	1.2	1* U
	01/23/23	T/Dis	0.05* U	8.1	34	0.02 T	0.02* U	0.42	0.68	0.08 JT	0.011 T	0.9	1* U
	04/03/23	T/Dis	0.05* U	7.1	32	0.015 T	0.02* U	0.51	0.59	0.07 T	0.011 T	0.8	1* U
	07/23/23	T/Dis	0.05* U	7.5	30	0.016 T	0.02* U	0.43 J	0.55	0.05 T	0.008 T	0.6	1* U
	10/29/23	T/Dis	0.05* U	7.9	32	0.018 T	0.02* U	0.44 J	0.51	0.08 T	0.02* U	0.6	1* U
	01/28/24	T/Dis	0.05* U	7.3	28	0.02	0.02* U	0.5	0.6	0.1 T	0.01 T	0.7 J	1* U
	04/01/24	T/Dis	0.05 U	6.5	28	0.019 T	0.02 U	0.8	0.5	0.1	0.022	0.8	1 U
count			10	44	45	41	6	42	45	45	36	41	6
max			0.050 T	15.0	44.4	0.023	0.25 T	0.76	0.68	0.97 B	0.053	1.66	1.00 T
min			0.011 T	3.44	23.5	0.011 T	0.005 T	0.35	0.31	0.05 T	0.008 T	0.64	0.20 T
non-detects			36	0	0	4	40	0	0	0	8	0	40
average			0.020	9.200	33.276	0.017	0.052	0.486	0.454	0.236	0.023	0.938	0.468
sample stdev			0.011	2.445	4.632	0.002	0.097	0.091	0.092	0.225	0.010	0.241	0.279
variance			0.000	5.979	21.459	0.000	0.009	0.008	0.009	0.051	0.000	0.058	0.078
coeff. of variation			0.57	0.27	0.14	0.14	1.88	0.19	0.20	0.95	0.44	0.26	0.59
standard error			0.0	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-12B		Total Below				Dissolved Below					
	04/09/13	0.02* U	0.7* T	4.8	0.5* U	88,800	51,200	30,700	6,500	3,690	23,700
	07/11/13	0.006 T	0.003 T	3.5	0.46 T	60,400	38,100	20,100	4,730	3,520	22,200
	10/14/13	0.005 T	0.02* U	3.6	0.70	73,600	49,400	25,100	5,780	3,680	23,400
	01/13/14	0.02* U	0.02* U	2.6	0.50 T	56,600	25,200	18,500	4,160	3,940	24,100
	04/18/14	0.02* U	0.02* U	2.8	0.30 T	64,500	36,100	21,400	5,060	4,040	25,700
	07/15/14	0.02* U	0.02* U	3.3	0.5* B1	62,500	35,200	20,400	4,950	3,800	24,800
	10/19/14	0.02* U	0.02* U	3.3 J	0.50 JT	63,000	36,600	21,000	5,030	3,850	25,300
	01/13/15	0.02* U	0.02* U	2.9	0.30 T	64,200	32,700	20,700	4,740	3,940	24,700
	04/08/15	0.02* U	0.02* U	3.6	0.30 T	64,600	35,900	21,700	4,990	4,040	24,800
	07/12/15	0.02* U	0.02* U	4.5	0.47 T	76,600	37,800	24,000	5,800	3,500	24,200
	10/26/15	0.02* U	0.004 T	2.9	2.13* J	68,100	26,000	21,900	5,040	4,400	29,300
	01/25/16	0.02* U	0.02* U	3.8	1.04 J	73,100	33,600	23,500	5,310	4,500	28,200
	04/03/16	0.02* U	0.02* U	4.2	1.30	83,900	35,700	26,400	6,490	4,510	29,300
	07/10/16	0.02* U	0.02* U	4.6	0.36 T	69,700	34,900	22,800	6,030	3,730	24,900
	10/09/16	0.02* U	0.02* U	2.4	0.5* B1	69,000	30,700	21,900	5,780	3,920	25,200
	01/23/17	0.006 T	0.02* U	3.2	0.40 T	75,400	32,000	22,900	5,550	4,310	27,400
	04/09/17	0.02* U	0.004 T	2.8	1.3 T	75,700	31,800	21,900	5,570	4,120	27,100
	07/27/17	0.25* U	1* U	6*	1* U	83,000	26	26,000	6,800	4,000	26,000
	10/15/17	0.25* U	1* U	4.2	1* U	66,000	33	20,000	6,000	3,400	23,000
	01/29/18	0.2* U	0.36* U	4.7	1* U	89,000	21 T	25,000	7,000	4,500	30,000
	04/03/18	0.2* U	0.36* U	4.4	1* U	93,000	21	26,000	8,900	4,600	30,000
	07/19/18	0.02* U	0.02* U	0.2*	2* B1	80,000	1,760	24,200	6,560	4,280	26,200
	10/14/18	0.02* U	0.02* U	3.4	7.2* J	88,300	2,410	25,600	6,640	4,360	27,000
	01/15/19	0.02* U	0.02* U	3.4	2* U	77,600	2,210	22,500	6,110	4,460	27,200
	04/02/19	0.02* U	0.016 T	3.4	0.8 T	75,400	10 T	23,200	5,940	4,560	27,000
	07/09/19	0.02* U	0.02* U	3.8	2* U	86,800	15 T	26,600	6,950	4,850	27,000
	10/27/19	0.02* U	0.018 T	3.1	2* U	77,500	15,200	24,700	6,470	4,770	28,400
	01/20/20	0.02* U	0.02* U	3.5	2* U	89,100	1,160	29,500	7,080	5,740	31,700
	04/13/20	0.02* U	0.02* U	3.0	0.5 T	74,600	4,280	24,700	6,810	4,700	28,700
	07/12/20	0.02* U	0.02* U	3.3	2* U	79,600	4,300	27,800	7,060	5,100	31,200
	10/14/20	0.02* U	0.02* U	2.9	0.8 T	73,500	2,620	24,400	6,340	4,470	27,600
	01/18/21	0.02* U	0.02* U	3.1	2* U	73,500	3,820	25,600	6,850	4,550	29,900
	04/11/21	0.02* U	0.02* U	3.3	0.5 T	78,800	21* U	30,800	7,680	5,020	31,000
	07/13/21	0.02* U	0.02* U	3.2 J	2* U	78,600	2,910	26,400	7,240	4,460	31,000
	10/25/21	0.02* U	0.02* U	2.7	2* U	72,900	92 J	30,800	6,790	4,530	26,500
	01/17/22	0.02* U	0.02* U	3.2	0.9 T	76,200	3,230	26,500	6,710	4,880	29,700
	04/06/22	0.02* U	0.02* U	3.1	0.5 U	77,200	8* U	27,400	6,970	4,920	28,900
	07/17/22	0.02* U	0.02* U	3.2	2* U	72,600	528 J	26,600	6,630	4,860	28,100
	10/09/22	0.02* U	0.02* U	3.0	0.6 T	73,600	3,380	24,900	6,610	4,300	26,900
	01/23/23	0.02* U	0.02* U	3.4	4.1* J	76,900	1,200	26,300	6,870	4,520	28,100
	04/03/23	0.02* U	0.017 T	3.0	0.8 T	74,800	14 JT	25,500	7,190	4,350	26,900
	07/23/23	0.02* U	0.02* U	2.9	2* U	68,300	20 JT	23,600	6,690	4,280	26,400
	10/29/23	0.02* U	0.02* U	2.8	2* U	68,500	21* U	26,800	6,370	4,610	27,400
	01/28/24	0.02* U	0.02* U	2.9	0.7 T	66,300	3,430	25,300	6,540	4,330	26,700
04/01/24	0.02 U	0.02 U	2.9	0.7 T	63,600	3,400	24,600	6,060	4,370	27,700	
	count	4	7	43	23	45	42	45	45	45	45
	max	0.020	0.020	4.76	1.30	93,000	51,200	30,800	8,900	5,740	31,700
	min	0.005 T	0.003 T	2.38	0.30 T	56,600	10 T	18,500	4,160	3,400	22,200
	non-detects	42	38	0	20	0	3	0	0	0	0
	average	0.009	0.012	3.357	0.640	74,331	15,690	24,582	6,253	4,339	27,122
	sample stdev	0.007	0.008	0.588	0.288	8,452	17,188	2,900	905	471	2,324
	variance	0.000	0.000	0.346	0.083	71,436,283	295,426,871	8,407,859	819,297	222,249	5,399,495
	coeff. of variation	0.78	0.65	0.18	0.45	0.11	1.10	0.12	0.14	0.11	0.09
	standard error	0.0	0.0	0.1	0.1	1,260	2,652	432	135	70	346

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-13	04/09/13	T/Dis	0.012 T	2.2 T	25	0.019 T	0.02* U	0.6	0.38	0.06 T	2* U	0.48	5* U
	07/11/13	T/Dis	0.05* U	1.3	23	0.020	0.004 T	0.8	0.43	0.43 J	0.015 T	1.05	1* U
	10/14/13	T/Dis	0.05* U	0.7	26	0.022	0.02* U	0.6	0.41	0.15	0.018 T	0.97	1* U
	01/13/14	T/Dis	0.014 T	1.0	23	0.027	0.02* U	0.7	0.49	0.32	0.028	1.0 J	1* U
	04/18/14	T/Dis	0.05* B1	1.1	24	0.025	0.02* U	0.7	0.52	0.35	0.017 T	0.99	1* U
	07/15/14	T/Dis	0.020 T	3.4	26	0.030	0.02* U	0.8	0.50	0.23	0.027	0.50	1* U
	10/19/14	T/Dis	0.017 T	3.3	33	0.024	0.02* U	0.7 J	0.60 J	0.19 J	0.010 JT	0.98	0.30 T
	01/13/15	T/Dis	0.023 T	0.8	23	0.022	0.02* U	1.0 J	0.36	0.22	0.013 T	0.75	3* U
	04/08/15	T/Dis	0.05* U	2.0	23	0.021	0.02* U	0.6	0.40	0.27 J	0.032	0.50	1* U
	07/12/15	T/Dis	0.026 T	4.45*	43	0.039	0.012 T	0.9	0.753*	0.23	0.022	0.58	1* U
	10/26/15	T/Dis	0.025 T	4.77*	45	0.040	0.02* U	1.0	0.894* J	0.28	0.038 J	0.52	1* U
	01/25/16	T/Dis	0.016 T	1.0	23	0.023	0.02* U	0.7	0.28	0.09 T	0.012 T	0.53	1* U
	04/03/16	T/Dis	0.1* U	0.9	29	0.025	0.02* U	0.7	0.34	0.11	0.012 T	0.50	1* U
	07/10/16	T/Dis	0.017 T	1.7	31	0.029	0.02* U	0.8	0.36	0.10 T	0.012 T	0.42	1* U
	10/09/16	T/Dis	0.05* U	1.8	29	0.028	0.008 JT	0.7	0.31	0.14	0.02* B1	0.42	1* U
	01/23/17	T/Dis	0.012 T	0.8	33	0.026	0.02* U	0.5	0.36	0.28	0.02* B1	0.90	0.40 T
	04/09/17	T/Dis	0.025 T	3.1	39	0.038	0.02* U	1.0 J	0.692*	0.42	0.02* B1	1.34*	1* U
	07/27/17	T/Dis	0.5* U	2.0	25	0.5* U	0.02* U	0.8	0.35 T	0.55	0.1* U	1.9*	0.44 T
	10/15/17	T/Dis	0.5* U	2.2	33	0.5* U	0.02* U	0.6 B	0.37 T, B	0.74* B	0.1* U	2.5*	1* B1
	01/29/18	T/Dis	1* U	1.6	27	0.5* U	0.02* U	0.6	0.31 T	0.68*	0.1* U	1.8*	1* U
	04/03/18	T/Dis	1* U	2.1	33	0.5* U	0.02* U	0.8	0.41 T	0.87*	0.1* U	2*	1* U
	07/19/18	T/Dis	0.05* U	1.4	34	0.022	0.02* U	0.5	0.36	0.18 J	0.007 T	0.38	1* U
	10/14/18	T/Dis	0.05* U	1.0	35	0.025	0.02* U	0.6	0.37	0.25 J	0.032 J	0.38 J	1* U
	01/15/19	T/Dis	0.05* U	1.0	31	0.022	0.02* U	0.5	0.27	0.25	0.033 J	0.35	1* U
	04/02/19	T/Dis	0.05* U	2.2	31	0.027	0.02* U	0.5	0.37	0.32	0.067*	0.35	1* U
	07/09/19	T/Dis	0.05* U	1.7	30	0.021	0.02* U	0.5	0.27	0.19	0.021	0.32	1* U
	10/27/19	T/Dis	0.05* U	1.3	32	0.022	0.02* U	0.6	0.30	0.12	0.022	0.28	1* U
	01/20/20	T/Dis	0.05* U	0.9	29	0.023	0.02* U	0.5	0.22	0.12	0.009 T	0.33	1* U
	04/13/20	T/Dis	0.05* U	1.0	32	0.033	0.02* U	0.7	0.33	0.19	0.017 JT	0.27	1* U
	07/12/20	T/Dis	0.05* U	0.9	32	0.032	0.02* U	0.7	0.32	0.14	0.037 J	0.16 T	1* U
	10/14/20	T/Dis	0.05* U	1.9	35	0.031	0.02* U	0.6 J	0.38	0.17	0.023	0.38	1* U
	01/18/21	T/Dis	0.05* U	1.0	30	0.025	0.02* U	0.6	0.28	0.16 J	0.02* B1	0.30	1* U
	04/11/21	T/Dis	0.05* U	1.6	32	0.027	0.02* U	0.6	0.33	0.47 J	0.021	0.29	1* U
	07/13/21	T/Dis	0.05* U	1.8 J	26	0.020 T	0.02* U	0.5 J	0.25	0.27 J	0.023	0.33 J	1* U
	10/25/21	T/Dis	0.05* U	3.7	41	0.035	0.02* U	0.9	0.675*	0.15	0.043	0.45	0.2 T
	01/17/22	T/Dis	0.05* U	1.1	29	0.025	0.02* U	0.5	0.22	0.23	0.015 T	0.27	1* U
	04/06/22	T/Dis	0.05* U	1.3	23	0.024	0.02* U	0.6	0.20	0.25	0.024 J	0.29	0.2 U
	07/17/22	T/Dis	0.05* U	1.5	19	0.022	0.02* U	1.0	0.21	0.26	0.027	0.54	1* U
	10/09/22	T/Dis	0.05* U	3.4	29	0.024	0.02* U	0.8	0.44	0.12	0.022 J	0.30	1* U
	01/23/23	T/Dis	0.05* U	1.5	25	0.029	0.02* U	0.5	0.27	0.14 J	0.014 T	0.29	1* U
	04/03/23	T/Dis	0.023 T	1.8	27	0.031	0.02* U	0.9	0.32	0.28	0.034	0.35	1* U
	07/23/23	T/Dis	0.05* U	2.4	24	0.026	0.02* U	0.7 J	0.28	0.11	0.014 T	0.28	1* U
	10/29/23	T/Dis	0.05* U	1.9	26	0.031	0.02* U	0.8 J	0.27	0.2	0.02* U	0.32	0.2 T
	01/28/24	T/Dis	0.05* U	1.3	21	0.018 T	0.02* U	0.6	0.18	0.13	0.013 T	0.24 J	1* U
	04/01/24	T/Dis	0.05 U	1.7	23	0.021	0.02 U	0.6	0.23	0.22	0.033	0.28	1 U
count			13	43	45	41	4	45	41	42	34	40	7
max			0.050 T	3.7	45.4	0.040	0.020 T	1.01 J	0.60	0.55	0.043	1.05	1.00 T
min			0.012 T	0.70	18.8	0.018 T	0.004 T	0.46	0.18	0.06 T	0.007 T	0.16 T	0.20 T
non-detects			33	0	0	4	42	0	0	0	10	0	40
average			0.022	1.670	29.116	0.026	0.011	0.679	0.337	0.222	0.022	0.471	0.391
sample stdev			0.010	0.774	5.843	0.005	0.007	0.152	0.091	0.107	0.009	0.245	0.286
variance			0.000	0.599	34.142	0.000	0.000	0.023	0.008	0.012	0.000	0.060	0.082
coeff. of variation			0.46	0.46	0.20	0.21	0.62	0.22	0.27	0.48	0.43	0.52	0.73
standard error			0.0	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-13	Total Below					Dissolved Below					
	04/09/13	0.02* U	0.8* T	3.8	0.5* U	52,500	23,700	19,700	4,920	2,920	18,000
	07/11/13	0.009 T	0.004 T	3.5	0.46 T	48,000	22,700	18,000	4,530	2,690	17,200
	10/14/13	0.02* U	0.006 T	3.5	0.60	50,700	23,300	19,300	4,720	3,090	18,800
	01/13/14	0.02* U	0.02* U	3.5	0.50 T	50,500	19,700	18,800	4,620	2,830	17,500
	04/18/14	0.02* U	0.02* U	3.3	0.30 T	53,000	21,000	19,800	5,000	2,680	18,500
	07/15/14	0.02* U	0.02* U	4.5	0.58	53,300	29,800	19,200	5,110	2,730	19,800
	10/19/14	0.004 T	0.02* U	3.4 J	0.40 JT	61,200	38,200	22,000	5,940	2,970	22,000
	01/13/15	0.02* U	0.02* U	3.1	0.30 T	54,900	19,500	19,700	5,450	2,630	18,600
	04/08/15	0.02* U	0.02* U	3.8	0.83	49,200	20,500	17,700	4,890	2,600	17,700
	07/12/15	0.010 T	0.02* U	5.9	0.84	73,400	50,500	24,500	6,710	2,950	23,100
	10/26/15	0.02* U	0.02* U	5.3	0.95 J	74,600	52,300	26,800	5,780	3,170	25,400
	01/25/16	0.006 T	0.02* U	3.8	1.2 J	48,400	19,600	18,000	4,450	2,630	17,900
	04/03/16	0.007 T	0.02* U	4.0	0.94	59,100	24,700	20,700	6,000	2,770	19,000
	07/10/16	0.008 T	0.02* U	4.8	0.25 T	58,100	27,900	20,000	5,140	2,810	19,000
	10/09/16	0.02* U	0.02* U	4.3	0.5* B1	51,500	28,900	18,000	4,640	2,930	18,800
	01/23/17	0.007 T	0.002 T	3.3	0.50 T	72,200	27,900	24,500	7,050	2,660	18,000
	04/09/17	0.003 T	0.002 T	4.2	0.50 T	68,900	45,800	27,800	4,920	2,610	22,500
	07/27/17	0.25* U	1* U	4.9	1* U	60,000	140	22,000	5,800	2,600	19,000
	10/15/17	0.25* U	1* U	4.2	1* U	75,000	37	26,000	7,300	2,900	20,000
	01/29/18	0.2* U	0.36* U	3.9	1* U	67,000	75	21,000	6,300	2,700	19,000
	04/03/18	0.2* U	0.36* U	5.1	1* U	73,000	62	23,000	8,200	2,800	21,000
	07/19/18	0.02* U	0.02* U	4.0	2* B1	66,600	486	22,100	6,020	2,760	18,000
	10/14/18	0.02* U	0.02* U	4.2	1.4 JT	74,200	2,110	23,800	6,870	2,990	20,600
	01/15/19	0.02* U	0.029 J	3.5	2* U	67,600	1,830	21,100	6,290	2,660	18,500
	04/02/19	0.02* U	0.019 T	3.9	0.7 T	63,800	12 T	20,400	6,390	2,700	19,100
	07/09/19	0.02* U	0.02* U	3.7	0.7 T	61,300	21* U	19,600	3,040	2,800	18,000
	10/27/19	0.02* U	0.026	4.4	2* U	61,100	11,600	20,000	6,180	3,250	19,700
	01/20/20	0.02* U	0.02* U	3.8	2* U	59,800	446	19,200	5,890	2,750	16,800
	04/13/20	0.02* U	0.02* U	4.4	2* U	61,300	3,510	21,200	6,310	2,970	17,500
	07/12/20	0.02* U	0.02* U	4.7	2* U	60,300	1,510	21,800	5,820	3,120	18,000
	10/14/20	0.02 T	0.02* U	4.1	2* U	55,800	4,110	19,300	5,120	3,130	16,500
	01/18/21	0.02* U	0.02* U	3.7	2* U	53,800	2,680	18,600	5,580	2,840	16,000
	04/11/21	0.02* U	0.02* U	3.8	2* U	54,900	21* U	20,100	5,080	3,110	16,100
	07/13/21	0.02* U	0.02* U	3.1 J	2* U	48,800	2,470	15,900	4,410	2,680	13,800
	10/25/21	0.02* U	0.02* U	4.6	2* U	67,600	1,310 J	25,400	5,840	3,290	21,200
	01/17/22	0.02* U	0.02* U	3.3	2* U	52,600	2,690	18,200	4,920	2,960	13,800
	04/06/22	0.02* U	0.009 U	3.6	0.5* U	42,700	1,860	15,600	3,630	2,830	12,000
	07/17/22	0.02* U	0.02* U	3.5	0.6 T	36,400	1,270 J	13,300	2,950	2,180	10,100
	10/09/22	0.02* U	0.041 J	4.3	2* U	50,900	5,260	16,800	4,260	2,920	16,200
	01/23/23	0.02* U	0.02* U	3.7	4.3* J	49,000	1,330	16,900	3,740	2,540	12,200
	04/03/23	0.02* U	0.019 T	4.0	1.0 T	49,600	835 J	16,300	4,100	2,620	13,200
	07/23/23	0.02* U	0.02* U	3.6	2* U	42,100	1,560 J	13,900	3,580	2,590	12,800
	10/29/23	0.02* U	0.02* U	4.0	2* U	43,100	1,230	16,400	3,220	2,900	14,900
	01/28/24	0.09	0.02* U	3.0	0.6 T	41,900	4,160	15,300	3,390	2,840	11,000
04/01/24	0.02 U	0.02 U	3.4	2.0 U	43,100	4,380	15,000	3,350	2,890	11,900	
count	11	11	45	22		45	43	45	45	45	45
max	0.085 T	0.041	5.89	2.00		75,000	52,300	27,800	8,200	3,290	25,400
min	0.003 T	0.002 T	3.04	0.25 T		36,400	12 T	13,300	2,950	2,180	10,100
non-detects	35	35	0	23		0	2	0	0	0	0
average	0.016	0.016	3.962	0.733		56,951	12,860	19,838	5,188	2,822	17,527
sample stdev	0.023	0.013	0.611	0.406		10,114	15,061	3,349	1,211	212	3,301
variance	0.001	0.000	0.373	0.165		102,302,101	226,845,516	11,213,313	1,466,277	45,057	10,896,091
coeff. of variation	1.44	0.79	0.15	0.55		0.18	1.17	0.17	0.23	0.08	0.19
standard error	0.0	0.0	0.1	0.1		1,508	2,297	499	181	32	492

**Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)**

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-14B	04/09/13	T/Dis	0.018 T	7.4	29	0.045	0.02* U	1.6	0.57	0.09 T	2* U	0.77	5* U
	07/11/13	T/Dis	0.060	8.3	32	0.036	0.005 T	2.2	0.64	0.38 J	0.012 T	1.48	1* U
	10/14/13	T/Dis	0.006 T	5.9	25	0.037	0.009 T	1.3	0.49	0.27	0.025	1.25	1* U
	01/13/14	T/Dis	0.014 T	4.8	25	0.040	0.02* U	1.3	0.54	0.30	0.012 T	1.23 J	1* U
	04/18/14	T/Dis	0.05* B1	6.8	27	0.041	0.006 T	1.3	0.55	0.30	0.009 T	1.11	0.40 T
	07/15/14	T/Dis	0.040 T	6.8	27	0.031	0.02* U	1.2	0.49	0.14	0.007 T	0.57	0.40 T
	10/19/14	T/Dis	0.020 T	6.4	27	0.040	0.02* U	1.5 J	0.58 J	0.22 J	0.008 JT	1.14	0.40 T
	01/13/15	T/Dis	0.051	6.2	27	0.039	0.006 T	2.0 J	0.57	0.26	0.012 T	1.07	0.30 T
	04/08/15	T/Dis	0.017 T	12.7	37	0.039	0.02* U	1.8	0.72	0.15 J	0.005 T	0.69	1* U
	04/08/15	T/Dis	0.016 T	12.7	37	0.043	0.02* U	1.8	0.77	0.12 J	0.004 T	0.67	0.50 T
	07/12/15	T/Dis	0.043 T	7.6	28	0.038	0.015 T	1.7	0.51	0.17	0.022	0.61	1* U
	10/26/15	T/Dis	0.020 T	5.9	27	0.044	0.027	1.4	0.46 J	0.54*	0.025 J	0.69	1* U
	01/25/16	T/Dis	0.043 T	6.8	28	0.045	0.02* U	1.5	0.57	0.21	0.027	0.77	1* U
	04/03/16	T/Dis	0.1* U	6.4	26	0.038	0.011 T	1.2	0.43	0.21	0.030	0.72	1* U
	07/10/16	T/Dis	0.027 T	10.7	30	0.040	0.02* U	1.6	0.48	0.13	0.012 T	0.77	1* U
	10/09/16	T/Dis	0.05* U	3.1	17	0.032	0.009 JT	1.3	0.34	0.25	0.035	0.93	1* U
	01/23/17	T/Dis	0.023 T	5.9	25	0.046	0.02* U	1.2	0.50	0.33	0.020	1.02	1* U
	04/09/17	T/Dis	0.035 T	8.3	27	0.041	0.009 T	1.3 J	0.58	0.30	0.020	1.30	1* U
	07/27/17	T/Dis	0.5* U	8.0	24	0.5* U	0.25* U	1.5	0.45 T	0.57*	0.1* U	2.0	0.45 T
	10/15/17	T/Dis	0.5* U	6.4	23	0.5* U	0.25* U	1.7 B	0.45 T, B	0.76* B	0.1* U	2.2*	1* B1
	01/29/18	T/Dis	1* U	8.6	30	0.5* U	0.25* U	1.7	0.6 T	0.68*	0.1* U	2.2*	1* U
	04/03/18	T/Dis	1* U	10	35	0.5* U	0.25* B1	1.8	0.64 T	0.78*	0.1* U	2.3*	0.32 T
	07/19/18	T/Dis	0.029 T	8.7	30	0.036	0.008 T	1.5	0.59	0.21 J	0.014 T	0.66	0.30 T
	10/14/18	T/Dis	0.041 T	6.0	24.7	0.037	0.015 JT	1.55	0.46	0.23 J	0.044 J	0.79 J	1* U
	01/15/19	T/Dis	0.026 T	6.5	27.6	0.043	0.02* B1	1.43	0.59	0.22	0.031 J	0.76	0.30 T
	04/02/19	T/Dis	0.05* U	10.1	33.5	0.040	0.02* U	1.81	0.70	0.2	0.020 T	1.03	0.30 T
	07/09/19	T/Dis	0.05* U	7.7	28.4	0.033	0.02* U	1.29	0.50	0.14	0.016 T	0.67	0.20 T
	10/27/19	T/Dis	0.05* U	5.2	23.4	0.032	0.02* U	1.23	0.42	0.15	0.021	0.56	1* U
	01/20/20	T/Dis	0.05* U	7.0	29.4	0.042	0.02* U	1.48	0.57	0.29	0.020	0.69	0.30 T
	04/13/20	T/Dis	0.05* U	6.9	25.8	0.038	0.02* U	1.47	0.53	0.16	0.010 JT	0.61	0.20 T
	07/12/20	T/Dis	0.05* U	6.5	26	0.039	0.02* U	1.3	0.56	0.19	0.020 J	0.53	0.20 T
	10/14/20	T/Dis	0.03 T	5.1	23	0.039	0.02* U	4.59* J	0.47	0.19	0.019 T	0.67	0.20 T
	01/18/21	T/Dis	0.05* U	6.0	22.7	0.036	0.02* U	1.21	0.45	0.17 J	0.021	0.62	0.20 T
	04/11/21	T/Dis	0.02 T	8.1	28.7	0.040	0.02* U	1.48	0.67	0.17 JT	0.017 T	0.67	0.30 T
	07/13/21	T/Dis	0.03 T	6.5 J	23.5	0.033	0.02* U	1.25 J	0.46	0.25 J	0.025	0.6 J	0.20 T
	10/25/21	T/Dis	0.05* U	3.9	20.4	0.033	0.02* U	1.21	0.44	0.8*	0.019 T	0.66	1* U
	01/17/22	T/Dis	0.05* U	5.9	23.1	0.040	0.009 T	1.39	0.45	0.21	0.036	0.84	0.20 T
	04/06/22	T/Dis	0.05* U	7.5	26.4	0.044	0.02* U	2.19	0.54	0.26	0.030 J	1.23	0.20 T
	07/17/22	T/Dis	0.05* U	7.7	22.2	0.039	0.02* U	1.28	0.41	0.17	0.017 T	0.56	1* U
	10/09/22	T/Dis	0.05* U	6.8	19.6	0.032	0.011 JT	2.52	0.43	0.24	0.047 J	1.21	0.20 T
	01/23/23	T/Dis	0.02 T	5.1	18.5	0.035	0.02* U	0.86	0.28	0.07 JT	0.013 T	0.53	1* U
	04/03/23	T/Dis	0.02 T	7.8	24.9	0.041	0.02* U	1.87	0.53	0.16	0.026	0.77	1* U
	07/23/23	T/Dis	0.03 T	9.6	26.4	0.038	0.02* U	1.65 J	0.48	0.19	0.020 T	0.69	0.20 T
	10/29/23	T/Dis	0.05* U	4.4	16.8	0.044	0.02* U	1.48 J	0.28	0.15	0.02* U	0.52	0.20 T
	01/28/24	T/Dis	0.05* U	5.1	18.2	0.045	0.02* U	1.26	0.36	0.23	0.023	0.57 J	1* U
	04/01/24	T/Dis	0.05 U	8.1	26.4	0.044	0.008 T	1.57	0.55	0.18	0.033	0.75	0 T
count			25	46	46	42	14	45	46	40	40	43	24
max			0.060	12.7	37.2	0.046	0.027	2.52	0.77	0.38	0.047 J	2.00	0.50 T
min			0.006 T	3.08	16.8	0.031	0.005 T	0.86	0.28	0.07 JT	0.004 T	0.52	0.20 T
non-detects			22	0	0	4	32	0	0	0	6	0	22
average			0.029	7.123	26.148	0.039	0.011	1.512	0.513	0.207	0.021	0.837	0.282
sample stdev			0.013	1.989	4.581	0.004	0.006	0.311	0.103	0.066	0.010	0.309	0.092
variance			0.000	3.957	20.989	0.000	0.000	0.097	0.011	0.004	0.000	0.095	0.008
coeff. of variation			0.45	0.28	0.18	0.11	0.53	0.21	0.20	0.32	0.48	0.37	0.33
standard error			0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-14B		Total Below				Dissolved Below					
	04/09/13	0.02* U	1.1* T	8.0	0.5* U	68,900	54,900	27,300	5,810	2,200	20,800
	07/11/13	0.014 T	0.005 T	7.9	0.61	64,400	61,500	24,900	5,760	2,140	20,800
	10/14/13	0.02* U	0.005 T	6.6	0.40 T	55,800	44,100	22,400	5,040	2,090	19,000
	01/13/14	0.02* U	0.02* U	6.4	0.40 T	59,100	42,400	23,500	5,260	2,050	18,100
	04/18/14	0.02* U	0.02* U	6.1	0.30 T	57,200	45,500	22,200	5,500	1,920	18,100
	07/15/14	0.02* U	0.005 T	6.2	0.5* B1	60,000	49,200	22,600	5,470	1,930	17,800
	10/19/14	0.005 T	0.02* U	7.5 J	0.40 JT	56,100	45,800	21,600	5,220	1,940	18,800
	01/13/15	0.004 T	0.02* U	6.6	0.40 T	69,200	50,300	25,000	6,470	1,940	18,700
	04/08/15	0.02* U	0.02* U	9.5	0.30 T	63,500	74,800	23,500	5,580	2,170	21,400
	04/08/15	0.02* U	0.02* U	9.7	0.26 T	62,000	73,300	23,000	5,500	2,200	21,100
	07/12/15	0.009 T	0.02* U	8.0	0.40 T	54,700	55,500	19,400	4,920	1,710	16,900
	10/26/15	0.02* U	0.02* U	7.1	1.7 J	52,300	45,300	19,900	4,710	1,760	17,400
	01/25/16	0.005 T	0.02* U	8.2	1.1 J	60,400	47,900	23,100	5,500	1,970	20,000
	04/03/16	0.02* U	0.02* U	6.9	2.1	49,700	41,500	17,200	5,110	1,760	17,300
	07/10/16	0.02* U	0.02* U	8.2	0.36 T	43,800	55,700	15,900	3,700	1,860	18,800
	10/09/16	0.02* U	0.02* U	5.6	0.5* B1	41,800	26,800	14,700	4,720	1,620	14,300
	01/23/17	0.011 T	0.004 T	5.9	0.6 T	59,600	41,400	20,600	6,040	1,700	17,000
	04/09/17	0.005 T	0.013 T	6.2	1.7 T	58,900	47,100	19,100	5,660	1,700	16,100
	07/27/17	0.25* U	1* U	8.8	1* U	51,000	180	19,000	4,500	1,800	17,000
	10/15/17	0.25* U	1* U	8.5	1* U	55,000	310	20,000	5,200	1,700	16,000
	01/29/18	0.25* U	0.36* U	9.1	1* U	72,000	65	24,000	10,000*	2,000	21,000
	04/03/18	0.25* U	0.36* U	9.1	1* U	75,000	60	25,000	14,000*	1,900	22,000
	07/19/18	0.02* U	0.013 T	7.8	2* B1	58,500	104	20,300	5,290	1,710	18,600
	10/14/18	0.02* U	0.021 J	7.4	1.8 JT	57,200	1,500	19,700	5,930	1,630	17,900
	01/15/19	0.02* U	0.049* J	7.7	2* U	59,300	2,580	20,000	5,710	1,780	18,400
	04/02/19	0.02* U	0.024	8.2	2* U	58,000	193	21,500	4,300	2,010	20,900
	07/09/19	0.02* U	0.019 T	7.1	2* U	52,200	1,020	19,100	4,440	1,930	17,300
	10/27/19	0.02* U	0.038	6.3	2* U	47,300	15,500	18,000	4,500	1,700	16,600
	01/20/20	0.02* U	0.018 T	7.5	2* U	57,500	709	20,800	5,520	1,840	19,000
	04/13/20	0.02* U	0.009 T	7.2	2* U	46,000	1,800	18,100	4,230	1,710	18,200
	07/12/20	0.02* U	0.02* U	7.4	2* U	48,700	3,730	19,500	4,330	1,740	18,800
	10/14/20	0.02* U	0.02* U	7.1	0.6 T	47,700	4,600	16,100	4,640	1,500	14,300
	01/18/21	0.02* U	0.02* U	6.5	0.8 T	45,200	1,960	15,700	4,840	1,640	17,000
	04/11/21	0.02* U	0.010 T	8.1	2* U	52,400	82	20,000	4,460	1,980	19,600
	07/13/21	0.02* U	0.02* U	7.0 J	1.0 JT	49,500	4,330	16,400	4,610	1,570	17,000
	10/25/21	0.02* U	0.02* U	5.8	2.0 U	50,700	1,580 J	16,100	5,720	1,430	15,000
	01/17/22	0.02* U	0.012 T	6.6	1.1 T	48,800	2,210	15,800	5,440	1,600	17,100
	04/06/22	0.013 T	0.012 T	8.1	0.6 T	49,200	2,070	17,000	3,450	1,800	17,700
	07/17/22	0.02* U	0.009 T	6.7	2* U	39,400	6,020 J	15,100	3,490	1,660	15,200
	10/09/22	0.02* U	0.086* J	7.1	0.8 T	40,300	7,870	13,500	3,420	1,540	15,700
	01/23/23	0.02* U	0.02* U	5.5	2.3* J	37,400	4,160	12,100	3,950	1,470	14,600
	04/03/23	0.02* U	0.014 T	7.3	0.9 T	49,300	3,370 J	16,500	4,780	1,670	16,600
	07/23/23	0.02* U	0.010 T	7.7	0.5 T	43,500	3,770 J	15,200	3,600	1,880	17,700
	10/29/23	0.02* U	0.02* U	6.1	0.5 T	34,700	4,530	12,600	3,300	1,470	14,400
	01/28/24	0.03	0.012 T	6.1	0.7 T	38,800	5,430	13,200	4,030	1,830	15,200
04/01/24	0.01 T	0.023	8.2	0.6 T	48,300	4,230	16,800	4,200	1,840	18,200	
	count	10	20	46	28	46	46	46	44	46	45
	max	0.033 T	0.038	9.74	2.13	75,000	74,800	27,300	6,470	2,200	22,000
	min	0.004 T	0.004 T	5.51	0.26 T	34,700	60 T	12,100	3,300	1,430	14,300
	non-detects	36	23	0	18	0	0	0	0	0	0
	average	0.011	0.014	7.320	0.816	53,267	21,456	19,196	4,860	1,804	17,747
	sample stdev	0.009	0.008	1.042	0.548	9,177	24,442	3,674	800	199	1,978
	variance	0.000	0.000	1.085	0.300	84,210,691	597,419,813	13,495,536	640,202	39,451	3,911,636
	coeff. of variation	0.77	0.60	0.14	0.67	0.17	1.14	0.19	0.16	0.11	0.11
	standard error	0.0	0.0	0.2	0.1	1,353	3,604	542	121	29	295

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
MW-15	04/09/13	T/Dis	0.028 T	3.9 T	21	0.019 T	0.030	0.7	0.8	1.2	2* U	1.8	5* U
	07/11/13	T/Dis	0.05* U	1.2	17	0.020	0.074	0.8	1.3	5.67*	0.006 T	3.1	0.30 T
	10/14/13	T/Dis	0.036	1.5	19	0.017 T	0.040	0.5	1.3	2.0	0.011 T	2.4	0.30 T
	01/13/14	T/Dis	0.048 T	3.3	21	0.025	0.022	0.7	0.7	1.2	0.02* U	2.1 J	1* U
	04/18/14	T/Dis	0.05* B1	2.3	20	0.018 T	0.051	0.7	1.2	1.8	0.02* U	2.4	0.30 T
	07/15/14	T/Dis	0.040 T	1.9	17	0.027	0.062	0.6	1.1	5.77*	0.003 T	2.5	1* U
	10/19/14	T/Dis	0.051	2.1	19	0.022	0.058	0.7 J	1.3 J	2.5 J	0.007 JT	2.9	1* U
	01/13/15	T/Dis	0.042 T	3.0	20	0.018 T	0.022	1.54* J	0.6	1.2	0.029	1.8	0.30 T
	04/08/15	T/Dis	0.020 T	2.9	16	0.022	0.045	0.8	1.0	3.3 J	0.02* U	2.2	1* U
	07/12/15	T/Dis	0.045 T	2.9	20	0.027	0.048	0.9	1.0	3.7	0.02* U	2.2	1* U
	10/26/15	T/Dis	0.029 T	2.7	26	0.036	0.042	1.0	1.0 J	1.4	0.02 J	2.0	1* U
	01/25/16	T/Dis	0.050 T	2.9	18	0.025	0.013 T	0.8	0.6	0.8	0.02* U	1.3	1* U
	04/03/16	T/Dis	0.1* U	2.0	15	0.022	0.039	0.6	1.4	1.8	0.02 T	1.9	1* U
	07/10/16	T/Dis	0.038 T	1.7	17	0.026	0.067	0.7	2.0	3.1	0.01 T	2.5	1* U
	10/09/16	T/Dis	0.02 T	2.0	19	0.023	0.044	0.8	1.1	1.9	0.02* B1	1.6	1* U
	01/23/17	T/Dis	0.043 T	2.8	18	0.028	0.024	0.7	0.7	1.6	0.02* B1	1.9	1* U
	04/09/17	T/Dis	0.041 T	2.6	18	0.020	0.018 T	0.8 J	0.7	1.2	0.02* B1	2.0	1* U
	07/27/17	T/Dis	0.5* U	2.1	17	0.5* U	0.038 T	0.9	2.7	2.5	0.1* U	3.5	0.55 T
	10/15/17	T/Dis	0.5* U	2.1	15	0.5* U	0.25* B1	0.9 B	1.8 B	1.8 B	0.1* B1	3.3	1* B1
	01/29/18	T/Dis	1* U	2.7	17	0.5* U	0.25* U	0.6	0.57 T	1.4	0.1* U	2.7	1* U
	04/03/18	T/Dis	1* U	2.1	15	0.5* U	0.25* B1	0.5	1.6	2.0	0.1* U	2.9	1* U
	07/19/18	T/Dis	0.043 T	1.4	16	0.021	0.078	0.5	2.6	2.6 J	0.01 T	2.1	0.20 T
	10/14/18	T/Dis	0.022 T	2.1	16.8	0.021	0.042 J	0.4	1.2	1.4 J	0.048* J	1.3 J	1* U
	01/15/19	T/Dis	0.025 T	2.0	16.2	0.021	0.028 J	0.4	0.8	1.3	0.02* B1	1.2	1* U
	04/02/19	T/Dis	0.027 T	2.3	15.8	0.023	0.063	0.5	1.3	1.3	0.054*	1.4	1* U
	07/09/19	T/Dis	0.043 T	2.6	16.7	0.024	0.042	0.6	1.4	1.6	0.02	1.5	1* U
	10/27/19	T/Dis	0.031 T	2.3	22.6	0.021	0.04	0.6	1.4	1.6	0.02	1.6	1* U
	01/20/20	T/Dis	0.034 T	4.0	23.1	0.023	0.018 T	0.7	0.8	1.1	0.02* U	1.2	1* U
	04/13/20	T/Dis	0.026 T	2.3	19.4	0.023	0.025	0.6	1.3	1.3	0.02 J	1.3	1* U
	07/12/20	T/Dis	0.036 T	1.8	20.3	0.026	0.026	0.6	1.7	1.0	0.01 T	1.2	1* U
	10/14/20	T/Dis	0.043 T	3.7	26.5	0.032	0.019 T	0.8 J	0.9	1.3	0.01 T	1.2	1* U
	01/18/21	T/Dis	0.027 T	3.6	21.0	0.028	0.021	1.0	0.7	1.4 J	0.02* B1	1.4	1* U
	04/11/21	T/Dis	0.039 T	2.2	16.9	0.025	0.029	0.7	1.3	2.3 J	0.01 T	1.5	1* U
	07/13/21	T/Dis	0.044 T	2.3 J	17.4	0.027	0.043	0.6 J	1.8	1.6 J	0.02	1.6 J	1* U
	10/25/21	T/Dis	0.032 T	3.2	25.8	0.037	0.053	1.0	1.0	3.0	0.145*	1.6	1* U
	01/17/22	T/Dis	0.033 T	3.9	20.5	0.031	0.025	0.7	0.6	2.2	0.01 T	1.3	1* U
	04/06/22	T/Dis	0.032 T	3.9	20.0	0.028	0.02 JT	0.9	0.7	1.7	0.01 JT	1.1	1* U
	07/17/22	T/Dis	0.025 T	2.1	16.3	0.019 T	0.02	0.6	1.9	1.4	0.01 T	1.4	1* U
	10/09/22	T/Dis	0.027 T	2.5	17.2	0.024	0.027 J	0.8	1.4	1.5	0.03 J	1.4	1* U
	01/23/23	T/Dis	0.032 T	2.9	16.8	0.031	0.016 T	0.7	0.8	1.6 J	0.02* U	1.2	1* U
	04/03/23	T/Dis	0.039 T	3.1	17.2	0.029	0.029	0.9	1.0	2.2	0.01 T	1.4	1* U
	07/23/23	T/Dis	0.043 T	2.8	16.4	0.028	0.022	0.7 J	1.9	1.7	0.01 T	1.5	1* U
	10/29/23	T/Dis	0.031 T	4.0	22.9	0.034	0.024	1.3	1.3	1.5	0.02* U	1.4	1* U
	01/28/24	T/Dis	0.037 T	3.1	22.8	0.025	0.015 JT	0.8	0.6	1.5	0.02* U	1.1 J	1* U
	04/01/24	T/Dis	0.029 T	3.8	21.6	0.026	0.02	0.9	1.0	1.5	0.02	1.2	1 U
count			38	45	45	41	42	44	45	43	23	45	7
max			0.051	4.0	26.5	0.037	0.078	1.29	2.70	3.65	0.032 J	3.50	1.00 T
min			0.019 T	1.15	14.7	0.017 T	0.013 T	0.40	0.55	0.82	0.003 T	1.09	0.20 T
non-detects			7	0	0	4	3	0	0	0	19	0	39
average			0.035	2.631	18.813	0.025	0.035	0.725	1.195	1.769	0.014	1.816	0.421
sample stdev			0.008	0.740	2.965	0.005	0.017	0.172	0.503	0.639	0.008	0.637	0.277
variance			0.000	0.548	8.791	0.000	0.000	0.030	0.253	0.408	0.000	0.405	0.077
coeff. of variation			0.24	0.28	0.16	0.19	0.48	0.24	0.42	0.36	0.55	0.35	0.66
standard error			0.0	0.1	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
MW-15	Total Below					Dissolved Below					
	04/09/13	0.02* U	2.5* U	4.6	0.56 J	78,700	6,910	15,900	6,350	2,730	12,900
	07/11/13	0.006 T	0.022	3.1	0.55	63,500	3,400	14,500	15,900	2,400	11,800
	10/14/13	0.02* U	0.015 T	3.2	0.50	73,000	3,920	16,300	10,100	2,950	13,600
	01/13/14	0.02* U	0.02* U	4.9	0.40 T	80,800	6,930	13,900	4,020	2,740	11,800
	04/18/14	0.02* U	0.013 T	3.7	0.90	73,200	5,020	15,000	11,800	2,740	12,600
	07/15/14	0.02* U	0.014 T	3.9	0.5* B1	72,700	4,250	15,700	14,900	2,190	12,200
	10/19/14	0.02* U	0.012 T	3.9 J	0.80 J	67,500	3,750	16,100	15,400	2,420	13,000
	01/13/15	0.02* U	0.006 T	4.9	0.50 T	77,100	7,120	13,700	7,630	2,750	12,500
	04/08/15	0.02* U	0.011 T	5.3	0.36 T	60,300	4,080	13,000	11,900	2,210	11,500
	07/12/15	0.02* U	0.008 T	6.1	0.36 T	70,100	4,880	13,100	9,100	2,240	12,600
	10/26/15	0.02* U	0.006 T	5.9	1.5 J	80,400	7,050	15,100	9,100	2,830	14,400
	01/25/16	0.02* U	0.02* U	5.5	0.88 J	65,500	5,500	12,200	4,650	2,550	12,300
	04/03/16	0.02* U	0.02* U	4.3	1.6	48,400	2,740	13,300	11,300	2,090	11,800
	07/10/16	0.02* U	0.020 T	4.5	0.81	41,200	1,550	12,100	10,800	1,800	9,520
	10/09/16	0.02* U	0.011 T	5.5	0.73	61,600	4,100	13,500	7,040	2,800	12,300
	01/23/17	0.01 T	0.008 T	5.1	1.0 T	65,300	5,050	12,300	4,870	2,370	11,200
	04/09/17	0.01 T	0.006 T	3.7	0.50 T	63,300	5,700	9,820	3,350	2,330	8,910
	07/27/17	0.02* U	1* U	5.4	0.73 T	51,000	2,800	14,000	11,000	2,800	13,000
	10/15/17	0.02* U	1* U	5.0	0.72 T	59,000	3,100	14,000	8,800	2,300	11,000
	01/29/18	0.02* U	0.36* U	3.8	1* U	75,000	84	12,000	3,400	2,600	11,000
	04/03/18	0.02* U	0.36* U	3.3	0.73 T	58,000	370	14,000	12,000	2,200	11,000
	07/19/18	0.02* U	0.038	3.7	2* B1	50,100	1,500	15,400	15,400	2,300	10,500
	10/14/18	0.02* U	0.031 J	3.2	1.5 JT	66,300	663	13,600	6,630	2,670	11,000
	01/15/19	0.01 T	0.033 J	3.7	2* U	61,800	197	11,800	5,100	2,410	10,500
	04/02/19	0.02* U	0.089*	3.6	0.8 T	60,700	715	13,500	9,240	2,080	10,700
	07/09/19	0.02* U	0.046	4.6	0.9 T	64,500	3,530	13,900	10,200	2,100	10,700
	10/27/19	0.02* U	0.048	3.7	0.6 T	80,100	2,420	17,500	7,870	3,090	12,600
	01/20/20	0.02* U	0.012 T	4.9	2* U	78,200	347	14,300	4,010	3,050	10,800
	04/13/20	0.02* U	0.025	4.4	2* U	73,800	664	15,600	7,120	2,280	11,100
	07/12/20	0.02* U	0.012 T	4.4	2* U	71,200	1,220	17,600	10,300	2,470	11,600
	10/14/20	0.02* U	0.009 T	6.2	0.6 T	84,700	348	14,600	4,940	3,140	10,800
	01/18/21	0.02* U	0.013 T	5.8	0.5 T	68,000	1,280	12,700	3,940	3,000	11,100
	04/11/21	0.02* U	0.016 T	4.8	0.8 T	62,000	3,180	14,000	6,310	2,580	11,300
	07/13/21	0.02* U	0.04	4.8 J	2* U	68,100	1,720	15,400	9,210	2,480	11,300
10/25/21	0.02* U	0.021	6.3	1.5 T	83,300	891 J	16,000	5,970	3,580	10,800	
01/17/22	0.02* U	0.014 T	5.6	2* U	63,000	1,560	11,800	3,820	3,420	10,200	
04/06/22	0.02* U	0.015 T	5.7	0.5* U	67,200	1,240	12,300	4,290	3,440	9,950	
07/17/22	0.02* U	0.023	3.1	0.8 T	58,700	306 J	15,100	5,890	2,670	10,100	
10/09/22	0.02* U	0.065* J	5.0	0.7 T	67,500	2,950	13,700	6,400	2,680	10,100	
01/23/23	0.02* U	0.014 T	5.9	7.6* J	56,500	4,280	11,000	4,210	2,870	8,400	
04/03/23	0.02* U	0.021	5.7	1.1 T	56,500	2,870 J	11,000	4,810	3,200	8,860	
07/23/23	0.02* U	0.019 T	5.3	0.6 T	56,300	4,190 J	13,100	6,950	2,880	10,400	
10/29/23	0.02* U	0.02* U	5.4	0.6 T	71,900	170	15,100	5,980	3,870	11,000	
01/28/24	0.07	0.02* U	5.3	0.6 T	67,000	620	11,600	4,620	4,200	9,280	
04/01/24	0.02	0.027	4.8	0.6 T	68,100	526	13,000	5,170	3,680	10,100	
count	6	33	45	34		45	45	45	45	45	14
max	0.066 T	0.048	6.25	1.57		84,700	7,120	17,600	15,900	4,200	14,400
min	0.005 T	0.006 T	3.05	0.36 T		41,200	84 T	9,820	3,350	1,800	8,400
non-detects	39	10	0	10		0	0	0	0	0	0
average	0.021	0.019	4.702	0.773		66,469	2,793	13,847	7,818	2,715	11,203
sample stdev	0.023	0.011	0.923	0.325		9,613	2,128	3,512	3,512	509	1,277
variance	0.001	0.000	0.851	0.105		92,416,283	4,526,519	2,962,966	12,333,514	259,507	1,631,606
coeff. of variation	1.11	0.60	0.20	0.42		0.14	0.76	0.12	0.45	0.19	0.11
standard error	0.0	0.0	0.1	0.1		1,433	317	257	524	76	190

