November 21, 2024

Mr. Brad Davison, Environmental Specialist
IDNR – Land Quality Bureau
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321

HLW Engineering Group
Engineering Management

RE: JACKSON COUNTY SANITARY LANDFILL
2024 ANNUAL WATER QUALITY REPORT & LANDFILL GAS REPORT
CLOSURE PERMIT #49-SDP-1-74C

Dear Mr. Davison:

This letter forwards the results of water quality testing at the Jackson County Sanitary Landfill that was performed in accordance with Permit Amendment #15, dated January 8, 2018 (Doc #91229).

__Hydrologic Monitoring System Plan (HMSP)__

1) On April 8, 2024 and on October 8, 2024 the required wells (Figure 1) were sampled. Samples collected at MW-11, MW-12, MW-17, MW-19, and MW-20 are required to be analyzed for parameters listed in Appendix I, IAC 567, Chapter 113. Samples collected at MW-10, MW-13, MW-14, and MW-15 are required to be analyzed for the metal parameters listed in Appendix I, IAC 567, Chapter 113. Note that MW-19 and MW-20 were both recorded as dry on April 8, 2024, and on October 8, 2024.
2) Water Elevation Measurements were collected at each well at the time of sample collection.
3) Explosive Gas was monitored in gas probes GP-1 through GP-6 (Figure 1) semi-annually and/or quarterly in accordance with Permit Amendment #14 (Doc #88195) and/or Permit Amendment 17 (Doc #110053). The on-site structure was monitored semi-annually in accordance with Permit Amendment #16 (Doc #92771).
4) The results of the 2024 HMSP activities are reported herein and this letter represents the 2024 Annual Water Quality Report/2024 Landfill Gas Report. The statistical analyses (VOC trend analyses and VOC confidence interval evaluations) required by the IDNR Letter dated January 8, 2018 (Doc #91230) are included in the information presented below. The statistical analyses (metals trend analyses and intrawell statistical evaluations) required by the IDNR Letter dated January 13, 2020 (Doc #96730) are included in the information presented below. This site is regulated under the rules in effect at the time of closure (August 29, 1994) and the Closure Permit.

__Results of the HMSP Activities__

Water Quality - Summary tables of all analytical data collected to date since October 5, 2015 along with the 2024 Analytical Reports are included in **Attachment A**. Field Sampling Forms for April 8, 2024 and October 8, 2024 sample collection events are included in **Attachment B**. The Statistical Evaluation Reports (May 2024 and October 2024) are included in **Attachment C**. Review of the data in Attachment A indicates that MW-19 and MW-20 were dry during both sample collection events in 2024. A total of two (2) different VOC compounds were detected at this site based on the three (3) wells sampled for VOC in 2024. Review of the data in Attachment A indicates that a total of four (4) different metal compounds were detected at this site based on the seven (7) wells sampled for metals in 2024. Note that MW-19 and that MW-20 were recorded as dry on April 8, 2024 and October 8, 2024.

VOC Trend Analyses and VOC Confidence Interval Evaluation – Review of the Summary of Appendix I Detections indicates that low-level VOC concentrations have been reported at well MW-11, MW-12, and MW-17 in 2024. Although dry, it is assumed that VOC will persist at MW-19 and MW-20 until testing confirms otherwise. With a few exceptions, the reported VOC concentrations have been below the Statewide Standard for

Protected Groundwater included in IAC 567, Chapter 137, the groundwater protection standard (GWPS). The historic VOC exceedances of the GWPS are highlighted in yellow on the Summary Table in **Attachment A** and are restricted to MW-12 and MW-19. There were no recorded VOC concentrations that exceeded a GWPS in 2024 (note that MW-19 and MW-20 were recorded as dry). All reported VOC concentrations are also below the Statewide Standard for *Non-Protected* Groundwater included in IAC 567, Chapter 137.

The Statistical Evaluation Reports (May, 2024 and October, 2024) are included in **Attachment C** and satisfy the statistical evaluations of the VOC data required by the IDNR Letter dated January 8, 2018 (Doc #91230).

The tables presented in **Attachment D** include a comprehensive summary of all VOC results detected to date at the facility since no-purge sample collection was implemented. The tables are presented by monitoring well (MW-11, MW-12, MW-17, MW-19, and MW-20) and include a summary of VOC results for any compound that has been detected in the given well. The detected values that exceed the Prediction Limit (the MRL) are highlighted in brown. The detected values that exceed the Statewide Standard for Protected Groundwater included in IAC 567, Chapter 137 are highlighted in yellow.