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	MCL>	Antimony 6	Arsenic 0.05	Barium 1000	Beryllium 4	Cadmium 5	Chromium 50 (total)	Cobalt	Copper 1000 (2ndary)	Lead 15	Nickel 100	Selenium 10
		Total Below											
MW-16B	01/15/19	T/Dis	0.05* U	0.99	29	0.020	0.02* U	0.23	0.53	0.3	0.03 J	0.38	1* U
	01/15/19	T/Dis	0.05* U	0.92	29	0.019 T	0.02* U	0.21	0.52	0.3	0.03 J	0.41	1* U
	04/02/19	T/Dis	0.05* U	0.84	30	0.017 T	0.02* U	0.72	0.50	0.3	0.04	0.5	1* U
	04/02/19	T/Dis	0.05* U	0.94	29	0.017 T	0.02* U	0.45	0.50	0.3	0.03	0.44	1* U
	07/09/19	T/Dis	0.02 T	0.87	31	0.019 T	0.02* U	0.50	0.54	0.4	0.05	0.56	1* U
	07/09/19	T/Dis	0.05* U	0.88	31	0.020 T	0.02* U	0.50	0.55	0.4	0.05	0.54	1* U
	10/27/19	T/Dis	0.05* U	0.99	31	0.014 T	0.02* U	0.39	0.61	0.3	0.05	0.49	1* U
	10/27/19	T/Dis	0.05* U	1.01	31	0.017 T	0.02* U	0.36	0.61	0.3	0.05	0.45	1* U
	01/20/20	T/Dis	0.03 T	1.12	34	0.024	0.02* U	0.38	0.70	0.4	0.05	0.5	1* U
	01/20/20	T/Dis	0.02 T	1.09	33	0.022	0.02* U	0.33	0.66	0.3	0.03	0.44	1* U
	04/13/20	T/Dis	0.05* U	1.01	33	0.020 T	0.02* U	0.34	0.64	0.3	0.06 J	0.44	1* U
	04/13/20	T/Dis	0.05* U	0.99	33	0.018 T	0.02* U	0.34	0.66	0.3	0.03 J	0.45	1* U
	07/12/20	T/Dis	0.02 T	0.89	36	0.023	0.02* U	0.41	0.69	0.4	0.06 J	0.31	1* U
	07/12/20	T/Dis	0.05* U	0.90	37	0.022	0.02* U	0.38	0.65	0.3	0.05 J	0.31	1* U
	10/14/20	T/Dis	0.04 T	0.99	38	0.020	0.02* U	0.44 J	0.62	0.3	0.05	0.47	1* U
	10/14/20	T/Dis	0.02 T	0.99	38	0.022	0.02* U	0.96* J	0.71	0.3	0.05	0.48	1* U
	01/18/21	T/Dis	0.05* U	1.14	34	0.022	0.02* U	0.37	0.68	0.4 J	0.05	0.51	1* U
	01/18/21	T/Dis	0.05* U	1.11	35	0.026	0.02* U	0.47	0.76	0.5 J	0.08	0.62	1* U
	04/11/21	T/Dis	0.03 T	1.04	38	0.020	0.02* U	0.36	0.67	0.4 J	0.04	0.47	1* U
	04/11/21	T/Dis	0.05* U	1.08	36	0.020 T	0.02* U	0.39	0.66	0.3 J	0.04	0.47	1* U
	07/13/21	T/Dis	0.02 T	0.45 JT	29	0.020	0.02* U	0.17 JT	0.52	0.1 J	0.03	0.33 J	1* U
	07/13/21	T/Dis	0.05* U	1.01 J	36	0.016 T	0.02* U	0.34 J	0.64	0.4 J	0.06	0.48 J	1* U
	10/25/21	T/Dis	0.05* U	1.01	34	0.022	0.02* U	0.34	0.70	0.2	0.04	0.49	1* U
	10/25/21	T/Dis	0.02 T	1.03	36	0.021	0.008 T	0.37	0.65	0.2	0.03	0.49	1* U
	01/17/22	T/Dis	0.05* U	1.19	37	0.022	0.02* U	0.30	0.73	0.3	0.03	0.51	1* U
	01/17/22	T/Dis	0.05* U	1.10	37	0.023	0.02* U	0.35	0.74	0.3	0.03	0.53	1* U
	04/06/22	T/Dis	0.03 T	1.10	36	0.021	0.02* U	0.44	0.64	0.3	0.04 J	0.5	1* U
	04/06/22	T/Dis	0.02 T	1.09	36	0.021	0.02* U	0.40	0.64	0.4	0.05 J	0.5	1* U
	07/17/22	T/Dis	0.05* U	1.09	35	0.024	0.02* U	0.53	0.64	0.5	0.07	0.6	1* U
	07/17/22	T/Dis	0.05* U	1.12	35	0.025	0.02* U	0.52	0.66	0.5	0.07	0.59	1* U
	10/09/22	T/Dis	0.05* U	1.03	34	0.015 T	0.02* U	0.47	0.63	0.4	0.04 J	0.54	1* U
	10/09/22	T/Dis	0.05* U	1.10	34	0.014 T	0.02* U	0.47	0.64	0.3	0.04 J	0.53	1* U
	01/23/23	T/Dis	0.02 T	1.09	36	0.033	0.02* U	0.40	0.63	0.2 J	0.05	0.58	1* U
	01/23/23	T/Dis	0.05* U	1.11	36	0.029	0.02* U	0.33	0.61	0.3 J	0.06	0.59	1* U
	04/03/23	T/Dis	0.04 T	1.16	36	0.035	0.02* U	0.46	0.62	0.3	0.05	0.51	1* U
	04/03/23	T/Dis	0.04 T	1.20	35	0.027	0.02* U	0.41	0.60	0.3	0.05	0.49	1* U
	07/23/23	T/Dis	0.02 T	1.11	36	0.023	0.02* U	1.05* J	0.60	0.2	0.04	0.59	1* U
	07/23/23	T/Dis	0.05* U	1.07	36	0.023	0.02* U	0.69 J	0.55	0.3	0.04	0.66	1* U
	10/29/23	T/Dis	0.02 T	1.18	37	0.026	0.02* U	0.59 J	0.55	0.2	0.04 J	0.55	1* U
	10/29/23	T/Dis	0.02 T	1.17	37	0.025	0.02* U	0.31 J	0.55	0.2	0.02 J	0.44	1* U
	01/28/24	T/Dis	0.02 T	1.14	34	0.025	0.02* U	0.95	0.64	0.3	0.04	0.76 J	1* U
	01/28/24	T/Dis	0.05* U	1.09	34	0.023	0.02* U	0.40	0.63	0.3	0.04	0.5 J	1* U
	04/01/24	T/Dis	0.05 U	1.13	35	0.022	0.02 U	0.38	0.58	0.3	0.03	0.5	1 U
	04/01/24	T/Dis	0.05 U	1.11	35	0.022	0.02 U	0.35	0.58	0.2	0.03	0.53	1 U
count			33	75	83	75	9	76	83	80	69	69	8
max			0.05 T	1.20	38.1	0.035	0.022	0.95	0.859	1.00	0.088 U	1.05	1.00
min			0.01 T	0.34 T	19.6	0.010 T	0.005 T	0.14 T	0.319	0.11 J	0.014 T	0.31	0.30 T
non-detects			52	0	0	8	74	2	0	0	10	0	77
average			0.023	0.933	31.18	0.020	0.013	0.382	0.561	0.389	0.043	0.538	0.620
sample stdev			0.011	0.188	4.32	0.005	0.006	0.140	0.109	0.210	0.015	0.158	0.263
variance			0.000	0.035	18.68	0.000	0.000	0.019	0.012	0.044	0.000	0.025	0.069
coeff. of variation			0.47	0.20	0.14	0.27	0.49	0.37	0.19	0.54	0.34	0.29	0.42
standard error			0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

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B = detected in blank. Result may be affected.

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B1 = blank corrected to MRL

MCL = WAC173-200 groundwater quality criteria or drinking water criteria. 2ndary is secondary standard.

Metals: dissolved prior to April 2011, total April 2011 to present except geochemical metals dissolved after Jan 2013.

Cowlitz County Tennant Way Landfill
Metals Groundwater Quality Data and Statistics (ug/l)

Site	Date	Silver 50	Thallium 2	Vanadium	Zinc 5000 (2ndary)	Geochemical Metals					
						Calcium	Iron 300 (2ndary)	Magnesium	Manganese 50 (2ndary)	Potassium	Sodium
Total Below						Dissolved Below					
MW-16B	01/15/19	0.02* U	0.02* U	1.3	2* U	79,300	9,070	38,400	4,580	2,500	23,400
	01/15/19	0.02* U	0.02* U	1.2	2* U	79,300	6,180	37,600	4,500	2,440	22,600
	04/02/19	0.02* U	0.018 T	1.4	0.7 T	81,600	11 T	40,100	4,950	2,400	22,800
	04/02/19	0.02* U	0.02* U	1.4	0.6 T	81,300	21* U	39,700	4,920	2,410	22,700
	07/09/19	0.02* U	0.02* U	1.5	1.3 T	82,400	21* U	40,300	4,950	2,430	22,200
	07/09/19	0.02* U	0.02* U	1.5	0.6 T	82,300	13 T	40,400	4,930	2,470	22,300
	10/27/19	0.02* U	0.038	1.5	0.9 T	85,300	29,100	40,500	5,380	2,680	24,000
	10/27/19	0.02* U	0.027	1.4	0.6 T	83,800	31,500	40,000	5,300	2,690	23,800
	01/20/20	0.02* U	0.02* U	1.7	0.5 T	84,900	9,790	41,400	5,430	2,960	23,800
	01/20/20	0.02* U	0.02* U	1.4	2* U	84,200	9,530	40,400	5,440	2,870	23,400
	04/13/20	0.02* U	0.02* U	1.5	2* U	73,600	13,100	37,600	5,060	2,680	21,900
	04/13/20	0.02* U	0.02* U	1.4	0.5 T	79,400	13,700	39,000	5,610	2,700	22,700
	07/12/20	0.02* U	0.02* U	1.6	2* U	84,600	14,900	42,500	5,740	2,940	24,100
	07/12/20	0.02* U	0.02* U	1.7	2* U	85,000	15,700	42,500	5,780	3,040	23,600
	10/14/20	0.02* U	0.02* U	1.6	0.6 T	88,300	10,300	37,500	5,640	2,780	21,400
	10/14/20	0.02* U	0.02* U	1.6	1.0 T	89,000	11,300	38,100	5,680	2,880	21,700
	01/18/21	0.02* U	0.02* U	1.6	2* B1	78,800	12,300	36,100	5,800	3,060	22,500
	01/18/21	0.02* U	0.02* U	1.8	2* B1	78,700	11,100	36,100	5,810	3,060	22,500
	04/11/21	0.02* U	0.02* U	1.6	0.7 T	79,200	21* U	37,800	5,770	3,340	23,300
	04/11/21	0.02* U	0.02* U	1.5	0.8 T	80,000	21* U	37,900	5,790	3,320	23,300
	07/13/21	0.02* U	0.02* U	0.49 J	2* U	83,200	10,500	35,200	5,730	3,010	21,200
	07/13/21	0.02* U	0.02* U	1.6 J	2.3* J	83,200	9,150	35,200	5,700	3,020	21,200
	10/25/21	0.02* U	0.011 T	1.3	2* U	83,300	4,530 J	36,500	5,820	3,420	20,900
	10/25/21	0.02* U	0.02* U	1.2	0.5 T	83,200	5,040 J	36,700	5,860	3,440	21,100
	01/17/22	0.02* U	0.02* U	1.5	0.5 T	81,900	7,290	37,300	5,750	3,610	23,200
	01/17/22	0.02* U	0.02* U	1.6	0.5 T	82,500	7,140	38,100	5,840	3,730	23,700
	04/06/22	0.02* U	0.02* U	1.5	0.5* U	79,800	8* U	37,200	5,670	3,730	22,400
	04/06/22	0.02* U	0.02* U	1.5	0.5* U	80,000	8* U	36,900	5,660	3,640	22,100
	07/17/22	0.02* U	0.02* U	1.8	0.8 T	71,800	4,340 J	36,000	5,320	3,500	20,700
	07/17/22	0.02* U	0.02* U	1.9	0.8 T	71,900	6,460 J	36,000	5,330	3,500	20,700
	10/09/22	0.02* U	0.02* U	1.4	0.6 T	80,100	14,000	35,000	5,590	3,400	21,600
	10/09/22	0.02* U	0.02* U	1.5	0.7 T	80,000	13,200	35,200	5,580	3,430	21,800
	01/23/23	0.02* U	0.02* U	1.8	2.2* J	77,400	8,410	35,800	5,340	3,580	21,500
	01/23/23	0.02* U	0.02* U	1.9	3.2* J	76,900	10,800	35,700	5,300	3,600	21,400
04/03/23	0.02* U	0.016 T	1.6	0.9 T	77,000	4,470 J	36,100	5,390	3,600	21,600	
04/03/23	0.02* U	0.014 T	1.5	0.7 T	76,600	2,860 J	36,200	5,400	3,640	21,700	
07/23/23	0.02* U	0.02* U	1.5	2* U	75,700	477 J	35,500	5,440	3,610	21,500	
07/23/23	0.02* U	0.02* U	1.6	0.7 T	76,000	1,780 J	35,500	5,470	3,600	21,700	
10/29/23	0.02* U	0.02* U	1.5	0.5 T	76,000	21* U	38,700	5,090	3,800	22,300	
10/29/23	0.02* U	0.02* U	1.5	0.6 T	77,000	21* U	38,600	4,680	3,800	22,200	
01/28/24	0.02* U	0.02* U	1.6	0.9 T	74,600	13,100	36,100	5,340	3,850	22,500	
01/28/24	0.02* U	0.02* U	1.5	0.9 T	74,300	12,700	35,900	5,300	3,840	22,500	
04/01/24	0.02 U	0.02 U	1.4	2.0 U	76,900	12,200	37,100	5,320	3,880	23,400	
04/01/24	0.02 U	0.02 U	1.5	0.6 T	75,100	11,500	36,200	5,210	3,760	22,800	
count		5	10	80	47	83	75	83	83	83	83
max		0.020 T	0.038	1.90	2.00	89,000	49,900	44,400	5,860	3,880	26,000
min		0.005 T	0.003 T	0.49 J	0.34 T	65,600	11	35,000	4,000	2,010 L	19,200
non-detects		80	74	0	28	0	8	0	0	0	0
average		0.0	0.017	1.400	0.742	77,341.0	22,170.4	39,014.5	5,071.9	2,791.2	22,013.3
sample stdev		0.0	0.010	0.268	0.274	4,876.3	19,369.7	2,381.6	508.2	580.3	1,423.1
variance		0.0	0.000	0.072	0.075	23,778,058	375,184,089	5,671,984	258,218	336,713	2,025,310
coeff. of variation		0.63	0.59	0.19	0.37	0.06	0.87	0.06	0.10	0.21	0.06
standard error		0.0	0.0	0.0	0.0	535	2,237	261	56	64	156

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B1 = blank corrected to MRL

MCL = WAC173-200 groundwater quality criteria or drinking water criteria. 2ndary is secondary standard.

Metals: dissolved prior to April 2011, total April 2011 to present except geochemical metals dissolved after Jan 2013.

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro-methane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Di-chloro-ethene	Carbon Disulfide	Methylene Chloride	trans-1,2-Di-chloro-ethene	1,1-Di-chloro-ethane	2-Butanone	cis-1,2-Di-chloro-ethene
MW-3B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.2 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.1 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
MW-5B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	21 B	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.9 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.9 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.9 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5	0.5 U	5.9 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.6 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloroform	Bromo-chloro-methane	1,1,1-Tri-chloro-ethane	Carbon Tetra-chloride	1,2-Di-chloro-ethane	Benzene	Tri-chloro-ethene	1,2-Di-chloro-propane	Bromo-dichloro-methane	Dibromo-methane	2-Hexanone	cis-1,3-Dichloro-propene	Toluene	trans-1,3-Dichloro-propene
MW-3B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	1.1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	4.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
MW-5B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.7	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.2 T	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

								1,1,2,2-				1,1,2,2-			
Sample Location	Date Sampled	1,1,2-Tri-chloro-ethane	4-Methyl-2-pentanone	Tetra-chloro-ethene	Dibromo-chloro-methane	1,2-Di-bromo-ethane	Chloro-benzene	Tetra-chloro-ethane	Ethyl-benzene	Total Xylenes	Styrene	Bromo-form	Tetra-chloro-ethane	1,2,3-Trichloro-propane	1,4-Di-chloro-benzene
MW-3B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-5B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di- chloro- benzene	1,2-Di- bromo-3- chloro- propane	Acrylo- nitrile	trans+cis- 1,4-Di- chloro- 2-butene	Iodo- methane	Vinyl Acetate
MW-3B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U
MW-5B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro-methane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Di-chloro-ethene	Carbon Disulfide	Methylene Chloride	trans-1,2-Di-chloro-ethene	1,1-Di-chloro-ethane	2-Butanone	cis-1,2-Di-chloro-ethene
MW-7B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.2 JT	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
MW-8B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 UB1	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.6 T	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.4 T	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.6 T	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8 JT	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

[illegible]

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

		1,1,1,2,2-Pentachloroethane							1,1,1,2,2-Tetrachloroethane				1,1,2,2,3-Pentachloropropane			
Sample Location	Date Sampled	1,1,2-Tri-chloro-ethane	4-Methyl-2-pentanone	Tetra-chloro-ethene	Dibromo-chloro-methane	1,2-Di-bromo-ethane	Chloro-benzene	Tetra-chloro-ethane	Ethyl-benzene	Total Xylenes	Styrene	Bromo-form	Tetra-chloro-ethane	Trichloro-propane	1,4-Di-chloro-benzene	
MW-7B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U	
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U	
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
MW-8B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U	
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U	
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di- chloro- benzene	1,2-Di- bromo-3- chloro- propane	Acrylo- nitrile	trans+cis- 1,4-Di- chloro- 2-butene	Iodo- methane	Vinyl Acetate
MW-7B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.1 T	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U
MW-8B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro-methane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Di-chloro-ethene	Carbon Disulfide	Methylene Chloride	trans-1,2-Di-chloro-ethene	1,1-Di-chloro-ethane	2-Butanone	cis-1,2-Di-chloro-ethene
MW-9B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 UB1	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.4 T	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.8 T	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.0 T	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.2 T	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.6 JT	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
MW-10B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	7.5 T	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.7 JT	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloroform	Bromo-chloro-methane	1,1,1-Tri-chloro-ethane	Carbon Tetra-chloride	1,2-Di-chloro-ethane	Benzene	Tri-chloro-ethene	1,2-Di-chloro-propane	Bromo-dichloro-methane	Dibromo-methane	2-Hexanone	cis-1,3-Dichloro-propene	Toluene	trans-1,3-Dichloro-propene
MW-9B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
MW-10B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.2 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

1,1,1,2,2-Pentachloroethane																
		1,1,2-Tri-chloro-		Tetra-		Dibromo-		1,2-Di-		1,1,2,2-		Tetra-		1,2,3-		1,4-Di-
Sample	Date	chloro-	4-Methyl-2-	chloro-	chloro-	chloro-	bromo-	Chloro-	chloro-	Ethyl-	Total		Bromo-	chloro-	Trichloro-	chloro-
Location	Sampled	ethane	pentanone	ethene	methane	ethane	ethane	benzene	ethane	benzene	Xylenes	Styrene	form	ethane	propane	benzene
MW-9B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-10B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di- chloro- benzene	1,2-Di- bromo-3- chloro- propane	Acrylo- nitrile	trans+cis- 1,4-Di- chloro- 2-butene	Iodo- methane	Vinyl Acetate
MW-9B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U
MW-10B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro- methane	Vinyl chloride	Bromo- methane	Chloro- ethane	Trichloro- fluoro- methane	Acetone	1,1-Di- chloro- ethene	Carbon Disulfide	Methylene Chloride	trans- 1,2-Di- chloro- ethene	1,1-Di- chloro- ethane	2-Butanone	cis- 1,2-Di- chloro- ethene
MW-11B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.6 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	28 B	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.6 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
MW-12B	01/29/18	0.5 U	0.5 U	1 UB1	0.5 U	0.5 U	20 UB1	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 UB1	0.5 U	0.5 U	20 U	0.5 UB1	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	10 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.8 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.9 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 T	0.5 U	5.1 JT	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.9 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloroform	Bromo-chloro-methane	1,1,1-Tri-chloro-ethane	Carbon Tetra-chloride	1,2-Di-chloro-ethane	Benzene	Tri-chloro-ethene	1,2-Di-chloro-propane	Bromo-dichloro-methane	Dibromo-methane	2-Hexanone	cis-1,3-Dichloro-propene	Toluene	trans-1,3-Dichloro-propene
MW-11B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.3 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
MW-12B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,1,1,2,2-Pentachloroethane						1,1,1,2,2-Tetrachloroethane				1,1,2,2,3-Pentachloropropane			
		1,1,2-Tri-chloro-ethane	4-Methyl-2-pentanone	Tetra-chloro-ethene	Dibromo-chloro-methane	1,2-Di-bromo-ethane	Chloro-benzene	Tetra-chloro-ethane	Ethyl-benzene	Total Xylenes	Styrene	Bromo-form	Tetra-chloro-ethane	Trichloro-propane	1,4-Di-chloro-benzene
MW-11B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-12B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di- chloro- benzene	1,2-Di- bromo-3- chloro- propane	Acrylo- nitrile	trans+cis- 1,4-Di- chloro- 2-butene	Iodo- methane	Vinyl Acetate
MW-11B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	0.14 T	5 U
MW-12B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro-methane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Di-chloro-ethene	Carbon Disulfide	Methylene Chloride	trans-1,2-Di-chloro-ethene	1,1-Di-chloro-ethane	2-Butanone	cis-1,2-Di-chloro-ethene
MW-13	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 UB1	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.2 T	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.2 T
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.2 T
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.2 T
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.2 T
	10/27/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 UB1	0.5 U	0.5 U	20 U	0.1 T
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.4 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.1 T
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.6 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.7 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	5.6 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
MW-14B	01/29/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 U	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/18	0.5 U	0.5 U	1 U	0.5 U	0.5 U	20 U	0.5 UB1	50 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/18	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.2 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.4 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8 T	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.9 JT	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.5 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloroform	Bromo-chloro-methane	1,1,1-Tri-chloro-ethane	Carbon Tetra-chloride	1,2-Di-chloro-ethane	Benzene	Tri-chloro-ethene	1,2-Di-chloro-propane	Bromo-dichloro-methane	Dibromo-methane	2-Hexanone	cis-1,3-Dichloro-propene	Toluene	trans-1,3-Dichloro-propene
MW-13	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.3 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
MW-14B	01/29/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/19/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.2 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.2 T	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,1,2-Tri-chloro-ethane	4-Methyl-2-pentanone	Tetra-chloro-ethene	Dibromo-chloro-methane	1,2-Di-bromo-ethane	Chloro-benzene	1,1,1,2-Tetra-chloro-ethane	Ethyl-benzene	Total Xylenes	Styrene	Bromo-form	1,1,2,2-Tetra-chloro-ethane	1,2,3-Trichloro-propane	1,4-Di-chloro-benzene
MW-13	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-14B	01/29/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	04/03/18	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
	07/19/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/18	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/15/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/02/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di- chloro- benzene	1,2-Di- bromo-3- chloro- propane	Acrylo- nitrile	trans+cis- 1,4-Di- chloro- 2-butene	Iodo- methane	Vinyl Acetate
MW-13	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	0.18 T	5 U
MW-14B	01/29/18	0.5 U	5 U	2 U		50 U	
	04/03/18	0.5 U	5 U			50 U	
	07/19/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/18	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/15/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/02/19	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	0.14 T	5 U

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloro-methane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Di-chloro-ethene	Carbon Disulfide	Methylene Chloride	trans-1,2-Di-chloro-ethene	1,1-Di-chloro-ethane	2-Butanone	cis-1,2-Di-chloro-ethene
MW-15	07/09/19	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.9 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/13/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.9 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.9 T	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.7 T	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.0 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	5.3 T	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 UB1	0.5 U	0.5 U	0.3 T	0.5 U	3.3 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
MW-16B	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/20	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.6 JT	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U

U = Not detected. Method Reporting Limit shown.

T = Detected below reporting limit. Value is an estimate.

J = The associated value is qualified as an estimate.

UB1 = Detected in blank below MRL. MRL shown.

.B = Detected in blank below MRL. Result may be affected

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	Chloroform	Bromo-chloro-methane	1,1,1-Tri-chloro-ethane	Carbon Tetra-chloride	1,2-Di-chloro-ethane	Benzene	Tri-chloro-ethene	1,2-Di-chloro-propane	Bromo-dichloro-methane	Dibromo-methane	2-Hexanone	cis-1,3-Dichloro-propene	Toluene	trans-1,3-Dichloro-propene
MW-15	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	01/20/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
MW-16B	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 UB1	0.5 U
	07/12/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.1 T	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U

U = Not detected. Method Reporting Limit shown.
T = Detected below reporting limit. Value is an estimate.

J = The associated value is qualified as an estimate.
UB1 = Detected in blank below MRL. MRL shown.

B = Detected in blank below MRL. Result may be affected.

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,1,2-Tri-chloro-ethane	4-Methyl-2-pentanone	Tetra-chloro-ethene	Dibromo-chloro-methane	1,2-Di-bromo-ethane	Chloro-benzene	1,1,1,2-Tetra-chloro-ethane	Ethyl-benzene	Total Xylenes	Styrene	Bromo-form	1,1,2,2-Tetra-chloro-ethane	1,2,3-Trichloro-propane	1,4-Di-chloro-benzene
MW-15	07/09/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/27/19	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/20/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/13/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-16B	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	07/12/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	10/14/20	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	01/18/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	04/11/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	07/12/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	10/25/21	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	01/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	04/06/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	07/17/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	10/09/22	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	01/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	04/03/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	07/23/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	10/29/23	0.5 U	20 U	0.5 U	0.5 U	2 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	01/28/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T
	04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T
	04/01/24	0.5 U	20 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T

U = Not detected. Method Reporting Limit shown.
T = Detected below reporting limit. Value is an estimate.

J = The associated value is qualified as an estimate.
UB1 = Detected in blank below MRL. MRL shown.

B = Detected in blank below MRL. Result may be affected.

Cowlitz County Tennant Way Landfill
Groundwater Quality Data
Volatile Organic Compounds ug/l (ppb)

Sample Location	Date Sampled	1,2-Di-chloro-benzene	1,2-Di-bromo-3-chloro-propane	trans+ cis-Acrylo-nitrile	trans+ cis-1,4-Di-chloro-2-butene	Iodo-methane	Vinyl Acetate
MW-15	07/09/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	10/27/19	0.5 U	2 U	5 U	10 U	5 UB1	5 U
	01/20/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/13/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.1 T	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.5 U	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.5 U	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.5 U	2 U	5 U	10 U	5 U	5 U
MW-16B	07/12/20	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/12/20	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/14/20	0.4 T	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.4 T	2 U	5 U	10 U	5 U	5 U
	01/18/21	0.5 T	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.3 T	2 U	5 U	10 U	5 U	5 U
	04/11/21	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/12/21	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/25/21	0.4 T	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.4 T	2 U	5 U	10 U	5 U	5 U
	01/17/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	04/06/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/17/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/09/22	0.3 T	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.4 T	2 U	5 U	10 U	5 U	5 U
	01/23/23	0.4 T	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.4 T	2 U	5 U	10 U	5 U	5 U
	04/03/23	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.3 T	2 U	5 U	10 U	5 U	5 U
	07/23/23	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.3 T	2 U	5 U	10 U	5 U	5 U
	10/29/23	0.3 T	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.3 T	2 U	5 U	10 U	5 U	5 U
	01/28/24	0.2 T	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.2 T	2 U	5 U	10 U	5 U	5 U
	04/01/24	0.2 T	2 U	5 U	10 U	5 U	5 U

U = Not detected. MRL shown.
T = Est. value detected below MRL.

J = The associated value is qualified as an estimate.
UB1 = Detected in blank below MRL. MRL shown.

B = Detected in blank below MRL. Result may be affected.

APPENDIX C

SURFACE WATER AND LEACHATE QUALITY DATA

Cowlitz County Tennant Way Landfill Surface Water and Leachate Quality Data

Inorganics

Water Quality											Field Measurements			
Location	Date	mg/L								Total Dissolved Solids	Total Suspended Solids	pH	Specific Conduct. (umhos/cm)	Temp. (C)
		Alkalinity as CaCO3	Bicarbonate	Chloride	Ammonia	Nitrate	Sulfate	TOC						
S-2	01/27/12					0.71						6.4	110	5.6
	04/06/12					1.27						7.8	108	12.2
	07/12/12					0.1 U						7.1	160	24.3
	10/25/12					0.1 U						7.1	105	13.4
	01/07/13					0.22						5.3	165	5.1
	04/12/13					0.08 T						7.4	179	13.0
	07/12/13					0.1 U						8.9	165	22.1
	10/16/13					0.06 T						7.0	195	12.4
	01/14/14					0.24						7.1	169	6.8
	04/21/14					0.18						6.8	174	15.5
	07/16/14					0.1 U						7.9	182	27.0
	10/20/14					0.31						6.8	175	16.6
	01/14/15					0.26						6.6	151	5.9
	04/08/15					0.17						6.0	180	15.0
	07/13/15					0.1 U						8.8	156	22.9
	10/27/15					0.07 T						7.1	175	13.4
	01/26/16					0.23						6.3	161	7.2
	04/04/16					0.1 U						7.2	165	15.2
	07/11/16					0.1 U						7.4	181	20.3
	10/10/16					0.1 U						7.6	175	15.5
	01/23/17					0.17						8.4	164	4.0
	04/09/17					0.08 T						7.0	125	13.0
	07/27/17					1.30						8.3	162	25.5
	10/16/17					0.5 B1						8.0	168	18.3
	01/29/18					0.29 T						7.4	160	8.1
	04/03/18					0.5 U						7.5	176	12.4
	07/20/18					0.1 U						7.8	200	23.8
	10/15/18					0.07 T						6.9	206	17.2
	01/15/19					0.09 T						6.6	128	6.9
	04/02/19					0.06 T						7.2	180	16.4
	07/09/19					0.55						9.6	197	25.2
	10/27/19					0.1 U						6.6	196	13.4
	01/20/20					0.27						6.9	172	7.6
	04/14/20					0.1 U						7.1	191	13.3
	07/13/20					0.1 U						8.6	212	15.1
	10/14/20					0.1 U						6.8	194	19.3
	01/19/21					0.31						7.0	156	7.6
	04/12/21					0.07 T						6.6	184	11.7
	07/13/21					0.1 U						6.8	169	21.7
	10/26/21					0.1						6.8	181	12.6
01/18/22					0.24 J						6.7	165	7.2	
04/07/22					0.1 U						7.1	176	14.2	
07/17/22					0.1 U						7.8	146	24.4	
10/10/22					0.06 T						7.7	205	18.7	
01/24/23					0.31						6.4	153	6.4	
04/03/23					0.1 U						6.6	176	11.2	
07/24/23					0.28						7.0	175	23.2	
10/29/23					0.24						6.5	189	14.0	
01/28/24					0.5						7.4	163	9.2	
04/01/24											8.3	164	16.4	

**Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Inorganics**

Thot Lakes											Field Measurements			
Location	Date	mg/L								Total Dissolved Solids	Total Suspended Solids	pH	Specific Conduct. (umhos/cm)	Temp. (C)
		Alkalinity as CaCO3	Bicarbonate	Chloride	Ammonia	Nitrate	Sulfate	TOC						
Runoff	01/27/12					10.3						6.8	380	6.1
Discharge	04/06/12					2.1						7.7	144	11.1
	07/12/12					0.84 J						6.6	560	17.6
	10/25/12					7.4						7.1	255	12.7
	01/07/13					6.3						7.0	267	7.1
	04/12/13					2.7						7.4	412	10.4
	07/12/13					1.3						7.3	718	15.2
	10/16/13					4.6						7.2	449	11.9
	01/14/14					10.5						7.0	357	7.7
	04/21/14					2.2						6.9	470	12.1
	07/16/14					3.2						7.3	715	17.2
	10/20/14					2.5						6.9	599	14.5
	01/14/15					12.8						6.7	380	6.8
	04/08/15					4.2						6.2	365	11.5
	07/13/15					1.4						7.7	555	16.3
	10/27/15					0.55						6.7	296	11.4
	01/26/16					3.8						6.3	423	8.2
	04/04/16					1.0						7.1	321	11.8
	07/11/16					0.24						7.2	436	16.6
	10/10/16					2.9						7.4	283	14.8
	01/23/17					4.5						8.1	231	4.5
	04/09/17					5.4						6.9	318	12.3
	07/27/17					0.13 T						7.1	442	18.7
	10/16/17					1.1						7.7	353	13.7
	01/29/18					4.8						7.3	291	9.0
	04/03/18					2.8						7.6	235	9.0
	07/20/18					0.06 T						6.5	438	15.9
	10/15/18					0.89						6.8	455	12.7
	01/15/19					5.6						6.5	245	7.0
	04/02/19					2.2						6.9	259	10.4
	07/09/19					0.34						7.0	416	18.1
	10/27/19					5.7						6.7	271	12.8
	01/20/20					8.3						6.9	247	7.5
	04/14/20					1.5						6.8	230	9.6
	07/13/20					0.20						7.1	357	16.4
	10/14/20					3.7						6.8	245	16.4
	01/19/21					6.9						7.1	228	7.1
	04/12/21					2.2						6.8	210	9.3
	07/13/21					0.17						6.7	337	17.8
	10/26/21					9.8 J						6.9	250	12.9
	01/18/22					5.9 J						6.8	229	7.7
	04/07/22					2.9						7.4	202	11.0
	07/17/22					0.14						7.3	314	18.9
	10/10/22					0.10 T						7.6	331	14.1
	01/24/23					5.6						6.7	235	8.2
	04/03/23					4.4						6.8	269	9.7
	07/24/23					0.04 T						7.1	325	16.6
	10/29/23					4.0						6.7	296	11.7
	01/28/24					4.0						7.4	179	10.1
	04/01/24											7.0	202	12.5

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Inorganics

Location	Date	mg/L									Field Measurements			
		Alkalinity as CaCO3	Bicarbonate	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Dissolved Solids	Total Suspended Solids	pH	Specific	Temp.	
												Conduct. (umhos/cm)		(C)
L-1	01/27/12	381	465	20	12.4	3.1	6.6	22	479			6.5	800	11.2
	04/06/12	379	462	24	15.4	0.4	6.3	30	426			6.0	730	13.6
	07/12/12	502	612	35	16.0	0.1 U	3.1	29	500			6.2	770	13.6
	10/25/12	251	306	99	11.6	9.5	69	22	596			6.9	917	13.6
	01/07/13	336	410	23	12.0	1.4	13	22	402		74	6.5	970	12.0
	04/12/13	397	484	20	15.7	0.1 T	3.5	21	453		80.5	6.7	1,130	12.5
	07/12/13	463	564	32	16.8	0.1 U	1.9	26	518		144	6.7	1,055	15.5
	10/16/13	422	515	21	14.3	0.9	4.9	23	468		103	6.7	1,060	13.5
	01/14/14	348	424	13	10.8	4.6	7.0	20	400		83	6.8	920	12.5
	04/21/14	371	452	21	16.2	0.1	4.9	26	412		72	6.7	920	14.1
	07/16/14	379	462	19	12.0	0.0	6.7	25	407		99	7.6	800	15.0
	10/20/14	1,220	1,487	251	61.0	0.7	40	73	1,460		200	5.9	3,086	15.2
	01/14/15	314	383	16	14.1	5.6	16	16	410		26	6.5	722	10.8
	04/08/15	403	491	19	16.6	0.3	5.2	19	412		90	6.5	861	14.0
	07/13/15	253	308	17	15.0	0.2 T	139	19	455		24	6.3	900	18.5
	10/27/15	242	295	55	22.0	1.7	25	23	341		10	6.6	801	13.6
	01/26/16	193	235	6.2	5.6	1.0	14	12	260		10	6.5	460	10.2
	04/04/16	364	444	18	13.0	0.4 T	3.6	18	393		76	6.6	829	12.5
	07/11/16	291	355	14	10.5	0.3	17	18	354		70	6.6	636	15.7
	10/10/16	64	78	1.9	0.3 T	2.7	10	5.7	130		7.0	7.3	173	15.8
	01/23/17	311	379	12	10.1	0.7	8.7	15	353		60	6.7	698	10.4
	04/09/17	178	217	4.7	5.5	2.1	4.6	12	234		10	7.7	420	12.0
	07/27/17	390	475	22	9.4	0.2 T	11 T	22	440		91	6.4	827	16.7
	10/16/17	100	122	3.3 T	2.2	7.4	17 T	8.5	240		11	7.0	326	13.7
	01/29/18	190	232	7.2 T	8.7	2.2	16 T	11	260		19	7.8	505	11.1
	04/03/18	340	415	17 T	15.0	0.7	2.1 T	17	380		60	7.1	804	12.4
	07/20/18	332	405	15	11.9	0.3	15	14	381 J		71	6.1	729	16.4
	10/15/18	367	447	16	10.1	1.4	5.2	14 J	368		77	6.4	757	15.1
	01/15/19	190	232	6.0	4.2	8.4	18	8.9	281		5 U	6.0	486	11.8
	04/02/19	367	447	16	12.9	2.4	3.7	18	411		73	6.3	833	13.7
	07/09/19	329	401	13	10.2	1.1	6.7	19	379		135	6.9	792	16.9
	10/27/19	158	193	5.2	4.6	13.6	9.6	8.8	292		51	6.3	461	15.4
	01/21/20	311	379	15	12.4	9.7	14.3	17	445		31	6.6	778	12.2
	04/14/20	341	416	14	13.4	1.0	2.3	19	395		61	6.3	739	13.4
	07/13/20	351	428	16	13.2 J	0.9	2.2	21	429		99	6.5	718	15.7
	10/14/20	49	60	2.2	0.6	18.7 J	13.5	5.1	285		5 U	6.8	289	17.8
	01/19/21	326	397	15	13.9	5.7	13.7	15	432		54	6.4	759	11.6
	04/12/21	305	372	12	11.0	1.9	2.3	16	415		56	6.2	671	13.9
	07/13/21	250	305	12	14.8	0.6	5.6	16	361		91	6.2	755	15.9
	10/26/21	164	200	5.1	4.2	11.6	7.2	9.6	305		56 J	6.6	490	15.2
	01/18/22	321	391	15.6 J	13.9	10.6 J	8.0 J	17	445		51	6.2	822	10.7
	04/07/22	211	257	8.5		4.1	3.0	13	339		40	6.7	572	14.5
	07/17/22	324	395	14.0	11.9	0.7	2.9	18	377		74	7.0	752	14.7
	10/10/22	395	482	70.2	34.5	1.3	62.2	21	509		62	6.8	1002	16.8
	01/24/23	288	351	10.4	10.5	3.5	5.2	13	339		47	6.4	664	11.8
	04/03/23	248	302	8.2	9.0	3.1	2.7	12	306		45	6.4	566	11.5
	07/24/23	333	406	12.2	10.9	1.5	5.2	16	364		117	6.7	674	16.3
	10/29/23	232	283	8.1	6.0	7.7	6.0	10	308		80	6.5	568	15.1
	01/28/24	227	277	7.8	8.7	3.7	7.6	13	275		48	6.7	530	11.2
	04/01/24	289	352	12.0	11.8 J	1.8	1.9	14	311		64	6.4	632	14.7

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Inorganics

Location	Date	mg/L								Total Suspended Solids	Field Measurements		
		Alkalinity as CaCO3	Bicarbonate	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total Dissolved Solids		pH	Specific Conduct.	Temp.
												(umhos/cm)	(C)
L-2	01/27/12	2,120	2,585	398	228	1 U	80	146	2,550		7.0	3,110	19.7
	04/06/12	2,010	2,451	362	225	1.6	53	286	2,340		5.8	2,870	20.9
	07/12/12	3,870	4,718	1,100	493	0.3 T	73	305	4,950		7.2	4,710	24.3
	10/25/12	2,810	3,426	860	417	9.3	511	220	4,170		7.5	3,740	24.2
	01/07/13	2,240	2,731	458	218	3.3 J	112	237	2,720	138	7.1	5,240	19.3
	04/12/13	2,770	3,377	564	310	1 U	23	225	3,210	25	7.1	6,780	19.3
	07/12/13	4,090	4,987	1,010	526	0.6 T	62	309	4,810	41	5.2	10,260	22.6
	10/16/13	2,980	3,633	650	350	0.4 T	102	219	3,580	36	7.3	7,570	23.5
	01/14/14	190	232	352	206	3.6	115	114	2,190	23	7.2	4,580	20.6
	04/21/14	2,460	2,999	536	294	1.0	58	208	2,980	20	7.2	6,260	21.4
	07/16/14	4,100	4,999	1,040	529	5.5	99	293	5,190	29	7.3	10,180	24.6
	10/20/14	4,770	5,816	1,360	360	1.0 T	122	396	6,280	19	6.9	11,700	22.2
	01/14/15	4,710	5,743	1,340	620	6.9	134	362	5,680	12	7.4	11,340	17.1
	04/08/15	5,070	6,181	1,430	560	10.2	136	410	6,240	9.0	7.5	12,170	19.5
	07/13/15	5,220	6,364	1,180	380	8.0 T	147	490	6,460	22	7.5	12,940	21.4
	10/27/15	5,100	6,218	1,600	540	3.7	200	420	6,600	20	7.7	13,200	19.5
	01/26/16	3,190	3,889	910	321	19.3	373	277	2,190	25	8.0	9,650	15.4
	04/04/16	4,430	5,401	1,260	400	18.6	461	370	5,940	13	7.9	11,720	16.6
	07/11/16	4,550	5,547	1,500	580	22.0	547	412	6,900	32	8.0	12,980	19.1
	10/10/16	4,440	5,413	1,530	720	34.4	644	408	6,540	17	8.0	12,170	19.6
	01/23/17	3,750	4,572	1,340	370	13.2	458	350	5,920	9.5	8.0	10,540	14.3
	04/09/17	3,410	4,158	1,120	340	31.9	474	299	5,480	17	7.3	10,400	15.2
	07/27/17	3,600	4,389	9,700	580	63.0	1,000	410	7,000	7.0	7.8	12,020	20.0
	10/16/17	4,100	4,999	1,700	760	32.0	470	380	7,300	12	8.0	12,280	19.4
	01/29/18	2,300	2,804	990	350	81.0	470	220	4,900	11	8.1	8,410	14.5
	04/03/18	3,400	4,145	1,200	460	49.0	440	210	5,600	8.0	8.0	9,290	14.6
	07/20/18	3,770	4,596	1,430	556	1.8	677	253	6,780	20	7.6	11,650	18.0
	10/15/18	3,620	4,414	1,580	436	68.4	747	187	6,680	16	7.6	11,580	17.5
	01/15/19	2,510	3,060	1,080	270	89.9	596	176	4,940	11	7.7	8,320	14.6
	04/02/19	3,030	3,694	1,360	352	102	600	238	5,700	14	7.6	10,490	16.0
	07/09/19	3,680	4,487	1,500	406	94.2	820	252	7,030	20	7.5	12,530	18.2
	10/27/19	2,940	3,584	1,280	345	138	800	246	6,590	14	7.6	11,360	17.9
	01/21/20	1,950	2,377	805	199	97.2	580	153	4,130	10	7.5	7,530	14.1
	04/14/20	2,930	3,572	1,180	491	75.4	652	227	5,450	25	7.7	10,230	15.0
	07/13/20	3,380	4,121	1,440	463 J	38.6	715	275	6,860	29	7.6	12,280	17.3
	10/14/20	2,800	3,414	1,400	360	153	1,130	240	7,220	24	7.5	12,150	17.8
	01/19/21	1,860	2,268	746	39.3	77.0	1,560	57	3,820	19	7.5	7,270	13.3
	04/12/21	2,390	2,914	942	311	76.4	635	190	4,780	23	7.6	9,030	14.7
	07/13/21	2,900	3,536	1,290	382	82.8	694	216	5,760	28	7.6	10,510	17.3
	10/26/21	2,270	2,768	1,210	197	193	937	270	6,380	19 J	7.4	9,410	17.1
	01/18/22	No sample- sump empty											
	04/07/22	1,900	2,317	954	194	13.4	40	155	3,680	15	7.1	6,940	16.9
	07/17/22	2,410	2,938	1,000	196	14.4	676	201	5,070	42	7.3	8,120	23.1
	10/10/22	2,590	3,158	1,460	329	50.4	1,350	234	6,910	32	7.6	10,290	18.8
	01/24/23	1,680	2,048	707	121	1.3	517	125	3,640	11	7.4	5,870	13.0
	04/03/23	1,760	2,146	824	189	87	575	141		19	7.8	6,880	13.1
	07/24/23	2,320	2,829	1,180	171	106	831	171	5,770	13	7.6	8,920	17.3
	10/29/23	2,500	3,048	1,130	288	111	780	193	5,910	19	7.6	9,070	17.1
	01/28/24	1,660	2,024	625	162	48	403	120	3,310	13	7.4	6,290	13.7
	04/01/24	1,880	2,292	829	198 J	60	506	130	3,800	17	7.8	7,590	15.8

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Inorganics

Location	Date	mg/L									Field Measurements		
		Alkalinity	Bicarbonate	Chloride	Ammonia	Nitrate	Sulfate	TOC	Total	Total	pH	Specific	Temp.
		as CaCO3							Dissolved	Suspended		Conduct.	
									Solids	Solids		(umhos/cm)	(C)
L-3	10/25/12	2,690	3,280	707	382	15	355	190	3,380		7.7	3,980	22.2
	01/07/13	2,090	2,548	380	197	11	134	340	2,610	476	7.3	2,740	17.2
	04/12/13	2,910	3,548	597	324	1 U	16	252	2,330	69	7.1	6,850	19.2
	07/12/13	4,390	5,352	958	557	1 U	13	306	5,080	79	7.7	10,520	24.2
	10/16/13	2,980	3,633	619	340	0.1 T	57	4	3,400	68	7.2	7,410	22.3
	01/14/14	33	40	318	211	0.5 TJ	77	109	2,100	28	7.1	4,400	17.0
	04/21/14	2,420	2,950	443	292	1 U	15	193	2,690	37	7.1	5,920	19.5
	07/16/14	4,370	5,328	934	497	0.8 T	23	289	4,450	22	7.4	10,350	24.8
	10/20/14	4,450	5,426	1,130	370	1 U	44	318	5,160	21	7.2	10,510	22.2
	01/14/15	4,990	6,084	1,350	620	0.1 U	26	396	6,160	14	6.3	11,430	19.6
	04/08/15	5,260	6,413	1,360	580	0.1 U	25	374	6,160	5.5	7.4	12,150	21.3
	07/13/15	5,450	6,645	1,340	410	1.0	25	480	6,380	11	7.5	12,740	24.0
	10/27/15	5,480	6,681	1,500	440	1 UB1	44	390	6,370	7.5	7.7	12,690	20.4
	01/26/16	653	796	187	58	14	49	61	1,080	5 U	7.7	2,900	15.3
	04/04/16	2,970	3,621	893	150	13	248	116	4,080	12	7.7	8,140	19.1
	07/11/16	4,940	6,023	1,550	560	1.9	374	399	6,890	12	7.7	13,090	22.7
	10/10/16	4,350	5,304	1,490	620	48	584	349	6,360	11	7.8	11,860	22.4
	01/23/17	3,770	4,596	1,300	430	33	465	310	6,000	12	7.5	10,520	15.1
	04/09/17	4,300	5,243	1,300	430	17	356	391	6,170	5.5	7.3	11,160	18.5
	07/27/17	3,800	4,633	9,800	560	110	930	390	6,700	5 U	8.0	12,360	21.5
	10/16/17	4,800	5,852	1,600	880	31	340	390	7,200	14	8.0	12,380	20.1
	01/29/18	2,800	3,414	1,000	410	71	350	200	5,200	12	8.0	9,050	18.3
	04/03/18	3,700	4,511	1,200	530	57	460	290	6,200	5.0 T	7.8	10,550	15.6
	07/20/18	3,930	4,792	1,690	642	2.0	529	274	7,160	23	7.5	7,760	21.0
	10/15/18	3,640	4,438	1,700	461	105	607	266 J	7,320	18	8.0	12,030	19.4
	01/15/19	2,880	3,511	1,190	480	97	506	271	5,490	102	7.9	9,060	16.7
	04/02/19	3,700	4,511	1,580	825	90	540	308	6,520	20	7.9	12,120	17.5
	07/09/19	3,860	4,706	1,620	454	109	710	285	7,570	22	7.8	13,300	20.8
	10/27/19	3,540	4,316	1,450	405	101	650	298	6,830	25	6.2	12,320	18.2
	01/21/20	3,160	3,853	1,110	407	52	357	229	5,150	13	7.8	9,730	14.9
	04/14/20	3,970	4,840	1,440	585	29	671	322	6,130	41	7.9	12,230	15.4
	07/13/20	4,090	4,987	1,620	571	42	677	353	7,240	61	7.7	13,240	17.4
	10/14/20	2,380	2,902	1,520	274	145	1,220	221	7,310	29	7.5	11,660	20.0
	01/19/21	1,130	1,378	448	51	25	422	51	2,390	10	7.5	4,260	13.3
	04/12/21	2,230	2,719	879	286	31	732	184	4,690	22	7.5	8,230	14.9
	07/13/21	2,470	3,011	1,260	317	87	678	196	5,540	15	7.4	9,570	19.3
	10/26/21	2,330	2,841	981	263	34	662	210	4,920	27 J	7.5	7,900	15.7
	01/18/22	394	480	162	65	10	303	33	923	5 U	7.1	1,460	12.3
	04/07/22	2,110	2,573	928	241	1 U	161	330	4,030	516	7.6	6,980	15.4
	07/17/22	2,220	2,707	946	242	1.9	780	177	4,780	10	7.6	7,610	16.5
	10/10/22	2,450	2,987	1,500	238	0.4	1,470	210	6,990	13	7.3	10,040	24.8
	01/24/23	2,040	2,487	706	138	0.1	398	138	3,400	19	7.4	5,980	11.4
	04/03/23	2,600	3,170	853	284	19	506	176		15	7.4	7,630	11.2
	07/24/23	2,720	3,316	1,060	191	14	692	173	5,050	11	7.6	8,360	18.3
	10/29/23	3,100	3,780	1,070	325	0.9 T	600	220	5,410	45	7.5	8,740	14.4
	01/28/24	1,330	1,622	460	142	5.7	293	96	2,270	5 U	7.5	4,500	12.1
	04/01/24	2,420	2,950	804	328 J	4.6	508	152	3,820	12	7.9	7,450	13.3