There are no increasing VOC trends detected in the data. The Upper and Lower Confidence Limits (95%) are summarized in **Attachment D** for the VOC compounds and indicate that all of the calculated 95% LCL values are below the GWPS. The Confidence Limits values are included on *Table 1 in Attachment C* to the Statistical Reports included in **Attachment C of this Report**. The time series plots for all VOC are also included in the graphs in the Confidence Limits (Assessment) plots in *Attachment C* to the Statistical Report included in **Attachment C** of this report.

There are no Statistically Significant Levels (SSL) reported for VOC at the site.

Metals Trend Analyses and Evaluation Methods– The development of the HMSP for this site predates current rule. Sampling for Appendix I analytes was required by IDNR in Permit #11, dated March 17, 2015 (Doc #82748). The analyte list was later reduced to Appendix I metals at certain wells, while full Appendix I sampling continues at the remaining wells (Permit Amendment #14, dated January 24, 2017 (Doc #88195)).

The original HMSP included a single deep bedrock well (MW-10) as the only background well for the site. The interwell statistics performed to date for the VOC compounds is considered appropriate, since the “background” for VOC compounds and the Prediction Limits are based on the laboratory practical quantitation limits (PQL), and is not dependent upon developing appropriate background from representative waters at the site.

With regard to the inorganic compounds, developing interwell prediction limits for the site based on background from a single well completed in one (1) of the two (2) site stratigraphic intervals monitored is highly discouraged. In lieu of performing interwell statistics for the site, intrawell statistical evaluations have been completed utilizing control chart methods. The intrawell statistical evaluations are deemed appropriate for this site where the background is not appropriately characterized in both monitored formations, where only one (1) background well exists, and spatial variability cannot be accounted for.

The intrawell Sherhart-CUSUM control charts are developed for each inorganic compound in each site monitoring well. The control charts are sensitive to both sudden and gradual releases. The control charts evaluate both constituent concentrations and cumulative increases.

Control chart evaluation requires a detection frequency of 25%, or greater, to properly define data variance. A minimum of eight (8) data points are required to develop limits. For constituents that are not detected at a frequency of 25% of tests, the 99% confidence nonparametric prediction limit can be developed after thirteen (13) data points are collected. For constituents that are never detected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit (as is the case with all VOC compounds). The background currently includes thirteen data points at all wells, except MW-19 (12 data points).

Specific to this site, arsenic, barium, and cobalt are the specific compounds that have been detected in site monitoring wells at concentrations that have exceeded the GWPS. At this site, arsenic, barium, cobalt, nickel, and zinc are the compounds that are generally detected at frequencies greater than 25% of the tests in a specific well.

It follows that the control chart method of intrawell statistical evaluation is appropriate to address concerns at this site.

Metals Trend Analyses and Evaluation Findings - A summary of metal testing results is included in **Attachment A** of this document where all detected concentrations that exceed the GWPS are highlighted in yellow and blue. The following is a summary of detected concentrations of arsenic, barium, cadmium, and cobalt that have exceeded the *Protected* Groundwater Standard included in IAC 567, Chapter 137:

MW-10 (upgradient) - 10/5/15 - cadmium (0.0063 mg/L), exceeds the GWPS of 0.005 mg/L *(anomaly)*

MW-12 -
4/3/17 - cobalt (0.0137 mg/L), exceeds the GWPS of 0.0028 mg/L
10/3/17 - cobalt (0.0073 mg/L), exceeds the GWPS of 0.0028 mg/L
4/7/20 - cobalt (0.0026 mg/L), exceeds the GWPS of 0.0021 mg/L
10/7/20 - cobalt (0.0024 mg/L), exceeds the GWPS of 0.0021 mg/L
4/16/21 - cobalt (0.0023 mg/L), exceeds the GWPS of 0.0021 mg/L
10/4/22 - cobalt (0.0029 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-13 -
10/5/15 - arsenic (0.0223 mg/L), exceeds the GWPS of 0.01 mg/L
4/4/16 - arsenic (0.0166 mg/L), exceeds the GWPS of 0.01 mg/L
10/4/16 - arsenic (0.0148 mg/L), exceeds the GWPS of 0.01 mg/L
4/3/17 - arsenic (0.0116 mg/L), exceeds the GWPS of 0.01 mg/L
10/3/17 - arsenic (0.0152 mg/L), exceeds the GWPS of 0.01 mg/L
4/10/18 - arsenic (0.0203 mg/L), exceeds the GWPS of 0.01 mg/L
10/12/18 - arsenic (0.0160 mg/L), exceeds the GWPS of 0.01 mg/L
4/17/19 - arsenic (0.0187 mg/L), exceeds the GWPS of 0.01 mg/L
9/30/19 - arsenic (0.0215 mg/L), exceeds the GWPS of 0.01 mg/L
4/7/20 - arsenic (0.0313 mg/L), exceeds the GWPS of 0.01 mg/L
10/7/20 - arsenic (0.0271 mg/L), exceeds the GWPS of 0.01 mg/L
4/16/21 - arsenic (0.0174 mg/L), exceeds the GWPS of 0.01 mg/L
10/14/21 - arsenic (0.0338 mg/L), exceeds the GWPS of 0.01 mg/L
4/4/22 - arsenic (0.0256 mg/L), exceeds the GWPS of 0.01 mg/L
10/4/22 - arsenic (0.0188 mg/L), exceeds the GWPS of 0.01 mg/L
4/13/23 - arsenic (0.0103 mg/L), exceeds the GWPS of 0.01 mg/L
10/18/23 - arsenic (0.0157 mg/L), exceeds the GWPS of 0.01 mg/L

10/3/17 - barium (3.36 mg/L), exceeds the GWPS of 2.0 mg/L
4/10/18 - barium (2.50 mg/L), exceeds the GWPS of 2.0 mg/L
10/12/18 - barium (2.43 mg/L), exceeds the GWPS of 2.0 mg/L
4/17/19 - barium (4.22 mg/L), exceeds the GWPS of 2.0 mg/L
9/30/19 - barium (3.20 mg/L), exceeds the GWPS of 2.0 mg/L
4/7/20 - barium (3.18 mg/L), exceeds the GWPS of 2.0 mg/L
10/7/20 - barium (3.80 mg/L), exceeds the GWPS of 2.0 mg/L
4/16/21 - barium (2.94 mg/L), exceeds the GWPS of 2.0 mg/L
10/14/21 - barium (3.31 mg/L), exceeds the GWPS of 2.0 mg/L

10/5/15 - cobalt (0.0172 mg/L), exceeds the GWPS of 0.0028 mg/L
4/4/16 - cobalt (0.0131 mg/L), exceeds the GWPS of 0.0028 mg/L
10/4/16 - cobalt (0.0084 mg/L), exceeds the GWPS of 0.0028 mg/L
4/3/17 - cobalt (0.0069 mg/L), exceeds the GWPS of 0.0028 mg/L
10/3/17 - cobalt (0.0092 mg/L), exceeds the GWPS of 0.0028 mg/L
4/10/18 - cobalt (0.0134 mg/L), exceeds the GWPS of 0.0021 mg/L
10/12/18 - cobalt (0.0082 mg/L), exceeds the GWPS of 0.0021 mg/L
4/17/19 - cobalt (0.0048 mg/L), exceeds the GWPS of 0.0021 mg/L
9/30/19 - cobalt (0.0043 mg/L), exceeds the GWPS of 0.0021 mg/L
4/7/20 - cobalt (0.0079 mg/L), exceeds the GWPS of 0.0021 mg/L
10/7/20 - cobalt (0.0105 mg/L), exceeds the GWPS of 0.0021 mg/L
4/16/21 - cobalt (0.0044 mg/L), exceeds the GWPS of 0.0021 mg/L
10/14/21 - cobalt (0.0174 mg/L), exceeds the GWPS of 0.0021 mg/L
4/4/22 - cobalt (0.0161 mg/L), exceeds the GWPS of 0.0021 mg/L
10/4/22 - cobalt (0.0115 mg/L), exceeds the GWPS of 0.0021 mg/L
4/13/23 - cobalt (0.0063 mg/L), exceeds the GWPS of 0.0021 mg/L
10/18/23 - cobalt (0.0090 mg/L), exceeds the GWPS of 0.0021 mg/L
4/8/24 - cobalt (0.0064 mg/L), exceeds the GWPS of 0.0021 mg/L
10/8/24 - cobalt (0.0064 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-14 -