Note: U = Not detected. Method Reporting Limit shown. J = The associated value is an estimate. * = outlier data point, not used in statistical calculations
T = Detected below reporting limit. Value is an estimate. HCO3 calculated from Alkalinity (as CaCO3) divided by 0.8202 as described in USGS WSP 2254a (He:
UB1 = blank corrected to MRL

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Total Metals
ug/l (ppb)

Site	Date		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
S-2	01/27/12	Total	10 U	5 U	14	0.2 U	1 U		2 U	1 U	2 U	1,110	2 U		207
	04/06/12	Total	10 U	2 U	14	0.2 U	1 U		0.6 T	1 U	2 U	1,060	2 U		333
	07/12/12	Total	10 U	5 U	16	0.2 U	1 U		2 U	1 U	2 U	478	2 U		75
	10/25/12	Total	10 U	5 U	29	0.2 U	1 U		1.4 T	1 U	2 U	1,910	2 U		341
	01/07/13	Total	10 U	5 U	26	0.2 U	1 U		2 U	1 U	2.20	2,380	2 U		414
	04/12/13	Total	0.061	5 U	25	0.006 T	0.008 T		0.36	0.604	1.80	2,100	2 U		359
	07/12/13	Total	0.050	0.70	13	0.02 U	0.005 T		0.23	0.258	1.10	509	0.086		111
	10/16/13	Total	0.076	0.90	24	0.006 T	0.02 U		0.15 T	0.299	1.13		0.148		318
	01/14/14	Total	0.038 T	0.40 T	15	0.02 U	0.02 U		0.23	0.247	1.13	1,220	0.135		170
	04/21/14	Total	0.074	0.60	17	0.02 U	0.006 T		0.33	0.342	1.38		0.137		
	07/16/14	Total	0.090	1.07	12	0.008 T	0.009 T		0.20	0.239	1.19	1,420	0.169		77
	10/20/14	Total	0.040 T	0.70	22	0.02 U	0.020 U		0.10	0.110 J	0.56 J	510	0.039 J		106
	01/14/15	Total	0.079	0.40 T	14	0.02 U	0.005 T		0.25 J	0.155	1.40		0.149		
	04/08/15	Total	0.043 T	0.54	14	0.02 U	0.008 T		0.16 T	0.194	1.07	1,200	0.048		260
	07/13/15	Total	0.061	1.39	17	0.01 U	0.020 U		0.06 T	0.100	0.57 J		0.023		
	10/27/15	Total	0.058	0.76	22	0.02 U	0.014 T		0.09 T	0.089 J	0.68	954	0.067 J		223
	01/26/16	Total	0.115	0.46 T	16	0.02 U	0.020 U		0.22	0.212	3.14		0.153		
	04/04/16	Total	0.037 T	0.46 T	11	0.02 U	0.122		0.15 T	0.171	1.90	826	0.228		213
	07/11/16	Total	0.051	1.09	25	0.02 U	0.006 T		0.10 T	0.205	0.52	1,670	0.072		281
	10/10/16	Total	0.026 T	1.00	22	0.02 U	0.005 JT		0.04 T	0.094	0.36	810	0.024		229
	01/23/17	Total	0.052	0.56	17	0.02 U	0.016 T		0.17 T	0.227	2.02	1,400	0.118		228
	04/09/17	Total	0.058	0.44 T	10	0.01 T	0.010 T		0.26 J	0.210	2.59	621	0.078		63
	07/27/17	Total	0.5 U	0.77	10	0.50 U	0.25 U		0.5 U	0.200 T	1.10	760	0.140		130
	10/16/17	Total	0.5 U	0.67	20	0.50 U	0.25 UB1		0.5 U	1.0 UB1	0.79 B	1,000	0.120 B		150
	01/29/18	Total	1 U	0.35	11	0.50 U	0.25 U		0.5 U	0.160 T	1.40	1,200	0.048 T		160
	04/03/18	Total	1 U	0.51	10	0.50 U	0.250 T		0.20 T	0.390 T	1.40	2,200	0.078 T		370
	07/20/18	Total	0.062	0.73	19	0.02 U	0.007 T		0.2 U	0.139	1.00 J	722	0.076		145
	10/15/18	Total	0.036 T	0.77	29	0.02 U	0.011 T		0.05 T	0.100	0.64		0.079		
	01/15/19	Total	0.040 T	0.29 T	13	0.02 U	0.020 U		0.06 T	0.261	1.25	948	0.084 J		158
	04/02/19	Total	0.035 T	0.46 T	13	0.01 T	0.020 U		0.36	0.516	1.81	2,180	0.267		368
	07/09/19	Total	0.035 T	0.70	12	0.02 U	0.020 U		0.09 T	0.094	0.34	900	0.021		40
	10/27/19	Total	0.033 T	0.49 T	21	0.02 U	0.011 T		0.11 T	0.131	0.51	1,440	0.060		229
	01/20/20	Total	0.042 T	0.41 T	18	0.01 T	0.020 U		0.18 T	0.389	1.62	1,790	0.129		248
	04/14/20	Total	0.041 T	0.36 T	14	0.02 U	0.020 U		0.11 T	0.138	1.03	836	0.023 J		191
	07/13/20	Total	0.035 T	0.42 T	11	0.02 U	0.009 T		0.20 U	0.092	0.65	264	0.018 T		34
	10/14/20	Total	0.038 T	0.54	24	0.02 U	0.020 U		0.06 T	0.095	0.39	1,090	0.047		52
	01/19/21	Total	0.032 T	0.38 T	16	0.02 U	0.020 U		0.11 T	0.131	0.95 J	1,480	0.046		215
	04/12/21	Total	0.034 T	0.65	47	0.02 U	0.020 U		0.13 T	0.322	0.91 J	2,120	0.082		239
	07/13/21	Total	0.059	0.79 J	22	0.01 T	0.020 U		0.15 JT	0.140	0.93 J	698	0.122		59
	10/26/21	Total	0.036 T	0.57	23	0.02 U	0.020 U		0.13 T	0.162	0.73	1,660 J	0.066		179
	01/18/22	Total	0.052	0.38 T	16	0.02 U	0.020 U		0.14 T	0.231	1.54	1,630	0.091		193
	04/07/22	Total	0.034 T	0.39 T	14	0.02 U	0.020 U		0.19 T	0.204	1.13	1,270	0.076		248
	07/18/22	Total	0.026 T	0.52	9	0.02 U	0.020 U		0.25	0.094	0.64	446 J	0.064		24
	10/10/22	Total	0.056	0.78	30	0.02 U	0.037 J		0.11 T	0.086	0.69	2,510	0.045 J		182
	01/24/23	Total	0.030 T	0.37 T	16	0.01 T	0.020 U		1.44	0.177	1.60 J	1,770	0.059		193
	04/03/23	Total	0.074	0.36 T	15	0.02 U	0.020 U		0.24	0.184	1.17	1,400 J	0.115		232
	07/24/23	Total	0.053	0.66	21	0.02 U	0.020 U		0.22 J	0.089	0.65	598 J	0.032		76
	10/29/23	Total	0.056	0.84	28	0.02 T	0.020		0.11 J	0.076	0.56	3,990	0.043 J		161
	01/28/24	Total	0.041 T	0.29 T	13	0.02 U	0.020 U		0.46	0.133	1.15	1,610	0.048		180
	04/01/24	Total	0.040 T	0.31 T	16	0.02 U	0.020 U		0.17 T	0.200	0.98	998	0.031		235

**Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data**

Total Metals

ug/l (ppb)

Site	Date		Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
S-2	01/27/12	Total	2 U		5 U	2 U		5 U	1.1 T	1.1 T
	04/06/12	Total	2 U		4 U	1 U		1 U	1.1 T	1.7 T
	07/12/12	Total	20 U		5 U	2 U		5 U	2.0 U	1.2 T
	10/25/12	Total	2.6		1.0 T	2 U		5 U	2.4	2.6
	01/07/13	Total	2 U		5 U	2 U		5 U	1.5 T	5.9
	04/12/13	Total	1.0		0.4 T	0.02 U		2.5 U	1.5	3.0
	07/12/13	Total	0.9		1 U	0.02 U		0.02 U	1.9	1.1
	10/16/13	Total	0.9		1 U	0.02 U		0.02 U	1.1	1.9
	01/14/14	Total	0.8 J		1 U	0.02 U		0.02 U	1.1	1.5
	04/21/14	Total	0.9		1 U	0.005 T		0.02 U	0.8	2.9
	07/16/14	Total	0.9		1 U	0.02 U		0.02 U	2.2	4.5
	10/20/14	Total	0.6		1 U	0.02 U		0.02 U	0.6 J	0.6 J
	01/14/15	Total	0.7		3 U	0.02 U		0.02 U	0.8	1.9
	04/08/15	Total	0.7		1 U	0.02 U		0.02 U	0.7	0.8
	07/13/15	Total	0.4		1 U	0.02 U		0.02 U	1.6	0.5
	10/27/15	Total	0.4		1 U	0.02 U		0.02 U	0.8	2.7 J
	01/26/16	Total	1.0		1 U	0.02 U		0.02 U	1.0	4.5 J
	04/04/16	Total	0.9		1 U	0.006 T		0.02 U	0.4	7.2
	07/11/16	Total	0.7		1 U	0.02 U		0.02 U	0.9	2.3
	10/10/16	Total	0.4		1 U	0.03 U		0.02 U	0.5	0.5 UBI
	01/23/17	Total	0.9		1 U	0.003 T		0.003 T	0.7	3.4
	04/09/17	Total	0.8		1 U	0.003 T		0.005 T	0.8	1.2 T
	07/27/17	Total	1.0 T		0.3 T	0.25 U		1 U	1.0 T	3.9
	10/16/17	Total	1.0		1 UBI	0.25 U		1 U	0.4 T	1.5 U
	01/29/18	Total	0.9		1 U	0.2 U		0.36 U	0.5 T	1.1
	04/03/18	Total	1.2		1 U	0.2 U		0.36 U	0.7 T	1.5
	07/20/18	Total	0.6		1 U	0.02 U		0.02 U	0.8	2.5
	10/15/18	Total	0.4		1 U	0.02 U		0.02 U	0.5	2.3
	01/15/19	Total	0.5		1 U	0.02 U		0.02 U	0.9	1.0 T
	04/02/19	Total	0.9		1 U	0.02 U		0.01 T	1.9	3.0
	07/09/19	Total	0.4		1 U	0.02 U		0.02 U	0.5	1.0 T
	10/27/19	Total	0.3		1 U	0.02 U		0.02	0.5	1.1 T
	01/20/20	Total	0.8		1 U	0.02 U		0.02 U	1.2	1.4 T
	04/14/20	Total	0.6		1 U	0.02 U		0.02 U	0.4	0.8 T
	07/13/20	Total	0.3		1 U	0.02 U		0.02 U	0.4	2.0 U
	10/14/20	Total	0.4		1 U	0.02 U		0.02 U	0.5	1.4 T
	01/19/21	Total	0.4		1 U	0.02 U		0.02 U	0.5	2.0 B1
	04/12/21	Total	0.7		1 U	0.02 U		0.02 U	0.7	1.6 T
	07/13/21	Total	0.6 J		1 U	0.02 U		0.02 U	0.8 J	1.9 JT
	10/26/21	Total	0.5		1 U	0.02 U		0.02 U	0.6	1.9 T
	01/18/22	Total	0.6		1 U	0.02 U		0.02 U	0.8	2.1
	04/07/22	Total	0.6		1 U	0.02 U		0.02 U	0.7	2.6
	07/18/22	Total	0.4		1 U	0.02 U		0.02 U	0.7	0.6 T
	10/10/22	Total	0.9		1 U	0.02 U		0.02 U	0.5	1.6 T
	01/24/23	Total	0.6		1 U	0.02 U		0.02 U	0.7	2.4 J
	04/03/23	Total	0.7		1 U	0.02 U		0.01 T	0.5	1.5 T
	07/24/23	Total	0.5		1 U	0.02 U		0.02 U	0.4	2.1
	10/29/23	Total	0.4		1 U	0.02 T		0.02 U	0.8	1.2
	01/28/24	Total	0.7 J		1 U	0.02 U		0.02 U	0.5	1.8 T
	04/01/24	Total	0.6		1 U	0.02 U		0.02 U	0.3	1.0 T

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Total Metals
ug/l (ppb)

Site	Date		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
Runoff Discharge	01/27/12	Total	10 U	1.3 T	37	0.2 U	1 U		1.3 T	1.4	62.7	1,530	1.1 T		382
	04/06/12	Total	2.1 T	2.6 T	21	0.2 U	1 U		1.9 T	0.9 T	22.9	1,170	2 U		375
	07/12/12	Total	10 U	3.7 T	47	0.2 U	1 U		1.0 T	6.0	10.7	6,040	2 U		5,380
	10/25/12	Total	10 U	2.4 T	40	0.2 U	1 U		1.1 T	1.1	31.6	3,930	2 U		549
	01/07/13	Total	10 U	1.3 T	31	0.2 U	1 U		0.8 T	1.1	42.3	1,620	2 U		480
	04/12/13	Total	0.44	2.7 T	53	0.033	0.12		2.3	3.79	65.2	4,920	2.40		1,520
	07/12/13	Total	0.22	2.3	44	0.013 T	0.07		1.2	5.10	8.19	3,380	0.90		4,090
	10/16/13	Total	0.38	1.5	34	0.008 T	0.05		0.56	1.85	36.7		0.63		985
	01/14/14	Total	0.33	1.0	26	0.020 T	0.03		0.52	1.00	36.0	994	0.38		341 J
	04/21/14	Total	0.34	1.4	30	0.017 T	0.07		0.53	1.97	40.0		0.55		
	07/16/14	Total	0.27	2.1	38	0.015 T	0.05		0.66	4.80	9.35	4,160	0.68		4,520
	10/20/14	Total	0.28	1.8	30	0.009 T	0.02 T		0.61 J	1.80 J	17.3 J	2,900	0.54 J		814
	01/14/15	Total	0.38	1.1	28	0.011 T	0.05		0.56 J	0.904	40.9		0.41		
	04/08/15	Total	0.39	1.6	32	0.019 T	0.10		0.92	2.05	48.1 J	2,380	2.95		511
	07/13/15	Total	0.23	2.1	26	0.014 T	0.05		0.61	2.59	6.96		0.46		
	10/27/15	Total	0.24	2.3	30	0.013 T	0.07		0.51	1.48 J	10.4	4,610	0.98 J		1,080
	01/26/16	Total	0.53	1.2	24	0.008 T	0.07		0.42	0.645	41.7		0.35		
	04/04/16	Total	0.35	2.1	30	0.019 T	0.21		0.62	2.04	38.4	2,840	1.82		1,470
	07/11/16	Total	0.22	2.1	37	0.011 T	0.05		0.54	3.63	9.30	3,940	0.49		4,580
	10/10/16	Total	0.37	1.9	27	0.019 T	0.06		0.66	1.13	31.7	4,050	1.03		450
	01/23/17	Total	0.29	1.4	20	0.015 T	0.04		0.34	0.742	30.7	1,630	0.29		437
	04/09/17	Total	0.15	0.6	26	0.010 T	0.02		0.46	1.03	15.0	889	0.15		232
	07/27/17	Total	0.5 U	3.6	68	0.5 U	0.03 T		0.68	6.00	4.6	7,300	0.59		8,400
	10/16/17	Total	0.5 U	2.1	40	0.5 U	0.25 UB1		0.50 UB1	1.60 B	11.0	5,400	0.66 B		1,400
	01/29/18	Total	0.38 T	1.0	19	0.5 U	0.03 T		0.51	0.710 T	29.0	830	0.29		250
	04/03/18	Total	0.32 T	1.3	19	0.5 U	0.25 UB1		0.42 T	0.99 T	30.0	1,500	0.53		420
	07/20/18	Total	0.13	4.7	107	0.011 T	0.02		0.38	4.65	3.44 J	11,900	0.28		5,280
	10/15/18	Total	0.09	1.7	64	0.006 T	0.03		0.25	1.61	3.34		0.28		
	01/15/19	Total	0.36	1.0	21	0.012 T	0.04 J		0.29	0.63	36.0	1,350	0.29 J		207
	04/02/19	Total	0.30	0.7	22	0.008 T	0.05		0.34	0.78	29.6	1,210	0.22		325
	07/09/19	Total	0.16	1.3	30	0.020 U	0.03		0.46	1.77	8.6	2,530	0.28		1,530
	10/27/19	Total	0.26	0.8	19	0.020 U	0.02 T		0.28	0.47	22.7	1,170	0.25		222
	01/20/20	Total	0.40	1.2	24	0.017 T	0.03		0.53	0.65	29.7	1,460	0.84		252
	04/14/20	Total	0.30	1.2	17	0.005 T	0.02		0.30	0.63	28.2	1,540	0.19 J		366
	07/13/20	Total	0.15	1.0	27	0.009 T	0.03		0.32	1.55	11.9	2,360	0.25 J		1,270
	10/14/20	Total	0.35	1.7	30	0.014 T	0.06		0.71	0.87	23.5	2,810	1.34		346
	01/19/21	Total	0.39	0.9	16	0.009 T	0.03		0.36	0.41	29.3 J	674	0.34		110
	04/12/21	Total	0.29	0.9	17	0.009 T	0.03		0.34	0.79	28.5 J	1,400	0.40		252
	07/13/21	Total	0.25	1.4 J	25	0.006 T	0.03		0.34 J	1.43	12.1 J	2,380	0.59		949
	10/26/21	Total	0.40	1.4	28	0.017 T	0.07		0.50	0.83	29.1	2,120 J	1.75		410
	01/18/22	Total	0.37	0.9	15	0.010 T	0.04		0.30	0.49	30.0	630	0.30		118
	04/07/22	Total	0.33	1.0	14	0.009 T	0.03		0.40	0.74	31.3	1,080	0.36		201
	07/18/22	Total	0.25	1.3	25	0.012 T	0.05		1.68	1.52	17.0	2,340 J	0.95		830
	10/10/22	Total	0.23	5.2	54	0.029	0.09 J		1.08	2.69	12.3	11,700	2.81 J		2,650
	01/24/23	Total	0.31	0.8	21	0.009 T	0.04		0.27	0.56	28.2 J	526	0.27		108
	04/03/23	Total	0.27	0.9	17	0.016 T	0.03		0.55	0.70	29.5	798 J	0.48		132
	07/24/23	Total	0.21	2.7	38	0.008 T	0.05		0.40 J	5.65	4.7	3,210 J	0.37		5,780
	10/29/23	Total	0.22	0.8	22	0.009 T	0.03		0.33 J	0.41	15.3	1,460	0.60 J		140
	01/28/24	Total	0.42	1.1	13	0.010 T	0.03 J		0.44	0.40	29.3	667	0.38		78
	04/01/24	Total	0.29	1.4	18	0.012 T	0.05		0.39	0.68	31.2	1,660	0.47		319

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data

Total Metals

ug/l (ppb)

Site	Date		Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Runoff Discharge	01/27/12	Total	7.5		5 U	2 U		5 U	5.5	20
	04/06/12	Total	5.0		4 U	2 U		1.4 T	3.6	8
	07/12/12	Total	13.5 T		5 U	2 U		5 U	7.9	9
	10/25/12	Total	11.3		5 U	2 U		5 U	4.1	8
	01/07/13	Total	5.8		5 U	2 U		5 UB1	4.2	15
	04/12/13	Total	13.3		1.1 T	0.186		2.5 U	6.1	30
	07/12/13	Total	11.7		1 U	0.024		0.025	3.9	10
	10/16/13	Total	7.4		0.6 T	0.159		0.028	3.2	11
	01/14/14	Total	5.1 J		1.0 U	0.061		0.018 T	2.9	10
	04/21/14	Total	9.9		0.4 T	0.096		0.034	3.2	16
	07/16/14	Total	10.2 T		0.5 T	0.015		0.035	3.6	10
	10/20/14	Total	6.7		0.4 T	0.024		0.014 T	3.0 J	6 J
	01/14/15	Total	5.3		0.3 T	0.041		0.024	2.6	12
	04/08/15	Total	8.8		1 U	0.067		0.030	3.7	20
	07/13/15	Total	7.9		1 U	0.012 T		0.014 T	2.4	6
	10/27/15	Total	3.6		1 U	0.012 T		0.009 T	3.3	13 J
	01/26/16	Total	4.9		1 U	0.053		0.017 T	3.1	16 J
	04/04/16	Total	7.3		1 U	0.079		0.019 T	3.0	20
	07/11/16	Total	8.6		1 U	0.012 T		0.033	2.8	9
	10/10/16	Total	4.3		1 U	0.069 T		0.021	4.3	12
	01/23/17	Total	4.1		1 U	0.029		0.022	2.3	9
	04/09/17	Total	4.4		1 U	0.011 T		0.016 T	0.8	5
	07/27/17	Total	7.7		1 T	0.25 U		1 U	4.0	6
	10/16/17	Total	4.5		1 UB1	0.25 U		1 U	3.0 UB1	7 U
	01/29/18	Total	4.3		1 U	0.2 U		0.36 U	2.8	8
	04/03/18	Total	4.8		1 U	0.2 U		0.36 U	2.7	8
	07/20/18	Total	3.8		0.3 T	0.02 U		0.01 T	3.1	3
	10/15/18	Total	2.1		1 U	0.02 U		0.02 T	1.4	7
	01/15/19	Total	3.8		1 U	0.027		0.02 J	2.7	11
	04/02/19	Total	4.3		1 U	0.022		0.03 J	2.1	9
	07/09/19	Total	4.6		1 U	0.02 U		0.02 J	1.7	5
	10/27/19	Total	2.7		1 U	0.011 T		0.01 T	2.1	5
	01/20/20	Total	3.3		1 U	0.040		0.02 T	3.3	12
	04/14/20	Total	4.2		1 U	0.020 T		0.02 T	2.1	6
	07/13/20	Total	5.4		0.2 T	0.010 T		0.02	1.5	6
	10/14/20	Total	3.2		1 U	0.041		0.02	4.0	13
	01/19/21	Total	3.0		6.9	1.000 U		0.03	0.02 T	3
	04/12/21	Total	4.2		1 U	0.035		0.02 T	2.5	8
	07/13/21	Total	5.9 J		0.2 T	0.020 U		0.02 T	2.4 J	7 J
	10/26/21	Total	3.2		1 U	0.048		0.02	4.1	15
	01/18/22	Total	3.1		1 U	0.035		0.02	3.0	15
	04/07/22	Total	3.7		1 U	0.038		0.02	2.9	8
	07/18/22	Total	6.5		1 U	0.015 T		0.02	2.4	9
	10/10/22	Total	4.8		1 U	0.046		0.03 J	6.3	15
	01/24/23	Total	4.1		1 U	0.021		0.03	2.7	11 J
	04/03/23	Total	4.0		1 U	0.035		0.04	2.8	8 J
	07/24/23	Total	5.4		1 U	0.009 T		0.03	1.7	5
	10/29/23	Total	2.4		1 U	0.013 T		0.02 U	2.1	6
	01/28/24	Total	3.0 J		1 U	0.054		0.02 T	3.2	10
	04/01/24	Total	4.4		1 U	0.045		0.03	2.8	9

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Total Metals
ug/l (ppb)

Site	Date		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
L-1	01/27/12	Total	10 U	6.1	156	0.2 U	0.5 U	75,800	0.6 T	1.3	6.2	39,100	0.7 T	22,100	2,310
	04/06/12	Total	2.5 T	7.9	139	0.2 U	0.5 U	72,300	0.9 T	1.0	5.4	38,700	2 U	20,600	2,340
	07/12/12	Total	10 U	11	184	0.2 U	0.5 U	89,400	1.4 T	0.6 T	3.3	51,100	2 U	28,900	3,530
	10/25/12	Total	10 U	2.8 T	108	0.2 U	0.5 U	66,000	2.9	4.9	16.8	8,820	0.7 T	21,400	1,550
	01/07/13	Total	10 U	5.3	137	0.2 U	0.6	68,200	1.3 T	1.40	5.8	35,000	2 U	20,400	2,220
	04/12/13	Total	1.19	8.6	182	0.017 T	0.017 T	81,600	1.2	1.83	4.5	48,100	2 U	23,100	2,610
	07/12/13	Total	0.98	10.0	186	0.025	0.027	86,000	2.1	2.62	4.4	57,300	0.970	27,200	3,480
	10/16/13	Total	0.13	7.0	173	0.012 T	0.011 T	84,100	1.1	1.63	5.3	46,600	0.410	23,800	2,900
	01/14/14	Total	0.16	4.6	138	0.017 T	0.028	70,400	1.0	1.33	7.8	34,300	0.236	20,600	1,990
	04/21/14	Total	0.76	6.8	149	0.016 T	0.011 T	76,700	0.92	1.45	5.3	43,600	0.306	21,600	2,520
	07/16/14	Total	1.48	5.2	159	0.014 T	0.023	73,500	1.2	1.74	7.7	40,400	0.359	20,400	2,000
	10/20/14	Total	8.74	25.6	345	0.071	0.067	109,000	19.1 J	6.73 J	8.7 J	60,000	1.50 J	42,900	2,810
	01/14/15	Total	0.18	1.5	114	0.016 T	0.026	70,500	2.1	2.25	15.4	19,300	0.513	17,100	1,120
	04/08/15	Total	0.29	4.2	178	0.017 T	0.028	77,100	1.4	2.41	10.1	49,200	0.378	19,300	1,770
	07/13/15	Total	7.90	6.2	121	0.020 U	0.018 T	76,000	0.59	1.39	6.83	10,900	0.028	20,300	1,640
	10/27/15	Total	1.23	2.7	72	0.034	0.024	26,400	6.2	2.25 J	22.2	3,700	0.316 J	9,860	276
	01/26/16	Total	0.61	1.5	69	0.013 T	0.063	47,200	0.64	4.77	20.8	8,850	0.245	11,900	1,400
	04/04/16	Total	0.40	4.2	169	0.023	0.030	73,800	1.1	2.34	6.9	36,600	0.425	19,100	1,800
	07/11/16	Total	0.97	2.1	174	0.009 T	0.017 T	64,600	0.84	1.18	8.5	30,800	0.190	14,700	1,090
	10/10/16	Total	0.45	0.9	29	0.051	0.030	16,300	1.0	0.57	20.7	3,800	0.319	4,930	144
	01/23/17	Total	0.13	2.3	123	0.015 T	0.011 T	66,300	1.0	2.60	5.2	27,900	0.582	15,300	1,300
	04/09/17	Total	0.18	0.8	56	0.008 T	0.056	42,600	0.7	1.92	14.9	7,890	0.584	9,700	781
	07/27/17	Total	1.40	5.9	190	0.5 U	0.25 U	81,000	1.1	1.10	3.8	38,000	0.140	19,000	1,900
	10/16/17	Total	1.70	3.4	55	0.5 U	0.25 UB1	35,000	0.5 UB1	0.37 T, B	14.0	7,300	0.110 B	9,000	200
	01/29/18	Total	0.92 T	2.9	73	0.5 U	0.026 T	54,000	0.8	2.10	9.6	12,000	0.480	11,000	750
	04/03/18	Total	1.00 U	6.7	150	0.5 U	0.250 T	67,000	1.0	1.10	3.6	42,000	0.270	17,000	2,300
	07/20/18	Total	1.50	3.0	193	0.02 U	0.02 U	71,900	0.8	0.75	2.5 J	32,300	0.096	16,100	1,330
	10/15/18	Total	0.24 T	2.1 T	197	0.20 U	0.20 U	78,200	0.8 T	0.73	2.6 J	37,600	0.370 J	18,900	1,860
	01/15/19	Total	0.60	1.4	64	0.01 T	0.07 J	51,000	0.5	2.59	19.5	1,370	0.103 J	13,900	947
	04/02/19	Total	0.24	3.9	176	0.01 T	0.02 U	76,000	1.0	0.65	4.4	37,800	0.127	18,700	1,590
	07/09/19	Total	0.90	4.6	277	0.01 T	0.01 T	75,500	1.3	0.76	5.0	58,500	0.324	16,600	1,340
	10/27/19	Total	0.25	1.1	138	0.02 U	0.02 U	49,500	0.6	0.27	8.6	23,400	0.136	12,400	508
	01/21/20	Total	0.18	4.6	171	0.01 T	0.02 T	75,500	1.0	0.93	5.2	35,700	0.416	19,600	1,560
	04/14/20	Total	0.29	4.9	163	0.02 T	0.02 U	70,800	1.0	0.77	4.1	40,000	0.209 J	18,200	1,870
	07/13/20	Total	0.60	4.0	225	0.01 T	0.02 T	75,700	1.2	0.76	2.8	48,900	0.201 J	19,400	1,810
	10/14/20	Total	0.50	1.3	41	0.01 T	0.01 T	28,400	0.2	0.14	15.3	1,250	0.112	8,500	28
	01/19/21	Total	0.13	3.3	151	0.01 T	0.02 T	72,600	0.9	2.02	6.0 J	27,800	0.401	17,600	1,390
	04/12/21	Total	0.14	3.3	153	0.01 T	0.02 U	64,600	1.0	0.61	6.6 J	35,100	0.187	16,000	1,490
	07/13/21	Total	0.68	3.0 J	232	0.02 U	0.02 U	78,700	1.0 J	0.65	1.9 J	49,900	0.227	16,100	1,550
	10/26/21	Total	0.25 U	2.5 U	148	0.10 U	0.10 U	50,700	0.6 T	0.32	8.6	28,500 J	0.180	11,600	619
	01/18/22	Total	0.14	5.6	160	0.02 T	0.03	79,000	0.9	1.15	5.4	33,800	0.293	20,400	1,710
	04/07/22	Total	0.16	2.7	121	0.01 T	0.01 T	59,800	0.9	0.47	7.6	29,400	0.278	13,800	1,220
	07/18/22	Total	0.30	5.4	157	0.01 T	0.02 U	67,100	1.1	0.70	2.9	44,100 J	0.216	18,000	1,920
	10/10/22	Total	1.83	6.6	161	0.02 U	0.02 U	75,800	1.7	1.52	6.1	28,800	0.081 J	13,300	991
	01/24/23	Total	0.13	3.0	137	0.01 T	0.01 T	67,600	0.9	0.64	5.0 J	31,600	0.217	14,800	1,260
	04/03/23	Total	0.15	2.1	120	0.01 T	0.02 U		0.9	0.48	5.6	30,800 J	0.394		1,100
	07/24/23	Total	0.32	4.0	209	0.01 T	0.02 U	74,500	1.2 J	0.64	3.2	55,500 J	0.234	16,400	1,570
	10/29/23	Total	0.11	0.7	197	0.01 T	0.02 U	61,300	0.8 J	0.36	4.5	39,200	0.165 J	13,900	905
	01/28/24	Total	0.16	2.3	111	0.01 T	0.01 JT	54,500	1.0	0.65	7.7	28,100	0.384	11,800	977
	04/01/24	Total	0.12	5.1	134	0.02 T	0.01 T	61,200	0.9	0.66	5.1	32,400	0.296	15,400	1,700

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Total Metals
ug/l (ppb)

Site	Date		Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
L-1	01/27/12	Total	2 U	20,900	5 U	2 U	30,600	5 U	4.00	5.8
	04/06/12	Total	0.7 T	19,800	4 U	2 U	33,100	0.9 T	4.50	6.3
	07/12/12	Total	20 U	25,900	5 U	2 U	48,500	5 U	7.40	3.2
	10/25/12	Total	14	25,900	0.4 T	2 U	87,700	5 U	4.40	11.4
	01/07/13	Total	1.1 T	17,100	5 U	2 U	29,200	5 UB1	5.90	5.9
	04/12/13	Total	2.5	23,500	0.6 T	0.02 U	33,800	2.5 U	2.52	4.0
	07/12/13	Total	4.4	24,600	1 U	0.015 T	43,900	0.006 T	4.25	10.3
	10/16/13	Total	2.9	23,400	0.8 T	0.02 U	35,000	0.02 U	1.99	8.6
	01/14/14	Total	2.7 J	22,700	1 U	0.009 T	24,400	0.02 U	2.05	6.3
	04/21/14	Total	2.8	22,200	0.3 T	0.02 UB1	31,900	0.02 U	2.06	3.9
	07/16/14	Total	3.9	28,300	0.4 T	0.02 U	28,500	0.007 T	2.73	4.0
	10/20/14	Total	24.0	129,000	1.7 T	0.030 T	299,000	0.04 U	15.5 J	17.6 J
	01/14/15	Total	3.8	19,100	0.2 T	0.008 T	21,600	0.012 T	1.40	10.5
	04/08/15	Total	3.0	22,700	1 U	0.007 T	29,100	0.004 T	2.44	4.0
	07/13/15	Total	9.0	24,400	1 U	0.02 U	28,900	0.02 U	0.57	4.8
	10/27/15	Total	10.2	39,500	1 U	0.038	72,200	0.005 T	6.34	8.6 J
	01/26/16	Total	4.8	15,400	1 U	0.016 T	13,000	0.011 T	1.90	10.9 J
	04/04/16	Total	2.8	21,400	1 U	0.011 T	32,600	0.02 U	2.03	5.2
	07/11/16	Total	3.2	23,600	1 U	0.009 T	20,000	0.006 T	1.22	5.0
	10/10/16	Total	4.9	10,900	1 U	0.076	4,080	0.013 T	3.68	11.3
	01/23/17	Total	2.8	16,100	1 T	0.008 T	20,900	0.007 T	1.29	5.8
	04/09/17	Total	3.9	10,600	1 U	0.011 T	9,170	0.020	1.26	9.9
	07/27/17	Total	4.5	22,000	1 T	0.25 U	30,000	1 U	1.90	3.0
	10/16/17	Total	6.1	14,000	1 UB1	0.25 U	7,000	1 U	1.30 B	4.7
	01/29/18	Total	3.8	13,000	1 U	0.2 U	12,000	0.36 U	1.50	7.4
	04/03/18	Total	3.3	16,000	1 U	0.2 U	27,000	0.36 U	1.80	2.0
	07/20/18	Total	4.3	21,300	1 U	0.02 U	22,600	0.02 U	0.70	2.6
	10/15/18	Total	14.3 J	23,300	10 U	0.20 U	25,200	0.20 U	0.50 T	45.0 J
	01/15/19	Total	3.9	13,800	1 U	0.015 T	10,400	0.03 J,B	1.20	6.2
	04/02/19	Total	1.7	19,400	1 U	0.02 U	26,700	0.01 T	1.51	1.9 T
	07/09/19	Total	3.5	21,700	1 U	0.02 U	22,100	0.02 U	1.69	11.5 T
	10/27/19	Total	5.2	18,700	1 U	0.02 U	10,700	0.02 U	1.05	3.5 T
	01/21/20	Total	3.2	17,900	1 U	0.02 U	24,800	0.02 U	1.36	16.5
	04/14/20	Total	1.7	18,100	1 U	0.02 U	25,500	0.02 U	2.01	2.1
	07/13/20	Total	1.7	20,000	0.6 T	0.02 U	27,100	0.02 U	1.65	1.8 T
	10/14/20	Total	2.6	12,400	0.2 T	0.01 T	3,930	0.01 T	1.66	7.3
	01/19/21	Total	2.8	16,700	1 U	0.02 U	24,600	0.02 U	1.23	10.7
	04/12/21	Total	1.9	16,800	1 U	0.02 U	21,900	0.02 U	1.53	3.9
	07/13/21	Total	2.2 J	18,800	1 U	0.02 U	21,100	0.02 U	0.92 J	2.8 J
	10/26/21	Total	2.3	14,400	5 U	0.10 U	8,780	0.10 U	1.20	7.0 T
	01/18/22	Total	2.6	17,600	1 U	0.02 U	28,600	0.02 U	1.61	10.4
	04/07/22	Total	1.8	13,800	1 U	0.02 U	15,800	0.02 U	1.61	3.4
	07/18/22	Total	1.7	16,200	1 U	0.02 U	23,300	0.02 U	1.85	3.2
	10/10/22	Total	10.2	23,100	1 U	0.02 U	47,800	0.02 U	1.39	3.3
	01/24/23	Total	1.9	13,900	1 U	0.02 U	18,700	0.02 U	1.39	3.9 J
	04/03/23	Total	1.7		1 U	0.02 U		0.01 T	1.32	3.4 U
	07/24/23	Total	2.4	16,300	1 U	0.02 U	21,500	0.02 U	1.32	6.0
	10/29/23	Total	3.4	16,100	1 U	0.02 U	14,100	0.02 U	0.96	6.9
	01/28/24	Total	1.8 J	10,500	1 U	0.01 T	14,800	0.02 U	1.60	5.0
	04/01/24	Total	2.1	13,000	1 U	0.02 U	23,100	0.02 U	1.54	2.7

Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data
Total Metals
ug/l (ppb)

Site	Date		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
L-2	01/27/12	Total	10 U	15	417	0.2 U	1 U	131,000	36	9.1	13.5	11,300	2.50	50,200	1,590
	04/06/12	Total	7.20 T	25	346	0.2	1 U	149,000	37	9.2	19.6	12,100	7.50	52,700	2,020
	07/12/12	Total	2.00 T	32	696	0.2 U	1 U	132,000	93	16.8	3.8	8,690	2 U	91,400	1,090
	10/25/12	Total	4.00 T	24	500	0.2 U	1 U	160,000	60	15.3	19.1	8,170	8.40	77,200	1,050
	01/07/13	Total	3.90 T	22	408	0.2 U	1 U	167,000	44	13.1	33.2	12,200	18.8	62,300	1,520
	04/12/13	Total	2.93	19	548	0.06	0.09	151,000	58	14.2	10.4	7,670	1.50 T	63,000	1,690
	07/12/13	Total	2.70	43	703	0.07 T	0.13	129,000	95	20.6	4.5	12,200	1.31	81,000	1,180
	10/16/13	Total	2.36	30	582	0.07	0.10	122,000	52	14.2	6.7	9,220	1.16	62,100	1,100
	01/14/14	Total	1.83	16	321	0.03	0.12	113,000	28	9.3	17.5	6,730	1.88	44,700	1,090
	04/21/14	Total	1.96	25	425	0.04	0.11	100,000	45	11.9	9.7	10,300	1.53	57,600	1,230
	07/16/14	Total	2.57	38	655	0.13	0.12	139,000	87	19.4	4.0	10,400	1.57	81,900	1,080
	10/20/14	Total	4.86	71	830	0.17	0.16	148,000	98 J	22.6 J	4.2 J	10,300	1.59 J	91,500	1,160
	01/14/15	Total	2.70	40	880	0.09	0.14	166,000	94	20.4	3.1	9,880	1.21	91,700	1,140
	04/08/15	Total	2.30	41	1,040	0.10	0.11	150,000	120	28.5	2.9	8,960	1.25	100,000	1,030
	07/13/15	Total	4.22	45	1,110	0.08 T	0.11	157,000	160	30.6	3.6	7,310	1.34	108,000	1,040
	10/27/15	Total	6.36	56	1,170	0.07 T	0.18	150,000	151	32.8 J	5.3	7,010	1.31 J	104,000	1,040
	01/26/16	Total	4.01	36	596	0.06 T	0.21	163,000	93	26.5	9.4	5,050	1.15	96,500	1,480
	04/04/16	Total	4.37	39	695	0.05 T	0.27	144,000	112	35.5	10.7	5,120	0.92	93,800	1,500
	07/11/16	Total	5.37	50	821	0.06 T	0.22	160,000	139	42.3	8.8	6,240	1.13	108,000	1,560
	10/10/16	Total	4.72	46	725	0.08 T	0.26	152,000	112	35.6	16.6	5,060	1.27	107,000	1,270
	01/23/17	Total	4.27	46	630	0.11 T	0.42	137,000	96	34.5	14	5,330	1.21	99,600	1,380
	04/09/17	Total	2.53	31	534	0.05 T	0.29	157,000	70	28.4	8.6	4,200	0.68	87,400	1,670
	07/27/17	Total	4.50 T	45	690	5 U	0.57 T	160,000	91	37.0	41	5,100	0.99 T	98,000	1,900
	10/16/17	Total	4.10	48	550	1 U	0.42 B	160,000	77	31.0	31	4,600	0.99 B	110,000	1,600
	01/29/18	Total	0.72 T	6.2	84	0.5 U	0.08 T	170,000	12	5.8	5.3	610	0.13	84,000	310
	04/03/18	Total	3.00	32	550	1 U	0.58 B	190,000	52	29.0	22	3,400	0.63	95,000	1,800
	07/20/18	Total	7.07	40	637	0.07 T	0.67	185,000	83	35.5	11 J	3,410	0.58	116,000	1,840
	10/15/18	Total	6.21	36	601	0.10 T	0.71 J	202,000	78	38.3	13 J	3,250	1.06 J	124,000	2,370
	01/15/19	Total	3.04	25	444	0.10	0.51 J	182,000	52	30.9	12	2,110	0.42 J	90,900	1,920
	04/02/19	Total	4.41	30	502	0.13	0.74	210,000	56	36.6	14	2,490	0.44	109,000	2,340
	07/09/19	Total	5.75	40	716	0.07	0.44	223,000	80	34.5	12	3,080	0.63	124,000	1,920
	10/27/19	Total	6.06	40	599	0.04	0.37	243,000	72	32.0	15	1,930	0.54	120,000	2,140
	01/21/20	Total	2.89	24	375	0.15	0.48	168,000	42	25.3	13	1,640	0.33	84,500	1,870
	04/14/20	Total	4.25	33	487	0.12	0.49	196,000	56	33.3	12	3,680	0.52 J	80,100	2,090
	07/13/20	Total	5.97	40	616	0.05	0.52	185,000	67	40.1	21	4,750	0.84 J	110,000	2,090
	10/14/20	Total	7.28	41	756	0.04 T	0.69	302,000	67	43.4	26	2,230	0.50	140,000	2,800
	01/19/21	Total	2.41	20	336	0.08	0.44	168,000	33	28.8	18 J	1,980	0.28	74,200	1,920
	04/12/21	Total	2.26	26	435	0.07	0.52	197,000	43	35.6	16 J	3,350	0.35	88,200	2,360
	07/13/21	Total	4.39	30 J	460	0.05	0.60	217,000	57 J	40.7	22 J	2,290	0.28	103,000	2,500
	10/26/21	Total	3.19	25	474	0.03 T	0.45	316,000	41	31.1	21	1,980 J	0.28	142,000	2,580
	01/18/22	No sample- Sump empty													
	04/07/22	Total	1.94	26	262	0.02	0.42	168,000	31	33.6	28	4,410	0.56	73,300	2,060
	07/18/22	Total	2.97	30	423	0.08	0.59	215,000	32	36.3	28	12,000 J	1.90	108,000	4,760
	10/10/22	Total	4.57	22	435	0.04	0.42 J	297,000	42	34.1	20	7,000	0.82 J	134,000	4,540
	01/24/23	Total	1.50	12	220	0.03	0.20	166,000	22	16.4	14 J	2,520	0.25	70,500	2,400
	04/03/23	Total	3.24	15	277	0.03	0.29		30	24.0	21	3,830 J	0.25		2,140
	07/24/23	Total	2.54	15	333	0.03	0.30	233,000	36 J	30.5	20	3,130 J	0.24	117,000	3,580
	10/29/23	Total	1.59	17	438	0.03	0.31	247,000	37 J	25.5	11	4,610	0.27 J	132,000	2,800
	01/28/24	Total	1.42	13	285	0.04	0.17 J	136,000	29	17.5	11	3,780	0.24	65,500	1,880
	04/01/24	Total	1.57	14	260	0.03	0.26	163,000	30	20.8	12	3,240	0.25	80,400	1,960

**Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data**

Total Metals

ug/l (ppb)

Site	Date		Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
L-2	01/27/12	Total	31	226,000	5 U	2 U	438,000	5 U	25	31
	04/06/12	Total	31	204,000	4 U	2 U	425,000	5 U	25	114
	07/12/12	Total	67	491,000	5 U	2 U	1,090,000	5 U	55	28
	10/25/12	Total	71	391,000	0.5 T	2 U	843,000	5 U	38	60
	01/07/13	Total	47	244,000	5 U	2 U	494,000	5 UB1	36	113
	04/12/13	Total	54	331,000	1.6 T	0.051	671,000	2.5 U	46	40
	07/12/13	Total	79	472,000	5.4	0.274	1,080,000	0.012 T	72	25
	10/16/13	Total	52	353,000	2 U	0.112	787,000	0.02 U	41	20
	01/14/14	Total	37 J	257,000	2 U	0.123	463,000	0.009 T	23	36
	04/21/14	Total	43	300,000	2.2	0.130	700,000	0.04 U	31	24
	07/16/14	Total	78	485,000	3.4 T	0.1 U	1,150,000	0.1 U	75	57
	10/20/14	Total	92	613,000	5.4	0.126	1,440,000	0.1 U	85 J	28 J
	01/14/15	Total	74	545,000	6 U	0.165	1,290,000	0.1 U	77	18
	04/08/15	Total	106	610,000	4.1 T	0.05 T	1,380,000	0.1 U	103	21
	07/13/15	Total	114	711,000	2.7 T	0.05 T	1,710,000	0.1 U	122	20
	10/27/15	Total	121	762,000	3.4 T	0.11	1,690,000	0.1 U	116	26 J
	01/26/16	Total	97	556,000	5.8	0.08 T	1,370,000	0.1 U	85	37 J
	04/04/16	Total	128	538,000	3.5 T	0.07 T	1,380,000	0.01 U	104	44
	07/11/16	Total	146	670,000	3.6 T	0.12	1,660,000	0.1 U	133	47
	10/10/16	Total	131	693,000	5.1	0.06 T	1,680,000	0.1 U	120	93
	01/23/17	Total	130	629,000	18.0	0.18 T	1,460,000	0.03 T	86	58
	04/09/17	Total	102	478,000	1.8 T	0.18 T	1,180,000	0.01 T	68	44
	07/27/17	Total	140	620,000	4.3 T	2.5 U	1,600,000	10 U	98	96
	10/16/17	Total	120	640,000	1.4 T, B	0.91	1,700,000	2 U	93	44
	01/29/18	Total	21	420,000	1 U	0.072 T	1,100,000	0.4 U	12	11
	04/03/18	Total	94	460,000	0.8 B	0.47	1,200,000	0.7 U	57	59
	07/20/18	Total	144	583,000	5 U	0.1 U	1,570,000	0.1 U	86	67
	10/15/18	Total	154 J	564,000	10 U	0.2 U	1,630,000	0.2 U	80	114 J
	01/15/19	Total	103	433,000	4 U	0.1 U	1,140,000	0.1 B1	55	72
	04/02/19	Total	125	459,000	4 U	0.1 U	1,270,000	0.10	64	111
	07/09/19	Total	135	583,000	0.9 T	0.018 T	1,620,000	0.03	92	63
	10/27/19	Total	133	577,000	0.9 T	0.014 T	1,560,000	0.02	80	53
	01/21/20	Total	87	366,000	0.6 T	0.012 T	920,000	0.04	49	81
	04/14/20	Total	116	414,000	0.7 T	0.019 T	1,120,000	0.06	70	83
	07/13/20	Total	145	569,000	10 U	0.064	1,470,000	0.04	92	62
	10/14/20	Total	164	573,000	3.1 T	0.070 T	1,520,000	0.1 U	83	48
	01/19/21	Total	93	310,000	0.6 T	0.038	874,000	0.05	43	53
	04/12/21	Total	121	406,000	0.6 T	0.041	1,190,000	0.06	64	59
	07/13/21	Total	150 J	475,000	0.8 T	0.036	1,390,000	0.06	73 J	42 J
	10/26/21	Total	123	441,000	5 U	0.100 U	1,200,000	0.10 U	54	32
	01/18/22	No sam								
	04/07/22	Total	116	346,000	0.6 T	0.077	912,000	0.04	46	19
	07/18/22	Total	142	401,000	0.8 T	0.091	1,110,000	0.06	56	32
	10/10/22	Total	164	476,000	1.0 T	0.080	1,560,000	0.04 J	59	30
	01/24/23	Total	67	266,000	0.8 T	0.023	740,000	0.02 T	37	24 J
	04/03/23	Total	98		0.6 T	0.025		0.02	37	27
	07/24/23	Total	123	411,000	0.8 T	0.014 T	1,290,000	0.03	47	34
	10/29/23	Total	109	455,000	0.8 T	0.030	1,340,000	0.02 U	49	26
	01/28/24	Total	77 J	284,000	0.5 T	0.017 T	810,000	0.02 T	41	24
	04/01/24	Total	90	327,000	0.6 T	0.017 T	986,000	0.03	43	33

**Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data**

Total Metals

ug/l (ppb)