4/10/18 - arsenic (0.0299 mg/L), exceeds the GWPS of 0.01 mg/L
4/17/19 - arsenic (0.0186 mg/L), exceeds the GWPS of 0.01 mg/L
9/30/19 - arsenic (0.0323 mg/L), exceeds the GWPS of 0.01 mg/L
4/7/20 - arsenic (0.0278 mg/L), exceeds the GWPS of 0.01 mg/L
4/16/21 - arsenic (0.0133 mg/L), exceeds the GWPS of 0.01 mg/L
10/14/21 - arsenic (0.0587 mg/L), exceeds the GWPS of 0.01 mg/L
4/4/22 - arsenic (0.1390 mg/L), exceeds the GWPS of 0.01 mg/L
10/4/22 - arsenic (0.0125 mg/L), exceeds the GWPS of 0.01 mg/L

4/4/22 - barium (2.36 mg/L), exceeds the GWPS of 2.0 mg/L

10/3/17 - cobalt (0.0036 mg/L), exceeds the GWPS of 0.0028 mg/L
10/4/22 - cobalt (0.0024 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-15 -

4/3/17 - arsenic (0.0131 mg/L), exceeds the GWPS of 0.01 mg/L
10/3/17 - arsenic (0.0164 mg/L), exceeds the GWPS of 0.01 mg/L
4/17/19 - arsenic (0.0139 mg/L), exceeds the GWPS of 0.01 mg/L
4/7/20 - arsenic (0.0301 mg/L), exceeds the GWPS of 0.01 mg/L
10/14/21 - arsenic (0.0124 mg/L), exceeds the GWPS of 0.01 mg/L
10/4/22 - arsenic (0.0111 mg/L), exceeds the GWPS of 0.01 mg/L
10/18/23 - arsenic (0.0130 mg/L), exceeds the GWPS of 0.01 mg/L

10/5/15 - cobalt (0.0061 mg/L), exceeds the GWPS of 0.0028 mg/L
4/4/16 - cobalt (0.0112 mg/L), exceeds the GWPS of 0.0028 mg/L
10/4/16 - cobalt (0.0086 mg/L), exceeds the GWPS of 0.0028 mg/L
4/3/17 - cobalt (0.0144 mg/L), exceeds the GWPS of 0.0028 mg/L
10/3/17 - cobalt (0.0046 mg/L), exceeds the GWPS of 0.0028 mg/L
4/10/18 - cobalt (0.0031 mg/L), exceeds the GWPS of 0.0021 mg/L
10/12/18 - cobalt (0.0027 mg/L), exceeds the GWPS of 0.0021 mg/L
4/17/19 - cobalt (0.0097 mg/L), exceeds the GWPS of 0.0021 mg/L
9/30/19 - cobalt (0.0048 mg/L), exceeds the GWPS of 0.0021 mg/L
4/7/20 - cobalt (0.0111 mg/L), exceeds the GWPS of 0.0021 mg/L
10/7/20 - cobalt (0.0044 mg/L), exceeds the GWPS of 0.0021 mg/L

4/16/21 - cobalt (0.0101 mg/L), exceeds the GWPS of 0.0021 mg/L
10/14/21 - cobalt (0.0044 mg/L), exceeds the GWPS of 0.0021 mg/L
4/4/22 - cobalt (0.0079 mg/L), exceeds the GWPS of 0.0021 mg/L
10/4/22 - cobalt (0.0066 mg/L), exceeds the GWPS of 0.0021 mg/L
4/13/23 - cobalt (0.0053 mg/L), exceeds the GWPS of 0.0021 mg/L
10/18/23 - cobalt (0.0051 mg/L), exceeds the GWPS of 0.0021 mg/L
4/8/2024 - cobalt (0.0022 mg/L), exceeds the GWPS of 0.0021 mg/L
10/8/24 - cobalt (0.0079 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-17 -
10/3/17 - cobalt (0.0107 mg/L), exceeds the GWPS of 0.0028 mg/L
4/10/18 - cobalt (0.0095 mg/L), exceeds the GWPS of 0.0021 mg/L
4/17/19 - cobalt (0.0038 mg/L), exceeds the GWPS of 0.0021 mg/L
9/30/19 - cobalt (0.0093 mg/L), exceeds the GWPS of 0.0021 mg/L
4/7/20 - cobalt (0.0079 mg/L), exceeds the GWPS of 0.0021 mg/L
10/14/21 - cobalt (0.0090 mg/L), exceeds the GWPS of 0.0021 mg/L
10/8/2024 - cobalt (0.0054 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-19 -
10/3/17 - arsenic (0.0109 mg/L), exceeds the GWPS of 0.01 mg/L
4/10/18 - arsenic (0.0119 mg/L), exceeds the GWPS of 0.01 mg/L