Site	Date		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese
L-3	01/07/13	Total	3.1 T	29	491	0.2 U	1.4	200,000	46.0	23	100	28,400	63	69,000	1,870
	04/12/13	Total	1.56	17	778	0.06	0.09	162,000	47.8	16	10	16,300	2.70	69,800	1,820
	07/12/13	Total	1.80	41	852	0.05 T	0.13	120,000	87.4	20	4	14,600	1.75	92,600	997
	10/16/13	Total	1.37	26	713	0.06	0.12	125,000	43.5	14	10	15,300	1.65	67,800	966
	01/14/14	Total	1.47	17	357	0.03	0.15	140,000	24.9	10	24	8,480	2.09	51,700	1,380
	04/21/14	Total	1.24	23	480	0.06 T	0.12	100,000	41.1	13	15	14,100	1.93	58,800	1,240
	07/16/14	Total	1.35	34	739	0.13	0.11	123,000	74.7	18	2.0	11,100	0.88	91,000	908
	10/20/14	Total	1.47	40	1,030	0.16	0.14	137,000	81.3 J	21 J	2.9 J	14,100	1.26 J	93,500	1,050
	01/14/15	Total	1.32	36	1,100	0.09	0.13	142,000	80.9	20	2.0	10,600	0.88	94,700	1,000
	04/08/15	Total	1.62	40	1,070	0.10 T	0.08 T	126,000	109	27	2.1	8,220	1.08	105,000	899
	07/13/15	Total	2.26	39	1,220	0.06 T	0.14	126,000	127	27	2.3 J	8,120	1.02	107,000	883
	10/27/15	Total	3.04	40	1,220	0.04 T	0.1 U	121,000	120	29 J	5.0	6,950	0.96 J	101,000	779
	01/26/16	Total	1.14	63	126	0.01 T	0.06	35,000	10.0	3.6	30	686	0.14	15,300	142
	04/04/16	Total	2.81	35	838	0.05 T	0.20	101,000	93.8	25	13	5,340	0.77	89,700	693
	07/11/16	Total	4.07	49	1,150	0.06 T	0.23	128,000	129	34	8.8	6,780	1.00	109,000	811
	10/10/16	Total	2.96	43	951	0.10 T	0.20	149,000	91.6	33	16	6,780	3.20	116,000	974
	01/23/17	Total	1.65	38	750	0.2 U	0.22	131,000	78.0	27	13	5,010	0.87	105,000	1,270
	04/09/17	Total	2.23	37	793	0.06 T	0.21	125,000	88.9	27	11	5,390	0.93	90,700	1,200
	07/27/17	Total	6.40	47	690	5 U	0.33 T	140,000	98.0	29	33	3,500	0.88 T	110,000	1,000
	10/16/17	Total	5.10	47	660	1 U	0.29 B	120,000	76.0	25	29	2,800	1.00 B	110,000	860
	01/29/18	Total	0.94 T	7.1	90	0.5 U	0.04 T	140,000	14.0	4	6	430	0.12	80,000	150
	04/03/18	Total	3.90	40	730	1 U	0.22 T	150,000	54.0	21	24	4,700	0.74	92,000	1,300
	07/20/18	Total	6.38	50	648	0.04 T	0.18	146,000	89.3	33	13 J	2,700	0.78	111,000	838
	10/15/18	Total	7.85 J	47	595	0.20	0.23 U	140,000 J	82.6	31	17	2,450 J	1.17	116,000 J	642
	01/15/19	Total	4.80	35	419	0.04 T	0.17 J	158,000	57.7	23	15	2,100	0.64 J	88,500	554
	04/02/19	Total	10.20	67	509	0.06 T	0.28	174,000	68.1	29	16	2,360	1.16	106,000	707
	07/09/19	Total	6.93	57	695	0.05	0.20	206,000	72.7	31	14	3,240	0.91	120,000	757
	10/27/19	Total	7.60	59	571	0.04	0.26	182,000	76.0	33	16	2,160	0.77	104,000	498
	01/21/20	Total	3.65	42	553	0.05	0.15	119,000	56.6	21	12	2,610	0.67	78,100	458
	04/14/20	Total	6.36	65	557	0.05	0.22	166,000	69.7	29	12	8,810	3.55 J	87,300	1,520
	07/13/20	Total	7.51	65	735	0.05	0.51	157,000	74.0	52	35	6,340	1.72 J	105,000	1,210
	10/14/20	Total	6.20	48	654	0.03 T	0.81	348,000	46.5	79	55	4,090	0.62	139,000	2,580
	01/19/21	Total	1.33	8	100	0.02	0.12	60,100	9.3	11	23 J	1,230	0.34	23,500	568
	04/12/21	Total	2.57	29	324	0.03	0.27	211,000	37.3	35	23 J	7,500	0.53	88,000	2,460
	07/13/21	Total	3.51	34 J	432	0.03	0.63	254,000	42.5 J	51	38 J	5,550	0.34	95,400	2,570
	10/26/21	Total	3.21	30	406	0.03 T	0.55	221,000	34.9	42	28	6,600 J	0.47	88,200	2,650
	01/18/22	Total	1.28	6	68	0.03	0.10	39,500	6.0	8	21	1,950	0.35	14,600	495
	04/07/22	Total	3.53	26	547	0.03	0.22	151,000	37.4	27	15	4,450	1.14	76,800	1,820
	07/18/22	Total	1.68	24	296	0.02 T	0.30	210,000	27.2	35	23	4,130 J	0.37	93,100	2,570
	10/10/22	Total	1.70	18	341	0.01 T	0.16 J	346,000	25.5	35	16	5,530	0.41 J	143,000	2,580
	01/24/23	Total	1.06	22	446	0.03	0.11	139,000	25.6	18	12 J	12,400	0.31	57,200	2,980
	04/03/23	Total	1.83	22	467	0.03	0.24	29.4	29.4	28	14	11,300 J	0.32		3,660
	07/24/23	Total	1.62	15	344	0.02 T	0.22	223,000	30.3 J	34	19	4,990 J	0.25	96,500	3,990
	10/29/23	Total	0.90	27	489	0.03	0.20	228,000	35.9 J	28	3	14,000	0.29 J	114,000	4,230
	01/28/24	Total	0.79	11	217	0.03	0.07 J	98,300	18.4	14	11	4,970	0.22	44,400	2,200
	04/01/24	Total	1.68	20	409	0.02	0.09	162,000	31.2	21	8	11,300	0.36	74,900	3,760

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**Cowlitz County Tennant Way Landfill
Surface Water and Leachate Quality Data**

Total Metals

ug/l (ppb)

Site	Date		Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
L-3	01/07/13	Total	59	217,000	5 U	2 U	416,000	6.5	64	264
	04/12/13	Total	57	310,000	1.7 T	0.051	634,000	2.5 U	45	62
	07/12/13	Total	77	487,000	6.6	0.270	1,110,000	0.1 U	72	19
	10/16/13	Total	52	337,000	2 U	0.134	771,000	0.009 T	39	27
	01/14/14	Total	38 J	238,000	2 U	0.128	439,000	0.027	20	46
	04/21/14	Total	48	300,000	3.8 T	0.188	600,000	0.1 U	33	31
	07/16/14	Total	72	493,000	3.1 T	0.1 U	1,130,000	0.1 U	70	15
	10/20/14	Total	86	541,000	4.4 T	0.118	1,270,000	0.1 U	75 J	20 J
	01/14/15	Total	74	528,000	6.0 U	0.166	1,270,000	0.01 U	73	13
	04/08/15	Total	105	639,000	2 U	0.060 T	1,420,000	0.01 U	104	17
	07/13/15	Total	104	686,000	2.3 T	0.050 T	1,650,000	0.01 U	103	17
	10/27/15	Total	115	729,000	3.4 T	0.090 T	1,580,000	0.10 U	103	25 J
	01/26/16	Total	17	92,900	0.8 T	0.013 T	199,000	0.02 U	14	14 J
	04/04/16	Total	107	548,000	3.0 T	0.060 T	1,370,000	0.01 U	86	30
	07/11/16	Total	140	678,000	3.2 T	0.110	1,620,000	0.1 U	119	38
	10/10/16	Total	136	689,000	5.4	0.080 T	1,630,000	0.02 T	108	61
	01/23/17	Total	117	615,000	17	0.150 T	1,420,000	0.03 T	84	48
	04/09/17	Total	116	562,000	4.2 T	0.230 T	1,340,000	0.02 T	81	46
	07/27/17	Total	140	710,000	3.6 T	2.5 U	1,700,000	10 U	100	59
	10/16/17	Total	110	700,000	2.0 UB1	0.840	1,700,000	2 U	87	31
	01/29/18	Total	20	500,000	1 U	0.083 T	1,200,000	0.36 U	14	8
	04/03/18	Total	94	540,000	0.8 T	0.610	1,300,000	0.72 U	63	29
	07/20/18	Total	154	676,000	10 U	0.1 U	1,660,000	0.1 U	100	39
	10/15/18	Total	157	667,000 J	10	0.2 U	1,760,000 U	0.20	84 U	144
	01/15/19	Total	115	544,000	4 U	0.1 U	1,270,000	0.1 U	66	36
	04/02/19	Total	145	615,000	1 T	0.1 U	1,570,000	0.07 T	83	49
	07/09/19	Total	148	667,000	1 T	0.017 T	1,700,000	0.01 T	96	39
	10/27/19	Total	156	617,000	1	0.021	1,610,000	0.01 T	96	46
	01/21/20	Total	99	471,000	1 T	0.021	1,200,000	0.02 U	76	31
	04/14/20	Total	130	565,000	1 T	0.028	1,460,000	0.01 T	89	45
	07/13/20	Total	182	629,000	10 U	0.080	1,630,000	0.05	110	43
	10/14/20	Total	217	502,000	4 T	0.080 T	1,450,000	0.10	81	27
	01/19/21	Total	38	107,000	0.3 T	0.034	287,000	0.03	17	12
	04/12/21	Total	124	394,000	0.6 T	0.047	1,030,000	0.04	62	16
	07/13/21	Total	172 J	424,000	0.9 T	0.036	1,260,000	0.07	67 J	22 J
	10/26/21	Total	141	417,000	5.0 U	0.050 T	1,020,000	0.10 U	53	36
	01/18/22	Total	26	79,300	0.3 T	0.059	200,000	0.02 T	14	25
	04/07/22	Total	126	375,000	0.5 T	0.028	1,020,000	0.02 T	50	19
	07/18/22	Total	119	383,000	0.7 T	0.052	1,020,000	0.02	42	16
	10/10/22	Total	182	451,000	0.8 T	0.050	1,590,000	0.04 J	31	7
	01/24/23	Total	75	256,000	0.9 T	0.030	723,000	0.02 T	50	15 J
	04/03/23	Total	106		0.5 T	0.028		0.02	46	18
	07/24/23	Total	129	365,000	0.6 T	0.019 T	1,150,000	0.04	45	18
	10/29/23	Total	116	447,000	0.5 T	0.043	1,280,000	0.02 U	48	11
	01/28/24	Total	59 J	181,000	0.4 T	0.015 T	521,000	0.01 T	27	10
	04/01/24	Total	86	305,000	0.7 T	0.018 T	929,000	0.01 T	46	12

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Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	1,1,1,2- Tetra- chloro- ethane	1,1,1-Tri- chloro- ethane	1,1,2,2- Tetra- chloro- ethane	1,1,2-Tri- chloro- ethane	1,1-Di- chloro- ethane	1,1-Di- chloro- ethene	1,2,3- Trichloro- propane	1,2-Di- bromo-3- chloro- propane	1,2-Di- chloro- benzene	1,2-Di- chloro- ethane	1,2-Di- chloro- propane	1,4-Di- chloro- benzene	2-Hexanone	Acetone
L-1	01/27/12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.8	20 U	3.5 T
	04/06/12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.7	20 U	20 U
	07/12/12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.4	20 U	9.6 T
	10/25/12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.4	20 U	10 T
	01/07/13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.5	20 U	20 U
	04/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.9	20 U	6.2 T
	07/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.4	20 U	12 T
	10/16/13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.5	20 U	7.3 T
	01/14/14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.1	20 U	3.5 T
	04/21/14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.6	20 U	5.2 T
	07/16/14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.0	20 U	10 T
	10/20/14	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	0.5 U	5 U	5 U	2.3 JT	20 U	94 JT
	01/14/15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.5	20 U	20 U
	04/08/15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.8	20 U	17 T
	07/13/15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.1 T	0.5 U	1.7	20 U	20 UJ
	10/27/15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.3 T	20 U	20 U
	01/26/16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.6 T	20 U	20 UB1
	04/04/16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.7	20 U	4.3 T
	07/11/16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.0	20 U	11 T
	10/10/16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	20 U
	01/23/17	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.8	20 U	20 U
	04/09/17	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.7	20 U	20 U
	07/27/17	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.1 T	0.5 U	0.5 U	1.6	20 U	20 U
	10/16/17	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 UB1	20 U	20 UB1
	01/29/18		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 B1		0.1 T	0.5 U	0.5 U	1.2	20 U	20 UB1
	04/03/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	0.1 T	0.5 U	0.5 U	1.6	20 U	1.5 T
	07/20/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.1	20 U	9.8 T
	10/15/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.7	20 U	20 UB1
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.6	20 U	20 UB1
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.4	20 U	5.0 T
	07/09/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.9	20 U	20 UB1
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.4 T	20 U	20 UB1
	01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.7	20 U	20 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.3	20 U	20 UB1
	07/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.2	20 U	20 UB1
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	20 UB1
	01/19/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.8	20 U	20 U
	04/12/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.4	20 U	3.3 T
	07/13/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.5 U	1.3	20 U	20 UB1
	10/26/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5	20 U	20 UB1
	01/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.5	20 U	20 U
	04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	20 U	6.1 T
	07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.3 T	20 U	20 UB1
	10/10/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.3 T	0.5 U	0.5 U	0.3 T	20 U	8.9 T
	01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.4 T	0.5 U	0.5 U	0.3 T	20 U	20 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.3	20 U	20 U
	07/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.3	20 U	5.3 JT
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.7	20 U	20 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.7 J	20 U	20 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	20 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	Benzene	Bromo-	Bromo-	Bromo-	Carbon	Carbon	Trichloro-	Dichloro-	Chloro-	Dibromo-	Chloro-	Chloroform	Chloro-	cis- 1,2-Di-
			chloro- methane	Bromo- form	methane	Disulfide	Tetra- chloride	methane (CFC-11)	methane (CFC-12)		chloro- methane	ethane		methane	ethene
L-1	01/27/12	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.6	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	04/06/12	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7	0.5 U	0.5 T	0.5 U	0.5 U	0.5 U
	07/12/12	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 T	0.5 U	0.5 U	0.5 U
	10/25/12	0.1 T	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.3 T	0.5 U	0.1 T	0.5 U
	01/07/13	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/12/13	0.2 T	0.5 U	0.5 U	0.5 U	0.07 T	0.5 U	0.5 U	0.5 U	1.6	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	07/12/13	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.6	0.5 U	0.5 U	0.5 U
	10/16/13	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	01/14/14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/21/14	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/16/14	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	10/20/14	1.1 JT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	01/14/15	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/08/15	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	07/13/15	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T
	10/27/15	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/26/16	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/04/16	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/11/16	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	10/10/16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/17	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/09/17	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/27/17	0.5 U	5 U	0.5 U	1 U	50 U	0.5 U	0.5 U	1 U	1.5	0.5 U	0.2 T	0.5 U	0.5 UB1	0.5 U
	10/16/17	0.5 U	5 U	0.5 U	1 U	50 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U
	01/29/18	0.5 U	0.5 U	0.5 U	1.0 U	50 U	0.5 U	0.5 U	1 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/18	0.5 U	5 U	0.5 U	1 U	50 U	0.5 U	0.5 U	1 U	1.5	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	07/20/18	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	10/15/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.5 U	0.7 T	0.5 U	0.5 UB1	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 T	0.5 U	0.7 T	0.5 U	0.5 U	0.5 U
	04/02/19	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/09/19	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U	0.2 T	0.5 U	0.5 UB1	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T	0.5 U	0.3 T	0.5 U	0.5 UB1	0.5 U
	01/21/20	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/14/20	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/13/20	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.1	0.5 U	0.3 T	0.5 U	0.5 UB1	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/19/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/12/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U
	07/13/21	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 T	0.5 U	0.5 U	0.5 U
	10/26/21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U
	01/18/22	0.1 T	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U
	04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U
	10/10/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.4 T	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U
	01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.4 T	0.5 U	0.5 U	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample	Date	cis-1,3-Dichloro-propene	Dibromo-methane	Bromo-dichloro-methane	Ethyl-benzene	1,2-Di-bromo-ethane (EDB)	2-Butanone (MEK)	Iodo-methane	4-Methyl-2-pentanone (MIBK)	Methylene Chloride	Styrene	Tetra-chloro-ethene	Toluene	Total Xylenes	trans-1,2-Di-chloro-ethene
L-1	01/27/12	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.3 T	0.5 U
	04/06/12	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.2 T	0.5 U
	07/12/12	0.5 U	0.5 U	0.5 U	0.1 T	2 U	6.8 T	5 U	20 U	2 U	0.5 U	0.5 U	0.3 T	0.7 T	0.5 U
	10/25/12	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.1 T	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	01/07/13	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	04/12/13	0.5 U	0.5 U	0.5 U	0.1 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.2 T	0.5 T	0.5 U
	07/12/13	0.5 U	0.5 U	0.5 U	0.1 T	2 U	5.9 T	5 U	20 U	2 U	0.5 U	0.5 U	0.3 T	0.6 T	0.5 U
	10/16/13	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.2 T	0.5 U
	01/14/14	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U
	04/21/14	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.3 T	0.5 U
	07/16/14	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.4 T	0.9 T	0.5 U
	10/20/14	5 U	5 U	5 U	4.2 JT	20 U	200 U	5 U	200 U	8.3 JT	5 U	5 U	4.2 JT	12	5 U
	01/14/15	0.5 U	0.5 U	0.5 U	0.1 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.4 T	0.5 U
	04/08/15	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.2 T	0.5 U
	07/13/15	0.5 U	0.5 U	0.5 U	4.3	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	2.2	11	0.5 U
	10/27/15	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.2 T	0.6 T	0.5 U
	01/26/16	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	04/04/16	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.2 T	0.3 T	0.5 U
	07/11/16	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.2 T	0.5 T	0.5 U
	10/10/16	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/23/17	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.3 T	0.5 U
	04/09/17	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	0.1 T	0.5 U
	07/27/17	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	20 U	50 U	20 U	0.5 U	5 U	0.5 U	0.5 U	0.9	0.5 B1
	10/16/17	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	20 U	50 U	20 U	0.5 U	5 U	0.5 B1	0.5 U	0.2 T	0.5 B1
	01/29/18	0.5 U	0.5 U	0.5 U	0.18 T	20 U	20 U	20 U	20 U	0.5 U	0.5 U	0.5 U	0.2 T	0.3 T	0.5 U
	04/03/18	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	20 U	1 T	20 U	0.5 U	5 U	0.5 U	0.5 U	0.5	0.5 B1
	07/20/18	0.5 U	0.5 U	0.5 U	0.3 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.3 T	0.7 T	0.5 U
	10/15/18	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.1 T	0.5 U
	01/15/19	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.1 T	0.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	0.2 T	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.1 T	2 U	2.8 T	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	0.5 T	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	0.5 T	0.5 U
	01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	1.2 T	0.5 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.2 T	0.5 U
	07/13/20	0.5 U	0.5 U	0.5 U	0.1 T	2 U	3.7 T	5 UB1	20 U	2 U	0.5 U	0.5 U	0.1 T	0.3 T	0.5 U
	10/14/20	0.5 U	0.5 U	0.5 U	0.1 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U
	01/19/21	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	04/12/21	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U
	07/13/21	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.2 T	0.6 T	0.5 U
	10/26/21	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/18/22	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U
	07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U
	10/10/22	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.8 T	0.5 U
	01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.1 T	0.1 T	0.5 U
	07/24/23	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	3.7 T	1.1	0.5 U	0.5 U	0.1 T	0.9 T	0.5 U
	10/29/23	0.5 U	0.5 U	0.5 U	0.2 T	2 U	20 U	5 U	3.7 T	1.1	0.5 U	0.5 U	0.1 T	0.9 T	0.5 U
	01/28/24	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	trans-1,3-	Tri-	Vinyl chloride	Acrylo- nitrile	trans+cis- 1,4-Di-	Vinyl Acetate
		Dichloro- propene	chloro- ethene			chloro- 2-butene	
L-1	01/27/12	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/06/12	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/12/12	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/25/12	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/07/13	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/12/13	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/12/13	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/16/13	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/14/14	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/21/14	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/16/14	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/20/14	5 U	5 U	5 U	5 U	10 U	5 U
	01/14/15	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/08/15	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/13/15	0.5 U	0.5 U	0.1 T	5 U	10 U	5 U
	10/27/15	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/26/16	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/04/16	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/11/16	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/10/16	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/23/17	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/09/17	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/27/17	0.5 U	0.5 U	0.5 U			
	10/16/17	0.5 U	0.5 U	0.5 U			
	01/29/18	0.5 U	0.5 U	0.5 U	2 U		
	04/03/18	0.5 U	0.5 U	0.5 U			
	07/20/18	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/15/18	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/15/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/02/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/09/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/27/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/21/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/14/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/13/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/14/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/19/21	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/12/21	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/13/21	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/26/21	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/18/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/07/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/18/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/10/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/24/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/03/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/24/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/29/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/28/24	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/01/24	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	1,1,1,2-Tetra-	1,1,1-Tri-	1,1,2,2-Tetra-	1,1,2-Tri-	1,1-Di-	1,1-Di-	1,2,3-	1,2-Di-	1,2-Di-	1,2-Di-	1,2-Di-	1,4-Di-	2-Hexanone	Acetone
		chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethene	Trichloro-propane	chloro-propane	chloro-benzene	chloro-ethane	chloro-propane	chloro-benzene		
L-2	01/27/12	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.3 T	0.7	0.3 T	8.8	20 U	140
	04/06/12	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	2 U	0.2 T	0.5	0.5 U	6.1	18 T	280
	07/12/12	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	7.2	100 U	27 JT
	10/25/12	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.1 T	0.4 T	0.2 T	6.5	20 U	21
	01/07/13	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.2 T	0.4 T	0.2 T	8.0	20 U	200
	04/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.1 T	0.3 T	0.2 T	4.9	20 U	140
	07/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.2 T	0.3 T	0.2 T	7.9	20 U	18 T
	10/16/13	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.1 T	0.1 T	0.1 T	5.0	20 U	47
	01/14/14	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.2 T	0.5 U	0.1 T	5.3	20 U	18 T
	04/21/14	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.1 T	0.2 T	0.2 T	5.8	20 U	38
	07/16/14	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.1 T	6.3	20 U	18 T
	10/20/14	5 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U	8.1	200 U	97 JT
	01/14/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	5.5	100 U	100 U
	04/08/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	4.6	100 U	26 JT
	07/13/15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	4.5	20 U	20 UJ
	10/27/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	3.2	100 U	100 U
	01/26/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.1 JT	100 U	100 UB1
	04/04/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.4 JT	100 U	26 JT
	07/11/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.2 JT	100 U	100 U
	10/10/16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U	5 U	200 U	200 U
	01/23/17	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.4 JT	100 U	100 U
	04/09/17	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	4.6 JT	100 U	42 JT
	07/27/17	0.5 U	5 U	5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	5 U	50 U	50 U
	10/16/17	0.5 U	5 U	5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	1.4 JT, B	50 U	31 JT, B
	01/29/18		0.5 U	0.5 U	0.5 U	0.1 T	0.5 B1			0.5 U	0.5 U	0.5 U	1.0	20 U	20 B1
	04/03/18	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.1 JT	25 U	25 U
	07/20/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.6	20 U	20 U
	10/15/18	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.9 JT	25 U	25 U
	01/15/19	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.2 JT	25 U	17 JT, B
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.7	20 U	20 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.5	20 U	20 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	20 U	20 U
	01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	20 U	20 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.0	20 U	20 U
	07/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.3	20 U	20 U
	10/14/20	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	01/19/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	04/12/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.4 JT	25 U	25 U
	07/13/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.3 T	25 U	25 U
	10/26/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	01/18/22	No leachate in sump													
	04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.0	20 U	20 U
	07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	2.5 U	20 U	20 U
	10/10/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.9	20 U	20 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.6	20 U	20 U
	07/24/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	10/29/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U
	01/28/24	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	0.8	25 U	25 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.6	20 U	20 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

							Trichloro-		Dichloro-						cis-	
			Bromo-			Carbon		fluoro-	difluoro-	Dibromo-					1,2-Di-	
Sample	Date		chloro-	Bromo-	Bromo-	Carbon	Tetra-	methane	methane	Chloro-	chloro-	Chloro-		Chloro-	chloro-	
Location	Sampled	Benzene	methane	form	methane	Disulfide	chloride	(CFC-11)	(CFC-12)	benzene	methane	ethane	Chloroform	methane	ethene	
L-2	01/27/12	4.3	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	0.2 T	1.3	0.5 U	0.5 U	0.5 U	0.1 T	1.9	
	04/06/12	4.9	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	0.3 T	1.1	0.5 U	0.5 U	0.5 U	0.1 T	1.4 U	
	07/12/12	2.4 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	10/25/12	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 T	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	1.7	
	01/07/13	3.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.89 T	0.5 U	0.5 U	0.5 U	0.5 U	1.5	
	04/12/13	2.9	0.5 U	0.5 U	0.5 U	0.6 T	0.5 U	0.5 U	0.5 U	0.67	0.5 U	0.5 U	0.5 U	0.5 U	1.0	
	07/12/13	1.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.72	0.5 U	0.5 U	0.5 U	0.5 U	1.3	
	10/16/13	1.9	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.73	0.5 U	0.5 U	0.5 U	0.5 U	0.6	
	01/14/14	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.09 T	0.4 T	
	04/21/14	1.9	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.3 T	0.9	0.5 U	0.5 U	0.5 U	0.11 T	0.5 T	
	07/16/14	1.1	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1.1	
	10/20/14	3.3 JT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.6 JT	
	01/14/15	1.9 JT	2.5 U	2.5 U	2.5 U	2.5 UB1	2.5 U	2.5 U	2.5 U	0.8 JT	2.5 U	2.5 U	2.5 U	2.5 U	1.5 JT	
	04/08/15	1.3 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.65 JT	2.5 U	2.5 U	2.5 U	2.5 U	1.0 JT	
	07/13/15	0.9	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.6	
	10/27/15	0.9 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.7 JT	
	01/26/16	0.4 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	04/04/16	0.5 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.45 T	2.5 U	
	07/11/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	10/10/16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UB1	5 U	
	01/23/17	0.5 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	04/09/17	3.0	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.55 JT	2.5 U	2.5 U	2.5 U	2.5 U	
	07/27/17	5 U	50 U	5 U	10 U	50 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	
	10/16/17	5 U	50 U	5 U	10 U	50 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	
	01/29/18	0.4 T		0.5 U	1.0 U	50 U	0.5 U	0.5 U	1 U	0.3 T	0.5 U	0.5 U	0.5 U	0.5 U	4.9	
	04/03/18	0.8 JT	25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	0.7 T	2.5 U	2.5 UB1	2.5 U	2.5 U	
	07/20/18	0.4 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	10/15/18	0.5 JT	25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	01/15/19	2.5 U	25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	04/02/19	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	
	07/09/19	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4	0.5 U	0.5 U	0.5 U	0.5 B1	0.1 T	
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
07/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
10/14/20	2.5 U	25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
01/19/21	2.5 U	25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
04/12/21	0.6 T	25 U	2.5 U	5 U	50 UB1	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
07/13/21	0.7 T	25 U	2.5 U	5 U	50 UB1	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
10/26/21	2.5 U	25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
01/18/22																
04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
10/10/22	2.5 U	25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
07/24/23	2.5 U	25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
10/29/23	2.5 U	25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
01/28/24	2.5 U	25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

		1,2-Di-												trans-		
		cis-1,3-		Bromo-		bromo-		4-Methyl-2-				Tetra-				
Sample	Date	Dichloro-	Dibromo-	dichloro-	Ethyl-	ethane	2-Butanone	Iodo-	pentanone	Methylene		chloro-		Total	chloro-	
Location	Sampled	propene	methane	methane	benzene	(EDB)	(MEK)	methane	(MIBK)	Chloride	Styrene	ethene	Toluene	Xylenes	ethene	
L-2	01/27/12	0.5 U	0.5 U	0.5 U	24	2 U	170	5 U	6.3 T	2 U	0.5 U	0.1 T	18	72	0.5 U	
	04/06/12	0.5 U	0.5 U	0.5 U	24	2 U	500	0.2 T	11 T	2 U	0.5 U	0.5 U	20	65	0.2 T	
	07/12/12	2.5 U	2.5 U	2.5 U	12	10 U	18 JT	25 U	100 U	1.4 JT	2.5 U	2.5 U	14	48	2.5 U	
	10/25/12	0.5 U	0.5 U	0.5 U	7.9	2 U	20 U	5 U	20 U	2 U	0.5 U	0.2 T	8.7	40	0.5 U	
	01/07/13	0.5 U	0.5 U	0.5 U	17	2 U	260	5 U	5.8 T	2 U	0.8	0.2 T	17	56	0.5 U	
	04/12/13	0.5 U	0.5 U	0.5 U	11	2 U	210	5 U	7.2 T	0.1 T	0.4 T	0.1 T	9.0	21	0.5 U	
	07/12/13	0.5 U	0.5 U	0.5 U	10	2 U	15 T	5 U	20 U	0.2 T	0.6	0.1 T	11	43	0.5 U	
	10/16/13	0.5 U	0.5 U	0.5 U	6.4	2 U	34 U	5 U	20 U	2 U	0.3 T	0.4 T	6.5	25	0.5 U	
	01/14/14	0.5 U	0.5 U	0.5 U	1.4	2 U	11 T	5 U	3.3 T	2 U	0.1 T	0.5 U	3.1	16	0.5 U	
	04/21/14	0.5 U	0.5 U	0.5 U	5.2	2 U	23	5 B1	20 U	2 U	0.3 T	0.5 U	5.8	20	0.5 U	
	07/16/14	0.5 U	0.5 U	0.5 U	4.0	2 U	4.8 T	5 U	20 U	2 U	0.4 T	0.1 T	5.0	32	0.5 U	
	10/20/14	5 U	5 U	5 U	14	20 U	40 JT	50 U	200 U	8.3 JT	0.9 JT	5 U	15	46	5 U	
	01/14/15	2.5 U	2.5 U	2.5 U	7.3	10 U	100 U	25 U	100 U	10 B1	0.55 JT	2.5 U	9.2	32	2.5 U	
	04/08/15	2.5 U	2.5 U	2.5 U	3.6	10 U	9.8 JT	25 U	100 U	10 B1	2.5 U	2.5 U	3.5	14	2.5 U	
	07/13/15	0.5 U	0.5 U	0.5 U	4	2 U	20 U	5 U	20 U	2 U	0.2 JT	0.5 U	3.3	16	0.5 U	
	10/27/15	2.5 U	2.5 U	2.5 U	2.8	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	2.1 JT	11	2.5 U	
	01/26/16	2.5 U	2.5 U	2.5 U	0.6 JT	10 U	13 JT	25 U	100 U	10 B1	2.5 U	2.5 U	0.9 JT	2.1 JT	2.5 U	
	04/04/16	2.5 U	2.5 U	2.5 U	2.5 U	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.7 JT	4.0 JT	2.5 U	
	07/11/16	2.5 U	2.5 U	2.5 U	0.6 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.9 JT	1.8 JT	2.5 U	
	10/10/16	5 U	5 U	5 U	5 U	20 U	200 U	50 U	200 U	20 B1	5 U	5 U	5 U	5 U	5 U	
	01/23/17	2.5 U	2.5 U	2.5 U	0.4 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.3 JT	1.9 JT	2.5 U	
	04/09/17	2.5 U	2.5 U	2.5 U	8.0	10 U	100 U	25 U	100 U	10 B1	0.4 JT	2.5 U	12	25	2.5 U	
	07/27/17	5 U	5 U	5 U	5 U	5 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	
	10/16/17	5 U	5 U	5 U	5 U	5 U	50 U	50 U	50 U	5 U	5 U	5 B1	5 U	5 U	5 B1	
	01/29/18	0.5 U		0.5 U	0.3 T		20 U		20 U	0.5 U	0.5 U	0.5 U	0.2 T	1.3	0.5 U	
	04/03/18	2.5 U	2.5 U	0.6 T	2.5 U	2.5 U	25 U	1.9 T	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.7	2.5 U	
	07/20/18	0.5 U	0.5 U	0.5 U	0.1 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.4 T	2.8	0.5 U	
	10/15/18	2.5 U	2.5 U	2.5 U	0.3 JT	2.5 U	25 U	25 U	25 U	2.5 B1	2.5 U	2.5 U	0.4 JT	2.6	2.5 U	
	01/15/19	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	1.3 JT	2.5 U	
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	8.7 T	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	2.3	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.2 T	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	1.9	0.5 U	
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	0.8	0.5 U
	01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.6	0.5 U
	07/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U
	10/14/20	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/19/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	04/12/21	2.5 U	2.5 U	2.5 U	0.6 T	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	0.4 T	1.6 JT	2.5 U
	07/13/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	0.3 T	1.2 T	2.5 U
	10/26/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
01/18/22																
04/07/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.6	0.5 U	
07/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	
10/10/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	
04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	
07/24/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
10/29/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
01/28/24	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	25 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	trans-1,3-	Tri-	Vinyl chloride	Acrylo- nitrile	trans+cis- 1,4-Di-	Vinyl Acetate
		Dichloro- propene	chloro- ethene			chloro- 2-butene	
L-2	01/27/12	0.5 U	1.0	0.6	5 U	10 U	5 U
	04/06/12	0.5 U	0.1 T	0.9	5 U	10 U	5 U
	07/12/12	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/25/12	0.5 U	0.2 T	0.2 T	5 U	10 U	5 U
	01/07/13	0.5 U	0.2 T	0.4 T	5 U	10 U	5 U
	04/12/13	0.5 U	0.1 T	0.5 T	5 U	10 U	5 U
	07/12/13	0.5 U	0.2 T	0.2 T	5 U	10 U	5 U
	10/16/13	0.5 U	0.4 T	0.3 T	5 U	10 U	5 U
	01/14/14	0.5 U	0.5 U	0.2 T	5 U	10 U	5 U
	04/21/14	0.5 U	0.5 U	0.1 T	5 U	10 U	5 U
	07/16/14	0.5 U	0.1 T	0.1 T	5 U	10 U	5 U
	10/20/14	5 U	5 U	5 U	50 U	100 U	50 U
	01/14/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/08/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/13/15	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/27/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/26/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/04/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/11/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/10/16	5 U	5 U	5 U	50 U	100 U	50 U
	01/23/17	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/09/17	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/27/17	5 U	5 U	5 U			
	10/16/17	5 U	5 U	5 U			
	01/29/18	0.5 U	0.5 U	0.5 U	2 U		
	04/03/18	2.5 U	2.5 U	2.5 U		50 U	25 U
	07/20/18	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/15/18	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/15/19	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/02/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/09/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/27/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/21/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/14/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/13/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/14/20	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/19/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/12/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/13/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/26/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/18/22						
	04/07/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/18/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/10/22	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/24/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/03/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/24/23	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/29/23	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/28/24	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/01/24	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	1,1,1,2-Tetra-	1,1,1-Tri-	1,1,2,2-Tetra-	1,1,2-Tri-	1,1-Di-	1,1-Di-	1,2,3-	1,2-Di-	1,2-Di-	1,2-Di-	1,2-Di-	1,4-Di-	2-Hexanone	Acetone
		chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethane	chloro-ethene	Trichloro-propane	chloro-propane	chloro-benzene	chloro-ethane	chloro-propane	chloro-benzene		
L-3	01/07/13	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.1 T	4.2	6 T	370
	04/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	2 U	0.2 T	0.3 T	0.2 T	4.6	11 T	210
	07/12/13	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	2 U	0.2 T	0.3 T	0.1 T	6.3	20 U	31
	10/16/13	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	2 U	0.2 T	0.2 T	0.2 T	4.4	20 U	99
	01/14/14	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	2 U	0.2 T	0.2 T	0.2 T	4.5	20 U	39
	04/21/14	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.2 T	0.2 T	0.2 T	5.4	20 U	53
	07/16/14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.2 T	0.2 T	0.5 U	5.0	20 U	25
	10/20/14	5 U	5 U	5 U	5 U	5.0 U	5 U	5 U	20 U	5 U	5 U	5 U	6.2	200 U	57 JT
	01/14/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	5.0	100 U	100 U
	04/08/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	2.9	100 U	25 JT
	07/13/15	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	2 U	0.5 U	0.1 T	0.5 U	2.5	20 U	20 UJ
	10/27/15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.5 JT	100 U	24 JT
	01/26/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	0.3 JT	100 U	21 JT
	04/04/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	1.5 JT	100 U	100 U
	07/11/16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	2.6 JT	100 U	18 JT
	10/10/16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U	2.2 JT	200 U	200 U
	01/23/17	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	2.6 JT	100 U	18 JT
	04/09/17	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U	5.4	100 U	21 JT
	07/27/17	5 U	5 U	5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	5 U	50 U	50 U
	10/16/17	5 U	5 U	5 U	5 U	5 U	5 U	50 U	50 U	5 U	5 U	5 U	2.1 JT, B	50 U	16 JT, B
	01/29/18		0.5 U	0.5 U	0.5 U	0.1 T	0.5 B1			0.5 U	0.5 U	0.5 U	1.8	20 U	20 B1
	04/03/18	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.7 JT	25 U	25 U
	07/20/18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	20 U	7.6 T
	10/15/18	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.3 T	25 U	25 U
	01/15/19	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.1 JT	25 U	26 JT, B
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.1 T	0.5 U	0.5 U	1.6	20 U	20 UB1
	07/09/19	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.4	20 U	20 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.4	20 U	20 U
	01/21/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.5	20 U	20 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.4	20 U	20 U
	07/13/20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.6	20 U	20 U
	10/14/20	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	01/19/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	04/12/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.2 JT	25 U	100 U
	07/13/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.4 T	25 U	100 U
	10/26/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	01/18/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	20 U
	04/07/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	07/18/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	10/10/22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.1	20 U	20 U
	01/24/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	2.1	20 U	20 U
	04/03/23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5	20 U	20 U
	07/24/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	10/29/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	100 U
	01/28/24	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	1.0	25 U	100 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.5	20 U	20 U

Note: U = not detected, MRL shown.

T = Detected below reporting limit. Value is an estimate.

B = detected in bland, reported concentration may be affected.

JT = Detected below elevated reporting limit, value is estimate.

UB1 = Detected in blank and sample below MRL shown.

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

							Trichloro-		Dichloro-						cis-	
			Bromo-			Carbon		fluoro-	difluoro-	Dibromo-			1,2-Di-			
Sample	Date		chloro-	Bromo-	Bromo-	Carbon	Tetra-	methane	methane	Chloro-	chloro-	Chloro-		Chloro-	chloro-	
Location	Sampled	Benzene	methane	form	methane	Disulfide	chloride	(CFC-11)	(CFC-12)	benzene	methane	ethane	Chloroform	methane	ethene	
L-3	01/07/13	2.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.73	0.5 U	0.5 U	0.5 U	0.1 T	0.3 T	
	04/12/13	3.3	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.7	
	07/12/13	2.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.18 T	0.5 U	0.5 U	1.0	
	10/16/13	2.8	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.5 U	0.5 U	0.1 T	0.4 T	
	01/14/14	3.4	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.21 T	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.3 T	
	04/21/14	3.1	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.16 T	1.3	0.5 U	0.16 T	0.5 U	0.1 T	0.4 T	
	07/16/14	1.7	0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.9	0.5 U	0.23 T	0.5 U	0.5 U	0.6	
	10/20/14	2.6 JT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.5 JT	5 U	5 U	5 U	5 UJ	1.3 JT	
	01/14/15	2.6	2.5 U	2.5 U	2.5 U	2.5 UB1	2.5 U	2.5 U	2.5 U	1.4 JT	2.5 U	2.5 U	2.5 U	2.5 U	1.3 JT	
	04/08/15	1.6 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.9 JT	2.5 U	2.5 U	2.5 U	2.5 U	0.6 JT	
	07/13/15	1.4	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.46 T	0.5 U	0.5 U	0.4 T	
	10/27/15	0.9 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.0 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
	01/26/16	0.2 JT	2.5 U	2.5 U	0.2 JT	2.5 UB1	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.3 JT	2.5 UB1	
	04/04/16	0.5 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	2.5 U	2.5 UB1	
	07/11/16	0.8 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	2.5 U	2.5 U	
	10/10/16	0.7 JT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UB1	5 U	5 U	
	01/23/17	0.8 JT	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	2.5 U	2.5 U	
	04/09/17	3.8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.75 JT	2.5 U	0.5 U	2.5 UB1	2.5 U	1.8 JT
	07/27/17	5 U	50 U	5 U	10 U	50 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
	10/16/17	1.6 T	50 U	5 U	10 U	50 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
	01/29/18	0.7			0.5 U	1.0 U	50 U	0.5 U	0.5 U	0.3 T	0.3 T	0.5 U	0.19 T	0.5 U	0.5 U	0.5 U
	04/03/18	0.8 T		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	0.9 JT	2.5 U	0.8 JT	2.5 U	2.5 U
	07/20/18	0.4 T		0.5 U	0.5 U	0.5 U	0.5 UB1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/15/18	0.4 T		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/15/19	2.5 U		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	04/02/19	0.1 T		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T	0.5 U	0.5 U	0.5 U	0.1 T	0.2 T
	07/09/19	0.6		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 T	0.5 U	0.5 U	0.5 U	0.5 U	0.2 T
	10/27/19	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/21/20	0.7		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/14/20	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/13/20	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	10/14/20	2.5 U		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/19/21	2.5 U		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	04/12/21	0.5 JT		25 U	2.5 U	5 U	50 UB1	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	07/13/21	0.6 T		25 U	2.5 U	5 U	50 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	10/26/21	2.5 U		25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/18/22	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/07/22	2.5 U		25 U	2.5 U	5 U	3.7	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	07/18/22	2.5 U		25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	10/10/22	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/24/23	0.7 T		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/03/23	0.9		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	07/24/23	2.5 U		25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	10/29/23	2.5 U		25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/28/24	2.5 U		25 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	04/01/24	0.9		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Note: U = not detected, MRL shown.

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Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	cis-1,3- Dichloro- propene	Bromo- Dibromo- methane	Bromo- dichloro- methane	Ethyl- benzene	1,2-Di- bromo- ethane (EDB)	2-Butanone (MEK)	Iodo- methane	4-Methyl-2- pentanone (MIBK)	Methylene Chloride	Styrene	Tetra- chloro- ethene	Toluene	Total Xylenes	trans- 1,2-Di- chloro- ethene
L-3	01/07/13	0.5 U	0.5 U	0.5 U	2.1	2 U	510	5 U	20 U	2 U	0.09 T	0.5 U	1.7	12	0.5 U
	04/12/13	0.5 U	0.5 U	0.5 U	11	2 U	310	5 U	6.9 T	0.2 T	0.5 U	0.5 U	3.9	24	0.1 T
	07/12/13	0.5 U	0.5 U	0.5 U	8.7	2 U	38	5 U	20 U	0.3 T	0.32 T	0.5 U	3.5	29	0.5 U
	10/16/13	0.5 U	0.5 U	0.5 U	9.0	2 U	70 U	5 U	20 U	2 U	0.14 T	0.22 T	2.3	21	0.5 U
	01/14/14	0.5 U	0.5 U	0.5 U	5.5	2 U	17 T	5 U	20 U	2 U	0.1 T	0.5 U	1.6	18	0.5 U
	04/21/14	0.5 U	0.5 U	0.5 U	4.4	2 U	30	5 B1	20 U	2 U	0.11 T	0.5 U	2.3	13	0.5 U
	07/16/14	0.5 U	0.5 U	0.5 U	2.4	2 U	20 U	5 U	20 U	2 U	0.15 T	0.5 U	1.2	13	0.5 U
	10/20/14	5 U	5 U	5 U	8.9	20 U	200 U	50 U	200 U	8.2 JT	5 U	5 U	4.0 JT	24	5 U
	01/14/15	2.5 U	2.5 U	2.5 U	9.1	10 U	100 U	25 U	100 U	2.5 B1	0.5 JT	2.5 U	7.7	27	2.5 U
	04/08/15	2.5 U	2.5 U	2.5 U	2.4 JT	10 U	11 JT	25 U	100 U	2.5 B1	2.5 U	2.5 U	2.6	10	2.5 U
	07/13/15	0.5 U	0.5 U	0.5 U	2.8	2 U	20 U	5 U	20 U	2 U	0.15 T	0.5 U	2.0	10	0.5 U
	10/27/15	2.5 U	2.5 U	2.5 U	1.3 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.9 JT	5.7 JT	2.5 U
	01/26/16	2.5 U	2.5 U	2.5 U	0.4 JT	10 U	2.7 JT	0.2 JT	100 U	10 U	2.5 U	2.5 U	0.3 JT	1.1 JT	2.5 U
	04/04/16	2.5 U	2.5 U	2.5 U	1.0 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	1.6 JT	3.2 JT	2.5 U
	07/11/16	2.5 U	2.5 U	2.5 U	1.4 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.7 JT	5.7 JT	2.5 U
	10/10/16	5 U	5 U	5 U	1.0 JT	20 U	200 U	50 U	200 U	20 B1	5 U	5 U	5 U	3.7 JT	5 U
	01/23/17	2.5 U	2.5 U	2.5 U	1.4 JT	10 U	100 U	25 U	100 U	10 B1	2.5 U	2.5 U	0.7 JT	5.7 JT	2.5 U
	04/09/17	2.5 U	2.5 U	2.5 U	9.5	10 U	13 JT	25 U	100 U	10 B1	0.65 JT	2.5 U	7.8	28	2.5 U
	07/27/17	5 U	5 U	5 U	5 U	5 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U	4.1 JT	5 U
	10/16/17	5 U	5 U	5 U	2.3 JT	5 U	50 U	50 U	50 U	5 U	5 U	5 B1	5 U	7.3	5 B1
	01/29/18	0.5 U		0.5 U	1.1		20 U		1 T	0.5 U	0.5 U	0.5 U	0.9	5.5	0.5 U
	04/03/18	2.5 U	2.5 U	0.8 JT	1.9 JT	2.5 U	25 U	2 JT	25 U	2.5 U	25 U	2.5 U	0.8 JT	6.9	2.5 U
	07/20/18	0.5 U	0.5 U	0.5 U	0.7 T	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.3 T	3.6	0.5 U
	10/15/18	2.5 U	2.5 U	2.5 U	0.3 JT	2.5 U	25 U	25 U	25 U	2.5 B1	25 U	2.5 U	2.5 U	2.5 JT	2.5 U
	01/15/19	2.5 U	2.5 U	2.5 U	0.4 JT	2.5 U	11 JT	25 U	25 U	2.5 B1	25 U	2.5 U	0.6 JT	3.3 JT	2.5 U
	04/02/19	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 B1	5.9	0.5 U
	07/09/19	0.5 U	0.5 U	0.5 U	0.6	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.6	4.2	0.5 U
	10/27/19	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.7	0.5 U
	01/21/20	0.5 U	0.5 U	0.5 U	1.1	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	5.8	0.5 U
	04/14/20	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.8	0.5 U
	07/13/20	0.5 U	0.5 U	0.5 U	0.8	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	3.4	0.5 U
	10/14/20	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/19/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	04/12/21	2.5 U	2.5 U	2.5 U	0.4 JT	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	0.4 T	2.0 JT	2.5 U
	07/13/21	2.5 U	2.5 U	2.5 U	0.5 T	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	1.7 T	2.5 U
	10/26/21	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/18/22	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	04/07/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	430 U	25 U	25 U	2.5 U	25 U	2.5 U	15	3.2	2.5 U
	07/18/22	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	10/10/22	0.5 U	0.5 U	0.5 U	0.5 U	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	01/24/23	0.5 U	0.5 U	0.5 U	1.1	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	1.9	0.5 U
	04/03/23	0.5 U	0.5 U	0.5 U	1.2	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.6	2.8	0.5 U
	07/24/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	10/29/23	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U
	01/28/24	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	25 U	25 U	2.5 U	25 U	2.5 U	2.5 U	0.6	2.5 U
	04/01/24	0.5 U	0.5 U	0.5 U	0.9	2 U	20 U	5 U	20 U	2 U	0.5 U	0.5 U	0.5 U	2.3	0.5 U

Note: U = not detected, MRL shown.

T = Detected below reporting limit. Value is an estimate.

JT = Detected below elevated reporting limit, value is estimate.

B = detected in bland, reported concentration may be affected.

B1 = Detected in blank and sample below MRL shown.

Cowlitz County Tennant Way Landfill
Leachate Quality Data
Volatile Organic Compounds
ug/l (ppb)

Sample Location	Date Sampled	trans-1,3-	Tri-	trans+cis-			
		Dichloro- propene	chloro- ethene	Vinyl chloride	Acrylo- nitrile	1,4-Di- chloro- 2-butene	Vinyl Acetate
L-3	01/07/13	0.5 U	0.5 U	0.3 T	5 U	10 U	5 U
	04/12/13	0.5 U	0.5 U	1.3	5 U	10 U	5 U
	07/12/13	0.5 U	0.5 U	0.4 T	5 U	10 U	5 U
	10/16/13	0.5 U	0.5 U	0.6	5 U	10 U	5 U
	01/14/14	0.5 U	0.1 T	0.7	5 U	10 U	5 U
	04/21/14	0.5 U	0.5 U	0.2 T	5 U	10 U	5 U
	07/16/14	0.5 U	0.5 U	0.2 T	5 U	10 U	5 U
	10/20/14	5 U	5 U	5 U	50 U	100 U	50 U
	01/14/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/08/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/13/15	0.5 U	0.5 U	0.1 T	5 U	10 U	5 U
	10/27/15	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/26/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/04/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/11/16	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/10/16	5 U	5 U	5 U	50 U	100 U	50 U
	01/23/17	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/09/17	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/27/17	5 U	5 U	5 U			
	10/16/17	5 U	5 U	5 U			
	01/29/18	0.5 U	0.5 U	0.3 T	2 U		
	04/03/18	2.5 U	2.5 U	2.5 U		50 U	25 U
	07/20/18	0.5 U	0.5 U	0.5 U	5 U	10 U	0.1 T
	10/15/18	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/15/19	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/02/19	0.5 U	0.5 U	0.1 T	5 U	10 U	5 U
	07/09/19	0.5 U	0.5 U	0.1 T	5 U	10 U	5 U
	10/27/19	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/21/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/14/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/13/20	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	10/14/20	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/19/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/12/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/13/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/26/21	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/18/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/07/22	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	07/18/22	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/10/22	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	01/24/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	04/03/23	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U
	07/24/23	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	10/29/23	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	01/28/24	2.5 U	2.5 U	2.5 U	25 U	50 U	25 U
	04/01/24	0.5 U	0.5 U	0.5 U	5 U	10 U	5 U

Note: U = not detected, MRL shown.

T = Detected below reporting limit. Value is an estimate.

B = d

JT = Detected below elevated reporting limit, value is estimate.

UB1 :

APPENDIX D

TECHNICAL MEMORANDA WITH ANALYTICAL DATA PACKAGE

MEMORANDUM

April 17, 2024

TO: Cowlitz County Tennant Way Landfill Project File

FROM: Dennis R. Dykes, Bright Fields Groundwater, Inc.

SUBJECT: 2nd Quarter 202 Field Sampling Procedures

The 2nd quarter 2024 monitoring event at the Cowlitz County Tennant Way Landfill was completed on April 1, 2024. Twelve monitoring wells, two surface water sites, and three leachate sites were sampled. One duplicate sample was also prepared. The sample locations, sample identifiers, and purging parameters are summarized on the attached table. The sampling and sample handling procedures used were consistent with those described in the Sampling and Analysis Plan as revised in March 2013.

The monitoring wells were purged and sampled using SS Sample Champ pumps dedicated to each well. The depth to water in each well was measured immediately before purging. At each well, the pump was started and the flow adjusted to approximately 320 to 600 ml per minute and the depth to water checked to determine the approximate drawdown. Drawdown at three wells (MW-5B, -8B and -11B) is known to exceed three tenths of a foot so a low flow rate was set at these wells to minimize drawdown. After a stable flow rate was established, typically within a few minutes, the water was observed for turbidity. The wells were pumped for 10 to 12 minutes before initiating the measurement of field parameters (temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity). Field parameters were measured and recorded at approximately three or four minute intervals until they had stabilized within SAP criteria. Flow rate, depth to water and the pump setting were checked and recorded occasionally during purging. Purge water was disposed to vegetated ground away from surface water at each well. The final flow rate and depth to water were measured and recorded after sample collection just before the pump was turned off. Drawdown appeared to be essentially stable at each well before initiation of sample collection.

The flow could not be stabilized at a low enough rate to keep drawdown less than 0.3 feet at three wells. A stable drawdown of 0.49 feet was achieved at MW-5B, 1.77 feet at MW-8B and 0.77 feet at MW-11B.

Water levels, which occasionally rise at several wells during sampling because of a rising tide, did not rise at a well this event during purging and sampling. Water levels at nine wells fell less than 0.2 feet with most of these less than 0.07. The flow rate during purging at several wells was greater than 500 ml/min. However, the drawdown was small and stable so the flow was not adjusted so that stability was maintained during purging and sampling.

Sample bottles were filled directly from the flow through cell so that the flow rate would not be affected by bypassing the flow through cell. The portion of each sample for dissolved metals analysis was collected in an unpreserved bottle for filtering at the lab.

A duplicate sample was collected at MW-16B by alternately filling sample bottles at this well. The bottle labels were marked with the project site, a blind sample number and the date and time. The time was marked as one half hour different which is similar to the sample time between wells.

Two surface water and three leachate sites specified in the SAP were sampled. The surface water samples were collected by submerging the bottles under the water surface at the designated locations. Sample site S-2 is located near the north end of the site in the lock to the log pond. The sample at the runoff discharge site was from flowing water near the inlet to the culvert that conducts runoff from the site under the railroad. Although flow was observed the water level was up in the pipe apparently because of a high water level in the log pond. The leachate samples were collected using a disposable bailer dipped into the designated sumps. The portions of the surface water and leachate samples for metals analyses were not filtered.

The sample bottles were placed in coolers immediately after collection. Samples were delivered to ALS in Kelso, Washington on April 2nd under chain of custody documentation. A copy of the chain of custody documents is attached.

The depth to water was measured in 26 monitoring wells and a piezometer on April 1, 2024. The measurements were made in a continuous round that began at approximately the forecast low tide at the Longview gauging station on the Columbia River. River level rose 0.32 feet during the measurement round. Wells closest to the river were measured first. The hydrology field sheet is attached.

Landfill gas monitoring was added to the monitoring events in 2018. Gas was measured at four gas probes and three onsite structures using a RKI GX 2012 meter on April 2nd. The results are reported separately to solid waste management.

Dedicated or disposable sampling equipment was used therefore decontamination was not necessary. The well probe and field meters were rinsed with distilled water after use. The field meters were calibrated before use.

Attachments: Sampling Summary
Hydrology Field Sheet
Field Sampling Data Sheets
Chain of Custody Documents

**Cowlitz County Tennant Way Landfill
Sampling Summary for
2nd Quarter 2024**

Sample Location	Sample Identifier	Depth to Water		Total Draw-down (feet)	Approx. Flow Rate (milliliters/minute)	Approx. Total Liters Removed *	Field Measurements Intervals **
		Initial (feet)	Final (feet)				
MW-3B	W9-401	10.69	10.69	0.0	585	14.6	3
MW-5B	W1-401	2.54	3.03	0.49	320	9.3	3
MW-7B	W11-401	19.68	19.85	0.17	600	14.4	3
MW-8B	W6-401	27.75	29.52	1.77	420	23.1	10
MW-9B	W7-401	29.64	29.76	0.12	510	11.7	4
MW-10B	W8-401	35.01	35.12	0.11	600	13.8	3
MW-11B	W10-401	16.22	16.99	0.77	400	11.2	3
MW-12B	W5-401	25.90	25.97	0.07	540	12.4	3
MW-13	W4-401	27.75	27.80	0.05	570	13.1	3
MW-14B	W3-401	25.18	25.21	0.03	480	12.0	4
MW-15	W2-401	24.56	24.57	0.01	540	12.4	3
MW-16B	W12-401	15.59	15.79	0.20	585	17.0	3
L-1	W16-401	---	---	---	---	---	---
L-2	W17-401	---	---	---	---	---	---
L-3	W18-401	---	---	---	---	---	---
RD-1	W15-401	---	---	---	---	---	---
S-2	W14-401	---	---	---	---	---	---
MW-16B Duplicate	W13-401	---	---	---	---	---	---
Notes: * total volume includes purged and sampled water. ** field measurements interval is typically three or four minutes of pumping. *** unable to accurately measure --- not applicable.							

Cowlitz County Tennant Way Landfill

Hydrology Field Sheet

Time of Low Tide: 1746

Event: 2.10.2024

Location	Date	Time	Measurement	Comments
River	4/1	1752	26.10	
MW-10B		1757	35.72	
MW-10A		"	34.73	
MW-9B		1800	30.68	
MW-9A		1801	31.11	
MW-8B		1803	29.06	
MW-8A		1805	29.43	
MW-12B		1808	27.18	
MW-12A		"	27.40	
MW-13		1811	28.62	
MW-14B		1813	25.74	
MW-14A		"	26.28	
MW-15		1816	24.73	
MW-1B		1819	16.09	
MW-1A		"	16.43	
MW-16B		1822	15.65	
MW-16A		1823	15.86	
PZ-2		1825	29.26	
MW-7B		1829	19.96	
MW-7A		1830	20.40	
MW-11B		1833	16.46	
MW-11A		"	17.44	
MW-3B		1837	10.79	
MW-3A		1838	10.87	
MW-2B		1845	7.23	
MW-2A		"	7.10	
MW-5B		1849	2.48	
MW-5A		1850	4.94	
River		1856	25.78	

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: M4-3B
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: W9-401
Sampler: Dennis R. Dykes	Start Date/Time: 4/1/24 BSS
	Weather: Sunny mild & Breeze

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		10.69	4/1	1355	Well Probe
	Final pumping	10.77	"	1425	
	Pumping Time	Rate	Voltage	DTW	Liters Pumped
	1	200/205	8.7	10.74	
	25	195/205	8.3	10.77	14.6
					585

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.79	119	11.6	3.21	0.00	-132
13	6.79	119	11.7	2.00	"	-134
16	6.90	119	11.6	1.38	"	~~-132~~ (133)

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1400	1 1000ml poly none	16.7	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: **None, dedicated equip used. Well probe rinsed with distilled.**

Sample Appearance: **Clear** Sample Handling: **Cooler, deliver to lab**

Comments: **pH & Eh Note - note?**

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: MW-SB
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: W1-401
Sampler: Dennis R. Dykes	Start Date/Time: 4/1/24 845
	Weather: Overcast Cool Calm

Well Pumping Data

		Measurement	Date	Time	Method	
Depth to Water	Prepumping	2.54	4/1	8:20	Well Probe	
	Final pumping	3.03	"	9:27		
Pumping Time		Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1		160/305	16.7	3.01		
14		152/11	8.9	2.97		
24		160/303	11.5	3.03	9.3	320

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
12	6.52	356	10.7	2.43	0.02	-44
16	6.51	356	10.9	1.86	0.00	-47
20	6.51	355	10.9	1.59	H	-47

Sampling

Date/Time	Containers (number/volume/type/preservative)				Depth Taken (ft)	Field Filtration	Sampling Method
4/1 9:00	1	1000ml	poly	none	6.7	no	Low Flow
" "	1	250ml	poly	none	"	no	Submersible
" "	1	250ml	poly	HNO3	"	no	Pump
" "	1	250ml	poly	H2SO4	"	no	"
" "	3	40ml	glass	HCl	"	no	"
" "	1	40ml	amber glass	HCl	"	no	"

Equipment Decontamination: None, dedicated equip used. Well probe rinsed with distilled.
 Sample Appearance: *Clear* Sample Handling: Cooler, deliver to lab

Comments:

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: MW-7B
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: W11-401
Sampler: Dennis R. Dykes	Start Date/Time: 4/1/24 1535
	Weather: Sunny 14.1°C 21.8°C

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		19.65	4/1	1505	Well Probe
	Final pumping	19.85	"	1535	
	Pumping Time	Rate	Voltage	DTW	Liters Pumped Rate (ml/min)
	1	185/205	12.9	19.83	
	29	200/205	4	19.85	14.4 600

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.29	84.5	10.6	1.64	2.33	77
13	6.33	84.8	10.6	1.22	2.3	79
16	6.29	84.7	10.5	1.16	2.32	84

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1530	1 1000ml poly none	24.4	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: **None, dedicated equip used. Well probe rinsed with distilled.**

Sample Appearance: **Clear** Sample Handling: **Cooler, deliver to lab**

Comments:

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill** Sample Location: **MW-8B**
 Sampling Event: **2nd Qtr 2024** Sample Field Identifier: **WG-401**
 Sampler: **Dennis R. Dykes** Start Date/Time: **4/1/24 1145**
 Weather: **Sunny Cool L4 Breeze**

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		27.75	4/1	1145	Well Probe
	Final pumping	29.52	"	1245	
Pumping Time		Rate	Voltage	DTW	Liters Pumped Rate (ml/min)
2		250/305	17.9	28.19	
14		~~250/305~~	~~17.9~~	28.87	
55		210/30	12.1	29.52	23.1 420

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
12	6.39	89.8	12.3	47.8	4.70	44
16	6.00	89.9	12.4	36.2	4.51	73
20	6.05	90.1	12.5	31.7	4.25	80
24	6.28	90.4	12.6	26.7	4.01	70
28	6.28	91.2	12.7	24.2	3.76	75
32	6.24	93.2	12.8	22.2	3.47	81
36	6.22	95.8	12.9	19.8	3.20	83
40	6.04	100	12.9	17.9	2.94	93
44	6.21	104	13.0	15.6	2.64	89
48	6.21	105	13.1		2.57	91

Sampling

Date/Time	Containers (number/volume/type/preservative)				Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1200	1	1000ml	poly	none	32.8	no	Low Flow
" "	1	250ml	poly	none	"	no	Submersible
" "	1	250ml	poly	HNO3	"	no	Pump
" "	1	250ml	poly	H2SO4	"	no	"
" "	3	40ml	glass	HCl	"	no	"
" "	1	40ml	amber glass	HCl	"	no	"

Equipment Decontamination: None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: **Slightly white turbid** Sample Handling: Cooler, deliver to labComments: **Initial purge very turbid**

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: ML-9B
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: 107-401
Sampler: Dennis R. Dykes	Start Date/Time: 4/1/24 1250
	Weather: Sunny Mild 4/1-22

Well Pumping Data

		Measurement	Date	Time	Method
Depth to Water	Prepumping	29.64	4/1	1250	Well Probe
	Final pumping	29.76	"	1315	
	Pumping Time	Rate	Voltage	DTW	Liters Pumped Rate (ml/min)
	1	170/205	17.1	29.66	
	23	" "	16.6	29.76	11.7 510

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.25	318	17.7	11.6	0.21	-111
13	6.29	318	17.6	65.4	0.18	-113
16	6.34	320	17.5	26.4	0.16	-117
19	~~6.46~~ 6.58	320	17.5	13.1	0.15	~~-119~~

Sampling

Date/Time	Containers (number/volume/type/preservative)				Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1300	1	1000ml	poly	none	34.8	no	Low Flow
" "	1	250ml	poly	none	"	no	Submersible
" "	1	250ml	poly	HNO3	"	no	Pump
" "	1	250ml	poly	H2SO4	"	no	"
" "	3	40ml	glass	HCl	"	no	"
" "	1	40ml	amber glass	HCl	"	no	"

Equipment Decontamination: None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: Sample Handling: Cooler, deliver to lab

Comments: Initial page ~~4~~ 401

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: MW-10B
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: W8-401
Sampler: Dennis R. Dykes	Start Date/Time: 4/1/24 1320
	Weather: Sunny Mild LF Breeze

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		35.61	4/1	1320	Well Probe
	Final pumping	35.12	"	1345	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1	200/205	17.4	35.05		
23	" 1	17.0	35.12		

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.36	184	14.8	4.75	0.10	-49
13	6.37	185	14.9	2.75	0.08	-52
16	6.36	186	14.9	2.05	0.10	-54

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1330	1 1000ml poly none		no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: None, dedicated equip used. Well probe rinsed with distilled.
 Sample Appearance: **Clear** Sample Handling: Cooler, deliver to lab

Comments:

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill** Sample Location: **MW-11B**
 Sampling Event: **2nd Qtr 2024** Sample Field Identifier: **W10-401**
 Sampler: **Dennis R. Dykes** Start Date/Time: **4/1/24 1430**
 Weather: **Sunny Mild LTBreeze**

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		16.22	4/1	1430	Well Probe
	Final pumping	16.99	"	1500	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1	190/30s	12.7	16.74		
28	230/30s	12.7	16.99	11.2	400

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
12	6.01	92.5	14.4	9.02	0.76	59
14	5.99	~~92.5~~ 92.9	14.5	6.09	0.50	48
20	5.99	92.7	14.5	4.19	0.42	42

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1430	1 1000ml poly none	21.5	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: **None, dedicated equip used. Well probe rinsed with distilled.**
 Sample Appearance: **clear** Sample Handling: **Cooler, deliver to lab**

Comments: **Slight Turbid initial purge**

Field Sampling Data

Project Location:	Cowlitz County Tennant Way Landfill	Sample Location:	12W-12B
Sampling Event:	2nd Qtr 2024	Sample Field Identifier:	WS-461
Sampler:	Dennis R. Dykes	Start Date/Time:	4/1/24 1115
		Weather:	Sunny Cool LF Breeze

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		25.90	4/1	1115	Well Probe
	Final pumping	25.97	"	1140	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1	190/235	14.3	25.92		
23	180/20	15.2	25.97		

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.40	603	19.6	1.87	0.26	-126
13	6.40	601	19.7	0.92	0.26	-127
16	6.40	600	19.7		0.26	-129

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1100	1 1000ml poly none	39.3	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination:

None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: Clear

Sample Handling: Cooler, deliver to lab

Comments:

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill

Sample Location: M2-13

Sampling Event: 2nd Qtr 2024

Sample Field Identifier: 4/1/24 1040

Sampler: Dennis R. Dykes

Start Date/Time: 11-4-2011

Weather: Sunny cool & breezy

Well Pumping Data

		<u>Measurement</u>	<u>Date</u>	<u>Time</u>	<u>Method</u>	
Depth to	Prepumping	27.75	4/1	1040	Well Probe	
Water	Final pumping	27.80	"	1105		
Pumping Time		Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
2		170/205	15.6	27.77		
23		190/205	15.2	27.80	~~123~~ 13.1	570

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

[illegible]

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
7/1 1230	1 1000ml poly none	36.1	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination:

None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: (see)

Sample Handling: Cooler, deliver to lab

Comments: Flow & pH fluctuated

Field Sampling Data

Project Location:	Cowlitz County Tennant Way Landfill	Sample Location:	ML-14B
Sampling Event:	2nd Qtr 2024	Sample Field Identifier:	W3-401
Sampler:	Dennis R. Dykes	Start Date/Time:	4/1/24 1055
		Weather:	Mostly Sunny (w/ 4 Breezes)

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		25.15	4/1	1010	Well Probe
	Final pumping	25.71	"	1035	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1	175/285	14.7	25.19		
25	160/11	11	25.21		480

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
~~6:10~~	6.48	518	14.8	10.7	0.15	-162
13	6.47	526	14.8	7.52	0.12	-164
16	6.32	526	14.7	5.40	0.15	-155
19	6.48	533	14.9	4.02	0.12	-168

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1200	1 1000ml poly none	32.1	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: Clear Sample Handling: Cooler, deliver to lab

Comments:

Field Sampling Data

Project Location: Cowlitz County Tennant Way Landfill	Sample Location: <i>MW-15</i>
Sampling Event: 2nd Qtr 2024	Sample Field Identifier: <i>W2-401</i>
Sampler: Dennis R. Dykes	Start Date/Time: <i>4/1/24 935</i>
	Weather: <i>Overcast 60s 61m</i>

Well Pumping Data

Depth to Water	Prepumping	Measurement	Date	Time	Method
		<i>24.56</i>	<i>4/1</i>	<i>940</i>	Well Probe
	Final pumping	<i>24.57</i>	"	<i>1005</i>	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
<i>1</i>	<i>280ml/20s</i>	<i>14.7</i>	<i>24.57</i>		
<i>23</i>	<i>140ml/20s</i>	<i>15.7</i>	<i>24.57</i>	<i>12.4</i>	<i>540</i>

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
<i>10</i>	<i>6.46</i>	<i>438</i>	<i>13.6</i>	<i>0.33</i>	<i>0.05</i>	<i>-115</i>
<i>13</i>	<i>6.47</i>	<i>436</i>	<i>13.6</i>	<i>0.26</i>	<i>0.05</i>	<i>-122</i>
<i>16</i>	<i>6.47</i>	<i>433</i>	<i>13.6</i>	<i>0.19</i>	<i>0.02</i>	<i>-125</i>

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
<i>4/1 930</i>	<i>1 1000ml poly none</i>	<i>36.2</i>	<i>no</i>	<i>Low Flow</i>
" "	<i>1 250ml poly none</i>	"	<i>no</i>	<i>Submersible</i>
" "	<i>1 250ml poly HNO3</i>	"	<i>no</i>	<i>Pump</i>
" "	<i>1 250ml poly H2SO4</i>	"	<i>no</i>	"
" "	<i>3 40ml glass HCl</i>	"	<i>no</i>	"
" "	<i>1 40ml amber glass HCl</i>	"	<i>no</i>	"

Equipment Decontamination: *None, dedicated equip used. Well probe rinsed with distilled.*

Sample Appearance: *Clear* Sample Handling: *Cooler, deliver to lab*

Comments:

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill**
 Sampling Event: **2nd Qtr 2024**
 Sampler: **Dennis R. Dykes**

Sample Location: **~~AN-16B~~ MU-16B**
 Sample Field Identifier: **W12-401**
 Start Date/Time: **4/1/24 1540**
 Weather: **Sunny, mild 46-60**

Well Pumping Data

Depth to Water	Measurement		Date	Time	Method
	Prepumping	Final pumping			
		15.59	4/1	1540	Well Probe
		15.79	"	1610	
Pumping Time	Rate	Voltage	DTW	Liters Pumped	Rate (ml/min)
1	175/205	11.3	15.68		
29	195/205	10.8	15.79	1710	585

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
10	6.34	763	15.1	2.5	0.14	-124
13	6.11	766	14.9	17.5	0.14	-114
16	6.15	778	14.8	6.13	0.11	-118

Sampling

Date/Time	Containers (number/volume/type/preservative)				Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1530	1	1000ml	poly	none	32.3	no	Low Flow
" "	1	250ml	poly	none	"	no	Submersible
" "	1	250ml	poly	HNO3	"	no	Pump
" "	1	250ml	poly	H2SO4	"	no	"
" "	3	40ml	glass	HCl	"	no	"
" "	1	40ml	amber glass	HCl	"	no	"

Equipment Decontamination:

None, dedicated equip used. Well probe rinsed with distilled.

Sample Appearance: **Clear**

Sample Handling: Cooler, deliver to lab

Comments:

Bottles filled alternating w/ MU-16B Dup

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill**
 Sampling Event: **2nd Qtr 2024**
 Sampler: **Dennis R. Dykes**

Sample Location: **MW-16B Dupire**
 Sample Field Identifier: **W13-401**
 Start Date/Time: **4/1/24 1540**
 Weather: **Sunny, mild, light breeze**

Well Pumping Data

Depth to Water	Prepumping Final pumping	Measurement Pumping Time	Date	Time	Method Well Probe
		Rate	Voltage	DTW	Liters Pumped Rate (ml/min)
See MW-16B					
Flow through cells apparatus volume = approx. 120ml.					

Field Water Quality Measurements

Pumping Time	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
See MW-16B						

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1/24	1 1000ml poly none	32.3	no	Low Flow
" "	1 250ml poly none	"	no	Submersible
" "	1 250ml poly HNO3	"	no	Pump
" "	1 250ml poly H2SO4	"	no	"
" "	3 40ml glass HCl	"	no	"
" "	1 40ml amber glass HCl	"	no	"

Equipment Decontamination: **None, dedicated equip used. Well probe rinsed with distilled.**
 Sample Appearance: **clear**
 Sample Handling: **Cooler, deliver to lab**

Comments: **Bottles filled alternating w/ MW-16B**

Field Sampling Data

Project Location:	Cowlitz County Tennant Way Landfill	Sample Location:	S-2
Sampling Event:	2nd Qtr 2024	Sample Field Identifier:	W14-405
Sampler:	Dennis R. Dykes	Start Date/Time:	4/1/24 1625
		Weather:	Sunny Mild 16°C

Well Pumping Data

Depth to Water:	Prepumping Final pumping	Measurement	Date	Time	Method
		Pumping Time	Rate	Voltage	DTW
					Liters Pumped
					Rate
Not Applicable					
Flow through cells apparatus volume = approx. 120ml.					

Field Water Quality Measurements

	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
	8.37	164	16.4			

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1/24	1 1000ml poly none	Surface	no	Dipped
4/1/24	1 250ml poly HNO3	"	no	"

Equipment Decontamination: None, field equipment rinsed with distilled.

Sample Appearance: Clear w/ 9/945 Sample Handling: Cooler, deliver to lab

Comments:

Field Sampling Data

Project Location:	Cowlitz County Tennant Way Landfill	Sample Location:	RD-1
Sampling Event:	2nd Qtr 2024	Sample Field Identifier:	W/S-401
Sampler:	Dennis R. Dykes	Start Date/Time:	4/1/24
		Weather:	

Well Pumping Data

Depth to Water:	Prepumping Final pumping	Measurement Pumping Time	Rate	Voltage	Date DTW	Time Liters Pumped	Method Well Probe Rate
Not Applicable							
Flow through cells apparatus volume = approx. 120ml.							

Field Water Quality Measurements

	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
	7.01	202	12.5			

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1630	1 1000ml poly none	Surface	no	Dipped
" 7	1 250ml poly HNO3	"	no	"

Equipment Decontamination: None, field equipment rinsed with distilled.

Sample Appearance: Sample Handling: Cooler, deliver to lab

Comments: w/ high ~1' deep ~ flow visible

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill** Sample Location: **L-1**
 Sampling Event: **2nd Qtr 2024** Sample Field Identifier: **W16-401**
 Sampler: **Dennis R. Dykes** Start Date/Time: **4/16/24 1640**
 Weather: **Sunny Mild 18-20°C**

Well Pumping Data

Depth to Water:	Prepumping Final pumping	Measurement Pumping Time	Rate	Voltage	Date DTW	Time Liters Pumped	Method Rate

Not Applicable

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
	6.43	632	14.7			

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/16/24	1 1000ml poly none	Sump	No	Disposable
11	1 250ml poly HNO3	"	"	Bailer
11	1 250ml poly H2SO4	"	"	"
	3 40ml glass none HCl	"	"	"
	1 40ml glass H2SO4	"	"	"

Equipment Decontamination: **None, disposable bailer used. Field equip rinsed with distilled.**

Sample Appearance: **Slight turbidity** Sample Handling: **Cooler, deliver to lab**

Comments:

Field Sampling Data

Project Location: **Cowlitz County Tennant Way Landfill**
 Sampling Event: **2nd Qtr 2024**

Sample Location: **L-2**
 Sample Field Identifier: **WMT-401**

Sampler: **Dennis R. Dykes**

Start Date/Time: **4/1/24 1705**

Weather: **Sunny mild LT breeze**

Well Pumping Data

Depth to Water:	Measurement		Date	Time	Method
	Prepumping	Final pumping			
	Pumping Time	Rate	Voltage	DTW	Liters Pumped

Not Applicable

Flow through cells apparatus volume = approx. 120ml.

Field Water Quality Measurements

	pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
	7.84	7590	15.8			

Sampling

Date/Time	Containers (number/volume/type/preservative)				Depth Taken (ft)	Field Filtration	Sampling Method
4/1 1700	1	1000ml	poly	none	Sump	No	Disposable
	1	250ml	poly	HNO3	"	"	Bailer
	1	250ml	poly	H2SO4	"	"	"
	3	40ml	glass	none	"	"	"
	1	40ml	glass	H2SO4	"	"	"

Equipment Decontamination: **None, disposable bailer used. Field equip rinsed with distilled.**

Sample Appearance: **Brown stain - clear** Sample Handling: **Cooler, deliver to lab**

Comments:

Field Sampling Data

Project Location:	Cowlitz County Tennant Way Landfill	Sample Location:	L-3
Sampling Event:	2nd Qtr 2024	Sample Field Identifier:	W18-401
Sampler:	Dennis R. Dykes	Start Date/Time:	4/1/24 1525
		Weather:	Sunny Mild w/ Breeze

Well Pumping Data

Depth to Water:	Prepumping Final pumping	Measurement Pumping Time	Rate	Voltage	Date DTW	Time Liters Pumped	Method Rate Well Probe
Not Applicable							
Flow through cells apparatus volume = approx. 120ml.							

Field Water Quality Measurements

pH	Specific Conductance (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Eh (mV)
7.89	7450	13.3			

Sampling

Date/Time	Containers (number/volume/type/preservative)	Depth Taken (ft)	Field Filtration	Sampling Method
4/1/24	1 1000ml poly none	Sump	No	Disposable
	1 250ml poly HNO3	"	"	Bailer
	1 250ml poly H2SO4	"	"	"
	3 40ml glass none	"	"	"
	1 40ml glass H2SO4	"	"	"

Equipment Decontamination: None, disposable bailer used. Field equip rinsed with distilled.

Sample Appearance: Brown turbid Sample Handling: Cooler, deliver to lab

Comments:



ALS Environmental

Project Name: Lehigh Valley Landfill Detection Monitoring
 Project Manager: Dennis Dykes
 Company: ALS Environmental
 Address, City, State: 1317 South 13th Ave, Kelso, WA 98626

Phone: 360 263 6307
 Email: dd@alsenv.com
 Sampler Printed Name: Dennis Dykes

CLIENT SAMPLE ID	LABID	SAMPLING Date	Time State	Matrix
W21-401		4/12/24	900	W
W22-401		4/12/24	930	W
W23-401		4/12/24	1000	W
W24-401		4/12/24	1030	W
W25-401		4/12/24	1100	W
W26-401		4/12/24	1200	W
W27-401		4/12/24	1300	W
W28-401		4/12/24	1330	W
W29-401		4/12/24	1400	W
W30-401		4/12/24	1430	W

Report Requirements

☒ I. Routine Report: Method Blank, Surrogate, as required

☒ II. Report Dup., MS, MSD as required

☐ III. CLP Like Summary (no raw data)

☐ IV. Data Validation Report

☐ V. EDD

Turnaround Requirements

Requested Report Date: 4/12/24

Received By: M. Mulleugh

Signature: [Signature]

Printed Name: M. Mulleugh

Firm: ALS

Invoice Information

P.O.#: 60126

Bill To: Public Works

Relinquished By:

Signature: [Signature]

Printed Name: Dennis Dykes

Firm: ALS

Date/Time: 4/12/24 900

Received By:

Signature: [Signature]

Printed Name: M. Mulleugh

Firm: ALS

Date/Time: 4/12/24 900

002

CHAIN OF CUSTODY

137059

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-895-7222 / FAX (360) 636-1068
 www.alsglobal.com

Page 1 of

SR#

COC Set 1 of 2

COC#

NUMBER OF CONTAINERS		Remarks	
48H	300.0 / NO3		
7D	3260C / VOC Unp		
	SM 2540 C / TDS		
	SM 2540 D / TSS		
14D	3260C / VOC FP		
	SM 2320 B / Alkalinity Tit		
	300.0 / Chloride		
28D	300.0 / SO4		
	SM 4500-NH3 E / Ammonia		
	200.7 / Metals D		
180D	200.8 / Metals T		
999D	Filter Mat / Filter Mat		

Circle which metals are to be analyzed

Total Metals: Al ☒ As ☒ Ba ☒ Be ☒ B ☒ Ca ☒ Cd ☒ Co ☒ Cr ☒ Cu ☒ Fe ☒ Mg ☒ Mn ☒ Mo ☒ Ni ☒ K ☒ Ag ☒ Na ☒ Se ☒ Sr ☒ Ti ☒ Sn ☒ V ☒ Zn ☒ Hg

Dissolved Metals: Al ☒ As ☒ Sb ☒ Ba ☒ Be ☒ B ☒ Ca ☒ Cd ☒ Co ☒ Cr ☒ Cu ☒ Fe ☒ Pb ☒ Mn ☒ Mo ☒ Ni ☒ K ☒ Ag ☒ Na ☒ Se ☒ Sr ☒ Ti ☒ Sn ☒ V ☒ Zn ☒ Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA HI Northwest Other (Circle One)



CHAIN OF CUSTODY

137059

002

tw

SR#

COC Set 2 of 2

COC#

1317 South 13th Ave. Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Page 1 of 1

Project Name: Centralia Temo-Hay 12 Detention Facility
 Project Number: 137059
 Project Manager: Bernis Dyke
 Company: BFSW
 Address: City, State

Phone: 360 263 6307
 email: Bernis.Dyke@BFSW.com
 Sampler Signature: Bernis Dyke
 Sampler Printed Name: Bernis Dyke

CLIENT SAMPLE ID	LABID	SAMPLING Date Time State	Matrix	48H	7D	14D	28D	180D	999D	Remarks
1. W11-401		4/12/14 1500 W	W	X	X	X	X	X	X	
2. W12-401		1530	W	X	X	X	X	X	X	
3. W13-401		1600	W	X	X	X	X	X	X	
4. W14-401		1615	W	X	X	X	X	X	X	
5. W15-401		1630	W	X	X	X	X	X	X	
6. W16-401		1645	W	X	X	X	X	X	X	
7. W17-401		1700	W	X	X	X	X	X	X	
8. W18-401		1730	W	X	X	X	X	X	X	
9.										
10.										

Report Requirements

- I. Routine Report: Method Blank, Surrogate, as required ☒ II. Report Dup., MS, MSD as required ☒ III. CLP Like Summary (no raw data) ☐ IV. Data Validation Report ☐ V. EDD ☐

Invoice Information

P.O.# 6000
 Bill To: P.S. Swisher

Turnaround Requirements

Requested Report Date: 4/24/14
 24 hr. ☐ 5 Day ☐ Standard ☒

Relinquished By:

Signature: Bernis Dyke
 Printed Name: BFSW
 Firm: BFSW
 Date/Time: 4/24 900

Received By:

Signature: M. Mulligan
 Printed Name: M. Mulligan
 Firm: ALS
 Date/Time: 4/24/14 0900

Relinquished By:

Signature: M. Mulligan
 Printed Name: M. Mulligan
 Firm: ALS
 Date/Time: 4/24/14 0900

Received By:

Signature: M. Mulligan
 Printed Name: M. Mulligan
 Firm: ALS
 Date/Time: 4/24/14 0900

Relinquished By:

Signature: M. Mulligan
 Printed Name: M. Mulligan
 Firm: ALS
 Date/Time: 4/24/14 0900

Received By:

Signature: M. Mulligan
 Printed Name: M. Mulligan
 Firm: ALS
 Date/Time: 4/24/14 0900

Circle which metals are to be analyzed

Total Metals: Al ☒ As ☒ Ba ☒ Be ☒ B ☒ Ca ☒ Cd ☒ Co ☒ Cr ☒ Cu ☒ Fe ☒ Hg ☒ K ☒ Na ☒ Ni ☒ Pb ☒ Se ☒ Si ☒ Sn ☒ V ☒ Zn ☒ Zr ☒

Dissolved Metals: Al ☒ As ☒ Ba ☒ Be ☒ B ☒ Ca ☒ Cd ☒ Co ☒ Cr ☒ Cu ☒ Fe ☒ Hg ☒ K ☒ Na ☒ Ni ☒ Pb ☒ Se ☒ Si ☒ Sn ☒ V ☒ Zn ☒ Zr ☒

Special Instructions/Comments:

+ add Fe + Mn
 + add Ca Fe Mg Mn K Na

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other (Circle One)

Cowlitz County Tennant Way Landfill

Quarterly Detection Monitoring Data Validation

Second Quarter 2024

This memorandum presents a summary of the validation review completed for the INORGANIC analytical data generated for the identified project using the identified analytical method, laboratory, and guidance.

1. General Information

Project: **Cowlitz County Tennant Way Landfill Quarterly Detection Monitoring Program**
Laboratory: ALS Environmental Kelso
Lab Package Identifiers: ALS Project Number K2403414
Date(s) Sampled: April 1, 2024
Data Reviewer: Dennis R. Dykes, Bright Fields Groundwater, Inc.
Date Reviewed: May 5, 2024
See attached table for sample numbers, laboratory-assigned identifiers, and sample dates.
Laboratory report which includes QC and Chain of Custody documentation is attached

2. Validation Review Guidance

Sampling and Analysis Plan, Cowlitz County (Bright Fields Groundwater, 2013)
National Functional Guidelines for Inorganic Data Review (USEPA, 1994)
Criteria for Municipal Solid Waste Landfills (Chapter 173-351 WAC)

3. Overall Assessment of Data

The data are judged to be acceptable for use in the quarterly monitoring program.
J qualifier assigned for ammonia detections because of poor field replicate results.
T data qualifier assigned to detections below the MRL, concentrations estimated.

Precision: Analytical precision acceptable; field duplication not evaluated
Accuracy: Spike, surrogate, and method blank results acceptable except as noted.
Representativeness: Sampling completeness confirms representativeness as specified in SAP.
Completeness: All locations sampled, results valid with above qualifiers, if assigned.
Comparability: Sampling and analyses performed per the SAP and method requirements.
Results should be comparable with previous similar sample results.

4. Data Validation Summary

Holding Times: NO3 1 days, Cl 2 to 3 days, SO4 2 to 3 days.
Ammonia 14 days, alkalinity 2 to 5 days, TOC 2 days
Metals: diss 3 days to extr, anal 8 days; total 3 to ext, 8 days to anal
TDS, TSS 2 to 4 days to analysis

Blanks: Method - Non-detect except ammonia (.030T), Alk (1.2T 4/5), chloride (.01T 4/3)
Total metals: Ca (6T), Mn (.2T), Na (80T)
Dissolved metals: not reported

Duplicates: Lab: Ok except Cd, Pb, Ag, and Th one <MRL and NH3 and TOC not reported.
Dissolved metals not reported
Field: Acceptable except ammonia.

Cowlitz County Tennant Way Landfill
Quarterly Detection Monitoring Data Validation
Second Quarter 2024

Spike Sample Analysis: No MS/MSD for Alk, TOC, TDS, TSS, NH3
MS total metals ok, diss not reported
MS/MSD Cl, NO3, and SO4 ok.

Laboratory Control Samples: Ok

Method Reporting Limits: Within SAP limits except various parameters in various
samples as follows:

Other:

Cowlitz County Tennant Way Landfill

Quarterly Detection Monitoring Data Validation

Second Quarter 2024

This memorandum presents a summary of the validation review completed for the VOLATILE ORGANIC COMPOUND data generated for the identified project using the specified analytical method, laboratory, and guidance.

1. General Information

Project: **Cowlitz County Tennant Way Landfill Quarterly Detection Monitoring Program**

Laboratory: ALS Environmental Kelso

Lab Package Identifiers: ALS Project Number K2403414

Date(s) Sampled: April 1, 2024

Data Reviewer: Dennis R. Dykes, Bright Fields Groundwater, Inc.

Date Reviewed: May 5, 2024

See attached table for sample numbers, laboratory-assigned identifiers, and sample dates.

Laboratory report which includes QC data and Chain of Custody documentation is attached.

2. Validation Review Guidance

Sampling and Analysis Plan, Cowlitz County (Bright Fields Groundwater, 2012)
National Functional Guidelines for Organic Data Review (USEPA, 1994)
Criteria for Municipal Solid Waste Landfills (Chapter 173-351 WAC)

3. Overall Assessment of Data

The data are judged to be acceptable for use in the quarterly monitoring program.

T data qualifier assigned estimated concentrations detected below MRL.

J data qualifier assigned to acetone because of poor field duplication

Precision: Analytical precision acceptable; field duplication not evaluated
Accuracy: Spike, surrogate, and method blank results acceptable except as noted.
Representativeness: Sampling completeness confirms representativeness as specified in SAP.
Completeness: All locations sampled, greater than specified percentage of results valid.
Comparability: Sampling and analyses performed per the SAP and method requirements.
Results should be comparable with previous similar sample results.

Holding Times: Analyzed 3 days W1-12, 17 and 18, 7 days W13 and W16

Blanks: Method - no detections

Trip- no detections

Duplicates: Field Dup- Chloromethane (.08T), Meth Chlor (.11T).

Detection limits: Three compounds with valid result duplicated 15 to 22%, all <MRL.

Surrogate Recovery: Acceptable, no dilutions.

Matrix Spike/Matrix Spike Duplicates: OK

Not reported

LCS/dupLCS: OK 4/4 and 4/8 except bromomethane slightly high in 4/4 LCS.

Initial Calibration Exceptions: None reported in case narrative.

Continuing Calibration Verification Exceptions:

Several analytes outside criteria reported in case narrative each analysis date.

Acceptable by other criteria.

Cowlitz County Tennant Way Landfill
Quarterly Detection Monitoring Data Validation
Second Quarter 2024

Sample Identifier Summary

Sample Location	Field Identifier	Laboratory Identifier	Date	Sample Type
MW-3B	W9- 401	K2403414 -009	4/1/2024	Groundwater
MW-5B	W1- 401	K2403414 -001	4/1/2024	Groundwater
MW-7B	W11- 401	K2403414 -011	4/1/2024	Groundwater
MW-8B	W6- 401	K2403414 -006	4/1/2024	Groundwater
MW-9B	W7- 401	K2403414 -007	4/1/2024	Groundwater
MW-10B	W8- 401	K2403414 -008	4/1/2024	Groundwater
MW-11B	W10- 401	K2403414 -010	4/1/2024	Groundwater
MW-12B	W5- 401	K2403414 -005	4/1/2024	Groundwater
MW-13	W4- 401	K2403414 -004	4/1/2024	Groundwater
MW-14B	W3- 401	K2403414 -003	4/1/2024	Groundwater
MW-15	W2- 401	K2403414 -002	4/1/2024	Groundwater
MW-16B	W12- 401	K2403414 -012	4/1/2024	Groundwater
L-1	W16- 401	K2403414 -016	4/1/2024	Leachate
L-2	W17- 401	K2403414 -017	4/1/2024	Leachate
L-3	W18- 401	K2403414 -018	4/1/2024	Leachate
RD-1	W14- 401	K2403414 -014	4/1/2024	Surface Water
S-2	W15- 401	K2403414 -015	4/1/2024	Surface Water
MW-16B Dup	W13- 401	K2403414 -013	4/1/2024	Groundwater
Trip Blank	---	K2403414 -019	---	Lab Blank



April 17, 2024

Service Request No:K2403414

Dan Bales
Cowlitz County Public Works
1600 13th Avenue South
Kelso, WA 98626

Laboratory Results for: Cowlitz Co. Tennet Way Landfill Detection Monitori

Dear Dan,

Enclosed are the results of the sample(s) submitted to our laboratory April 02, 2024
For your reference, these analyses have been assigned our service request number **K2403414**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Received: 04/02/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Nineteen water samples were received for analysis at ALS Environmental on 04/02/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

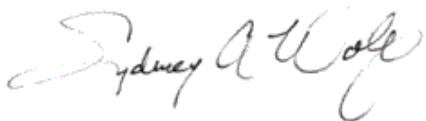
Volatiles by GC/MS:

Several analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) KQ2405647-02. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Several analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) KQ2405657-02. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Method 8260C, 04/04/2024: The upper control criterion was exceeded for Bromomethane in Laboratory Control Sample (LCS) KQ2405657-03. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Approved by



Date

04/17/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W12-401			Lab ID: K2403414-012			

Analyte	Results	Flag	MDL	MRL	Units	Method
1,2-Dichlorobenzene	0.20	J	0.12	0.50	ug/L	8260C
1,4-Dichlorobenzene	0.23	J	0.12	0.50	ug/L	8260C
Acetone	3.9	J	3.3	20	ug/L	8260C
Alkalinity as CaCO ₃ , Total	411		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	2.79		0.009	0.050	mg/L	SM 4500-NH ₃ E
Arsenic	1.13		0.09	0.50	ug/L	200.8
Barium	34.8		0.020	0.050	ug/L	200.8
Beryllium	0.022		0.005	0.020	ug/L	200.8
Calcium, Dissolved	76900		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	13.6		0.10	0.50	mg/L	SM 5310 B
Chloride	7.33		0.010	0.20	mg/L	300.0
Chlorobenzene	0.36	J	0.11	0.50	ug/L	8260C
Chromium	0.38		0.03	0.20	ug/L	200.8
Cobalt	0.583		0.009	0.020	ug/L	200.8
Copper	0.26		0.05	0.10	ug/L	200.8
Iron, Dissolved	12200		8	21	ug/L	200.7
Lead	0.031		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	37100		0.4	5.3	ug/L	200.7
Manganese, Dissolved	5320		0.2	1.1	ug/L	200.7
Nickel	0.50		0.04	0.20	ug/L	200.8
Potassium, Dissolved	3880		60	210	ug/L	200.7
Sodium, Dissolved	23400		30	210	ug/L	200.7
Solids, Total Dissolved	463			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	86.5			5.0	mg/L	SM 2540 D
Sulfate	1.98		0.02	0.20	mg/L	300.0
Vanadium	1.44		0.04	0.20	ug/L	200.8

CLIENT ID: W13-401			Lab ID: K2403414-013			

Analyte	Results	Flag	MDL	MRL	Units	Method
1,2-Dichlorobenzene	0.24	J	0.12	0.50	ug/L	8260C
1,4-Dichlorobenzene	0.23	J	0.12	0.50	ug/L	8260C
Alkalinity as CaCO ₃ , Total	408		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	11.4		0.009	0.050	mg/L	SM 4500-NH ₃ E
Arsenic	1.11		0.09	0.50	ug/L	200.8
Barium	35.0		0.020	0.050	ug/L	200.8
Beryllium	0.022		0.005	0.020	ug/L	200.8
Calcium, Dissolved	75100		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	13.7		0.10	0.50	mg/L	SM 5310 B
Chloride	7.32		0.010	0.20	mg/L	300.0
Chlorobenzene	0.37	J	0.11	0.50	ug/L	8260C
Chromium	0.35		0.03	0.20	ug/L	200.8

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W13-401			Lab ID: K2403414-013			

Analyte	Results	Flag	MDL	MRL	Units	Method
Cobalt	0.577		0.009	0.020	ug/L	200.8
Copper	0.24		0.05	0.10	ug/L	200.8
Iron, Dissolved	11500		8	21	ug/L	200.7
Lead	0.032		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	36200		0.4	5.3	ug/L	200.7
Manganese, Dissolved	5210		0.2	1.1	ug/L	200.7
Nickel	0.53		0.04	0.20	ug/L	200.8
Potassium, Dissolved	3760		60	210	ug/L	200.7
Sodium, Dissolved	22800		30	210	ug/L	200.7
Solids, Total Dissolved	457			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	95.5			5.0	mg/L	SM 2540 D
Sulfate	1.97		0.02	0.20	mg/L	300.0
Vanadium	1.47		0.04	0.20	ug/L	200.8
Zinc	0.6	J	0.5	2.0	ug/L	200.8

CLIENT ID: W16-401			Lab ID: K2403414-016			

Analyte	Results	Flag	MDL	MRL	Units	Method
1,4-Dichlorobenzene	1.1		0.12	0.50	ug/L	8260C
Alkalinity as CaCO3, Total	289		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	11.8		0.009	0.050	mg/L	SM 4500-NH3 E
Antimony	0.120		0.020	0.050	ug/L	200.8
Arsenic	5.10		0.09	0.50	ug/L	200.8
Barium	134		0.020	0.050	ug/L	200.8
Beryllium	0.015	J	0.005	0.020	ug/L	200.8
Cadmium	0.008	J	0.008	0.020	ug/L	200.8
Calcium	61200		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	14.0		0.10	0.50	mg/L	SM 5310 B
Chloride	12.0		0.010	0.20	mg/L	300.0
Chlorobenzene	1.1		0.11	0.50	ug/L	8260C
Chloroethane	0.27	J	0.16	0.50	ug/L	8260C
Chromium	0.92		0.03	0.20	ug/L	200.8
Cobalt	0.656		0.009	0.020	ug/L	200.8
Copper	5.12		0.05	0.10	ug/L	200.8
Iron	32400		8	21	ug/L	200.7
Lead	0.296		0.006	0.020	ug/L	200.8
Magnesium	15400		0.4	5.3	ug/L	200.7
Manganese	1700		0.2	1.1	ug/L	200.7
Nickel	2.09		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	1.84		0.006	0.10	mg/L	300.0
Potassium	13000		60	210	ug/L	200.7
Sodium	23100		30	210	ug/L	200.7

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W16-401			Lab ID: K2403414-016			

Analyte	Results	Flag	MDL	MRL	Units	Method
Solids, Total Dissolved	311			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	63.5			5.0	mg/L	SM 2540 D
Sulfate	1.91		0.02	0.20	mg/L	300.0
Vanadium	1.54		0.04	0.20	ug/L	200.8
Zinc	2.7		0.5	2.0	ug/L	200.8

CLIENT ID: W17-401			Lab ID: K2403414-017			

Analyte	Results	Flag	MDL	MRL	Units	Method
1,4-Dichlorobenzene	0.58			0.50	ug/L	8260C
Alkalinity as CaCO3, Total	1880		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	198		0.02	0.10	mg/L	SM 4500-NH3 E
Antimony	1.57		0.020	0.050	ug/L	200.8
Arsenic	13.9		0.09	0.50	ug/L	200.8
Barium	260		0.020	0.050	ug/L	200.8
Beryllium	0.030		0.005	0.020	ug/L	200.8
Cadmium	0.264		0.008	0.020	ug/L	200.8
Calcium	163000		20	110	ug/L	200.7
Carbon, Total Organic (TOC)	130		2	10	mg/L	SM 5310 B
Chloride	829		0.5	10	mg/L	300.0
Chromium	29.7		0.03	0.20	ug/L	200.8
Cobalt	20.8		0.009	0.020	ug/L	200.8
Copper	12.2		0.05	0.10	ug/L	200.8
Iron	3240		40	110	ug/L	200.7
Lead	0.251		0.006	0.020	ug/L	200.8
Magnesium	80400		2	26	ug/L	200.7
Manganese	1960		1.1	5.3	ug/L	200.7
Nickel	90.0		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	59.6		0.2	2.5	mg/L	300.0
Potassium	327000		300	1100	ug/L	200.7
Selenium	0.6	J	0.2	1.0	ug/L	200.8
Silver	0.017	J	0.009	0.020	ug/L	200.8
Sodium	986000		200	1100	ug/L	200.7
Solids, Total Dissolved	3800			200	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	16.5			5.0	mg/L	SM 2540 D
Sulfate	506		1.0	10	mg/L	300.0
Thallium	0.026		0.009	0.020	ug/L	200.8
Vanadium	43.1		0.04	0.20	ug/L	200.8
Zinc	33.2		0.5	2.0	ug/L	200.8

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W18-401		Lab ID: K2403414-018				
Analyte	Results	Flag	MDL	MRL	Units	Method
1,4-Dichlorobenzene	1.5			0.50	ug/L	8260C
Alkalinity as CaCO ₃ , Total	2420		1.2	4.0	mg/L	SM 2320 B
Ammonia as Nitrogen	328		0.05	0.25	mg/L	SM 4500-NH ₃ E
Antimony	1.68		0.020	0.050	ug/L	200.8
Arsenic	19.8		0.09	0.50	ug/L	200.8
Barium	409		0.020	0.050	ug/L	200.8
Benzene	0.89			0.50	ug/L	8260C
Beryllium	0.023		0.005	0.020	ug/L	200.8
Cadmium	0.086		0.008	0.020	ug/L	200.8
Calcium	162000		20	110	ug/L	200.7
Carbon, Total Organic (TOC)	152		2	10	mg/L	SM 5310 B
Chloride	804		0.5	10	mg/L	300.0
Chromium	31.2		0.03	0.20	ug/L	200.8
Cobalt	21.3		0.009	0.020	ug/L	200.8
Copper	7.71		0.05	0.10	ug/L	200.8
Ethylbenzene	0.86			0.50	ug/L	8260C
Iron	11300		40	110	ug/L	200.7
Lead	0.363		0.006	0.020	ug/L	200.8
m,p-Xylenes	0.96			0.50	ug/L	8260C
Magnesium	74900		2	26	ug/L	200.7
Manganese	3760		1.1	5.3	ug/L	200.7
Nickel	86.1		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	4.6		0.2	2.5	mg/L	300.0
o-Xylene	1.3			0.50	ug/L	8260C
Potassium	305000		300	1100	ug/L	200.7
Selenium	0.7	J	0.2	1.0	ug/L	200.8
Silver	0.018	J	0.009	0.020	ug/L	200.8
Sodium	929000		200	1100	ug/L	200.7
Solids, Total Dissolved	3820			200	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	11.5			5.0	mg/L	SM 2540 D
Sulfate	508		1.0	10	mg/L	300.0
Thallium	0.013	J	0.009	0.020	ug/L	200.8
Vanadium	45.7		0.04	0.20	ug/L	200.8
Zinc	11.5		0.5	2.0	ug/L	200.8

CLIENT ID: W1-401		Lab ID: K2403414-001				
Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.6	J	3.3	20	ug/L	8260C
Alkalinity as CaCO ₃ , Total	247		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.040	J	0.009	0.050	mg/L	SM 4500-NH ₃ E
Antimony	0.031	J	0.020	0.050	ug/L	200.8

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W1-401			Lab ID: K2403414-001			

Analyte	Results	Flag	MDL	MRL	Units	Method
Arsenic	0.47	J	0.09	0.50	ug/L	200.8
Barium	37.6		0.020	0.050	ug/L	200.8
Beryllium	0.008	J	0.005	0.020	ug/L	200.8
Cadmium	0.033		0.008	0.020	ug/L	200.8
Calcium, Dissolved	48200		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	5.70		0.10	0.50	mg/L	SM 5310 B
Chloride	3.92		0.010	0.20	mg/L	300.0
Chromium	0.20		0.03	0.20	ug/L	200.8
Cobalt	1.62		0.009	0.020	ug/L	200.8
Copper	1.56		0.05	0.10	ug/L	200.8
Lead	0.047		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	23300		0.4	5.3	ug/L	200.7
Manganese, Dissolved	836		0.2	1.1	ug/L	200.7
Nickel	2.87		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	0.006	J	0.006	0.10	mg/L	300.0
Potassium, Dissolved	1390		60	210	ug/L	200.7
Silver	0.086		0.009	0.020	ug/L	200.8
Sodium, Dissolved	20500		30	210	ug/L	200.7
Solids, Total Dissolved	290			10	mg/L	SM 2540 C
Sulfate	13.6		0.02	0.20	mg/L	300.0
Thallium	0.029		0.009	0.020	ug/L	200.8
Vanadium	1.57		0.04	0.20	ug/L	200.8
Zinc	0.7	J	0.5	2.0	ug/L	200.8

CLIENT ID: W2-401			Lab ID: K2403414-002			

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	5.0	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	240		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.760		0.009	0.050	mg/L	SM 4500-NH3 E
Antimony	0.029	J	0.020	0.050	ug/L	200.8
Arsenic	3.80		0.09	0.50	ug/L	200.8
Barium	21.6		0.020	0.050	ug/L	200.8
Beryllium	0.026		0.005	0.020	ug/L	200.8
Cadmium	0.020		0.008	0.020	ug/L	200.8
Calcium, Dissolved	68100		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	14.7		0.10	0.50	mg/L	SM 5310 B
Chloride	7.42		0.010	0.20	mg/L	300.0
Chromium	0.90		0.03	0.20	ug/L	200.8
Cobalt	0.978		0.009	0.020	ug/L	200.8
Copper	1.51		0.05	0.10	ug/L	200.8
Iron, Dissolved	526		8	21	ug/L	200.7

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W2-401			Lab ID: K2403414-002			