10/4/16 - cobalt (0.0043 mg/L), exceeds the GWPS of 0.0028 mg/L
4/3/17 - cobalt (0.0040 mg/L), exceeds the GWPS of 0.0028 mg/L
4/10/18 - cobalt (0.0039 mg/L), exceeds the GWPS of 0.0021 mg/L
10/12/18 - cobalt (0.0025 mg/L), exceeds the GWPS of 0.0021 mg/L
4/17/19 - cobalt (0.0032 mg/L), exceeds the GWPS of 0.0021 mg/L
9/30/19 - cobalt (0.0035 mg/L), exceeds the GWPS of 0.0021 mg/L
4/7/20 - cobalt (0.0023 mg/L), exceeds the GWPS of 0.0021 mg/L
4/16/21 - cobalt (0.0025 mg/L), exceeds the GWPS of 0.0021 mg/L
10/14/21 - cobalt (0.0024 mg/L), exceeds the GWPS of 0.0021 mg/L
4/4/22 - cobalt (0.0042 mg/L), exceeds the GWPS of 0.0021 mg/L
10/4/22 - cobalt (0.0052 mg/L), exceeds the GWPS of 0.0021 mg/L

MW-20 -
10/4/16 - barium (3.01 mg/L), exceeds the GWPS of 2.0 mg/L
4/3/17 - barium (3.66 mg/L), exceeds the GWPS of 2.0 mg/L
10/3/17 - barium (4.3 mg/L), exceeds the GWPS of 2.0 mg/L
4/10/18 - barium (3.41 mg/L), exceeds the GWPS of 2.0 mg/L
10/12/18 - barium (4.13 mg/L), exceeds the GWPS of 2.0 mg/L
4/17/19 - barium (4.54 mg/L), exceeds the GWPS of 2.0 mg/L
9/30/19 - barium (5.30 mg/L), exceeds the GWPS of 2.0 mg/L
4/7/20 - barium (4.99 mg/L), exceeds the GWPS of 2.0 mg/L
10/7/20 - barium (5.05 mg/L), exceeds the GWPS of 2.0 mg/L
4/16/21 - barium (4.37 mg/L), exceeds the GWPS of 2.0 mg/L
10/14/21 - barium (4.43 mg/L), exceeds the GWPS of 2.0 mg/L

10/4/16 - cobalt (0.0066 mg/L), exceeds the GWPS of 0.0028 mg/L
4/10/18 - cobalt (0.0033 mg/L), exceeds the GWPS of 0.0021 mg/L
10/12/18 - cobalt (0.0027 mg/L), exceeds the GWPS of 0.0021 mg/L
4/17/19 - cobalt (0.0025 mg/L), exceeds the GWPS of 0.0021 mg/L
9/30/19 - cobalt (0.0024 mg/L), exceeds the GWPS of 0.0021 mg/L
10/14/21 - cobalt (0.0022 mg/L), exceeds the GWPS of 0.0021 mg/L

The Statewide Standard for *<u>Non-Protected</u>* Groundwater included in IAC 567, Chapter 137 are as follows:
Arsenic 0.05 mg/L
Barium 10.0 mg/L
Cobalt 0.01 mg/L

To date, barium has not been detected at concentrations that exceed the Non-Protected Groundwater standard. Arsenic and cobalt concentrations are detected in excess of the Non-Protected Groundwater standard during random events as follows (values are also highlighted in blue in **Attachment A)**:

MW-12 -	4/3/17 - cobalt (0.0137 mg/L)*, exceeds the GWPS of 0.01 mg/L ** determined to be an outlier by Dixon's test*
MW-13 -	10/5/15 - cobalt (0.0172 mg/L), exceeds the GWPS of 0.01 mg/L 4/4/16 - cobalt (0.0131 mg/L), exceeds the GWPS of 0.01 mg/L 4/10/18 - cobalt (0.0134 mg/L), exceeds the GWPS of 0.01 mg/L 9/7/20 - cobalt (0.0105 mg/L), exceeds the GWPS of 0.01 mg/L 10/14/21 - cobalt (0.0174 mg/L), exceeds the GWPS of 0.01 mg/L 4/4/22 - cobalt (0.0161 mg/L), exceeds the GWPS of 0.01 mg/L 10/4/22 - cobalt (0.0115 mg/L), exceeds the GWPS of 0.01 mg/L
MW-14 -	10/14/21 - arsenic (0.0587 mg/L), exceeds the GWPS of 0.05 mg/L 4/4/22 - arsenic (0.1390 mg/L), exceeds the GWPS of 0.05 mg/L
MW-15 -	4/4/16 - cobalt (0.0112 mg/L), exceeds the GWPS of 0.01 mg/L 4/3/17 - cobalt (0.0144 mg/L), exceeds the GWPS of 0.01 mg/L 4/7/20 - cobalt (0.0111 mg/L), exceeds the GWPS of 0.01 mg/L 4/16/21 - cobalt (0.0101 mg/L), exceeds the GWPS of 0.01 mg/L
MW-17 -	10/3/17 - cobalt (0.0107 mg/L), exceeds the GWPS of 0.01 mg/L