Analyte	Results	Flag	MDL	MRL	Units	Method
Lead	0.021		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	13000		0.4	5.3	ug/L	200.7
Manganese, Dissolved	5170		0.2	1.1	ug/L	200.7
Nickel	1.18		0.04	0.20	ug/L	200.8
Potassium, Dissolved	3680		60	210	ug/L	200.7
Silver	0.024		0.009	0.020	ug/L	200.8
Sodium, Dissolved	10100		30	210	ug/L	200.7
Solids, Total Dissolved	340			10	mg/L	SM 2540 C
Sulfate	7.38		0.02	0.20	mg/L	300.0
Thallium	0.027		0.009	0.020	ug/L	200.8
Vanadium	4.77		0.04	0.20	ug/L	200.8
Zinc	0.6	J	0.5	2.0	ug/L	200.8

CLIENT ID: W3-401			Lab ID: K2403414-003			

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.5	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	238		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	2.44		0.009	0.050	mg/L	SM 4500-NH3 E
Arsenic	8.08		0.09	0.50	ug/L	200.8
Barium	26.4		0.020	0.050	ug/L	200.8
Beryllium	0.044		0.005	0.020	ug/L	200.8
Cadmium	0.008	J	0.008	0.020	ug/L	200.8
Calcium, Dissolved	48300		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	27.7		0.10	0.50	mg/L	SM 5310 B
Chloride	7.48		0.010	0.20	mg/L	300.0
Chromium	1.57		0.03	0.20	ug/L	200.8
Cobalt	0.552		0.009	0.020	ug/L	200.8
Copper	0.18		0.05	0.10	ug/L	200.8
Iodomethane	0.14	J	0.12	5.0	ug/L	8260C
Iron, Dissolved	4230		8	21	ug/L	200.7
Lead	0.033		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	16800		0.4	5.3	ug/L	200.7
Manganese, Dissolved	4200		0.2	1.1	ug/L	200.7
Nickel	0.75		0.04	0.20	ug/L	200.8
Potassium, Dissolved	1840		60	210	ug/L	200.7
Selenium	0.3	J	0.2	1.0	ug/L	200.8
Silver	0.012	J	0.009	0.020	ug/L	200.8
Sodium, Dissolved	18200		30	210	ug/L	200.7
Solids, Total Dissolved	302			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	128			5.0	mg/L	SM 2540 D
Sulfate	0.14	J	0.02	0.20	mg/L	300.0

SAMPLE DETECTION SUMMARY

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CLIENT ID: W3-401	Lab ID: K2403414-003

Analyte	Results	Flag	MDL	MRL	Units	Method
Thallium	0.023		0.009	0.020	ug/L	200.8
Vanadium	8.16		0.04	0.20	ug/L	200.8
Zinc	0.6	J	0.5	2.0	ug/L	200.8

CLIENT ID: W4-401	Lab ID: K2403414-004

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	3.7	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	211		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	1.05		0.009	0.050	mg/L	SM 4500-NH3 E
Arsenic	1.71		0.09	0.50	ug/L	200.8
Barium	23.0		0.020	0.050	ug/L	200.8
Beryllium	0.021		0.005	0.020	ug/L	200.8
Calcium, Dissolved	43100		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	14.2		0.10	0.50	mg/L	SM 5310 B
Chloride	2.30		0.010	0.20	mg/L	300.0
Chromium	0.60		0.03	0.20	ug/L	200.8
Cobalt	0.228		0.009	0.020	ug/L	200.8
Copper	0.22		0.05	0.10	ug/L	200.8
Iodomethane	0.18	J	0.12	5.0	ug/L	8260C
Iron, Dissolved	4380		8	21	ug/L	200.7
Lead	0.033		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	15000		0.4	5.3	ug/L	200.7
Manganese, Dissolved	3350		0.2	1.1	ug/L	200.7
Nickel	0.28		0.04	0.20	ug/L	200.8
Potassium, Dissolved	2890		60	210	ug/L	200.7
Sodium, Dissolved	11900		30	210	ug/L	200.7
Solids, Total Dissolved	262			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	78.5			5.0	mg/L	SM 2540 D
Sulfate	0.08	J	0.02	0.20	mg/L	300.0
Vanadium	3.38		0.04	0.20	ug/L	200.8

CLIENT ID: W5-401	Lab ID: K2403414-005

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.9	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	324		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.870		0.009	0.050	mg/L	SM 4500-NH3 E
Arsenic	6.54		0.09	0.50	ug/L	200.8
Barium	28.0		0.020	0.050	ug/L	200.8
Beryllium	0.019	J	0.005	0.020	ug/L	200.8
Calcium, Dissolved	63600		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	11.3		0.10	0.50	mg/L	SM 5310 B

SAMPLE DETECTION SUMMARY

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CLIENT ID: W5-401			Lab ID: K2403414-005			

Analyte	Results	Flag	MDL	MRL	Units	Method
Chloride	14.1		0.010	0.20	mg/L	300.0
Chromium	0.76		0.03	0.20	ug/L	200.8
Cobalt	0.540		0.009	0.020	ug/L	200.8
Copper	0.12		0.05	0.10	ug/L	200.8
Iron, Dissolved	3400		8	21	ug/L	200.7
Lead	0.022		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	24600		0.4	5.3	ug/L	200.7
Manganese, Dissolved	6060		0.2	1.1	ug/L	200.7
Nickel	0.76		0.04	0.20	ug/L	200.8
Potassium, Dissolved	4370		60	210	ug/L	200.7
Sodium, Dissolved	27700		30	210	ug/L	200.7
Solids, Total Dissolved	387			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	47.0			5.0	mg/L	SM 2540 D
Sulfate	0.10	J	0.02	0.20	mg/L	300.0
Vanadium	2.89		0.04	0.20	ug/L	200.8
Zinc	0.7	J	0.5	2.0	ug/L	200.8

CLIENT ID: W6-401			Lab ID: K2403414-006			

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.8	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	47.6		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.040	J	0.009	0.050	mg/L	SM 4500-NH3 E
Antimony	0.443		0.020	0.050	ug/L	200.8
Arsenic	1.25		0.09	0.50	ug/L	200.8
Barium	7.16		0.020	0.050	ug/L	200.8
Beryllium	0.041		0.005	0.020	ug/L	200.8
Cadmium	0.019	J	0.008	0.020	ug/L	200.8
Calcium, Dissolved	15800		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	18.3		0.10	0.50	mg/L	SM 5310 B
Chloride	1.20		0.010	0.20	mg/L	300.0
Chromium	0.96		0.03	0.20	ug/L	200.8
Cobalt	0.378		0.009	0.020	ug/L	200.8
Copper	61.7		0.05	0.10	ug/L	200.8
Iron, Dissolved	48		8	21	ug/L	200.7
Lead	0.207		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	3910		0.4	5.3	ug/L	200.7
Manganese, Dissolved	15.1		0.2	1.1	ug/L	200.7
Nickel	6.15		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	1.29		0.006	0.10	mg/L	300.0
Potassium, Dissolved	1090		60	210	ug/L	200.7
Selenium	0.5	J	0.2	1.0	ug/L	200.8

SAMPLE DETECTION SUMMARY

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CLIENT ID: W6-401	Lab ID: K2403414-006

Analyte	Results	Flag	MDL	MRL	Units	Method
Silver	0.018	J	0.009	0.020	ug/L	200.8
Sodium, Dissolved	3350		30	210	ug/L	200.7
Solids, Total Dissolved	125			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	6.5			5.0	mg/L	SM 2540 D
Sulfate	3.54		0.02	0.20	mg/L	300.0
Thallium	0.044		0.009	0.020	ug/L	200.8
Vanadium	4.69		0.04	0.20	ug/L	200.8
Zinc	1.6	J	0.5	2.0	ug/L	200.8

CLIENT ID: W7-401	Lab ID: K2403414-007

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	5.6	J	3.3	20	ug/L	8260C
Alkalinity as CaCO ₃ , Total	162		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	2.10		0.009	0.050	mg/L	SM 4500-NH ₃ E
Antimony	0.025	J	0.020	0.050	ug/L	200.8
Arsenic	2.20		0.09	0.50	ug/L	200.8
Barium	15.8		0.020	0.050	ug/L	200.8
Beryllium	0.029		0.005	0.020	ug/L	200.8
Calcium, Dissolved	35200		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	17.5		0.10	0.50	mg/L	SM 5310 B
Chloride	2.27		0.010	0.20	mg/L	300.0
Chromium	0.76		0.03	0.20	ug/L	200.8
Cobalt	0.704		0.009	0.020	ug/L	200.8
Copper	0.16		0.05	0.10	ug/L	200.8
Iron, Dissolved	289		8	21	ug/L	200.7
Lead	0.008	J	0.006	0.020	ug/L	200.8
Magnesium, Dissolved	10300		0.4	5.3	ug/L	200.7
Manganese, Dissolved	3090		0.2	1.1	ug/L	200.7
Nickel	1.53		0.04	0.20	ug/L	200.8
Potassium, Dissolved	3290		60	210	ug/L	200.7
Sodium, Dissolved	11600		30	210	ug/L	200.7
Solids, Total Dissolved	265			10	mg/L	SM 2540 C
Solids, Total Suspended (TSS)	10.0			5.0	mg/L	SM 2540 D
Sulfate	0.14	J	0.02	0.20	mg/L	300.0
Vanadium	5.51		0.04	0.20	ug/L	200.8
Zinc	0.7	J	0.5	2.0	ug/L	200.8

CLIENT ID: W8-401	Lab ID: K2403414-008

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	5.7	J	3.3	20	ug/L	8260C
Alkalinity as CaCO ₃ , Total	107		0.6	2.0	mg/L	SM 2320 B

SAMPLE DETECTION SUMMARY

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CLIENT ID: W8-401		Lab ID: K2403414-008				

Analyte	Results	Flag	MDL	MRL	Units	Method
Ammonia as Nitrogen	0.090		0.009	0.050	mg/L	SM 4500-NH3 E
Antimony	0.051		0.020	0.050	ug/L	200.8
Arsenic	0.85		0.09	0.50	ug/L	200.8
Barium	7.81		0.020	0.050	ug/L	200.8
Beryllium	0.022		0.005	0.020	ug/L	200.8
Calcium, Dissolved	26300		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	8.60		0.10	0.50	mg/L	SM 5310 B
Chloride	1.81		0.010	0.20	mg/L	300.0
Chromium	0.38		0.03	0.20	ug/L	200.8
Cobalt	1.29		0.009	0.020	ug/L	200.8
Copper	3.20		0.05	0.10	ug/L	200.8
Iron, Dissolved	1530		8	21	ug/L	200.7
Lead	0.046		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	7570		0.4	5.3	ug/L	200.7
Manganese, Dissolved	530		0.2	1.1	ug/L	200.7
Nickel	12.4		0.04	0.20	ug/L	200.8
Potassium, Dissolved	1470		60	210	ug/L	200.7
Sodium, Dissolved	6220		30	210	ug/L	200.7
Solids, Total Dissolved	163			10	mg/L	SM 2540 C
Sulfate	0.78		0.02	0.20	mg/L	300.0
Vanadium	4.24		0.04	0.20	ug/L	200.8
Zinc	0.8	J	0.5	2.0	ug/L	200.8

CLIENT ID: W9-401		Lab ID: K2403414-009				

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.1	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	50.0		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.170		0.009	0.050	mg/L	SM 4500-NH3 E
Arsenic	7.96		0.09	0.50	ug/L	200.8
Barium	6.95		0.020	0.050	ug/L	200.8
Calcium, Dissolved	9060		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	2.00		0.10	0.50	mg/L	SM 5310 B
Chloride	1.55		0.010	0.20	mg/L	300.0
Chromium	0.45		0.03	0.20	ug/L	200.8
Cobalt	1.95		0.009	0.020	ug/L	200.8
Copper	0.25		0.05	0.10	ug/L	200.8
Iron, Dissolved	861		8	21	ug/L	200.7
Lead	0.009	J	0.006	0.020	ug/L	200.8
Magnesium, Dissolved	4100		0.4	5.3	ug/L	200.7
Manganese, Dissolved	771		0.2	1.1	ug/L	200.7
Nickel	0.57		0.04	0.20	ug/L	200.8

SAMPLE DETECTION SUMMARY

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CLIENT ID: W9-401	Lab ID: K2403414-009

Analyte	Results	Flag	MDL	MRL	Units	Method
Potassium, Dissolved	610		60	210	ug/L	200.7
Sodium, Dissolved	4840		30	210	ug/L	200.7
Solids, Total Dissolved	106			10	mg/L	SM 2540 C
Sulfate	2.80		0.02	0.20	mg/L	300.0
Vanadium	0.57		0.04	0.20	ug/L	200.8

CLIENT ID: W10-401	Lab ID: K2403414-010

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.6	J	3.3	20	ug/L	8260C
Alkalinity as CaCO3, Total	44.3		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.040	J	0.009	0.050	mg/L	SM 4500-NH3 E
Antimony	0.098		0.020	0.050	ug/L	200.8
Arsenic	0.30	J	0.09	0.50	ug/L	200.8
Barium	5.06		0.020	0.050	ug/L	200.8
Beryllium	0.020		0.005	0.020	ug/L	200.8
Cadmium	0.028		0.008	0.020	ug/L	200.8
Calcium, Dissolved	10900		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	0.50		0.10	0.50	mg/L	SM 5310 B
Chloride	2.01		0.010	0.20	mg/L	300.0
Chromium	0.47		0.03	0.20	ug/L	200.8
Cobalt	0.690		0.009	0.020	ug/L	200.8
Copper	23.4		0.05	0.10	ug/L	200.8
Iodomethane	0.14	J	0.12	5.0	ug/L	8260C
Iron, Dissolved	61		8	21	ug/L	200.7
Lead	0.045		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	3520		0.4	5.3	ug/L	200.7
Manganese, Dissolved	20.3		0.2	1.1	ug/L	200.7
Nickel	5.05		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	0.08	J	0.006	0.10	mg/L	300.0
Potassium, Dissolved	1680		60	210	ug/L	200.7
Silver	0.012	J	0.009	0.020	ug/L	200.8
Sodium, Dissolved	3940		30	210	ug/L	200.7
Solids, Total Dissolved	96			10	mg/L	SM 2540 C
Sulfate	3.00		0.02	0.20	mg/L	300.0
Thallium	0.016	J	0.009	0.020	ug/L	200.8
Vanadium	5.44		0.04	0.20	ug/L	200.8
Zinc	1.0	J	0.5	2.0	ug/L	200.8

CLIENT ID: W11-401	Lab ID: K2403414-011

Analyte	Results	Flag	MDL	MRL	Units	Method
Acetone	4.2	J	3.3	20	ug/L	8260C



SAMPLE DETECTION SUMMARY

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CLIENT ID: W11-401	Lab ID: K2403414-011

Analyte	Results	Flag	MDL	MRL	Units	Method
Alkalinity as CaCO ₃ , Total	37.8		0.6	2.0	mg/L	SM 2320 B
Ammonia as Nitrogen	0.040	J	0.009	0.050	mg/L	SM 4500-NH ₃ E
Antimony	0.241		0.020	0.050	ug/L	200.8
Arsenic	0.49	J	0.09	0.50	ug/L	200.8
Barium	6.89		0.020	0.050	ug/L	200.8
Beryllium	0.008	J	0.005	0.020	ug/L	200.8
Cadmium	0.018	J	0.008	0.020	ug/L	200.8
Calcium, Dissolved	10800		3	21	ug/L	200.7
Carbon, Total Organic (TOC)	7.90		0.10	0.50	mg/L	SM 5310 B
Chloride	0.89		0.010	0.20	mg/L	300.0
Chromium	0.33		0.03	0.20	ug/L	200.8
Cobalt	0.108		0.009	0.020	ug/L	200.8
Copper	32.9		0.05	0.10	ug/L	200.8
Iron, Dissolved	35		8	21	ug/L	200.7
Lead	0.045		0.006	0.020	ug/L	200.8
Magnesium, Dissolved	3010		0.4	5.3	ug/L	200.7
Manganese, Dissolved	1.5		0.2	1.1	ug/L	200.7
Nickel	2.92		0.04	0.20	ug/L	200.8
Nitrate as Nitrogen	1.24		0.006	0.10	mg/L	300.0
Potassium, Dissolved	1620		60	210	ug/L	200.7
Sodium, Dissolved	2930		30	210	ug/L	200.7
Solids, Total Dissolved	79			10	mg/L	SM 2540 C
Sulfate	1.82		0.02	0.20	mg/L	300.0
Thallium	0.033		0.009	0.020	ug/L	200.8
Vanadium	2.19		0.04	0.20	ug/L	200.8
Zinc	1.4	J	0.5	2.0	ug/L	200.8

CLIENT ID: W14-401	Lab ID: K2403414-014

Analyte	Results	Flag	MDL	MRL	Units	Method
Antimony	0.040	J	0.020	0.050	ug/L	200.8
Arsenic	0.31	J	0.09	0.50	ug/L	200.8
Barium	15.8		0.020	0.050	ug/L	200.8
Chromium	0.17	J	0.03	0.20	ug/L	200.8
Cobalt	0.200		0.009	0.020	ug/L	200.8
Copper	0.98		0.05	0.10	ug/L	200.8
Iron	998		8	21	ug/L	200.7
Lead	0.031		0.006	0.020	ug/L	200.8
Manganese	235		0.2	1.1	ug/L	200.7
Nickel	0.62		0.04	0.20	ug/L	200.8
Vanadium	0.32		0.04	0.20	ug/L	200.8
Zinc	1.0	J	0.5	2.0	ug/L	200.8



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: W14-401			Lab ID: K2403414-014			

Analyte	Results	Flag	MDL	MRL	Units	Method

CLIENT ID: W15-401			Lab ID: K2403414-015			

Analyte	Results	Flag	MDL	MRL	Units	Method

Antimony	0.287		0.020	0.050	ug/L	200.8
Arsenic	1.36		0.09	0.50	ug/L	200.8
Barium	17.8		0.020	0.050	ug/L	200.8
Beryllium	0.012	J	0.005	0.020	ug/L	200.8
Cadmium	0.046		0.008	0.020	ug/L	200.8
Chromium	0.39		0.03	0.20	ug/L	200.8
Cobalt	0.680		0.009	0.020	ug/L	200.8
Copper	31.2		0.05	0.10	ug/L	200.8
Iron	1660		8	21	ug/L	200.7
Lead	0.466		0.006	0.020	ug/L	200.8
Manganese	319		0.2	1.1	ug/L	200.7
Nickel	4.44		0.04	0.20	ug/L	200.8
Silver	0.045		0.009	0.020	ug/L	200.8
Thallium	0.025		0.009	0.020	ug/L	200.8
Vanadium	2.83		0.04	0.20	ug/L	200.8
Zinc	9.2		0.5	2.0	ug/L	200.8

CLIENT ID: Trip Blank			Lab ID: K2403414-019			

Analyte	Results	Flag	MDL	MRL	Units	Method

Chloromethane	0.080	J	0.068	0.50	ug/L	8260C
Methylene Chloride	0.11	J	0.10	2.0	ug/L	8260C



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori

Service Request:K2403414

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2403414-001	W1-401	4/1/2024	0900
K2403414-002	W2-401	4/1/2024	0930
K2403414-003	W3-401	4/1/2024	1000
K2403414-004	W4-401	4/1/2024	1030
K2403414-005	W5-401	4/1/2024	1100
K2403414-006	W6-401	4/1/2024	1200
K2403414-007	W7-401	4/1/2024	1300
K2403414-008	W8-401	4/1/2024	1330
K2403414-009	W9-401	4/1/2024	1400
K2403414-010	W10-401	4/1/2024	1430
K2403414-011	W11-401	4/1/2024	1500
K2403414-012	W12-401	4/1/2024	1530
K2403414-013	W13-401	4/1/2024	1600
K2403414-014	W14-401	4/1/2024	1615
K2403414-015	W15-401	4/1/2024	1630
K2403414-016	W16-401	4/1/2024	1645
K2403414-017	W17-401	4/1/2024	1700
K2403414-018	W18-401	4/1/2024	1730
K2403414-019	Trip Blank	4/1/2024	



CHAIN OF CUSTODY

137059

002

SR# 22403414

COC Set 1 of 2

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068

www.alsglobal.com

Page 1 of

Project Name Cavillita Co. Trench West Wing Landfill Detection Monitoring		Project Number	
Project Manager Dennis Dykes		Company BFGW Inc	
Address, City, State		Phone 360 263 6307	
Email dd@bfgw.com		Sampler Signature [Signature]	
Sampler Printed Name Dennis Dykes		Sampler ID 8	
Matrix W		Remarks	
CLIENT SAMPLE ID	LABID	SAMPLING Date Time State	Matrix
W1-401		4/12/24 900 WA	W
W2-401		930	
W3-401		1000	
W4-401		1030	
W5-401		1100	
W6-401		1200	
W7-401		1300	
W8-401		1330	
W9-401		1400	
W10-401		1430	

Report Requirements

- ☐ I. Routine Report: Method Blank, Surrogate, as required
- ☒ II. Report Dup., MS, MSD as required
- ☐ III. CLP Like Summary (no raw data)
- ☐ IV. Data Validation Report
- ☐ V. EDD

Invoice Information

P.O.# Cavillita Co
Bill To: BFGW Inc

Turnaround Requirements

24 hr. 48 hr.
5 Day
☒ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al (As) (Sb) (Ba) (Be) B Ca (Cd) (Co) (Cr) (Cu) (Fe) (Pb) Mg Mn Mo (Ni) K Ag Na (Se) Sr (Ti) Sn (V) (Zn) Hg

Dissolved Metals: Al As Sb Ba Be B (Ca) Cd Co Cr Cu (Fe) Pb (Mn) Mo Ni (K) Ag Na (Se) Sr Ti Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature Dennis Dykes	Signature M. Mulligan	Signature	Signature	Signature	Signature
Printed Name Dennis Dykes	Printed Name M. Mulligan	Printed Name	Printed Name	Printed Name	Printed Name
Firm BFGW	Firm ALS	Firm	Firm	Firm	Firm
Date/Time 4/12/24 900	Date/Time 4/12/24 0900	Date/Time	Date/Time	Date/Time	Date/Time



CHAIN OF CUSTODY
137059

002

SR# K2M03474
COC Set 2 of 2
COC# _____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.aisglobal.com

Page 1 of 1

Project Name: <u>Levitt Lake Trenchment Day 14 Detection Monitoring</u>		Project Number: _____																					
Project Manager: <u>Dennis Dyke</u>		Company: <u>BFGW</u>																					
Address, City, State: _____		Phone: <u>3602636307</u>																					
Sampler Signature: <u>[Signature]</u>		Sampler Printed Name: <u>Dennis Dyke</u>																					
email: <u>[Email]</u>		Sampler Printed Name: <u>Dennis Dyke</u>																					
CLIENT SAMPLE ID		LABID	SAMPLING Date Time State	Matrix	NUMBER OF CONTAINERS	300.0 / NO3	3250C / VOC Unp	SM 2540 C / TDS	SM 2540 D / TSS	3250C / VOC FP	SM 2320 B / Alkalinity Tit	300.0 / Chloride	300.0 / SO4	SM 4500-NH3 E / Ammonia	200.7 / Metals D	200.8 / Metals T	Filter Met / Filter Met	1	2	3	4	5	Remarks
1. <u>W11-401</u>			<u>4/1/24 1500 W24</u>	<u>W</u>	<u>8</u>	<u>X</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
2. <u>W12-401</u>			<u>1530</u>		<u>8</u>	<u>X</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
3. <u>W13-401</u>			<u>1600</u>		<u>8</u>	<u>X</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
4. <u>W14-401</u>			<u>1615</u>		<u>2</u>											<u>+</u>							
5. <u>W15-401</u>			<u>1630</u>		<u>2</u>											<u>+</u>							
6. <u>W16-401</u>			<u>1645</u>		<u>7</u>	<u>X</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>+</u>							
7. <u>W17-401</u>			<u>1700</u>		<u>7</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>+</u>							
8. <u>W18-401</u>			<u>1730</u>		<u>7</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>+</u>							
9.																							
10.																							

Report Requirements ☐ I. Routine Report: Method Blank, Surrogate, as required ☒ II. Report Dup., MS, MSD as required ☐ III. CLP Like Summary (no raw data) ☐ IV. Data Validation Report ☐ V. EDD		Invoice Information P.O.# <u>10000</u> Bill To: <u>P.S. Works</u> Turnaround Requirements ☐ 24 hr. ☐ 48 hr. ☒ 5 Day ☒ Standard		Circle which metals are to be analyzed Total Metals: Al <u>(C)</u> As <u>(C)</u> Sb <u>(C)</u> Ba <u>(C)</u> Be <u>(C)</u> B <u>(C)</u> Ca <u>(C)</u> Cd <u>(C)</u> Co <u>(C)</u> Cr <u>(C)</u> Cu <u>(C)</u> Fe <u>(C)</u> Pb <u>(C)</u> Mg <u>(C)</u> Mn <u>(C)</u> Mo <u>(C)</u> Ni <u>(C)</u> K <u>(C)</u> Ag <u>(C)</u> Na <u>(C)</u> Se <u>(C)</u> Sr <u>(C)</u> Ti <u>(C)</u> Sn <u>(C)</u> V <u>(C)</u> Zn <u>(C)</u> Hg Dissolved Metals: Al As Sb Ba Be <u>(C)</u> Ca Cd Co Cr Cu <u>(C)</u> Fe Pb <u>(C)</u> Mg <u>(C)</u> Mn <u>(C)</u> Mo <u>(C)</u> Ni <u>(C)</u> K <u>(C)</u> Ag <u>(C)</u> Na <u>(C)</u> Se <u>(C)</u> Sr <u>(C)</u> Ti <u>(C)</u> Sn <u>(C)</u> V <u>(C)</u> Zn <u>(C)</u> Hg Special Instructions/Comments: <u>+ add Fe + Mn</u> <u>+ add Ca Fe Mg Mn K Na</u> *Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)	
Relinquished By: Signature: <u>[Signature]</u> Printed Name: <u>Dennis Dyke</u> Firm: <u>BFGW</u> Date/Time: <u>4/2/24 900</u>		Received By: Signature: <u>[Signature]</u> Printed Name: <u>M. Mulligan</u> Firm: <u>ALS</u> Date/Time: <u>4/2/24 0900</u>		Relinquished By: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	
Received By: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____		Relinquished By: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____		Received By: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	

PM SW

Cooler Receipt and Preservation Form

Client BFGW inc.Service Request K24 034114Received: 4/2/24 Opened: 4/2/24 By: mm Unloaded: 4/2/24 By: mm

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
<u>2.2</u>		<u>1201</u>					
<u>4.7</u>		<u>↓</u>					
<u>3.7</u>							

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:

If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM.

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)?

NA Y N

8. Were samples received in good condition (unbroken)

NA Y N

9. Were all sample labels complete (ie, analysis, preservation, etc.)?

NA Y N

10. Did all sample labels and tags agree with custody papers?

NA Y N

11. Were appropriate bottles/containers and volumes received for the tests indicated?

NA Y N

12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below

NA Y N

13. Were VOA vials received without headspace? Indicate in the table below.

NA Y N

14. Was C12/Res negative?

NA Y N

15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM

NA Y N

16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N

Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
<u>W17-401</u>	<u>250ml</u>			<u>X</u>	<u>HNO3</u>	<u>0.5ml</u>	<u>RE1-666-G</u>	<u>mm</u>	<u>1010</u>
<u>W18-401</u>	<u>250m</u>			<u>X</u>	<u>HNO3</u>	<u>0.5ml</u>	<u>RE1-666-G</u>	<u>mm</u>	<u>1010</u>
SHORT HOLD TIME									

Notes, Discrepancies, Resolutions: Received 4 trip Blanks not on COC

Also received TDC vials for W14-401 W17-401, W18-401

G:\SMO\2024 Forms

SOP: SMO-GEN

Reviewed: NP 1/3/2024



Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W1-401
Lab Code: K2403414-001
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W2-401
Lab Code: K2403414-002
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W3-401
Lab Code: K2403414-003
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W3-401
Lab Code: K2403414-003
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W4-401
Lab Code: K2403414-004
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W5-401
Lab Code: K2403414-005
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W5-401
Lab Code: K2403414-005
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W6-401
Lab Code: K2403414-006
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W7-401
Lab Code: K2403414-007
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON

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Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W7-401
Lab Code: K2403414-007
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
SM 2540 D
SM 4500-NH3 E
SM 5310 B

Extracted/Digested By

Analyzed By
AWILSON
ACHEATLEY
MSPECHT

Sample Name: W8-401
Lab Code: K2403414-008
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
200.7
200.8
300.0
8260C
SM 2320 B
SM 2540 C
SM 2540 D
SM 4500-NH3 E
SM 5310 B

Extracted/Digested By
ABOYER
ABOYER

Analyzed By
AMCKORNEY
EMCALLISTER
NFOTH
OTILLEY
MRICH
AWILSON
AWILSON
ACHEATLEY
MSPECHT

Sample Name: W9-401
Lab Code: K2403414-009
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
200.7
200.8
300.0
8260C
SM 2320 B
SM 2540 C
SM 2540 D
SM 4500-NH3 E

Extracted/Digested By
ABOYER
ABOYER

Analyzed By
AMCKORNEY
EMCALLISTER
NFOTH
OTILLEY
MRICH
AWILSON
AWILSON
ACHEATLEY

ALS Group USA, Corp.
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Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W9-401
Lab Code: K2403414-009
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
SM 5310 B

Extracted/Digested By

Analyzed By
MSPECHT

Sample Name: W10-401
Lab Code: K2403414-010
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
200.7
200.8
300.0
8260C
SM 2320 B
SM 2540 C
SM 2540 D
SM 4500-NH3 E
SM 5310 B

Extracted/Digested By
ABOYER
ABOYER

Analyzed By
AMCKORNEY
EMCALLISTER
NFOTH
OTILLEY
MRICH
AWILSON
AWILSON
ACHEATLEY
MSPECHT

Sample Name: W11-401
Lab Code: K2403414-011
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method
200.7
200.8
300.0
8260C
SM 2320 B
SM 2540 C
SM 2540 D
SM 4500-NH3 E
SM 5310 B

Extracted/Digested By
ABOYER
ABOYER

Analyzed By
AMCKORNEY
EMCALLISTER
NFOTH
OTILLEY
MRICH
AWILSON
AWILSON
ACHEATLEY
MSPECHT

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Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W12-401
Lab Code: K2403414-012
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W13-401
Lab Code: K2403414-013
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		GROETTGER
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W14-401
Lab Code: K2403414-014
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER

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Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W15-401
Lab Code: K2403414-015
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER

Sample Name: W16-401
Lab Code: K2403414-016
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		GROETTGER
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: W17-401
Lab Code: K2403414-017
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

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Analyst Summary report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori/

Service Request: K2403414

Sample Name: W18-401
Lab Code: K2403414-018
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
200.7	ABOYER	AMCKORNEY
200.8	ABOYER	EMCALLISTER
300.0		NFOTH
8260C		OTILLEY
SM 2320 B		MRICH
SM 2540 C		AWILSON
SM 2540 D		AWILSON
SM 4500-NH3 E		ACHEATLEY
SM 5310 B		MSPECHT

Sample Name: Trip Blank
Lab Code: K2403414-019
Sample Matrix: Water

Date Collected: 04/1/24
Date Received: 04/2/24

Analysis Method	Extracted/Digested By	Analyzed By
8260C		GROETTGER



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.6 J	20	3.3	1	04/04/24 14:36	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 14:36	
Benzene	ND U	0.50	0.062	1	04/04/24 14:36	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 14:36	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 14:36	
Bromoform	ND U	0.50	0.16	1	04/04/24 14:36	
Bromomethane	ND U	0.50	0.16	1	04/04/24 14:36	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 14:36	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 14:36	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 14:36	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 14:36	
Chloroethane	ND U	0.50	0.16	1	04/04/24 14:36	
Chloroform	ND U	0.50	0.072	1	04/04/24 14:36	
Chloromethane	ND U	0.50	0.068	1	04/04/24 14:36	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 14:36	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 14:36	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 14:36	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 14:36	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 14:36	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 14:36	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 14:36	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 14:36	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 14:36	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 14:36	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 14:36	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 14:36	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 14:36	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 14:36	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 14:36	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 14:36	
2-Hexanone	ND U	20	2.7	1	04/04/24 14:36	
Iodomethane	ND U	5.0	0.12	1	04/04/24 14:36	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 14:36	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 14:36	
Styrene	ND U	0.50	0.089	1	04/04/24 14:36	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 14:36	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 14:36	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 14:36	
Toluene	ND U	0.50	0.054	1	04/04/24 14:36	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 14:36	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 14:36	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 14:36	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 14:36	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 14:36	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 14:36	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 14:36	
o-Xylene	ND U	0.50	0.074	1	04/04/24 14:36	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 14:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 14:36	
Dibromofluoromethane	107	73 - 122	04/04/24 14:36	
Toluene-d8	102	65 - 144	04/04/24 14:36	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	5.0 J	20	3.3	1	04/04/24 15:00	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 15:00	
Benzene	ND U	0.50	0.062	1	04/04/24 15:00	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 15:00	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 15:00	
Bromoform	ND U	0.50	0.16	1	04/04/24 15:00	
Bromomethane	ND U	0.50	0.16	1	04/04/24 15:00	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 15:00	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 15:00	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 15:00	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 15:00	
Chloroethane	ND U	0.50	0.16	1	04/04/24 15:00	
Chloroform	ND U	0.50	0.072	1	04/04/24 15:00	
Chloromethane	ND U	0.50	0.068	1	04/04/24 15:00	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 15:00	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 15:00	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 15:00	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 15:00	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 15:00	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:00	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:00	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 15:00	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 15:00	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 15:00	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 15:00	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 15:00	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 15:00	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 15:00	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 15:00	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 15:00	
2-Hexanone	ND U	20	2.7	1	04/04/24 15:00	
Iodomethane	ND U	5.0	0.12	1	04/04/24 15:00	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 15:00	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 15:00	
Styrene	ND U	0.50	0.089	1	04/04/24 15:00	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 15:00	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 15:00	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 15:00	
Toluene	ND U	0.50	0.054	1	04/04/24 15:00	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 15:00	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 15:00	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 15:00	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 15:00	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 15:00	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 15:00	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 15:00	
o-Xylene	ND U	0.50	0.074	1	04/04/24 15:00	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 15:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 15:00	
Dibromofluoromethane	111	73 - 122	04/04/24 15:00	
Toluene-d8	103	65 - 144	04/04/24 15:00	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.5 J	20	3.3	1	04/04/24 15:24	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 15:24	
Benzene	ND U	0.50	0.062	1	04/04/24 15:24	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 15:24	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 15:24	
Bromoform	ND U	0.50	0.16	1	04/04/24 15:24	
Bromomethane	ND U	0.50	0.16	1	04/04/24 15:24	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 15:24	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 15:24	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 15:24	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 15:24	
Chloroethane	ND U	0.50	0.16	1	04/04/24 15:24	
Chloroform	ND U	0.50	0.072	1	04/04/24 15:24	
Chloromethane	ND U	0.50	0.068	1	04/04/24 15:24	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 15:24	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 15:24	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 15:24	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 15:24	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 15:24	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:24	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:24	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 15:24	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 15:24	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 15:24	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 15:24	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 15:24	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 15:24	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 15:24	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 15:24	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 15:24	
2-Hexanone	ND U	20	2.7	1	04/04/24 15:24	
Iodomethane	0.14 J	5.0	0.12	1	04/04/24 15:24	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 15:24	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 15:24	
Styrene	ND U	0.50	0.089	1	04/04/24 15:24	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 15:24	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 15:24	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 15:24	
Toluene	ND U	0.50	0.054	1	04/04/24 15:24	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 15:24	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 15:24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 15:24	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 15:24	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 15:24	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 15:24	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 15:24	
o-Xylene	ND U	0.50	0.074	1	04/04/24 15:24	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 15:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 15:24	
Dibromofluoromethane	107	73 - 122	04/04/24 15:24	
Toluene-d8	102	65 - 144	04/04/24 15:24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00

Sample Name: W4-401
Lab Code: K2403414-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	3.7 J	20	3.3	1	04/04/24 15:48	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 15:48	
Benzene	ND U	0.50	0.062	1	04/04/24 15:48	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 15:48	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 15:48	
Bromoform	ND U	0.50	0.16	1	04/04/24 15:48	
Bromomethane	ND U	0.50	0.16	1	04/04/24 15:48	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 15:48	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 15:48	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 15:48	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 15:48	
Chloroethane	ND U	0.50	0.16	1	04/04/24 15:48	
Chloroform	ND U	0.50	0.072	1	04/04/24 15:48	
Chloromethane	ND U	0.50	0.068	1	04/04/24 15:48	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 15:48	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 15:48	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 15:48	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 15:48	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 15:48	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:48	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 15:48	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 15:48	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 15:48	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 15:48	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 15:48	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 15:48	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 15:48	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 15:48	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 15:48	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 15:48	
2-Hexanone	ND U	20	2.7	1	04/04/24 15:48	
Iodomethane	0.18 J	5.0	0.12	1	04/04/24 15:48	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 15:48	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 15:48	
Styrene	ND U	0.50	0.089	1	04/04/24 15:48	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 15:48	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 15:48	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 15:48	
Toluene	ND U	0.50	0.054	1	04/04/24 15:48	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 15:48	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 15:48	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W4-401
Lab Code: K2403414-004

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 15:48	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 15:48	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 15:48	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 15:48	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 15:48	
o-Xylene	ND U	0.50	0.074	1	04/04/24 15:48	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 15:48	
Dibromofluoromethane	110	73 - 122	04/04/24 15:48	
Toluene-d8	103	65 - 144	04/04/24 15:48	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.9 J	20	3.3	1	04/04/24 16:12	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 16:12	
Benzene	ND U	0.50	0.062	1	04/04/24 16:12	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 16:12	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 16:12	
Bromoform	ND U	0.50	0.16	1	04/04/24 16:12	
Bromomethane	ND U	0.50	0.16	1	04/04/24 16:12	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 16:12	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 16:12	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 16:12	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 16:12	
Chloroethane	ND U	0.50	0.16	1	04/04/24 16:12	
Chloroform	ND U	0.50	0.072	1	04/04/24 16:12	
Chloromethane	ND U	0.50	0.068	1	04/04/24 16:12	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 16:12	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 16:12	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 16:12	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 16:12	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 16:12	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 16:12	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 16:12	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 16:12	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 16:12	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 16:12	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 16:12	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 16:12	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 16:12	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 16:12	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 16:12	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 16:12	
2-Hexanone	ND U	20	2.7	1	04/04/24 16:12	
Iodomethane	ND U	5.0	0.12	1	04/04/24 16:12	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 16:12	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 16:12	
Styrene	ND U	0.50	0.089	1	04/04/24 16:12	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 16:12	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 16:12	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 16:12	
Toluene	ND U	0.50	0.054	1	04/04/24 16:12	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 16:12	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 16:12	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 16:12	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 16:12	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 16:12	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 16:12	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 16:12	
o-Xylene	ND U	0.50	0.074	1	04/04/24 16:12	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 16:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 16:12	
Dibromofluoromethane	108	73 - 122	04/04/24 16:12	
Toluene-d8	102	65 - 144	04/04/24 16:12	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.8 J	20	3.3	1	04/04/24 16:36	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 16:36	
Benzene	ND U	0.50	0.062	1	04/04/24 16:36	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 16:36	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 16:36	
Bromoform	ND U	0.50	0.16	1	04/04/24 16:36	
Bromomethane	ND U	0.50	0.16	1	04/04/24 16:36	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 16:36	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 16:36	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 16:36	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 16:36	
Chloroethane	ND U	0.50	0.16	1	04/04/24 16:36	
Chloroform	ND U	0.50	0.072	1	04/04/24 16:36	
Chloromethane	ND U	0.50	0.068	1	04/04/24 16:36	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 16:36	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 16:36	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 16:36	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 16:36	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 16:36	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 16:36	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 16:36	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 16:36	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 16:36	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 16:36	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 16:36	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 16:36	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 16:36	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 16:36	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 16:36	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 16:36	
2-Hexanone	ND U	20	2.7	1	04/04/24 16:36	
Iodomethane	ND U	5.0	0.12	1	04/04/24 16:36	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 16:36	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 16:36	
Styrene	ND U	0.50	0.089	1	04/04/24 16:36	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 16:36	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 16:36	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 16:36	
Toluene	ND U	0.50	0.054	1	04/04/24 16:36	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 16:36	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 16:36	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 16:36	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 16:36	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 16:36	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 16:36	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 16:36	
o-Xylene	ND U	0.50	0.074	1	04/04/24 16:36	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 16:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	04/04/24 16:36	
Dibromofluoromethane	109	73 - 122	04/04/24 16:36	
Toluene-d8	102	65 - 144	04/04/24 16:36	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	5.6 J	20	3.3	1	04/04/24 17:00	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 17:00	
Benzene	ND U	0.50	0.062	1	04/04/24 17:00	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 17:00	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 17:00	
Bromoform	ND U	0.50	0.16	1	04/04/24 17:00	
Bromomethane	ND U	0.50	0.16	1	04/04/24 17:00	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 17:00	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 17:00	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 17:00	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 17:00	
Chloroethane	ND U	0.50	0.16	1	04/04/24 17:00	
Chloroform	ND U	0.50	0.072	1	04/04/24 17:00	
Chloromethane	ND U	0.50	0.068	1	04/04/24 17:00	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 17:00	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 17:00	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 17:00	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 17:00	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 17:00	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:00	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:00	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 17:00	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 17:00	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 17:00	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 17:00	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 17:00	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 17:00	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 17:00	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 17:00	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 17:00	
2-Hexanone	ND U	20	2.7	1	04/04/24 17:00	
Iodomethane	ND U	5.0	0.12	1	04/04/24 17:00	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 17:00	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 17:00	
Styrene	ND U	0.50	0.089	1	04/04/24 17:00	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 17:00	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 17:00	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 17:00	
Toluene	ND U	0.50	0.054	1	04/04/24 17:00	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 17:00	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 17:00	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 17:00	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 17:00	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 17:00	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 17:00	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 17:00	
o-Xylene	ND U	0.50	0.074	1	04/04/24 17:00	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 17:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 17:00	
Dibromofluoromethane	112	73 - 122	04/04/24 17:00	
Toluene-d8	104	65 - 144	04/04/24 17:00	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	5.7 J	20	3.3	1	04/04/24 17:24	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 17:24	
Benzene	ND U	0.50	0.062	1	04/04/24 17:24	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 17:24	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 17:24	
Bromoform	ND U	0.50	0.16	1	04/04/24 17:24	
Bromomethane	ND U	0.50	0.16	1	04/04/24 17:24	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 17:24	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 17:24	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 17:24	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 17:24	
Chloroethane	ND U	0.50	0.16	1	04/04/24 17:24	
Chloroform	ND U	0.50	0.072	1	04/04/24 17:24	
Chloromethane	ND U	0.50	0.068	1	04/04/24 17:24	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 17:24	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 17:24	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 17:24	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 17:24	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 17:24	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:24	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:24	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 17:24	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 17:24	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 17:24	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 17:24	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 17:24	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 17:24	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 17:24	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 17:24	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 17:24	
2-Hexanone	ND U	20	2.7	1	04/04/24 17:24	
Iodomethane	ND U	5.0	0.12	1	04/04/24 17:24	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 17:24	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 17:24	
Styrene	ND U	0.50	0.089	1	04/04/24 17:24	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 17:24	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 17:24	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 17:24	
Toluene	ND U	0.50	0.054	1	04/04/24 17:24	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 17:24	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 17:24	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 17:24	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 17:24	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 17:24	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 17:24	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 17:24	
o-Xylene	ND U	0.50	0.074	1	04/04/24 17:24	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 17:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	04/04/24 17:24	
Dibromofluoromethane	111	73 - 122	04/04/24 17:24	
Toluene-d8	101	65 - 144	04/04/24 17:24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.1 J	20	3.3	1	04/04/24 17:48	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 17:48	
Benzene	ND U	0.50	0.062	1	04/04/24 17:48	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 17:48	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 17:48	
Bromoform	ND U	0.50	0.16	1	04/04/24 17:48	
Bromomethane	ND U	0.50	0.16	1	04/04/24 17:48	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 17:48	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 17:48	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 17:48	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 17:48	
Chloroethane	ND U	0.50	0.16	1	04/04/24 17:48	
Chloroform	ND U	0.50	0.072	1	04/04/24 17:48	
Chloromethane	ND U	0.50	0.068	1	04/04/24 17:48	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 17:48	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 17:48	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 17:48	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 17:48	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 17:48	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:48	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 17:48	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 17:48	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 17:48	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 17:48	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 17:48	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 17:48	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 17:48	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 17:48	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 17:48	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 17:48	
2-Hexanone	ND U	20	2.7	1	04/04/24 17:48	
Iodomethane	ND U	5.0	0.12	1	04/04/24 17:48	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 17:48	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 17:48	
Styrene	ND U	0.50	0.089	1	04/04/24 17:48	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 17:48	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 17:48	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 17:48	
Toluene	ND U	0.50	0.054	1	04/04/24 17:48	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 17:48	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 17:48	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 17:48	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 17:48	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 17:48	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 17:48	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 17:48	
o-Xylene	ND U	0.50	0.074	1	04/04/24 17:48	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 17:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	04/04/24 17:48	
Dibromofluoromethane	109	73 - 122	04/04/24 17:48	
Toluene-d8	102	65 - 144	04/04/24 17:48	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.6 J	20	3.3	1	04/04/24 18:12	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 18:12	
Benzene	ND U	0.50	0.062	1	04/04/24 18:12	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 18:12	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 18:12	
Bromoform	ND U	0.50	0.16	1	04/04/24 18:12	
Bromomethane	ND U	0.50	0.16	1	04/04/24 18:12	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 18:12	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 18:12	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 18:12	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 18:12	
Chloroethane	ND U	0.50	0.16	1	04/04/24 18:12	
Chloroform	ND U	0.50	0.072	1	04/04/24 18:12	
Chloromethane	ND U	0.50	0.068	1	04/04/24 18:12	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 18:12	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 18:12	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 18:12	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 18:12	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 18:12	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 18:12	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 18:12	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 18:12	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 18:12	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 18:12	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 18:12	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 18:12	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 18:12	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 18:12	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 18:12	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 18:12	
2-Hexanone	ND U	20	2.7	1	04/04/24 18:12	
Iodomethane	0.14 J	5.0	0.12	1	04/04/24 18:12	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 18:12	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 18:12	
Styrene	ND U	0.50	0.089	1	04/04/24 18:12	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 18:12	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 18:12	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 18:12	
Toluene	ND U	0.50	0.054	1	04/04/24 18:12	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 18:12	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 18:12	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 18:12	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 18:12	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 18:12	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 18:12	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 18:12	
o-Xylene	ND U	0.50	0.074	1	04/04/24 18:12	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 18:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	04/04/24 18:12	
Dibromofluoromethane	111	73 - 122	04/04/24 18:12	
Toluene-d8	102	65 - 144	04/04/24 18:12	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00

Sample Name: W11-401
Lab Code: K2403414-011

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	4.2 J	20	3.3	1	04/04/24 18:36	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 18:36	
Benzene	ND U	0.50	0.062	1	04/04/24 18:36	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 18:36	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 18:36	
Bromoform	ND U	0.50	0.16	1	04/04/24 18:36	
Bromomethane	ND U	0.50	0.16	1	04/04/24 18:36	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 18:36	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 18:36	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 18:36	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 18:36	
Chloroethane	ND U	0.50	0.16	1	04/04/24 18:36	
Chloroform	ND U	0.50	0.072	1	04/04/24 18:36	
Chloromethane	ND U	0.50	0.068	1	04/04/24 18:36	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 18:36	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 18:36	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 18:36	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 18:36	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 18:36	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 18:36	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 18:36	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 18:36	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 18:36	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 18:36	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 18:36	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 18:36	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 18:36	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 18:36	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 18:36	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 18:36	
2-Hexanone	ND U	20	2.7	1	04/04/24 18:36	
Iodomethane	ND U	5.0	0.12	1	04/04/24 18:36	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 18:36	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 18:36	
Styrene	ND U	0.50	0.089	1	04/04/24 18:36	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 18:36	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 18:36	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 18:36	
Toluene	ND U	0.50	0.054	1	04/04/24 18:36	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 18:36	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 18:36	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W11-401
Lab Code: K2403414-011

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 18:36	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 18:36	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 18:36	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 18:36	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 18:36	
o-Xylene	ND U	0.50	0.074	1	04/04/24 18:36	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 18:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	04/04/24 18:36	
Dibromofluoromethane	107	73 - 122	04/04/24 18:36	
Toluene-d8	102	65 - 144	04/04/24 18:36	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00

Sample Name: W12-401
Lab Code: K2403414-012

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	3.9 J	20	3.3	1	04/04/24 19:00	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 19:00	
Benzene	ND U	0.50	0.062	1	04/04/24 19:00	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 19:00	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 19:00	
Bromoform	ND U	0.50	0.16	1	04/04/24 19:00	
Bromomethane	ND U	0.50	0.16	1	04/04/24 19:00	*
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 19:00	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 19:00	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 19:00	
Chlorobenzene	0.36 J	0.50	0.11	1	04/04/24 19:00	
Chloroethane	ND U	0.50	0.16	1	04/04/24 19:00	
Chloroform	ND U	0.50	0.072	1	04/04/24 19:00	
Chloromethane	ND U	0.50	0.068	1	04/04/24 19:00	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 19:00	*
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 19:00	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 19:00	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 19:00	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 19:00	
1,2-Dichlorobenzene	0.20 J	0.50	0.12	1	04/04/24 19:00	
1,4-Dichlorobenzene	0.23 J	0.50	0.12	1	04/04/24 19:00	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 19:00	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 19:00	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 19:00	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 19:00	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 19:00	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 19:00	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 19:00	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 19:00	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 19:00	
2-Hexanone	ND U	20	2.7	1	04/04/24 19:00	
Iodomethane	ND U	5.0	0.12	1	04/04/24 19:00	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 19:00	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 19:00	
Styrene	ND U	0.50	0.089	1	04/04/24 19:00	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 19:00	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 19:00	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 19:00	
Toluene	ND U	0.50	0.054	1	04/04/24 19:00	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 19:00	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 19:00	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W12-401
Lab Code: K2403414-012