The time series plots for metals are included in *<u>Attachment D, Times Series Plots of Trace Metals</u>* in the Statistical Reports (in **Attachment C of this document**). An upward trend was detected for arsenic at MW-13 and for barium at MW-14 in the historic background data (the first 13 data points). The time series plots indicate that the metals concentrations are static (not increasing trends) at all other wells across the site.

The intrawell statistics developed for the metals compounds are included in *<u>Attachment E, Statistics for Trace Metals</u>* in the Statistical Reports (in **Attachment C of this document**). In the Fall 2024 Statistical Evaluation the control limits were established based on the initial thirteen (13) rounds of data available. MW-19 and MW-20 were recorded as dry in both April, 2024 and October, 2024 and are not evaluated herein.

The control limits developed at each well based on the background events in each well are used on the control charts in *<u>Attachment E, Statistics for Trace Metals</u>* in the Statistical Reports (in **Attachment C of this document**). The Fall 2024 Control Charts are relied upon herein based on the most current data for each well (13 background events and 5 monitoring event). Many compounds have nonparametric limits established based on a frequency of detection below 25%.

Review of the Control Charts indicates that there were no control limit exceedances identified at any well in 2024.

There were no increasing trends identified in metals data based on the time series plots or the Control Charts in the Fall, 2024 (October, 2024) Statistical Evaluation, except the aforementioned increasing trend identified for arsenic at MW-13 and for barium at MW-14. The detected concentrations of metals appear to be consistent over time. It is concluded that the metals concentrations detected across the site are relatively static, generally do not exceed Control Chart limits, and do not appear to be trending. It appears that water quality has been stable over time.

Compilation of additional data over time (semi-annual samples over the next several years) will yield additional monitoring data to support conclusions related to water quality trends for metals.

Supplemental water quality testing and supplemental assessment of the subsurface conditions were performed at the site on October 14, 2021. The supplemental testing and study was performed in order to identify the outside factors that result in elevated metals concentrations at some wells on site. The supplemental study was submitted to IDNR on November 29, 2021 (Doc #101767) and IDNR agreed with the conclusions on November 28, 2022 (Doc #104673).

Monitoring Well Maintenance Performance Reevaluation - The table below outlines the status of well performance and maintenance activities as required by IAC 567-103.

Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual water-quality report	X	X	X	X	X	X	X	X	X	X	X
High and low water levels		X		X		X		X		X	
Six-month water levels	X	X	X	X	X	X	X	X	X	X	X
Well-depth measurements	X	X	X	X	X	X	X	X	X	`X	X
In-situ hydraulic conductivity							X				

Years	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual water-quality report	X	X	X	X	X	X	X	X	X	O	O
High and low water levels		X		X	X	X	X	X	X	O	O
Six-month water levels	X	X	X	X	X	X	X	X	X	O	O
Well-depth measurements	X	X	X	X	X	X	X	X	X	O	O
In-situ hydraulic conductivity	X						X				

X, completed; O, scheduled.

High & Low Water Levels
Water elevation data is included in the attached Table (**Attachment E**). It appears that up to 7 feet of variation is recorded in the water table elevations in 2024 and the variations are observed seasonally. MW-14, MW-15, and MW-21 generally demonstrate the greatest variation.

A Water Table and Bedrock Water Surface Contour Maps dated October 8, 2024, are included with this report as Figures 2 and 3.

Well Depth & Sedimentation
Well depth measurements were made on October 8, 2024. Review of the measurement data included on the field measurement forms in **Attachment B** indicates that well sedimentation is estimated to be less than 1.6 feet at all site monitoring wells.

Hydraulic Conductivity Rates
Hydraulic Conductivity values have been measured at site monitoring wells in 1991, 1994, 1999, 2004, 2011,

2016, and 2022. The most recent Monitoring Well Maintenance Performance Evaluation Report is dated April 18, 2022 (Doc #102862) and was submitted in accordance with 1992 IAC 110.9. The 2022 report concluded that the integrity of all MW's was intact, and that no changes in the HMSP were recommended. Monitoring well reevaluation is tentatively scheduled again in 2027.

Based on the water elevation data, the current well conditions, and the hydrologic setting at the site, the semi-annual water elevation measurements at the closed facility are interpreted to be adequate to monitor site conditions.

Quality Assurance/Quality Control - A blind duplicate sample was collected at MW-10 during the April 8, 2024 sampling episode. A blind duplicate sample was also collected at MW-17 during the October 8, 2024 sampling episode.

The purpose of the field duplicate is to evaluate the precision of sample collection and analysis process from the field through the laboratory. The calculation of the Relative Percent Difference (RPD) for duplicate pair results is used as the means to evaluate the precision.

The Quality Control (QC) limit for the RPD on field duplicates is established at thirty percent (30%) for duplicate pairs that have reported concentrations five (5) times greater than the laboratory Reporting Limit. For samples and respective duplicates with reported analyte concentrations nearer the Reporting Limit, the RPD calculations demonstrate greater variability and the RPD can be very large. RPD values are considered non-representative in the following conditions:

a) Both the original and/or the duplicate results are less than five (5) times the Reporting Limit.
b) One or both results are qualified, flagged, or estimated.
c) One or both results are non-detected.

The results of the blind duplicate and the monitoring well results were within the limits established and indicate that the data quality is acceptable without restriction.

Water Elevation Measurements - Water elevation measurements were collected at each well during sampling on April 8, 2024 and October 8, 2024 and are included in the Table in **Attachment E.** Review of the water elevation data for 2024 does not indicate excessive variability compared to historic water elevation data. The variability in water levels appears to be cyclic over time. A copy of the October 8, 2024 Water Table Contour Map (Figure 2) and the October 8, 2024 Bedrock Potentiometric Map (Figure 3) are included herein and illustrates groundwater flow paths across the site.

Explosive Gas Monitoring – The semi-annual explosive gas monitoring (in the site structure and at subsurface gas probes) was performed in accordance Permit Amendment #14 (Doc #88195) and Permit Amendment #16 (Doc #92771). The quarterly gas monitoring at GP-3 and the incorporation of water level measurements in gas probes was initiated in July of 2024 in accordance with Permit Amendment #17 (Doc #110053).

The passive gas vent trench required by Permit Amendment #17 (Doc 110053) was completed in September 2024 and construction documentation was submitted to IDNR on November 1, 2024 (Doc #111235). The east-end riser pipe (Trench (E)) and the west-end riser pipe (Trench (W)) are added to the Gas Monitoring activities at the site.

Gas Monitoring results are included in the Tables in **Attachment F**.

The results of the monitoring indicate that gas concentrations were undetected during both monitoring episodes in 2024 within the site structure and all subsurface gas probes, except GP-3 and GP-6. All detected concentrations were recorded below actionable levels.

The results of monitoring performed at the vent trench riser pipes on October 8, 2024, indicate that the trench is actively venting gas. Gas venting from Trench (E) was recorded at 98.7% LEL, while the gas venting from Trench (W) was recorded at >100% LEL.

Review of the water elevation data in gas probes indicates that all probes had sufficient screen open to the vadose zone at the site.

It is anticipated that the quarterly gas monitoring at GP-3 required by Permit Amendment #17 (Doc 110053) can be reduced again to a semi-annual frequency now that a remedy is constructed and documented to be actively venting gas.

The gas extraction system along the east side of the site was repaired in 2019 to further lower the landfill gas concentrations along the east side of the site (monitored by GP-4). The gas extraction system operates on a timer. The gas extraction system was observed to be operating on April 8, 2024 and on October 8, 2024.

Recommendations

It is recommended that the HMSP and GMSP activities performed in 2025 again be in accordance with the scope and frequencies required in Permit Amendments #14, #15, #16, and #17.

It is recommended that the frequency of gas monitoring at GP-3 be reduced to a semi-annual frequency to correspond to the measurement frequency at all other monitoring points at the site.

It is recommended that the gas extraction system along the east side of the site continue to be operated and maintained.