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 19:00	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 19:00	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 19:00	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 19:00	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 19:00	
o-Xylene	ND U	0.50	0.074	1	04/04/24 19:00	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 19:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	04/04/24 19:00	
Dibromofluoromethane	110	73 - 122	04/04/24 19:00	
Toluene-d8	103	65 - 144	04/04/24 19:00	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	04/08/24 16:34	
Acrylonitrile	ND U	5.0	0.53	1	04/08/24 16:34	
Benzene	ND U	0.50	0.062	1	04/08/24 16:34	
Bromochloromethane	ND U	0.50	0.16	1	04/08/24 16:34	
Bromodichloromethane	ND U	0.50	0.091	1	04/08/24 16:34	
Bromoform	ND U	0.50	0.16	1	04/08/24 16:34	*
Bromomethane	ND U	0.50	0.16	1	04/08/24 16:34	*
2-Butanone (MEK)	ND U	20	1.9	1	04/08/24 16:34	
Carbon Disulfide	ND U	0.50	0.069	1	04/08/24 16:34	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/08/24 16:34	
Chlorobenzene	0.37 J	0.50	0.11	1	04/08/24 16:34	
Chloroethane	ND U	0.50	0.16	1	04/08/24 16:34	
Chloroform	ND U	0.50	0.072	1	04/08/24 16:34	
Chloromethane	ND U	0.50	0.068	1	04/08/24 16:34	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/08/24 16:34	*
Dibromochloromethane	ND U	0.50	0.14	1	04/08/24 16:34	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/08/24 16:34	
Dibromomethane	ND U	0.50	0.15	1	04/08/24 16:34	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/08/24 16:34	
1,2-Dichlorobenzene	0.24 J	0.50	0.12	1	04/08/24 16:34	
1,4-Dichlorobenzene	0.23 J	0.50	0.12	1	04/08/24 16:34	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/08/24 16:34	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/08/24 16:34	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/08/24 16:34	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/08/24 16:34	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/08/24 16:34	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/08/24 16:34	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/08/24 16:34	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/08/24 16:34	
Ethylbenzene	ND U	0.50	0.050	1	04/08/24 16:34	
2-Hexanone	ND U	20	2.7	1	04/08/24 16:34	
Iodomethane	ND U	5.0	0.12	1	04/08/24 16:34	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/08/24 16:34	
Methylene Chloride	ND U	2.0	0.10	1	04/08/24 16:34	
Styrene	ND U	0.50	0.089	1	04/08/24 16:34	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/08/24 16:34	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/08/24 16:34	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/08/24 16:34	
Toluene	ND U	0.50	0.054	1	04/08/24 16:34	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/08/24 16:34	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/08/24 16:34	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/08/24 16:34	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/08/24 16:34	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/08/24 16:34	
Vinyl Acetate	ND U	5.0	0.43	1	04/08/24 16:34	
Vinyl Chloride	ND U	0.50	0.075	1	04/08/24 16:34	
o-Xylene	ND U	0.50	0.074	1	04/08/24 16:34	
m,p-Xylenes	ND U	0.50	0.11	1	04/08/24 16:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	04/08/24 16:34	
Dibromofluoromethane	95	73 - 122	04/08/24 16:34	
Toluene-d8	95	65 - 144	04/08/24 16:34	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24 16:45
Date Received: 04/02/24 09:00

Sample Name: W16-401
Lab Code: K2403414-016

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	04/08/24 16:59	
Acrylonitrile	ND U	5.0	0.53	1	04/08/24 16:59	
Benzene	ND U	0.50	0.062	1	04/08/24 16:59	
Bromochloromethane	ND U	0.50	0.16	1	04/08/24 16:59	
Bromodichloromethane	ND U	0.50	0.091	1	04/08/24 16:59	
Bromoform	ND U	0.50	0.16	1	04/08/24 16:59	*
Bromomethane	ND U	0.50	0.16	1	04/08/24 16:59	*
2-Butanone (MEK)	ND U	20	1.9	1	04/08/24 16:59	
Carbon Disulfide	ND U	0.50	0.069	1	04/08/24 16:59	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/08/24 16:59	
Chlorobenzene	1.1	0.50	0.11	1	04/08/24 16:59	
Chloroethane	0.27 J	0.50	0.16	1	04/08/24 16:59	
Chloroform	ND U	0.50	0.072	1	04/08/24 16:59	
Chloromethane	ND U	0.50	0.068	1	04/08/24 16:59	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/08/24 16:59	*
Dibromochloromethane	ND U	0.50	0.14	1	04/08/24 16:59	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/08/24 16:59	
Dibromomethane	ND U	0.50	0.15	1	04/08/24 16:59	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/08/24 16:59	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/08/24 16:59	
1,4-Dichlorobenzene	1.1	0.50	0.12	1	04/08/24 16:59	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/08/24 16:59	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/08/24 16:59	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/08/24 16:59	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/08/24 16:59	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/08/24 16:59	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/08/24 16:59	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/08/24 16:59	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/08/24 16:59	
Ethylbenzene	ND U	0.50	0.050	1	04/08/24 16:59	
2-Hexanone	ND U	20	2.7	1	04/08/24 16:59	
Iodomethane	ND U	5.0	0.12	1	04/08/24 16:59	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/08/24 16:59	
Methylene Chloride	ND U	2.0	0.10	1	04/08/24 16:59	
Styrene	ND U	0.50	0.089	1	04/08/24 16:59	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/08/24 16:59	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/08/24 16:59	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/08/24 16:59	
Toluene	ND U	0.50	0.054	1	04/08/24 16:59	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/08/24 16:59	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/08/24 16:59	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W16-401
Lab Code: K2403414-016

Service Request: K2403414
Date Collected: 04/01/24 16:45
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/08/24 16:59	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/08/24 16:59	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/08/24 16:59	
Vinyl Acetate	ND U	5.0	0.43	1	04/08/24 16:59	
Vinyl Chloride	ND U	0.50	0.075	1	04/08/24 16:59	
o-Xylene	ND U	0.50	0.074	1	04/08/24 16:59	
m,p-Xylenes	ND U	0.50	0.11	1	04/08/24 16:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	04/08/24 16:59	
Dibromofluoromethane	95	73 - 122	04/08/24 16:59	
Toluene-d8	93	65 - 144	04/08/24 16:59	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24 09:00

Sample Name: Trip Blank
Lab Code: K2403414-019

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	04/08/24 17:23	
Acrylonitrile	ND U	5.0	0.53	1	04/08/24 17:23	
Benzene	ND U	0.50	0.062	1	04/08/24 17:23	
Bromochloromethane	ND U	0.50	0.16	1	04/08/24 17:23	
Bromodichloromethane	ND U	0.50	0.091	1	04/08/24 17:23	
Bromoform	ND U	0.50	0.16	1	04/08/24 17:23	*
Bromomethane	ND U	0.50	0.16	1	04/08/24 17:23	*
2-Butanone (MEK)	ND U	20	1.9	1	04/08/24 17:23	
Carbon Disulfide	ND U	0.50	0.069	1	04/08/24 17:23	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/08/24 17:23	
Chlorobenzene	ND U	0.50	0.11	1	04/08/24 17:23	
Chloroethane	ND U	0.50	0.16	1	04/08/24 17:23	
Chloroform	ND U	0.50	0.072	1	04/08/24 17:23	
Chloromethane	0.080 J	0.50	0.068	1	04/08/24 17:23	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/08/24 17:23	*
Dibromochloromethane	ND U	0.50	0.14	1	04/08/24 17:23	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/08/24 17:23	
Dibromomethane	ND U	0.50	0.15	1	04/08/24 17:23	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/08/24 17:23	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/08/24 17:23	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/08/24 17:23	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/08/24 17:23	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/08/24 17:23	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/08/24 17:23	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/08/24 17:23	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/08/24 17:23	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/08/24 17:23	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/08/24 17:23	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/08/24 17:23	
Ethylbenzene	ND U	0.50	0.050	1	04/08/24 17:23	
2-Hexanone	ND U	20	2.7	1	04/08/24 17:23	
Iodomethane	ND U	5.0	0.12	1	04/08/24 17:23	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/08/24 17:23	
Methylene Chloride	0.11 J	2.0	0.10	1	04/08/24 17:23	
Styrene	ND U	0.50	0.089	1	04/08/24 17:23	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/08/24 17:23	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/08/24 17:23	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/08/24 17:23	
Toluene	ND U	0.50	0.054	1	04/08/24 17:23	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/08/24 17:23	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/08/24 17:23	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Trip Blank
Lab Code: K2403414-019

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/08/24 17:23	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/08/24 17:23	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/08/24 17:23	
Vinyl Acetate	ND U	5.0	0.43	1	04/08/24 17:23	
Vinyl Chloride	ND U	0.50	0.075	1	04/08/24 17:23	
o-Xylene	ND U	0.50	0.074	1	04/08/24 17:23	
m,p-Xylenes	ND U	0.50	0.11	1	04/08/24 17:23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	68 - 117	04/08/24 17:23	
Dibromofluoromethane	96	73 - 122	04/08/24 17:23	
Toluene-d8	94	65 - 144	04/08/24 17:23	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W17-401
Lab Code: K2403414-017

Service Request: K2403414
Date Collected: 04/01/24 17:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	20	1	04/04/24 13:24	
Acrylonitrile	ND U	5.0	1	04/04/24 13:24	
Benzene	ND U	0.50	1	04/04/24 13:24	
Bromochloromethane	ND U	0.50	1	04/04/24 13:24	
Bromodichloromethane	ND U	0.50	1	04/04/24 13:24	
Bromoform	ND U	0.50	1	04/04/24 13:24	
Bromomethane	ND U	0.50	1	04/04/24 13:24	*
2-Butanone (MEK)	ND U	20	1	04/04/24 13:24	
Carbon Disulfide	ND U	0.50	1	04/04/24 13:24	
Carbon Tetrachloride	ND U	0.50	1	04/04/24 13:24	
Chlorobenzene	ND U	0.50	1	04/04/24 13:24	
Chloroethane	ND U	0.50	1	04/04/24 13:24	
Chloroform	ND U	0.50	1	04/04/24 13:24	
Chloromethane	ND U	0.50	1	04/04/24 13:24	
1,2-Dibromo-3-chloropropane	ND U	2.0	1	04/04/24 13:24	*
Dibromochloromethane	ND U	0.50	1	04/04/24 13:24	
1,2-Dibromoethane (EDB)	ND U	2.0	1	04/04/24 13:24	
Dibromomethane	ND U	0.50	1	04/04/24 13:24	
trans-1,4-Dichloro-2-butene	ND U	10	1	04/04/24 13:24	
1,2-Dichlorobenzene	ND U	0.50	1	04/04/24 13:24	
1,4-Dichlorobenzene	0.58	0.50	1	04/04/24 13:24	
1,1-Dichloroethane	ND U	0.50	1	04/04/24 13:24	
1,2-Dichloroethane (EDC)	ND U	0.50	1	04/04/24 13:24	
1,1-Dichloroethene	ND U	0.50	1	04/04/24 13:24	
cis-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:24	
trans-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:24	
1,2-Dichloropropane	ND U	0.50	1	04/04/24 13:24	
cis-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:24	
trans-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:24	
Ethylbenzene	ND U	0.50	1	04/04/24 13:24	
2-Hexanone	ND U	20	1	04/04/24 13:24	
Iodomethane	ND U	5.0	1	04/04/24 13:24	
4-Methyl-2-pentanone (MIBK)	ND U	20	1	04/04/24 13:24	
Methylene Chloride	ND U	2.0	1	04/04/24 13:24	
Styrene	ND U	0.50	1	04/04/24 13:24	
1,1,1,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:24	
1,1,2,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:24	
Tetrachloroethene (PCE)	ND U	0.50	1	04/04/24 13:24	
Toluene	ND U	0.50	1	04/04/24 13:24	
1,1,2-Trichloroethane	ND U	0.50	1	04/04/24 13:24	
1,1,1-Trichloroethane (TCA)	ND U	0.50	1	04/04/24 13:24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W17-401
Lab Code: K2403414-017

Service Request: K2403414
Date Collected: 04/01/24 17:00
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	1	04/04/24 13:24	
Trichlorofluoromethane (CFC 11)	ND U	0.50	1	04/04/24 13:24	
1,2,3-Trichloropropane	ND U	0.50	1	04/04/24 13:24	
Vinyl Acetate	ND U	5.0	1	04/04/24 13:24	
Vinyl Chloride	ND U	0.50	1	04/04/24 13:24	
o-Xylene	ND U	0.50	1	04/04/24 13:24	
m,p-Xylenes	ND U	0.50	1	04/04/24 13:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	04/04/24 13:24	
Dibromofluoromethane	105	73 - 122	04/04/24 13:24	
Toluene-d8	102	65 - 144	04/04/24 13:24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W18-401
Lab Code: K2403414-018

Service Request: K2403414
Date Collected: 04/01/24 17:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	20	1	04/04/24 13:48	
Acrylonitrile	ND U	5.0	1	04/04/24 13:48	
Benzene	0.89	0.50	1	04/04/24 13:48	
Bromochloromethane	ND U	0.50	1	04/04/24 13:48	
Bromodichloromethane	ND U	0.50	1	04/04/24 13:48	
Bromoform	ND U	0.50	1	04/04/24 13:48	
Bromomethane	ND U	0.50	1	04/04/24 13:48	*
2-Butanone (MEK)	ND U	20	1	04/04/24 13:48	
Carbon Disulfide	ND U	0.50	1	04/04/24 13:48	
Carbon Tetrachloride	ND U	0.50	1	04/04/24 13:48	
Chlorobenzene	ND U	0.50	1	04/04/24 13:48	
Chloroethane	ND U	0.50	1	04/04/24 13:48	
Chloroform	ND U	0.50	1	04/04/24 13:48	
Chloromethane	ND U	0.50	1	04/04/24 13:48	
1,2-Dibromo-3-chloropropane	ND U	2.0	1	04/04/24 13:48	*
Dibromochloromethane	ND U	0.50	1	04/04/24 13:48	
1,2-Dibromoethane (EDB)	ND U	2.0	1	04/04/24 13:48	
Dibromomethane	ND U	0.50	1	04/04/24 13:48	
trans-1,4-Dichloro-2-butene	ND U	10	1	04/04/24 13:48	
1,2-Dichlorobenzene	ND U	0.50	1	04/04/24 13:48	
1,4-Dichlorobenzene	1.5	0.50	1	04/04/24 13:48	
1,1-Dichloroethane	ND U	0.50	1	04/04/24 13:48	
1,2-Dichloroethane (EDC)	ND U	0.50	1	04/04/24 13:48	
1,1-Dichloroethene	ND U	0.50	1	04/04/24 13:48	
cis-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:48	
trans-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:48	
1,2-Dichloropropane	ND U	0.50	1	04/04/24 13:48	
cis-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:48	
trans-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:48	
Ethylbenzene	0.86	0.50	1	04/04/24 13:48	
2-Hexanone	ND U	20	1	04/04/24 13:48	
Iodomethane	ND U	5.0	1	04/04/24 13:48	
4-Methyl-2-pentanone (MIBK)	ND U	20	1	04/04/24 13:48	
Methylene Chloride	ND U	2.0	1	04/04/24 13:48	
Styrene	ND U	0.50	1	04/04/24 13:48	
1,1,1,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:48	
1,1,2,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:48	
Tetrachloroethene (PCE)	ND U	0.50	1	04/04/24 13:48	
Toluene	ND U	0.50	1	04/04/24 13:48	
1,1,2-Trichloroethane	ND U	0.50	1	04/04/24 13:48	
1,1,1-Trichloroethane (TCA)	ND U	0.50	1	04/04/24 13:48	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W18-401
Lab Code: K2403414-018

Service Request: K2403414
Date Collected: 04/01/24 17:30
Date Received: 04/02/24 09:00

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	1	04/04/24 13:48	
Trichlorofluoromethane (CFC 11)	ND U	0.50	1	04/04/24 13:48	
1,2,3-Trichloropropane	ND U	0.50	1	04/04/24 13:48	
Vinyl Acetate	ND U	5.0	1	04/04/24 13:48	
Vinyl Chloride	ND U	0.50	1	04/04/24 13:48	
o-Xylene	1.3	0.50	1	04/04/24 13:48	
m,p-Xylenes	0.96	0.50	1	04/04/24 13:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	68 - 117	04/04/24 13:48	
Dibromofluoromethane	108	73 - 122	04/04/24 13:48	
Toluene-d8	101	65 - 144	04/04/24 13:48	



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	48200	ug/L	21	3	1	04/09/24 12:24	04/04/24	
Iron	200.7	ND U	ug/L	21	8	1	04/09/24 12:24	04/04/24	
Magnesium	200.7	23300	ug/L	5.3	0.4	1	04/09/24 12:24	04/04/24	
Manganese	200.7	836	ug/L	1.1	0.2	1	04/09/24 12:24	04/04/24	
Potassium	200.7	1390	ug/L	210	60	1	04/09/24 12:24	04/04/24	
Sodium	200.7	20500	ug/L	210	30	1	04/09/24 12:24	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.031 J	ug/L	0.050	0.020	1	04/09/24 15:02	04/04/24	
Arsenic	200.8	0.47 J	ug/L	0.50	0.09	1	04/09/24 15:02	04/04/24	
Barium	200.8	37.6	ug/L	0.050	0.020	1	04/09/24 15:02	04/04/24	
Beryllium	200.8	0.008 J	ug/L	0.020	0.005	1	04/09/24 15:02	04/04/24	
Cadmium	200.8	0.033	ug/L	0.020	0.008	1	04/09/24 15:02	04/04/24	
Chromium	200.8	0.20	ug/L	0.20	0.03	1	04/09/24 15:02	04/04/24	
Cobalt	200.8	1.62	ug/L	0.020	0.009	1	04/09/24 15:02	04/04/24	
Copper	200.8	1.56	ug/L	0.10	0.05	1	04/09/24 15:02	04/04/24	
Lead	200.8	0.047	ug/L	0.020	0.006	1	04/09/24 15:02	04/04/24	
Nickel	200.8	2.87	ug/L	0.20	0.04	1	04/09/24 15:02	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:02	04/04/24	
Silver	200.8	0.086	ug/L	0.020	0.009	1	04/09/24 15:02	04/04/24	
Thallium	200.8	0.029	ug/L	0.020	0.009	1	04/09/24 15:02	04/04/24	
Vanadium	200.8	1.57	ug/L	0.20	0.04	1	04/09/24 15:02	04/04/24	
Zinc	200.8	0.7 J	ug/L	2.0	0.5	1	04/09/24 15:02	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	68100	ug/L	21	3	1	04/09/24 12:26	04/04/24	
Iron	200.7	526	ug/L	21	8	1	04/09/24 12:26	04/04/24	
Magnesium	200.7	13000	ug/L	5.3	0.4	1	04/09/24 12:26	04/04/24	
Manganese	200.7	5170	ug/L	1.1	0.2	1	04/09/24 12:26	04/04/24	
Potassium	200.7	3680	ug/L	210	60	1	04/09/24 12:26	04/04/24	
Sodium	200.7	10100	ug/L	210	30	1	04/09/24 12:26	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.029 J	ug/L	0.050	0.020	1	04/09/24 15:08	04/04/24	
Arsenic	200.8	3.80	ug/L	0.50	0.09	1	04/09/24 15:08	04/04/24	
Barium	200.8	21.6	ug/L	0.050	0.020	1	04/09/24 15:08	04/04/24	
Beryllium	200.8	0.026	ug/L	0.020	0.005	1	04/09/24 15:08	04/04/24	
Cadmium	200.8	0.020	ug/L	0.020	0.008	1	04/09/24 15:08	04/04/24	
Chromium	200.8	0.90	ug/L	0.20	0.03	1	04/09/24 15:08	04/04/24	
Cobalt	200.8	0.978	ug/L	0.020	0.009	1	04/09/24 15:08	04/04/24	
Copper	200.8	1.51	ug/L	0.10	0.05	1	04/09/24 15:08	04/04/24	
Lead	200.8	0.021	ug/L	0.020	0.006	1	04/09/24 15:08	04/04/24	
Nickel	200.8	1.18	ug/L	0.20	0.04	1	04/09/24 15:08	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:08	04/04/24	
Silver	200.8	0.024	ug/L	0.020	0.009	1	04/09/24 15:08	04/04/24	
Thallium	200.8	0.027	ug/L	0.020	0.009	1	04/09/24 15:08	04/04/24	
Vanadium	200.8	4.77	ug/L	0.20	0.04	1	04/09/24 15:08	04/04/24	
Zinc	200.8	0.6 J	ug/L	2.0	0.5	1	04/09/24 15:08	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00
Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	48300	ug/L	21	3	1	04/09/24 12:29	04/04/24	
Iron	200.7	4230	ug/L	21	8	1	04/09/24 12:29	04/04/24	
Magnesium	200.7	16800	ug/L	5.3	0.4	1	04/09/24 12:29	04/04/24	
Manganese	200.7	4200	ug/L	1.1	0.2	1	04/09/24 12:29	04/04/24	
Potassium	200.7	1840	ug/L	210	60	1	04/09/24 12:29	04/04/24	
Sodium	200.7	18200	ug/L	210	30	1	04/09/24 12:29	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:15	04/04/24	
Arsenic	200.8	8.08	ug/L	0.50	0.09	1	04/09/24 15:15	04/04/24	
Barium	200.8	26.4	ug/L	0.050	0.020	1	04/09/24 15:15	04/04/24	
Beryllium	200.8	0.044	ug/L	0.020	0.005	1	04/09/24 15:15	04/04/24	
Cadmium	200.8	0.008 J	ug/L	0.020	0.008	1	04/09/24 15:15	04/04/24	
Chromium	200.8	1.57	ug/L	0.20	0.03	1	04/09/24 15:15	04/04/24	
Cobalt	200.8	0.552	ug/L	0.020	0.009	1	04/09/24 15:15	04/04/24	
Copper	200.8	0.18	ug/L	0.10	0.05	1	04/09/24 15:15	04/04/24	
Lead	200.8	0.033	ug/L	0.020	0.006	1	04/09/24 15:15	04/04/24	
Nickel	200.8	0.75	ug/L	0.20	0.04	1	04/09/24 15:15	04/04/24	
Selenium	200.8	0.3 J	ug/L	1.0	0.2	1	04/09/24 15:15	04/04/24	
Silver	200.8	0.012 J	ug/L	0.020	0.009	1	04/09/24 15:15	04/04/24	
Thallium	200.8	0.023	ug/L	0.020	0.009	1	04/09/24 15:15	04/04/24	
Vanadium	200.8	8.16	ug/L	0.20	0.04	1	04/09/24 15:15	04/04/24	
Zinc	200.8	0.6 J	ug/L	2.0	0.5	1	04/09/24 15:15	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W4-401
Lab Code: K2403414-004

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	43100	ug/L	21	3	1	04/09/24 12:31	04/04/24	
Iron	200.7	4380	ug/L	21	8	1	04/09/24 12:31	04/04/24	
Magnesium	200.7	15000	ug/L	5.3	0.4	1	04/09/24 12:31	04/04/24	
Manganese	200.7	3350	ug/L	1.1	0.2	1	04/09/24 12:31	04/04/24	
Potassium	200.7	2890	ug/L	210	60	1	04/09/24 12:31	04/04/24	
Sodium	200.7	11900	ug/L	210	30	1	04/09/24 12:31	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W4-401
Lab Code: K2403414-004

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:18	04/04/24	
Arsenic	200.8	1.71	ug/L	0.50	0.09	1	04/09/24 15:18	04/04/24	
Barium	200.8	23.0	ug/L	0.050	0.020	1	04/09/24 15:18	04/04/24	
Beryllium	200.8	0.021	ug/L	0.020	0.005	1	04/09/24 15:18	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:18	04/04/24	
Chromium	200.8	0.60	ug/L	0.20	0.03	1	04/09/24 15:18	04/04/24	
Cobalt	200.8	0.228	ug/L	0.020	0.009	1	04/09/24 15:18	04/04/24	
Copper	200.8	0.22	ug/L	0.10	0.05	1	04/09/24 15:18	04/04/24	
Lead	200.8	0.033	ug/L	0.020	0.006	1	04/09/24 15:18	04/04/24	
Nickel	200.8	0.28	ug/L	0.20	0.04	1	04/09/24 15:18	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:18	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:18	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:18	04/04/24	
Vanadium	200.8	3.38	ug/L	0.20	0.04	1	04/09/24 15:18	04/04/24	
Zinc	200.8	ND U	ug/L	2.0	0.5	1	04/09/24 15:18	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	63600	ug/L	21	3	1	04/09/24 12:34	04/04/24	
Iron	200.7	3400	ug/L	21	8	1	04/09/24 12:34	04/04/24	
Magnesium	200.7	24600	ug/L	5.3	0.4	1	04/09/24 12:34	04/04/24	
Manganese	200.7	6060	ug/L	1.1	0.2	1	04/09/24 12:34	04/04/24	
Potassium	200.7	4370	ug/L	210	60	1	04/09/24 12:34	04/04/24	
Sodium	200.7	27700	ug/L	210	30	1	04/09/24 12:34	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:25	04/04/24	
Arsenic	200.8	6.54	ug/L	0.50	0.09	1	04/09/24 15:25	04/04/24	
Barium	200.8	28.0	ug/L	0.050	0.020	1	04/09/24 15:25	04/04/24	
Beryllium	200.8	0.019 J	ug/L	0.020	0.005	1	04/09/24 15:25	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:25	04/04/24	
Chromium	200.8	0.76	ug/L	0.20	0.03	1	04/09/24 15:25	04/04/24	
Cobalt	200.8	0.540	ug/L	0.020	0.009	1	04/09/24 15:25	04/04/24	
Copper	200.8	0.12	ug/L	0.10	0.05	1	04/09/24 15:25	04/04/24	
Lead	200.8	0.022	ug/L	0.020	0.006	1	04/09/24 15:25	04/04/24	
Nickel	200.8	0.76	ug/L	0.20	0.04	1	04/09/24 15:25	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:25	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:25	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:25	04/04/24	
Vanadium	200.8	2.89	ug/L	0.20	0.04	1	04/09/24 15:25	04/04/24	
Zinc	200.8	0.7 J	ug/L	2.0	0.5	1	04/09/24 15:25	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	15800	ug/L	21	3	1	04/09/24 12:36	04/04/24	
Iron	200.7	48	ug/L	21	8	1	04/09/24 12:36	04/04/24	
Magnesium	200.7	3910	ug/L	5.3	0.4	1	04/09/24 12:36	04/04/24	
Manganese	200.7	15.1	ug/L	1.1	0.2	1	04/09/24 12:36	04/04/24	
Potassium	200.7	1090	ug/L	210	60	1	04/09/24 12:36	04/04/24	
Sodium	200.7	3350	ug/L	210	30	1	04/09/24 12:36	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.443	ug/L	0.050	0.020	1	04/09/24 15:27	04/04/24	
Arsenic	200.8	1.25	ug/L	0.50	0.09	1	04/09/24 15:27	04/04/24	
Barium	200.8	7.16	ug/L	0.050	0.020	1	04/09/24 15:27	04/04/24	
Beryllium	200.8	0.041	ug/L	0.020	0.005	1	04/09/24 15:27	04/04/24	
Cadmium	200.8	0.019 J	ug/L	0.020	0.008	1	04/09/24 15:27	04/04/24	
Chromium	200.8	0.96	ug/L	0.20	0.03	1	04/09/24 15:27	04/04/24	
Cobalt	200.8	0.378	ug/L	0.020	0.009	1	04/09/24 15:27	04/04/24	
Copper	200.8	61.7	ug/L	0.10	0.05	1	04/09/24 15:27	04/04/24	
Lead	200.8	0.207	ug/L	0.020	0.006	1	04/09/24 15:27	04/04/24	
Nickel	200.8	6.15	ug/L	0.20	0.04	1	04/09/24 15:27	04/04/24	
Selenium	200.8	0.5 J	ug/L	1.0	0.2	1	04/09/24 15:27	04/04/24	
Silver	200.8	0.018 J	ug/L	0.020	0.009	1	04/09/24 15:27	04/04/24	
Thallium	200.8	0.044	ug/L	0.020	0.009	1	04/09/24 15:27	04/04/24	
Vanadium	200.8	4.69	ug/L	0.20	0.04	1	04/09/24 15:27	04/04/24	
Zinc	200.8	1.6 J	ug/L	2.0	0.5	1	04/09/24 15:27	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	35200	ug/L	21	3	1	04/09/24 12:39	04/04/24	
Iron	200.7	289	ug/L	21	8	1	04/09/24 12:39	04/04/24	
Magnesium	200.7	10300	ug/L	5.3	0.4	1	04/09/24 12:39	04/04/24	
Manganese	200.7	3090	ug/L	1.1	0.2	1	04/09/24 12:39	04/04/24	
Potassium	200.7	3290	ug/L	210	60	1	04/09/24 12:39	04/04/24	
Sodium	200.7	11600	ug/L	210	30	1	04/09/24 12:39	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.025 J	ug/L	0.050	0.020	1	04/09/24 15:29	04/04/24	
Arsenic	200.8	2.20	ug/L	0.50	0.09	1	04/09/24 15:29	04/04/24	
Barium	200.8	15.8	ug/L	0.050	0.020	1	04/09/24 15:29	04/04/24	
Beryllium	200.8	0.029	ug/L	0.020	0.005	1	04/09/24 15:29	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:29	04/04/24	
Chromium	200.8	0.76	ug/L	0.20	0.03	1	04/09/24 15:29	04/04/24	
Cobalt	200.8	0.704	ug/L	0.020	0.009	1	04/09/24 15:29	04/04/24	
Copper	200.8	0.16	ug/L	0.10	0.05	1	04/09/24 15:29	04/04/24	
Lead	200.8	0.008 J	ug/L	0.020	0.006	1	04/09/24 15:29	04/04/24	
Nickel	200.8	1.53	ug/L	0.20	0.04	1	04/09/24 15:29	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:29	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:29	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:29	04/04/24	
Vanadium	200.8	5.51	ug/L	0.20	0.04	1	04/09/24 15:29	04/04/24	
Zinc	200.8	0.7 J	ug/L	2.0	0.5	1	04/09/24 15:29	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	26300	ug/L	21	3	1	04/09/24 12:49	04/04/24	
Iron	200.7	1530	ug/L	21	8	1	04/09/24 12:49	04/04/24	
Magnesium	200.7	7570	ug/L	5.3	0.4	1	04/09/24 12:49	04/04/24	
Manganese	200.7	530	ug/L	1.1	0.2	1	04/09/24 12:49	04/04/24	
Potassium	200.7	1470	ug/L	210	60	1	04/09/24 12:49	04/04/24	
Sodium	200.7	6220	ug/L	210	30	1	04/09/24 12:49	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.051	ug/L	0.050	0.020	1	04/09/24 15:31	04/04/24	
Arsenic	200.8	0.85	ug/L	0.50	0.09	1	04/09/24 15:31	04/04/24	
Barium	200.8	7.81	ug/L	0.050	0.020	1	04/09/24 15:31	04/04/24	
Beryllium	200.8	0.022	ug/L	0.020	0.005	1	04/09/24 15:31	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:31	04/04/24	
Chromium	200.8	0.38	ug/L	0.20	0.03	1	04/09/24 15:31	04/04/24	
Cobalt	200.8	1.29	ug/L	0.020	0.009	1	04/09/24 15:31	04/04/24	
Copper	200.8	3.20	ug/L	0.10	0.05	1	04/09/24 15:31	04/04/24	
Lead	200.8	0.046	ug/L	0.020	0.006	1	04/09/24 15:31	04/04/24	
Nickel	200.8	12.4	ug/L	0.20	0.04	1	04/09/24 15:31	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:31	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:31	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:31	04/04/24	
Vanadium	200.8	4.24	ug/L	0.20	0.04	1	04/09/24 15:31	04/04/24	
Zinc	200.8	0.8 J	ug/L	2.0	0.5	1	04/09/24 15:31	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00
Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	9060	ug/L	21	3	1	04/09/24 12:51	04/04/24	
Iron	200.7	861	ug/L	21	8	1	04/09/24 12:51	04/04/24	
Magnesium	200.7	4100	ug/L	5.3	0.4	1	04/09/24 12:51	04/04/24	
Manganese	200.7	771	ug/L	1.1	0.2	1	04/09/24 12:51	04/04/24	
Potassium	200.7	610	ug/L	210	60	1	04/09/24 12:51	04/04/24	
Sodium	200.7	4840	ug/L	210	30	1	04/09/24 12:51	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:34	04/04/24	
Arsenic	200.8	7.96	ug/L	0.50	0.09	1	04/09/24 15:34	04/04/24	
Barium	200.8	6.95	ug/L	0.050	0.020	1	04/09/24 15:34	04/04/24	
Beryllium	200.8	ND U	ug/L	0.020	0.005	1	04/09/24 15:34	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:34	04/04/24	
Chromium	200.8	0.45	ug/L	0.20	0.03	1	04/09/24 15:34	04/04/24	
Cobalt	200.8	1.95	ug/L	0.020	0.009	1	04/09/24 15:34	04/04/24	
Copper	200.8	0.25	ug/L	0.10	0.05	1	04/09/24 15:34	04/04/24	
Lead	200.8	0.009 J	ug/L	0.020	0.006	1	04/09/24 15:34	04/04/24	
Nickel	200.8	0.57	ug/L	0.20	0.04	1	04/09/24 15:34	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:34	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:34	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:34	04/04/24	
Vanadium	200.8	0.57	ug/L	0.20	0.04	1	04/09/24 15:34	04/04/24	
Zinc	200.8	ND U	ug/L	2.0	0.5	1	04/09/24 15:34	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	10900	ug/L	21	3	1	04/09/24 12:54	04/04/24	
Iron	200.7	61	ug/L	21	8	1	04/09/24 12:54	04/04/24	
Magnesium	200.7	3520	ug/L	5.3	0.4	1	04/09/24 12:54	04/04/24	
Manganese	200.7	20.3	ug/L	1.1	0.2	1	04/09/24 12:54	04/04/24	
Potassium	200.7	1680	ug/L	210	60	1	04/09/24 12:54	04/04/24	
Sodium	200.7	3940	ug/L	210	30	1	04/09/24 12:54	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.098	ug/L	0.050	0.020	1	04/09/24 15:36	04/04/24	
Arsenic	200.8	0.30 J	ug/L	0.50	0.09	1	04/09/24 15:36	04/04/24	
Barium	200.8	5.06	ug/L	0.050	0.020	1	04/09/24 15:36	04/04/24	
Beryllium	200.8	0.020	ug/L	0.020	0.005	1	04/09/24 15:36	04/04/24	
Cadmium	200.8	0.028	ug/L	0.020	0.008	1	04/09/24 15:36	04/04/24	
Chromium	200.8	0.47	ug/L	0.20	0.03	1	04/09/24 15:36	04/04/24	
Cobalt	200.8	0.690	ug/L	0.020	0.009	1	04/09/24 15:36	04/04/24	
Copper	200.8	23.4	ug/L	0.10	0.05	1	04/09/24 15:36	04/04/24	
Lead	200.8	0.045	ug/L	0.020	0.006	1	04/09/24 15:36	04/04/24	
Nickel	200.8	5.05	ug/L	0.20	0.04	1	04/09/24 15:36	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:36	04/04/24	
Silver	200.8	0.012 J	ug/L	0.020	0.009	1	04/09/24 15:36	04/04/24	
Thallium	200.8	0.016 J	ug/L	0.020	0.009	1	04/09/24 15:36	04/04/24	
Vanadium	200.8	5.44	ug/L	0.20	0.04	1	04/09/24 15:36	04/04/24	
Zinc	200.8	1.0 J	ug/L	2.0	0.5	1	04/09/24 15:36	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W11-401
Lab Code: K2403414-011

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00
Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	10800	ug/L	21	3	1	04/09/24 12:56	04/04/24	
Iron	200.7	35	ug/L	21	8	1	04/09/24 12:56	04/04/24	
Magnesium	200.7	3010	ug/L	5.3	0.4	1	04/09/24 12:56	04/04/24	
Manganese	200.7	1.5	ug/L	1.1	0.2	1	04/09/24 12:56	04/04/24	
Potassium	200.7	1620	ug/L	210	60	1	04/09/24 12:56	04/04/24	
Sodium	200.7	2930	ug/L	210	30	1	04/09/24 12:56	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W11-401
Lab Code: K2403414-011

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.241	ug/L	0.050	0.020	1	04/09/24 15:38	04/04/24	
Arsenic	200.8	0.49 J	ug/L	0.50	0.09	1	04/09/24 15:38	04/04/24	
Barium	200.8	6.89	ug/L	0.050	0.020	1	04/09/24 15:38	04/04/24	
Beryllium	200.8	0.008 J	ug/L	0.020	0.005	1	04/09/24 15:38	04/04/24	
Cadmium	200.8	0.018 J	ug/L	0.020	0.008	1	04/09/24 15:38	04/04/24	
Chromium	200.8	0.33	ug/L	0.20	0.03	1	04/09/24 15:38	04/04/24	
Cobalt	200.8	0.108	ug/L	0.020	0.009	1	04/09/24 15:38	04/04/24	
Copper	200.8	32.9	ug/L	0.10	0.05	1	04/09/24 15:38	04/04/24	
Lead	200.8	0.045	ug/L	0.020	0.006	1	04/09/24 15:38	04/04/24	
Nickel	200.8	2.92	ug/L	0.20	0.04	1	04/09/24 15:38	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:38	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:38	04/04/24	
Thallium	200.8	0.033	ug/L	0.020	0.009	1	04/09/24 15:38	04/04/24	
Vanadium	200.8	2.19	ug/L	0.20	0.04	1	04/09/24 15:38	04/04/24	
Zinc	200.8	1.4 J	ug/L	2.0	0.5	1	04/09/24 15:38	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W12-401
Lab Code: K2403414-012

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	76900	ug/L	21	3	1	04/09/24 12:59	04/04/24	
Iron	200.7	12200	ug/L	21	8	1	04/09/24 12:59	04/04/24	
Magnesium	200.7	37100	ug/L	5.3	0.4	1	04/09/24 12:59	04/04/24	
Manganese	200.7	5320	ug/L	1.1	0.2	1	04/09/24 12:59	04/04/24	
Potassium	200.7	3880	ug/L	210	60	1	04/09/24 12:59	04/04/24	
Sodium	200.7	23400	ug/L	210	30	1	04/09/24 12:59	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W12-401
Lab Code: K2403414-012

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:41	04/04/24	
Arsenic	200.8	1.13	ug/L	0.50	0.09	1	04/09/24 15:41	04/04/24	
Barium	200.8	34.8	ug/L	0.050	0.020	1	04/09/24 15:41	04/04/24	
Beryllium	200.8	0.022	ug/L	0.020	0.005	1	04/09/24 15:41	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:41	04/04/24	
Chromium	200.8	0.38	ug/L	0.20	0.03	1	04/09/24 15:41	04/04/24	
Cobalt	200.8	0.583	ug/L	0.020	0.009	1	04/09/24 15:41	04/04/24	
Copper	200.8	0.26	ug/L	0.10	0.05	1	04/09/24 15:41	04/04/24	
Lead	200.8	0.031	ug/L	0.020	0.006	1	04/09/24 15:41	04/04/24	
Nickel	200.8	0.50	ug/L	0.20	0.04	1	04/09/24 15:41	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:41	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:41	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:41	04/04/24	
Vanadium	200.8	1.44	ug/L	0.20	0.04	1	04/09/24 15:41	04/04/24	
Zinc	200.8	ND U	ug/L	2.0	0.5	1	04/09/24 15:41	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00

Basis: NA

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	75100	ug/L	21	3	1	04/09/24 13:01	04/04/24	
Iron	200.7	11500	ug/L	21	8	1	04/09/24 13:01	04/04/24	
Magnesium	200.7	36200	ug/L	5.3	0.4	1	04/09/24 13:01	04/04/24	
Manganese	200.7	5210	ug/L	1.1	0.2	1	04/09/24 13:01	04/04/24	
Potassium	200.7	3760	ug/L	210	60	1	04/09/24 13:01	04/04/24	
Sodium	200.7	22800	ug/L	210	30	1	04/09/24 13:01	04/04/24	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 15:43	04/04/24	
Arsenic	200.8	1.11	ug/L	0.50	0.09	1	04/09/24 15:43	04/04/24	
Barium	200.8	35.0	ug/L	0.050	0.020	1	04/09/24 15:43	04/04/24	
Beryllium	200.8	0.022	ug/L	0.020	0.005	1	04/09/24 15:43	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:43	04/04/24	
Chromium	200.8	0.35	ug/L	0.20	0.03	1	04/09/24 15:43	04/04/24	
Cobalt	200.8	0.577	ug/L	0.020	0.009	1	04/09/24 15:43	04/04/24	
Copper	200.8	0.24	ug/L	0.10	0.05	1	04/09/24 15:43	04/04/24	
Lead	200.8	0.032	ug/L	0.020	0.006	1	04/09/24 15:43	04/04/24	
Nickel	200.8	0.53	ug/L	0.20	0.04	1	04/09/24 15:43	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:43	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:43	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:43	04/04/24	
Vanadium	200.8	1.47	ug/L	0.20	0.04	1	04/09/24 15:43	04/04/24	
Zinc	200.8	0.6 J	ug/L	2.0	0.5	1	04/09/24 15:43	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W14-401
Lab Code: K2403414-014

Service Request: K2403414
Date Collected: 04/01/24 16:15
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.040 J	ug/L	0.050	0.020	1	04/09/24 15:45	04/04/24	
Arsenic	200.8	0.31 J	ug/L	0.50	0.09	1	04/09/24 15:45	04/04/24	
Barium	200.8	15.8	ug/L	0.050	0.020	1	04/09/24 15:45	04/04/24	
Beryllium	200.8	ND U	ug/L	0.020	0.005	1	04/09/24 15:45	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 15:45	04/04/24	
Chromium	200.8	0.17 J	ug/L	0.20	0.03	1	04/09/24 15:45	04/04/24	
Cobalt	200.8	0.200	ug/L	0.020	0.009	1	04/09/24 15:45	04/04/24	
Copper	200.8	0.98	ug/L	0.10	0.05	1	04/09/24 15:45	04/04/24	
Iron	200.7	998	ug/L	21	8	1	04/09/24 11:54	04/04/24	
Lead	200.8	0.031	ug/L	0.020	0.006	1	04/09/24 15:45	04/04/24	
Manganese	200.7	235	ug/L	1.1	0.2	1	04/09/24 11:54	04/04/24	
Nickel	200.8	0.62	ug/L	0.20	0.04	1	04/09/24 15:45	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:45	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:45	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:45	04/04/24	
Vanadium	200.8	0.32	ug/L	0.20	0.04	1	04/09/24 15:45	04/04/24	
Zinc	200.8	1.0 J	ug/L	2.0	0.5	1	04/09/24 15:45	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W15-401
Lab Code: K2403414-015

Service Request: K2403414
Date Collected: 04/01/24 16:30
Date Received: 04/02/24 09:00
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.287	ug/L	0.050	0.020	1	04/09/24 15:52	04/04/24	
Arsenic	200.8	1.36	ug/L	0.50	0.09	1	04/09/24 15:52	04/04/24	
Barium	200.8	17.8	ug/L	0.050	0.020	1	04/09/24 15:52	04/04/24	
Beryllium	200.8	0.012 J	ug/L	0.020	0.005	1	04/09/24 15:52	04/04/24	
Cadmium	200.8	0.046	ug/L	0.020	0.008	1	04/09/24 15:52	04/04/24	
Chromium	200.8	0.39	ug/L	0.20	0.03	1	04/09/24 15:52	04/04/24	
Cobalt	200.8	0.680	ug/L	0.020	0.009	1	04/09/24 15:52	04/04/24	
Copper	200.8	31.2	ug/L	0.10	0.05	1	04/09/24 15:52	04/04/24	
Iron	200.7	1660	ug/L	21	8	1	04/09/24 12:01	04/04/24	
Lead	200.8	0.466	ug/L	0.020	0.006	1	04/09/24 15:52	04/04/24	
Manganese	200.7	319	ug/L	1.1	0.2	1	04/09/24 12:01	04/04/24	
Nickel	200.8	4.44	ug/L	0.20	0.04	1	04/09/24 15:52	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:52	04/04/24	
Silver	200.8	0.045	ug/L	0.020	0.009	1	04/09/24 15:52	04/04/24	
Thallium	200.8	0.025	ug/L	0.020	0.009	1	04/09/24 15:52	04/04/24	
Vanadium	200.8	2.83	ug/L	0.20	0.04	1	04/09/24 15:52	04/04/24	
Zinc	200.8	9.2	ug/L	2.0	0.5	1	04/09/24 15:52	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W16-401
Lab Code: K2403414-016

Service Request: K2403414
Date Collected: 04/01/24 16:45
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	0.120	ug/L	0.050	0.020	1	04/09/24 15:54	04/04/24	
Arsenic	200.8	5.10	ug/L	0.50	0.09	1	04/09/24 15:54	04/04/24	
Barium	200.8	134	ug/L	0.050	0.020	1	04/09/24 15:54	04/04/24	
Beryllium	200.8	0.015 J	ug/L	0.020	0.005	1	04/09/24 15:54	04/04/24	
Cadmium	200.8	0.008 J	ug/L	0.020	0.008	1	04/09/24 15:54	04/04/24	
Calcium	200.7	61200	ug/L	21	3	1	04/09/24 12:16	04/04/24	
Chromium	200.8	0.92	ug/L	0.20	0.03	1	04/09/24 15:54	04/04/24	
Cobalt	200.8	0.656	ug/L	0.020	0.009	1	04/09/24 15:54	04/04/24	
Copper	200.8	5.12	ug/L	0.10	0.05	1	04/09/24 15:54	04/04/24	
Iron	200.7	32400	ug/L	21	8	1	04/09/24 12:16	04/04/24	
Lead	200.8	0.296	ug/L	0.020	0.006	1	04/09/24 15:54	04/04/24	
Magnesium	200.7	15400	ug/L	5.3	0.4	1	04/09/24 12:16	04/04/24	
Manganese	200.7	1700	ug/L	1.1	0.2	1	04/09/24 12:16	04/04/24	
Nickel	200.8	2.09	ug/L	0.20	0.04	1	04/09/24 15:54	04/04/24	
Potassium	200.7	13000	ug/L	210	60	1	04/09/24 12:16	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 15:54	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:54	04/04/24	
Sodium	200.7	23100	ug/L	210	30	1	04/09/24 12:16	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 15:54	04/04/24	
Vanadium	200.8	1.54	ug/L	0.20	0.04	1	04/09/24 15:54	04/04/24	
Zinc	200.8	2.7	ug/L	2.0	0.5	1	04/09/24 15:54	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W17-401
Lab Code: K2403414-017

Service Request: K2403414
Date Collected: 04/01/24 17:00
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	1.57	ug/L	0.050	0.020	1	04/09/24 15:57	04/04/24	
Arsenic	200.8	13.9	ug/L	0.50	0.09	1	04/09/24 15:57	04/04/24	
Barium	200.8	260	ug/L	0.050	0.020	1	04/09/24 15:57	04/04/24	
Beryllium	200.8	0.030	ug/L	0.020	0.005	1	04/09/24 15:57	04/04/24	
Cadmium	200.8	0.264	ug/L	0.020	0.008	1	04/09/24 15:57	04/04/24	
Calcium	200.7	163000	ug/L	110	20	5	04/09/24 12:18	04/04/24	
Chromium	200.8	29.7	ug/L	0.20	0.03	1	04/09/24 15:57	04/04/24	
Cobalt	200.8	20.8	ug/L	0.020	0.009	1	04/09/24 15:57	04/04/24	
Copper	200.8	12.2	ug/L	0.10	0.05	1	04/09/24 15:57	04/04/24	
Iron	200.7	3240	ug/L	110	40	5	04/09/24 12:18	04/04/24	
Lead	200.8	0.251	ug/L	0.020	0.006	1	04/09/24 15:57	04/04/24	
Magnesium	200.7	80400	ug/L	26	2	5	04/09/24 12:18	04/04/24	
Manganese	200.7	1960	ug/L	5.3	1.1	5	04/09/24 12:18	04/04/24	
Nickel	200.8	90.0	ug/L	0.20	0.04	1	04/09/24 15:57	04/04/24	
Potassium	200.7	327000	ug/L	1100	300	5	04/09/24 12:18	04/04/24	
Selenium	200.8	0.6 J	ug/L	1.0	0.2	1	04/09/24 15:57	04/04/24	
Silver	200.8	0.017 J	ug/L	0.020	0.009	1	04/09/24 15:57	04/04/24	
Sodium	200.7	986000	ug/L	1100	200	5	04/09/24 12:18	04/04/24	
Thallium	200.8	0.026	ug/L	0.020	0.009	1	04/09/24 15:57	04/04/24	
Vanadium	200.8	43.1	ug/L	0.20	0.04	1	04/09/24 15:57	04/04/24	
Zinc	200.8	33.2	ug/L	2.0	0.5	1	04/09/24 15:57	04/04/24	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: W18-401
Lab Code: K2403414-018

Service Request: K2403414
Date Collected: 04/01/24 17:30
Date Received: 04/02/24 09:00

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	1.68	ug/L	0.050	0.020	1	04/09/24 15:59	04/04/24	
Arsenic	200.8	19.8	ug/L	0.50	0.09	1	04/09/24 15:59	04/04/24	
Barium	200.8	409	ug/L	0.050	0.020	1	04/09/24 15:59	04/04/24	
Beryllium	200.8	0.023	ug/L	0.020	0.005	1	04/09/24 15:59	04/04/24	
Cadmium	200.8	0.086	ug/L	0.020	0.008	1	04/09/24 15:59	04/04/24	
Calcium	200.7	162000	ug/L	110	20	5	04/09/24 12:21	04/04/24	
Chromium	200.8	31.2	ug/L	0.20	0.03	1	04/09/24 15:59	04/04/24	
Cobalt	200.8	21.3	ug/L	0.020	0.009	1	04/09/24 15:59	04/04/24	
Copper	200.8	7.71	ug/L	0.10	0.05	1	04/09/24 15:59	04/04/24	
Iron	200.7	11300	ug/L	110	40	5	04/09/24 12:21	04/04/24	
Lead	200.8	0.363	ug/L	0.020	0.006	1	04/09/24 15:59	04/04/24	
Magnesium	200.7	74900	ug/L	26	2	5	04/09/24 12:21	04/04/24	
Manganese	200.7	3760	ug/L	5.3	1.1	5	04/09/24 12:21	04/04/24	
Nickel	200.8	86.1	ug/L	0.20	0.04	1	04/09/24 15:59	04/04/24	
Potassium	200.7	305000	ug/L	1100	300	5	04/09/24 12:21	04/04/24	
Selenium	200.8	0.7 J	ug/L	1.0	0.2	1	04/09/24 15:59	04/04/24	
Silver	200.8	0.018 J	ug/L	0.020	0.009	1	04/09/24 15:59	04/04/24	
Sodium	200.7	929000	ug/L	1100	200	5	04/09/24 12:21	04/04/24	
Thallium	200.8	0.013 J	ug/L	0.020	0.009	1	04/09/24 15:59	04/04/24	
Vanadium	200.8	45.7	ug/L	0.20	0.04	1	04/09/24 15:59	04/04/24	
Zinc	200.8	11.5	ug/L	2.0	0.5	1	04/09/24 15:59	04/04/24	



General Chemistry

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	247	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.040 J	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	5.70	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	3.92	mg/L	0.20	0.010	2	04/03/24 23:51	
Nitrate as Nitrogen	300.0	0.006 J	mg/L	0.10	0.006	2	04/02/24 16:43	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	13.6	mg/L	0.20	0.02	2	04/03/24 23:51	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W1-401
Lab Code: K2403414-001

Service Request: K2403414
Date Collected: 04/01/24 09:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	290	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	240	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.760	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	14.7	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	7.42	mg/L	0.20	0.010	2	04/04/24 00:43	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 17:17	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	7.38	mg/L	0.20	0.02	2	04/04/24 00:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W2-401
Lab Code: K2403414-002

Service Request: K2403414
Date Collected: 04/01/24 09:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	340	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	238	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	2.44	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	27.7	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	7.48	mg/L	0.20	0.010	2	04/04/24 01:17	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 18:09	
Solids, Total Suspended (TSS)	SM 2540 D	128	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	0.14 J	mg/L	0.20	0.02	2	04/04/24 01:17	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W3-401
Lab Code: K2403414-003

Service Request: K2403414
Date Collected: 04/01/24 10:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	302	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W4-401
Lab Code: K2403414-004

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	211	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	1.05	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	14.2	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	2.30	mg/L	0.20	0.010	2	04/04/24 01:26	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 18:18	
Solids, Total Suspended (TSS)	SM 2540 D	78.5	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	0.08 J	mg/L	0.20	0.02	2	04/04/24 01:26	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W4-401
Lab Code: K2403414-004

Service Request: K2403414
Date Collected: 04/01/24 10:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	262	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	324	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.870	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	11.3	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	14.1	mg/L	0.20	0.010	2	04/04/24 01:35	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 18:26	
Solids, Total Suspended (TSS)	SM 2540 D	47.0	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	0.10 J	mg/L	0.20	0.02	2	04/04/24 01:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W5-401
Lab Code: K2403414-005

Service Request: K2403414
Date Collected: 04/01/24 11:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	387	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	47.6	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.040 J	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	18.3	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	1.20	mg/L	0.20	0.010	2	04/04/24 01:43	
Nitrate as Nitrogen	300.0	1.29	mg/L	0.10	0.006	2	04/02/24 18:35	
Solids, Total Suspended (TSS)	SM 2540 D	6.5	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	3.54	mg/L	0.20	0.02	2	04/04/24 01:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W6-401
Lab Code: K2403414-006

Service Request: K2403414
Date Collected: 04/01/24 12:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	125	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	162	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	2.10	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	17.5	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	2.27	mg/L	0.20	0.010	2	04/04/24 01:52	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 18:44	
Solids, Total Suspended (TSS)	SM 2540 D	10.0	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	0.14 J	mg/L	0.20	0.02	2	04/04/24 01:52	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W7-401
Lab Code: K2403414-007

Service Request: K2403414
Date Collected: 04/01/24 13:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	265	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	107	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.090	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	8.60	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	1.81	mg/L	0.20	0.010	2	04/04/24 02:01	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 18:52	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	0.78	mg/L	0.20	0.02	2	04/04/24 02:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W8-401
Lab Code: K2403414-008

Service Request: K2403414
Date Collected: 04/01/24 13:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	163	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	50.0	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.170	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	2.00	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	1.55	mg/L	0.20	0.010	2	04/04/24 02:27	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 19:01	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	2.80	mg/L	0.20	0.02	2	04/04/24 02:27	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W9-401
Lab Code: K2403414-009

Service Request: K2403414
Date Collected: 04/01/24 14:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	106	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	44.3	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.040 J	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	0.50	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	2.01	mg/L	0.20	0.010	2	04/04/24 02:35	
Nitrate as Nitrogen	300.0	0.08 J	mg/L	0.10	0.006	2	04/02/24 19:44	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	3.00	mg/L	0.20	0.02	2	04/04/24 02:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W10-401
Lab Code: K2403414-010

Service Request: K2403414
Date Collected: 04/01/24 14:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	96	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W11-401
Lab Code: K2403414-011

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	37.8	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.040 J	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	7.90	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	0.89	mg/L	0.20	0.010	2	04/04/24 02:44	
Nitrate as Nitrogen	300.0	1.24	mg/L	0.10	0.006	2	04/02/24 19:53	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	1.82	mg/L	0.20	0.02	2	04/04/24 02:44	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W11-401
Lab Code: K2403414-011

Service Request: K2403414
Date Collected: 04/01/24 15:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	79	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W12-401
Lab Code: K2403414-012

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	411	mg/L	2.0	0.6	1	04/05/24 11:12	
Ammonia as Nitrogen	SM 4500-NH3 E	2.79	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	13.6	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	7.33	mg/L	0.20	0.010	2	04/04/24 02:52	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 20:02	
Solids, Total Suspended (TSS)	SM 2540 D	86.5	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	1.98	mg/L	0.20	0.02	2	04/04/24 02:52	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W12-401
Lab Code: K2403414-012

Service Request: K2403414
Date Collected: 04/01/24 15:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	463	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	408	mg/L	2.0	0.6	1	04/05/24 11:12	
Ammonia as Nitrogen	SM 4500-NH3 E	11.4	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	13.7	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	7.32	mg/L	0.20	0.010	2	04/04/24 03:01	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.10	0.006	2	04/02/24 20:10	
Solids, Total Suspended (TSS)	SM 2540 D	95.5	mg/L	5.0	-	1	04/04/24 09:56	
Sulfate	300.0	1.97	mg/L	0.20	0.02	2	04/04/24 03:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W13-401
Lab Code: K2403414-013

Service Request: K2403414
Date Collected: 04/01/24 16:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	457	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W16-401
Lab Code: K2403414-016

Service Request: K2403414
Date Collected: 04/01/24 16:45
Date Received: 04/02/24 09:00

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	289	mg/L	2.0	0.6	1	04/05/24 11:12	
Ammonia as Nitrogen	SM 4500-NH3 E	11.8	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	14.0	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	12.0	mg/L	0.20	0.010	2	04/04/24 03:10	
Nitrate as Nitrogen	300.0	1.84	mg/L	0.10	0.006	2	04/02/24 20:19	
Solids, Total Suspended (TSS)	SM 2540 D	63.5	mg/L	5.0	-	1	04/04/24 09:56	
Sulfate	300.0	1.91	mg/L	0.20	0.02	2	04/04/24 03:10	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W16-401
Lab Code: K2403414-016

Service Request: K2403414
Date Collected: 04/01/24 16:45
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	311	mg/L	10	-	1	04/05/24 09:18	

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dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W17-401
Lab Code: K2403414-017

Service Request: K2403414
Date Collected: 04/01/24 17:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	1880	mg/L	2.0	0.6	1	04/05/24 11:12	
Ammonia as Nitrogen	SM 4500-NH3 E	198	mg/L	0.10	0.02	2	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	130	mg/L	10	2	20	04/03/24 20:06	
Chloride	300.0	829	mg/L	10	0.5	100	04/04/24 03:18	
Nitrate as Nitrogen	300.0	59.6	mg/L	2.5	0.2	50	04/02/24 20:27	
Solids, Total Suspended (TSS)	SM 2540 D	16.5	mg/L	5.0	-	1	04/04/24 09:56	
Sulfate	300.0	506	mg/L	10	1.0	100	04/04/24 03:18	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W17-401
Lab Code: K2403414-017

Service Request: K2403414
Date Collected: 04/01/24 17:00
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3800	mg/L	200	-	1	04/05/24 09:18	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W18-401
Lab Code: K2403414-018

Service Request: K2403414
Date Collected: 04/01/24 17:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	2420	mg/L	4.0	1.2	2	04/06/24 12:10	
Ammonia as Nitrogen	SM 4500-NH3 E	328	mg/L	0.25	0.05	5	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	152	mg/L	10	2	20	04/03/24 20:06	
Chloride	300.0	804	mg/L	10	0.5	100	04/04/24 03:27	
Nitrate as Nitrogen	300.0	4.6	mg/L	2.5	0.2	50	04/02/24 20:36	
Solids, Total Suspended (TSS)	SM 2540 D	11.5	mg/L	5.0	-	1	04/04/24 09:56	
Sulfate	300.0	508	mg/L	10	1.0	100	04/04/24 03:27	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: W18-401
Lab Code: K2403414-018

Service Request: K2403414
Date Collected: 04/01/24 17:30
Date Received: 04/02/24 09:00
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3820	mg/L	200	-	1	04/05/24 09:18	



QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		68 - 117	73 - 122	65 - 144
W1-401	K2403414-001	97	107	102
W2-401	K2403414-002	97	111	103
W3-401	K2403414-003	97	107	102
W4-401	K2403414-004	97	110	103
W5-401	K2403414-005	97	108	102
W6-401	K2403414-006	96	109	102
W7-401	K2403414-007	97	112	104
W8-401	K2403414-008	96	111	101
W9-401	K2403414-009	96	109	102
W10-401	K2403414-010	96	111	102
W11-401	K2403414-011	97	107	102
W12-401	K2403414-012	96	110	103
W13-401	K2403414-013	94	95	95
W16-401	K2403414-016	94	95	93
Trip Blank	K2403414-019	93	96	94
Lab Control Sample	KQ2405654-03	102	100	98
Duplicate Lab Control Sample	KQ2405654-04	100	100	99
Method Blank	KQ2405654-05	94	90	95
Lab Control Sample	KQ2405657-03	108	109	104
Duplicate Lab Control Sample	KQ2405657-04	106	106	104
Method Blank	KQ2405657-05	98	108	101

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405654-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	04/08/24 12:14	
Acrylonitrile	ND U	5.0	0.53	1	04/08/24 12:14	
Benzene	ND U	0.50	0.062	1	04/08/24 12:14	
Bromochloromethane	ND U	0.50	0.16	1	04/08/24 12:14	
Bromodichloromethane	ND U	0.50	0.091	1	04/08/24 12:14	
Bromoform	ND U	0.50	0.16	1	04/08/24 12:14	
Bromomethane	ND U	0.50	0.16	1	04/08/24 12:14	
2-Butanone (MEK)	ND U	20	1.9	1	04/08/24 12:14	
Carbon Disulfide	ND U	0.50	0.069	1	04/08/24 12:14	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/08/24 12:14	
Chlorobenzene	ND U	0.50	0.11	1	04/08/24 12:14	
Chloroethane	ND U	0.50	0.16	1	04/08/24 12:14	
Chloroform	ND U	0.50	0.072	1	04/08/24 12:14	
Chloromethane	ND U	0.50	0.068	1	04/08/24 12:14	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/08/24 12:14	
Dibromochloromethane	ND U	0.50	0.14	1	04/08/24 12:14	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/08/24 12:14	
Dibromomethane	ND U	0.50	0.15	1	04/08/24 12:14	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/08/24 12:14	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/08/24 12:14	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/08/24 12:14	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/08/24 12:14	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/08/24 12:14	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/08/24 12:14	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/08/24 12:14	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/08/24 12:14	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/08/24 12:14	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/08/24 12:14	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/08/24 12:14	
Ethylbenzene	ND U	0.50	0.050	1	04/08/24 12:14	
2-Hexanone	ND U	20	2.7	1	04/08/24 12:14	
Iodomethane	ND U	5.0	0.12	1	04/08/24 12:14	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/08/24 12:14	
Methylene Chloride	ND U	2.0	0.10	1	04/08/24 12:14	
Styrene	ND U	0.50	0.089	1	04/08/24 12:14	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/08/24 12:14	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/08/24 12:14	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/08/24 12:14	
Toluene	ND U	0.50	0.054	1	04/08/24 12:14	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/08/24 12:14	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/08/24 12:14	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405654-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/08/24 12:14	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/08/24 12:14	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/08/24 12:14	
Vinyl Acetate	ND U	5.0	0.43	1	04/08/24 12:14	
Vinyl Chloride	ND U	0.50	0.075	1	04/08/24 12:14	
o-Xylene	ND U	0.50	0.074	1	04/08/24 12:14	
m,p-Xylenes	ND U	0.50	0.11	1	04/08/24 12:14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	04/08/24 12:14	
Dibromofluoromethane	90	73 - 122	04/08/24 12:14	
Toluene-d8	95	65 - 144	04/08/24 12:14	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405657-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	04/04/24 13:00	
Acrylonitrile	ND U	5.0	0.53	1	04/04/24 13:00	
Benzene	ND U	0.50	0.062	1	04/04/24 13:00	
Bromochloromethane	ND U	0.50	0.16	1	04/04/24 13:00	
Bromodichloromethane	ND U	0.50	0.091	1	04/04/24 13:00	
Bromoform	ND U	0.50	0.16	1	04/04/24 13:00	
Bromomethane	ND U	0.50	0.16	1	04/04/24 13:00	
2-Butanone (MEK)	ND U	20	1.9	1	04/04/24 13:00	
Carbon Disulfide	ND U	0.50	0.069	1	04/04/24 13:00	
Carbon Tetrachloride	ND U	0.50	0.096	1	04/04/24 13:00	
Chlorobenzene	ND U	0.50	0.11	1	04/04/24 13:00	
Chloroethane	ND U	0.50	0.16	1	04/04/24 13:00	
Chloroform	ND U	0.50	0.072	1	04/04/24 13:00	
Chloromethane	ND U	0.50	0.068	1	04/04/24 13:00	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	04/04/24 13:00	
Dibromochloromethane	ND U	0.50	0.14	1	04/04/24 13:00	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	04/04/24 13:00	
Dibromomethane	ND U	0.50	0.15	1	04/04/24 13:00	
trans-1,4-Dichloro-2-butene	ND U	10	0.35	1	04/04/24 13:00	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 13:00	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	04/04/24 13:00	
1,1-Dichloroethane	ND U	0.50	0.077	1	04/04/24 13:00	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	04/04/24 13:00	
1,1-Dichloroethene	ND U	0.50	0.080	1	04/04/24 13:00	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	04/04/24 13:00	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	04/04/24 13:00	
1,2-Dichloropropane	ND U	0.50	0.095	1	04/04/24 13:00	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	04/04/24 13:00	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	04/04/24 13:00	
Ethylbenzene	ND U	0.50	0.050	1	04/04/24 13:00	
2-Hexanone	ND U	20	2.7	1	04/04/24 13:00	
Iodomethane	ND U	5.0	0.12	1	04/04/24 13:00	
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	04/04/24 13:00	
Methylene Chloride	ND U	2.0	0.10	1	04/04/24 13:00	
Styrene	ND U	0.50	0.089	1	04/04/24 13:00	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	04/04/24 13:00	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	04/04/24 13:00	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	04/04/24 13:00	
Toluene	ND U	0.50	0.054	1	04/04/24 13:00	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	04/04/24 13:00	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	04/04/24 13:00	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405657-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	0.10	1	04/04/24 13:00	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	04/04/24 13:00	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	04/04/24 13:00	
Vinyl Acetate	ND U	5.0	0.43	1	04/04/24 13:00	
Vinyl Chloride	ND U	0.50	0.075	1	04/04/24 13:00	
o-Xylene	ND U	0.50	0.074	1	04/04/24 13:00	
m,p-Xylenes	ND U	0.50	0.11	1	04/04/24 13:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	68 - 117	04/04/24 13:00	
Dibromofluoromethane	108	73 - 122	04/04/24 13:00	
Toluene-d8	101	65 - 144	04/04/24 13:00	

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennen Way Landfill Detection Monitoring
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/08/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 837149

Lab Control Sample				Duplicate Lab Control Sample					
KQ2405654-03				KQ2405654-04					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	8.10	10.0	81	7.94	10.0	79	66-124	2	30
1,1,1-Trichloroethane (TCA)	8.37	10.0	84	8.12	10.0	81	59-136	3	30
1,1,2,2-Tetrachloroethane	8.38	10.0	84	8.53	10.0	85	70-127	2	30
1,1,2-Trichloroethane	8.81	10.0	88	8.67	10.0	87	74-118	2	30
1,1-Dichloroethane	8.55	10.0	86	8.45	10.0	85	68-132	1	30
1,1-Dichloroethene	8.14	10.0	81	7.94	10.0	79	66-129	2	30
1,2,3-Trichloropropane	8.59	10.0	86	8.42	10.0	84	69-123	2	30
1,2-Dibromo-3-chloropropane	6.76	10.0	68	6.53	10.0	65	55-132	3	30
1,2-Dibromoethane (EDB)	9.26	10.0	93	8.95	10.0	90	74-118	3	30
1,2-Dichlorobenzene	8.62	10.0	86	8.60	10.0	86	72-115	<1	30
1,2-Dichloroethane (EDC)	8.60	10.0	86	8.42	10.0	84	56-142	2	30
1,2-Dichloropropane	8.32	10.0	83	8.18	10.0	82	67-126	2	30
1,4-Dichlorobenzene	8.81	10.0	88	8.64	10.0	86	73-115	2	30
2-Butanone (MEK)	46.7	50.0	93	45.7	50.0	91	71-149	2	30
2-Hexanone	46.6	50.0	93	45.8	50.0	92	59-131	2	30
4-Methyl-2-pentanone (MIBK)	43.0	50.0	86	43.8	50.0	88	64-134	2	30
Acetone	49.0	50.0	98	48.0	50.0	96	68-135	2	30
Acrylonitrile	35.6	40.0	89	35.2	40.0	88	65-129	1	30
Benzene	8.94	10.0	89	8.77	10.0	88	69-124	2	30
Bromochloromethane	9.03	10.0	90	8.86	10.0	89	75-131	2	30
Bromodichloromethane	7.95	10.0	80	7.84	10.0	78	63-129	1	30
Bromoform	7.12	10.0	71	7.11	10.0	71	52-144	<1	30
Bromomethane	6.39	10.0	64	6.39	10.0	64	35-113	<1	30
Carbon Disulfide	16.6	20.0	83	16.1	20.0	81	46-144	3	30
Carbon Tetrachloride	7.95	10.0	80	7.84	10.0	78	55-140	1	30
Chlorobenzene	9.30	10.0	93	8.89	10.0	89	72-116	5	30
Chloroethane	9.00	10.0	90	8.70	10.0	87	58-134	3	30
Chloroform	8.79	10.0	88	8.51	10.0	85	70-129	3	30
Chloromethane	7.56	10.0	76	7.38	10.0	74	34-130	2	30
cis-1,2-Dichloroethene	8.28	10.0	83	8.05	10.0	81	71-118	3	30
cis-1,3-Dichloropropene	8.12	10.0	81	8.02	10.0	80	62-132	1	30
Dibromochloromethane	7.58	10.0	76	7.61	10.0	76	67-126	<1	30
Dibromomethane	8.49	10.0	85	8.55	10.0	86	69-128	<1	30
Ethylbenzene	9.16	10.0	92	8.83	10.0	88	67-121	4	30
Iodomethane	27.5	30.0	92	26.5	30.0	88	51-164	4	30
m,p-Xylenes	18.8	20.0	94	18.1	20.0	91	69-121	4	30
Methylene Chloride	9.03	10.0	90	8.81	10.0	88	71-122	2	30
o-Xylene	9.24	10.0	92	8.99	10.0	90	71-119	3	30
Styrene	9.00	10.0	90	8.72	10.0	87	74-121	3	30
Tetrachloroethene (PCE)	9.15	10.0	92	8.83	10.0	88	62-126	4	30
Toluene	8.87	10.0	89	8.60	10.0	86	69-124	3	30

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennenet Way Landfill Detection Monitoring
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/08/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 837149

Lab Control Sample
KQ2405654-03

Duplicate Lab Control Sample
KQ2405654-04

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	8.39	10.0	84	8.29	10.0	83	67-125	1	30
trans-1,3-Dichloropropene	8.00	10.0	80	7.66	10.0	77	59-125	4	30
trans-1,4-Dichloro-2-butene	23.2	30.0	77	24.4	30.0	81	46-170	5	30
Trichloroethene (TCE)	8.69	10.0	87	8.49	10.0	85	67-128	2	30
Trichlorofluoromethane (CFC 11)	9.07	10.0	91	8.95	10.0	90	52-141	1	30
Vinyl Acetate	41.1	50.0	82	40.7	50.0	81	44-156	1	30
Vinyl Chloride	8.22	10.0	82	8.08	10.0	81	55-123	2	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitoring
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/04/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 836836

Lab Control Sample				Duplicate Lab Control Sample					
KQ2405657-03				KQ2405657-04					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.0	100	9.66	10.0	97	66-124	4	30
1,1,1-Trichloroethane (TCA)	10.4	10.0	104	10.1	10.0	101	59-136	3	30
1,1,2,2-Tetrachloroethane	8.71	10.0	87	8.77	10.0	88	70-127	<1	30
1,1,2-Trichloroethane	10.0	10.0	100	9.57	10.0	96	74-118	5	30
1,1-Dichloroethane	9.96	10.0	100	9.94	10.0	99	68-132	<1	30
1,1-Dichloroethene	9.03	10.0	90	8.77	10.0	88	66-129	3	30
1,2,3-Trichloropropane	8.82	10.0	88	8.90	10.0	89	69-123	<1	30
1,2-Dibromo-3-chloropropane	6.53	10.0	65	6.45	10.0	65	55-132	1	30
1,2-Dibromoethane (EDB)	9.48	10.0	95	9.19	10.0	92	74-118	3	30
1,2-Dichlorobenzene	8.85	10.0	89	8.85	10.0	89	72-115	<1	30
1,2-Dichloroethane (EDC)	10.3	10.0	103	9.80	10.0	98	56-142	5	30
1,2-Dichloropropane	9.84	10.0	98	9.80	10.0	98	67-126	<1	30
1,4-Dichlorobenzene	9.41	10.0	94	9.50	10.0	95	73-115	<1	30
2-Butanone (MEK)	62.8	50.0	126	60.0	50.0	120	71-149	5	30
2-Hexanone	59.0	50.0	118	57.2	50.0	114	59-131	3	30
4-Methyl-2-pentanone (MIBK)	57.1	50.0	114	55.9	50.0	112	64-134	2	30
Acetone	67.4	50.0	135	60.8	50.0	122	68-135	10	30
Acrylonitrile	40.7	40.0	102	39.2	40.0	98	65-129	4	30
Benzene	9.97	10.0	100	10.1	10.0	101	69-124	<1	30
Bromochloromethane	10.9	10.0	109	10.6	10.0	106	75-131	3	30
Bromodichloromethane	10.0	10.0	100	9.75	10.0	98	63-129	3	30
Bromoform	9.14	10.0	91	8.97	10.0	90	52-144	2	30
Bromomethane	11.4	10.0	114 *	11.1	10.0	111	35-113	3	30
Carbon Disulfide	17.9	20.0	90	17.4	20.0	87	46-144	3	30
Carbon Tetrachloride	9.91	10.0	99	9.47	10.0	95	55-140	5	30
Chlorobenzene	9.95	10.0	100	9.70	10.0	97	72-116	3	30
Chloroethane	9.05	10.0	91	8.90	10.0	89	58-134	2	30
Chloroform	10.2	10.0	102	9.98	10.0	100	70-129	2	30
Chloromethane	7.75	10.0	78	7.42	10.0	74	34-130	4	30
cis-1,2-Dichloroethene	10.1	10.0	101	10.1	10.0	101	71-118	<1	30
cis-1,3-Dichloropropene	10.1	10.0	101	10.1	10.0	101	62-132	<1	30
Dibromochloromethane	9.42	10.0	94	9.13	10.0	91	67-126	3	30
Dibromomethane	10.3	10.0	103	9.70	10.0	97	69-128	6	30
Ethylbenzene	10.3	10.0	103	9.78	10.0	98	67-121	5	30
Iodomethane	31.8	30.0	106	31.1	30.0	104	51-164	2	30
m,p-Xylenes	21.4	20.0	107	20.7	20.0	103	69-121	3	30
Methylene Chloride	10.0	10.0	100	9.61	10.0	96	71-122	4	30
o-Xylene	10.3	10.0	103	10.1	10.0	101	71-119	2	30
Styrene	10.2	10.0	102	9.91	10.0	99	74-121	3	30
Tetrachloroethene (PCE)	10.1	10.0	101	9.76	10.0	98	62-126	4	30
Toluene	10.2	10.0	102	9.96	10.0	100	69-124	2	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennenet Way Landfill Detection Monitoring
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/04/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 836836

Lab Control Sample				Duplicate Lab Control Sample					
KQ2405657-03				KQ2405657-04					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	10.3	10.0	103	9.92	10.0	99	67-125	4	30
trans-1,3-Dichloropropene	10.0	10.0	100	9.73	10.0	97	59-125	3	30
trans-1,4-Dichloro-2-butene	25.4	30.0	85	25.1	30.0	84	46-170	<1	30
Trichloroethene (TCE)	10.4	10.0	104	10.2	10.0	102	67-128	1	30
Trichlorofluoromethane (CFC 11)	8.93	10.0	89	8.46	10.0	85	52-141	5	30
Vinyl Acetate	55.3	50.0	111	53.5	50.0	107	44-156	3	30
Vinyl Chloride	8.30	10.0	83	8.02	10.0	80	55-123	3	30

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		68 - 117	73 - 122	65 - 144
W17-401	K2403414-017	90	105	102
W18-401	K2403414-018	104	108	101
Lab Control Sample	KQ2405657-03	108	109	104
Duplicate Lab Control Sample	KQ2405657-04	106	106	104
Method Blank	KQ2405657-05	98	108	101

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405657-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	20	1	04/04/24 13:00	
Acrylonitrile	ND U	5.0	1	04/04/24 13:00	
Benzene	ND U	0.50	1	04/04/24 13:00	
Bromochloromethane	ND U	0.50	1	04/04/24 13:00	
Bromodichloromethane	ND U	0.50	1	04/04/24 13:00	
Bromoform	ND U	0.50	1	04/04/24 13:00	
Bromomethane	ND U	0.50	1	04/04/24 13:00	
2-Butanone (MEK)	ND U	20	1	04/04/24 13:00	
Carbon Disulfide	ND U	0.50	1	04/04/24 13:00	
Carbon Tetrachloride	ND U	0.50	1	04/04/24 13:00	
Chlorobenzene	ND U	0.50	1	04/04/24 13:00	
Chloroethane	ND U	0.50	1	04/04/24 13:00	
Chloroform	ND U	0.50	1	04/04/24 13:00	
Chloromethane	ND U	0.50	1	04/04/24 13:00	
1,2-Dibromo-3-chloropropane	ND U	2.0	1	04/04/24 13:00	
Dibromochloromethane	ND U	0.50	1	04/04/24 13:00	
1,2-Dibromoethane (EDB)	ND U	2.0	1	04/04/24 13:00	
Dibromomethane	ND U	0.50	1	04/04/24 13:00	
trans-1,4-Dichloro-2-butene	ND U	10	1	04/04/24 13:00	
1,2-Dichlorobenzene	ND U	0.50	1	04/04/24 13:00	
1,4-Dichlorobenzene	ND U	0.50	1	04/04/24 13:00	
1,1-Dichloroethane	ND U	0.50	1	04/04/24 13:00	
1,2-Dichloroethane (EDC)	ND U	0.50	1	04/04/24 13:00	
1,1-Dichloroethene	ND U	0.50	1	04/04/24 13:00	
cis-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:00	
trans-1,2-Dichloroethene	ND U	0.50	1	04/04/24 13:00	
1,2-Dichloropropane	ND U	0.50	1	04/04/24 13:00	
cis-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:00	
trans-1,3-Dichloropropene	ND U	0.50	1	04/04/24 13:00	
Ethylbenzene	ND U	0.50	1	04/04/24 13:00	
2-Hexanone	ND U	20	1	04/04/24 13:00	
Iodomethane	ND U	5.0	1	04/04/24 13:00	
4-Methyl-2-pentanone (MIBK)	ND U	20	1	04/04/24 13:00	
Methylene Chloride	ND U	2.0	1	04/04/24 13:00	
Styrene	ND U	0.50	1	04/04/24 13:00	
1,1,1,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:00	
1,1,2,2-Tetrachloroethane	ND U	0.50	1	04/04/24 13:00	
Tetrachloroethene (PCE)	ND U	0.50	1	04/04/24 13:00	
Toluene	ND U	0.50	1	04/04/24 13:00	
1,1,2-Trichloroethane	ND U	0.50	1	04/04/24 13:00	
1,1,1-Trichloroethane (TCA)	ND U	0.50	1	04/04/24 13:00	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2405657-05

Service Request: K2403414
Date Collected: NA
Date Received: NA

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	ND U	0.50	1	04/04/24 13:00	
Trichlorofluoromethane (CFC 11)	ND U	0.50	1	04/04/24 13:00	
1,2,3-Trichloropropane	ND U	0.50	1	04/04/24 13:00	
Vinyl Acetate	ND U	5.0	1	04/04/24 13:00	
Vinyl Chloride	ND U	0.50	1	04/04/24 13:00	
o-Xylene	ND U	0.50	1	04/04/24 13:00	
m,p-Xylenes	ND U	0.50	1	04/04/24 13:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	68 - 117	04/04/24 13:00	
Dibromofluoromethane	108	73 - 122	04/04/24 13:00	
Toluene-d8	101	65 - 144	04/04/24 13:00	

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitoring
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/04/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 836836

Lab Control Sample				Duplicate Lab Control Sample					
KQ2405657-03				KQ2405657-04					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.0	100	9.66	10.0	97	66-124	4	30
1,1,1-Trichloroethane (TCA)	10.4	10.0	104	10.1	10.0	101	59-136	3	30
1,1,2,2-Tetrachloroethane	8.71	10.0	87	8.77	10.0	88	70-127	<1	30
1,1,2-Trichloroethane	10.0	10.0	100	9.57	10.0	96	74-118	5	30
1,1-Dichloroethane	9.96	10.0	100	9.94	10.0	99	68-132	<1	30
1,1-Dichloroethene	9.03	10.0	90	8.77	10.0	88	66-129	3	30
1,2,3-Trichloropropane	8.82	10.0	88	8.90	10.0	89	69-123	<1	30
1,2-Dibromo-3-chloropropane	6.53	10.0	65	6.45	10.0	65	55-132	1	30
1,2-Dibromoethane (EDB)	9.48	10.0	95	9.19	10.0	92	74-118	3	30
1,2-Dichlorobenzene	8.85	10.0	89	8.85	10.0	89	72-115	<1	30
1,2-Dichloroethane (EDC)	10.3	10.0	103	9.80	10.0	98	56-142	5	30
1,2-Dichloropropane	9.84	10.0	98	9.80	10.0	98	67-126	<1	30
1,4-Dichlorobenzene	9.41	10.0	94	9.50	10.0	95	73-115	<1	30
2-Butanone (MEK)	62.8	50.0	126	60.0	50.0	120	71-149	5	30
2-Hexanone	59.0	50.0	118	57.2	50.0	114	59-131	3	30
4-Methyl-2-pentanone (MIBK)	57.1	50.0	114	55.9	50.0	112	64-134	2	30
Acetone	67.4	50.0	135	60.8	50.0	122	68-135	10	30
Acrylonitrile	40.7	40.0	102	39.2	40.0	98	65-129	4	30
Benzene	9.97	10.0	100	10.1	10.0	101	69-124	<1	30
Bromochloromethane	10.9	10.0	109	10.6	10.0	106	75-131	3	30
Bromodichloromethane	10.0	10.0	100	9.75	10.0	98	63-129	3	30
Bromoform	9.14	10.0	91	8.97	10.0	90	52-144	2	30
Bromomethane	11.4	10.0	114 *	11.1	10.0	111	35-113	3	30
Carbon Disulfide	17.9	20.0	90	17.4	20.0	87	46-144	3	30
Carbon Tetrachloride	9.91	10.0	99	9.47	10.0	95	55-140	5	30
Chlorobenzene	9.95	10.0	100	9.70	10.0	97	72-116	3	30
Chloroethane	9.05	10.0	91	8.90	10.0	89	58-134	2	30
Chloroform	10.2	10.0	102	9.98	10.0	100	70-129	2	30
Chloromethane	7.75	10.0	78	7.42	10.0	74	34-130	4	30
cis-1,2-Dichloroethene	10.1	10.0	101	10.1	10.0	101	71-118	<1	30
cis-1,3-Dichloropropene	10.1	10.0	101	10.1	10.0	101	62-132	<1	30
Dibromochloromethane	9.42	10.0	94	9.13	10.0	91	67-126	3	30
Dibromomethane	10.3	10.0	103	9.70	10.0	97	69-128	6	30
Ethylbenzene	10.3	10.0	103	9.78	10.0	98	67-121	5	30
Iodomethane	31.8	30.0	106	31.1	30.0	104	51-164	2	30
m,p-Xylenes	21.4	20.0	107	20.7	20.0	103	69-121	3	30
Methylene Chloride	10.0	10.0	100	9.61	10.0	96	71-122	4	30
o-Xylene	10.3	10.0	103	10.1	10.0	101	71-119	2	30
Styrene	10.2	10.0	102	9.91	10.0	99	74-121	3	30
Tetrachloroethene (PCE)	10.1	10.0	101	9.76	10.0	98	62-126	4	30
Toluene	10.2	10.0	102	9.96	10.0	100	69-124	2	30

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/04/24
Date Extracted: NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 8260C
Prep Method: None

Units: ug/L
Basis: NA
Analysis Lot: 836836

Lab Control Sample KQ2405657-03				Duplicate Lab Control Sample KQ2405657-04					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	10.3	10.0	103	9.92	10.0	99	67-125	4	30
trans-1,3-Dichloropropene	10.0	10.0	100	9.73	10.0	97	59-125	3	30
trans-1,4-Dichloro-2-butene	25.4	30.0	85	25.1	30.0	84	46-170	<1	30
Trichloroethene (TCE)	10.4	10.0	104	10.2	10.0	102	67-128	1	30
Trichlorofluoromethane (CFC 11)	8.93	10.0	89	8.46	10.0	85	52-141	5	30
Vinyl Acetate	55.3	50.0	111	53.5	50.0	107	44-156	3	30
Vinyl Chloride	8.30	10.0	83	8.02	10.0	80	55-123	3	30



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ2404846-01

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 14:57	04/04/24	
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	04/09/24 14:57	04/04/24	
Barium	200.8	ND U	ug/L	0.050	0.020	1	04/09/24 14:57	04/04/24	
Beryllium	200.8	ND U	ug/L	0.020	0.005	1	04/09/24 14:57	04/04/24	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	04/09/24 14:57	04/04/24	
Chromium	200.8	ND U	ug/L	0.20	0.03	1	04/09/24 14:57	04/04/24	
Cobalt	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 14:57	04/04/24	
Copper	200.8	ND U	ug/L	0.10	0.05	1	04/09/24 14:57	04/04/24	
Lead	200.8	ND U	ug/L	0.020	0.006	1	04/09/24 14:57	04/04/24	
Nickel	200.8	ND U	ug/L	0.20	0.04	1	04/09/24 14:57	04/04/24	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	04/09/24 14:57	04/04/24	
Silver	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 14:57	04/04/24	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	04/09/24 14:57	04/04/24	
Vanadium	200.8	ND U	ug/L	0.20	0.04	1	04/09/24 14:57	04/04/24	
Zinc	200.8	ND U	ug/L	2.0	0.5	1	04/09/24 14:57	04/04/24	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2404847-01

Service Request: K2403414
Date Collected: NA
Date Received: NA

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	6 J	ug/L	21	3	1	04/09/24 11:49	04/04/24	
Iron	200.7	ND U	ug/L	21	8	1	04/09/24 11:49	04/04/24	
Magnesium	200.7	ND U	ug/L	5.3	0.4	1	04/09/24 11:49	04/04/24	
Manganese	200.7	0.2 J	ug/L	1.1	0.2	1	04/09/24 11:49	04/04/24	
Potassium	200.7	ND U	ug/L	210	60	1	04/09/24 11:49	04/04/24	
Sodium	200.7	80 J	ug/L	210	30	1	04/09/24 11:49	04/04/24	

ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/9/24
Date Extracted: 04/4/24

Matrix Spike Summary
Total Metals

Sample Name: W1-401
Lab Code: K2403414-001
Analysis Method: 200.8
Prep Method: EPA CLP ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ2404846-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.031 J	9.68	10.0	97	70-130
Arsenic	0.47 J	51.7	50.0	102	70-130
Barium	37.6	137	100	99	70-130
Beryllium	0.008 J	2.52	2.50	100	70-130
Cadmium	0.033	24.3	25.0	97	70-130
Chromium	0.20	10.2	10.0	100	70-130
Cobalt	1.62	26.2	25.0	98	70-130
Copper	1.56	13.6	12.5	97	70-130
Lead	0.047	48.1	50.0	96	70-130
Nickel	2.87	26.9	25.0	96	70-130
Selenium	ND U	49.5	50.0	99	70-130
Silver	0.086	12.4	12.5	99	70-130
Thallium	0.029	49.0	50.0	98	70-130
Vanadium	1.57	27.3	25.0	103	70-130
Zinc	0.7 J	24.4	25.0	95	70-130

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Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/9/24
Date Extracted: 04/4/24

Matrix Spike Summary
Total Metals

Sample Name: W2-401
Lab Code: K2403414-002
Analysis Method: 200.8
Prep Method: EPA CLP ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ2404846-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.029 J	9.61	10.0	96	70-130
Arsenic	3.80	54.7	50.0	102	70-130
Barium	21.6	118	100	97	70-130
Beryllium	0.026	2.55	2.50	101	70-130
Cadmium	0.020	24.0	25.0	96	70-130
Chromium	0.90	10.6	10.0	98	70-130
Cobalt	0.978	25.6	25.0	98	70-130
Copper	1.51	13.7	12.5	97	70-130
Lead	0.021	48.0	50.0	96	70-130
Nickel	1.18	25.8	25.0	98	70-130
Selenium	ND U	49.3	50.0	99	70-130
Silver	0.024	12.1	12.5	97	70-130
Thallium	0.027	48.8	50.0	97	70-130
Vanadium	4.77	30.2	25.0	102	70-130
Zinc	0.6 J	24.5	25.0	96	70-130

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ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/9/24
Date Extracted: 04/4/24

Matrix Spike Summary
Total Metals

Sample Name: W14-401
Lab Code: K2403414-014
Analysis Method: 200.7
Prep Method: EPA CLP ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ2404847-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	15300	25300	10000	100	70-130
Iron	998	1970	1000	97	70-130
Magnesium	5500	15800	10000	103	70-130
Manganese	235	727	500	98	70-130
Potassium	5840	16100	10000	102	70-130
Sodium	11600	22300	10000	107	70-130

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ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/9/24
Date Extracted: 04/4/24

Matrix Spike Summary
Total Metals

Sample Name: W15-401
Lab Code: K2403414-015
Analysis Method: 200.7
Prep Method: EPA CLP ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ2404847-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	25800	35600	10000	98	70-130
Iron	1660	2640	1000	98	70-130
Magnesium	8710	19000	10000	103	70-130
Manganese	319	810	500	98	70-130
Potassium	7810	18200	10000	104	70-130
Sodium	4590	15300	10000	108	70-130

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ALS Group USA, Corp.

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414

Date Collected: 04/01/24

Date Received: 04/02/24

Date Analyzed: 04/09/24

Replicate Sample Summary

Total Metals

Sample Name: W1-401
Lab Code: K2403414-001

Units: ug/L

Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2404846-03	Average	RPD	RPD Limit
					Result			
Antimony	200.8	0.050	0.020	0.031 J	0.031 J	0.031	<1	20
Arsenic	200.8	0.50	0.09	0.47 J	0.46 J	0.47	2	20
Barium	200.8	0.050	0.020	37.6	38.2	37.9	2	20
Beryllium	200.8	0.020	0.005	0.008 J	0.007 J	0.008	13	20
Cadmium	200.8	0.020	0.008	0.033	0.030	0.032	10	20
Chromium	200.8	0.20	0.03	0.20	0.22	0.21	10	20
Cobalt	200.8	0.020	0.009	1.62	1.60	1.61	1	20
Copper	200.8	0.10	0.05	1.56	1.53	1.55	2	20
Lead	200.8	0.020	0.006	0.047	0.038	0.043	21 #	20
Nickel	200.8	0.20	0.04	2.87	2.85	2.86	<1	20
Selenium	200.8	1.0	0.2	ND U	ND U	ND	-	20
Silver	200.8	0.020	0.009	0.086	0.087	0.087	1	20
Thallium	200.8	0.020	0.009	0.029	0.012 J	0.021	83 #	20
Vanadium	200.8	0.20	0.04	1.57	1.58	1.58	<1	20
Zinc	200.8	2.0	0.5	0.7 J	0.8 J	0.8	13	20

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennen Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414

Date Collected: 04/01/24

Date Received: 04/02/24

Date Analyzed: 04/09/24

Replicate Sample Summary

Total Metals

Sample Name: W2-401
Lab Code: K2403414-002

Units: ug/L

Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2404846-05	Average	RPD	RPD Limit
					Result			
Antimony	200.8	0.050	0.020	0.029 J	0.025 J	0.027	15	20
Arsenic	200.8	0.50	0.09	3.80	3.71	3.76	2	20
Barium	200.8	0.050	0.020	21.6	20.9	21.3	3	20
Beryllium	200.8	0.020	0.005	0.026	0.026	0.026	<1	20
Cadmium	200.8	0.020	0.008	0.020	0.015 J	0.018	29 #	20
Chromium	200.8	0.20	0.03	0.90	0.74	0.82	20	20
Cobalt	200.8	0.020	0.009	0.978	0.985	0.982	<1	20
Copper	200.8	0.10	0.05	1.51	1.41	1.46	7	20
Lead	200.8	0.020	0.006	0.021	0.011 J	0.016	63 #	20
Nickel	200.8	0.20	0.04	1.18	1.15	1.17	3	20
Selenium	200.8	1.0	0.2	ND U	ND U	ND	-	20
Silver	200.8	0.020	0.009	0.024	0.015 J	0.020	46 #	20
Thallium	200.8	0.020	0.009	0.027	0.012 J	0.020	77 #	20
Vanadium	200.8	0.20	0.04	4.77	4.68	4.73	2	20
Zinc	200.8	2.0	0.5	0.6 J	0.7 J	0.7	15	20

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414**Date Collected:** 04/01/24**Date Received:** 04/02/24**Date Analyzed:** 04/09/24**Replicate Sample Summary****Total Metals**

Sample Name: W14-401
Lab Code: K2403414-014

Units: ug/L**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2404847-03	Average	RPD	RPD Limit
					Result			
Calcium	200.7	21	3	15300	15100	15200	1	20
Iron	200.7	21	8	998	989	994	<1	20
Magnesium	200.7	5.3	0.4	5500	5440	5470	1	20
Manganese	200.7	1.1	0.2	235	233	234	<1	20
Potassium	200.7	210	60	5840	5950	5900	2	20
Sodium	200.7	210	30	11600	11800	11700	2	20

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414**Date Collected:** 04/01/24**Date Received:** 04/02/24**Date Analyzed:** 04/09/24**Replicate Sample Summary****Total Metals****Sample Name:** W15-401**Units:** ug/L**Lab Code:** K2403414-015**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2404847-05	Average	RPD	RPD Limit
					Result			
Calcium	200.7	21	3	25800	25900	25900	<1	20
Iron	200.7	21	8	1660	1670	1670	<1	20
Magnesium	200.7	5.3	0.4	8710	8660	8690	<1	20
Manganese	200.7	1.1	0.2	319	319	319	<1	20
Potassium	200.7	210	60	7810	7750	7780	<1	20
Sodium	200.7	210	30	4590	4540	4570	1	20

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/09/24

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2404846-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Antimony	200.8	9.62	10.0	96	85-115
Arsenic	200.8	51.2	50.0	102	85-115
Barium	200.8	98.2	100	98	85-115
Beryllium	200.8	2.45	2.50	98	85-115
Cadmium	200.8	24.5	25.0	98	85-115
Chromium	200.8	10.2	10.0	102	85-115
Cobalt	200.8	25.5	25.0	102	85-115
Copper	200.8	12.8	12.5	102	85-115
Lead	200.8	49.3	50.0	99	85-115
Nickel	200.8	25.6	25.0	102	85-115
Selenium	200.8	51.0	50.0	102	85-115
Silver	200.8	12.4	12.5	99	85-115
Thallium	200.8	49.6	50.0	99	85-115
Vanadium	200.8	25.9	25.0	104	85-115
Zinc	200.8	25.2	25.0	101	85-115

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/09/24

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2404847-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Calcium	200.7	12300	12500	99	85-115
Iron	200.7	2310	2500	93	85-115
Magnesium	200.7	11700	12500	94	85-115
Manganese	200.7	1190	1250	95	85-115
Potassium	200.7	11900	12500	95	85-115
Sodium	200.7	12600	12500	100	85-115



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB1

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	ND U	mg/L	2.0	0.6	1	04/03/24 13:55	
Ammonia as Nitrogen	SM 4500-NH3 E	0.030 J	mg/L	0.050	0.009	1	04/15/24 13:15	
Carbon, Total Organic (TOC)	SM 5310 B	ND U	mg/L	0.50	0.10	1	04/03/24 20:06	
Chloride	300.0	0.01 J	mg/L	0.10	0.005	1	04/03/24 16:56	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.050	0.003	1	04/02/24 15:42	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	04/03/24 16:56	

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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB1

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB2

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	1.2 J	mg/L	2.0	0.6	1	04/05/24 11:12	
Chloride	300.0	0.01 J	mg/L	0.10	0.005	1	04/03/24 18:57	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.050	0.003	1	04/02/24 19:27	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/03/24 16:38	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	04/03/24 18:57	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB2

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	04/05/24 09:18	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB3

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	ND U	mg/L	2.0	0.6	1	04/06/24 12:10	
Chloride	300.0	0.01 J	mg/L	0.10	0.005	1	04/03/24 20:58	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.050	0.003	1	04/02/24 21:28	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/04/24 09:56	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	04/03/24 20:58	

ALS Group USA, Corp.
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Analytical Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2403414-MB4

Service Request: K2403414
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	04/04/24 09:56	

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request:K2403414
Date Collected:04/01/24
Date Received:04/02/24
Date Analyzed:04/02/24 - 04/04/24

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: W1-401 **Units:**mg/L
Lab Code: K2403414-001 **Basis:**NA

Matrix Spike K2403414-001MS						Duplicate Matrix Spike K2403414-001DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	300.0	3.92	19.3	16.0	96	19.4	16.0	96	90-110	<1	20
Nitrate as Nitrogen	300.0	0.006 J	7.95	8.00	99	7.96	8.00	99	90-110	<1	20
Sulfate	300.0	13.6	29.3	16.0	98	29.3	16.0	98	90-110	<1	20

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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request:K2403414
Date Collected:04/01/24
Date Received:04/02/24
Date Analyzed:04/02/24 - 04/04/24

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: W2-401 **Units:**mg/L
Lab Code: K2403414-002 **Basis:**NA

Matrix Spike K2403414-002MS						Duplicate Matrix Spike K2403414-002DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	300.0	7.42	23.0	16.0	97	23.0	16.0	97	90-110	<1	20
Nitrate as Nitrogen	300.0	ND U	7.96	8.00	100	7.99	8.00	100	90-110	<1	20
Sulfate	300.0	7.38	23.2	16.0	99	23.2	16.0	99	90-110	<1	20

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/02/24 - 04/03/24

Replicate Sample Summary
General Chemistry Parameters

Sample Name: W1-401
Lab Code: K2403414-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2403414-001DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	0.20	0.010	3.92	3.89	3.91	<1	20
Nitrate as Nitrogen	300.0	0.10	0.006	0.006 J	ND U	NC	NC	20
Sulfate	300.0	0.20	0.02	13.6	13.5	13.5	<1	20

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ALS Group USA, Corp.

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QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/02/24 - 04/04/24

Replicate Sample Summary
General Chemistry Parameters

Sample Name: W2-401
Lab Code: K2403414-002

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2403414-002DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	0.20	0.010	7.42	7.36	7.39	<1	20
Nitrate as Nitrogen	300.0	0.10	0.006	ND U	ND U	NC	NC	20
Sulfate	300.0	0.20	0.02	7.38	7.32	7.35	<1	20

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414**Date Collected:** 04/01/24**Date Received:** 04/02/24**Date Analyzed:** 04/05/24**Replicate Sample Summary
General Chemistry Parameters****Sample Name:** W5-401**Units:** mg/L**Lab Code:** K2403414-005**Basis:** NA

					Duplicate Sample K2403414- 005DUP			
Analyte Name	Analysis Method	MRL	MDL	Sample Result	Result	Average	RPD	RPD Limit
Solids, Total Dissolved	SM 2540 C	10	-	387	382	385	1	5

Results flagged with an asterisk (*) indicate values outside control criteria.

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414**Date Collected:** 04/01/24**Date Received:** 04/02/24**Date Analyzed:** 04/03/24**Replicate Sample Summary
General Chemistry Parameters****Sample Name:** W10-401**Units:** mg/L**Lab Code:** K2403414-010**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2403414-010DUP	Average	RPD	RPD Limit
					Result			
Alkalinity as CaCO ₃ , Total	SM 2320 B	2.0	0.6	44.3	43.7	44.0	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414**Date Collected:** 04/01/24**Date Received:** 04/02/24**Date Analyzed:** 04/03/24**Replicate Sample Summary
General Chemistry Parameters****Sample Name:** W11-401**Units:** mg/L**Lab Code:** K2403414-011**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2403414-011DUP	Average	RPD	RPD Limit
					Result			
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	ND U	ND U	NC	NC	5

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Collected: 04/01/24
Date Received: 04/02/24
Date Analyzed: 04/04/24 - 04/05/24

Replicate Sample Summary
General Chemistry Parameters

Sample Name: W13-401
Lab Code: K2403414-013

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2403414-013DUP	Average	RPD	RPD Limit
					Result			
Solids, Total Dissolved	SM 2540 C	10	-	457	454	456	<1	5
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	95.5	100	97.8	5	5

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/02/24 - 04/05/24

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2403414-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	51.4	50.2	102	85-115
Carbon, Total Organic (TOC)	SM 5310 B	26.3	25.0	105	85-115
Chloride	300.0	4.87	5.00	97	90-110
Nitrate as Nitrogen	300.0	2.52	2.50	101	90-110
Solids, Total Dissolved	SM 2540 C	1390	1430	97	85-115
Solids, Total Suspended (TSS)	SM 2540 D	360	390	92	85-115
Sulfate	300.0	5.00	5.00	100	90-110

ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/02/24 - 04/04/24

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2403414-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	52.8	50.2	105	85-115
Chloride	300.0	4.89	5.00	98	90-110
Nitrate as Nitrogen	300.0	2.56	2.50	102	90-110
Solids, Total Suspended (TSS)	SM 2540 D	372	390	95	85-115
Sulfate	300.0	5.02	5.00	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/02/24 - 04/05/24

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2403414-LCS4

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	51.3	50.2	102	85-115
Chloride	300.0	4.89	5.00	98	90-110
Nitrate as Nitrogen	300.0	2.54	2.50	102	90-110
Sulfate	300.0	5.00	5.00	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/05/24
Date Extracted: NA

Lab Control Sample Summary
Alkalinity as CaCO₃, Total

Analysis Method: SM 2320 B
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 836954

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2403414-LCS5	54.3	50.2	108	85-115

ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/06/24
Date Extracted: NA

Lab Control Sample Summary
Alkalinity as CaCO₃, Total

Analysis Method: SM 2320 B
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 837088

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2403414-LCS6	51.6	50.2	103	85-115

ALS Group USA, Corp.
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QA/QC Report

Client: Cowlitz County Public Works
Project: Cowlitz Co. Tennet Way Landfill Detection Monitori
Sample Matrix: Water

Service Request: K2403414
Date Analyzed: 04/06/24
Date Extracted: NA

Lab Control Sample Summary
Alkalinity as CaCO₃, Total

Analysis Method: SM 2320 B
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 837088

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2403414-LCS7	52.0	50.2	104	85-115

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:
Project:
Sample Matrix:

Cowlitz County Public Works
Cowlitz Co. Tennet Way Landfill Detection Monitori
Water

Service Request:
Date Analyzed:
Date Extracted:

K2403414
04/15/24
NA

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:
Prep Method:

SM 4500-NH3 E
None

Units:
Basis:
Analysis Lot:

mg/L
NA
837927

Lab Control Sample
K2403414-LCS1

Duplicate Lab Control Sample
K2403414-DLCS1

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Ammonia as Nitrogen	3.57	3.79	94	3.58	3.79	94	85-115	<1	20