Please feel free to contact our office at (515) 733-4144 with any questions you may have.

DOUGLAS J. LUZBETAK LICENSED 12654 IOWA PROFESSIONAL ENGINEER	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. 11/21/24 DOUGLAS J. LUZBETAK, P.E. DATE License number 12654 My license renewal date is December 31, 2024. Pages or sheets covered by this seal: All except Attachments A + C

cc: *Frank Frieberg, Director, Waste Authority of Jackson County*

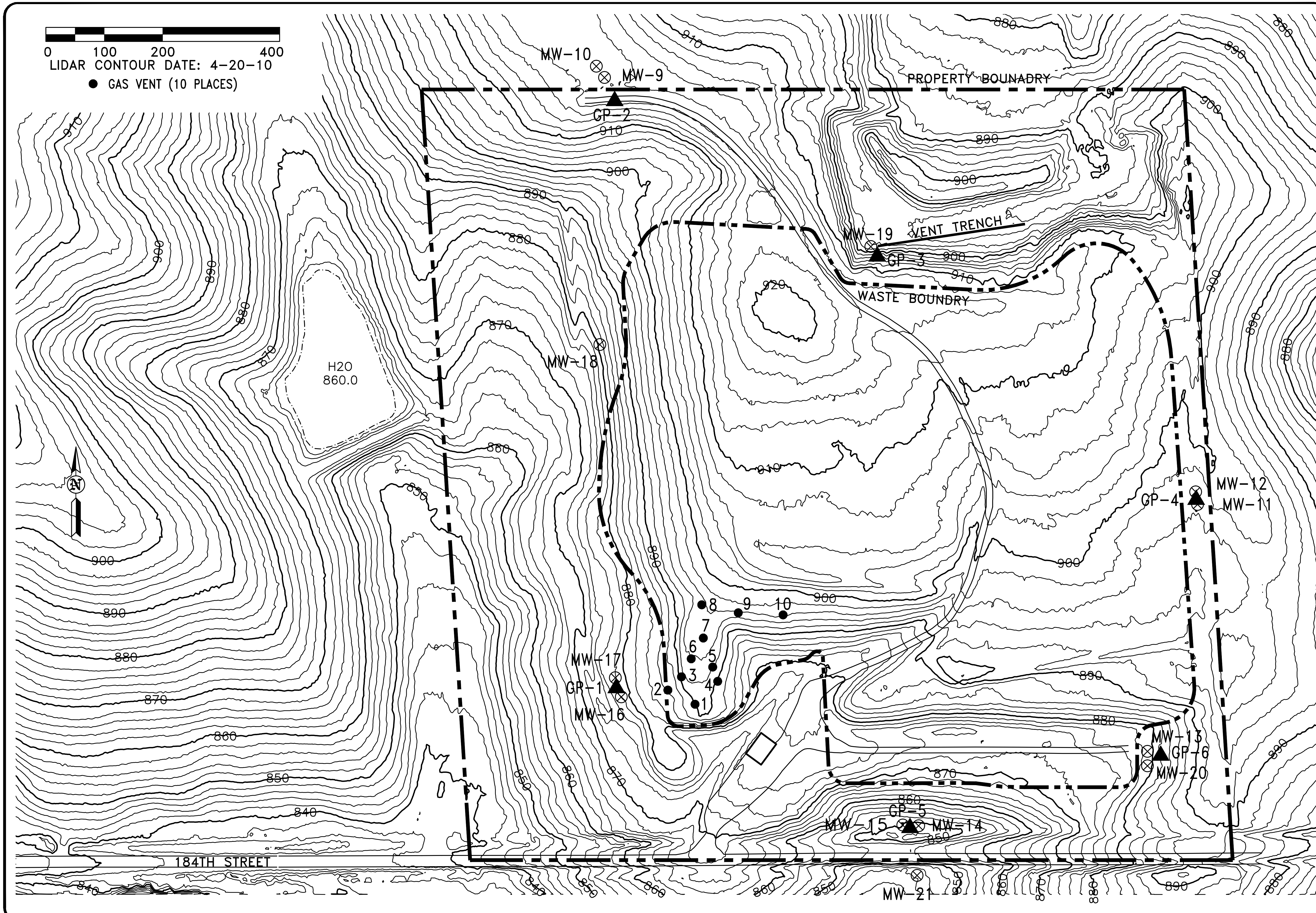


FIGURE: 1

REVISION	NO.	DATE

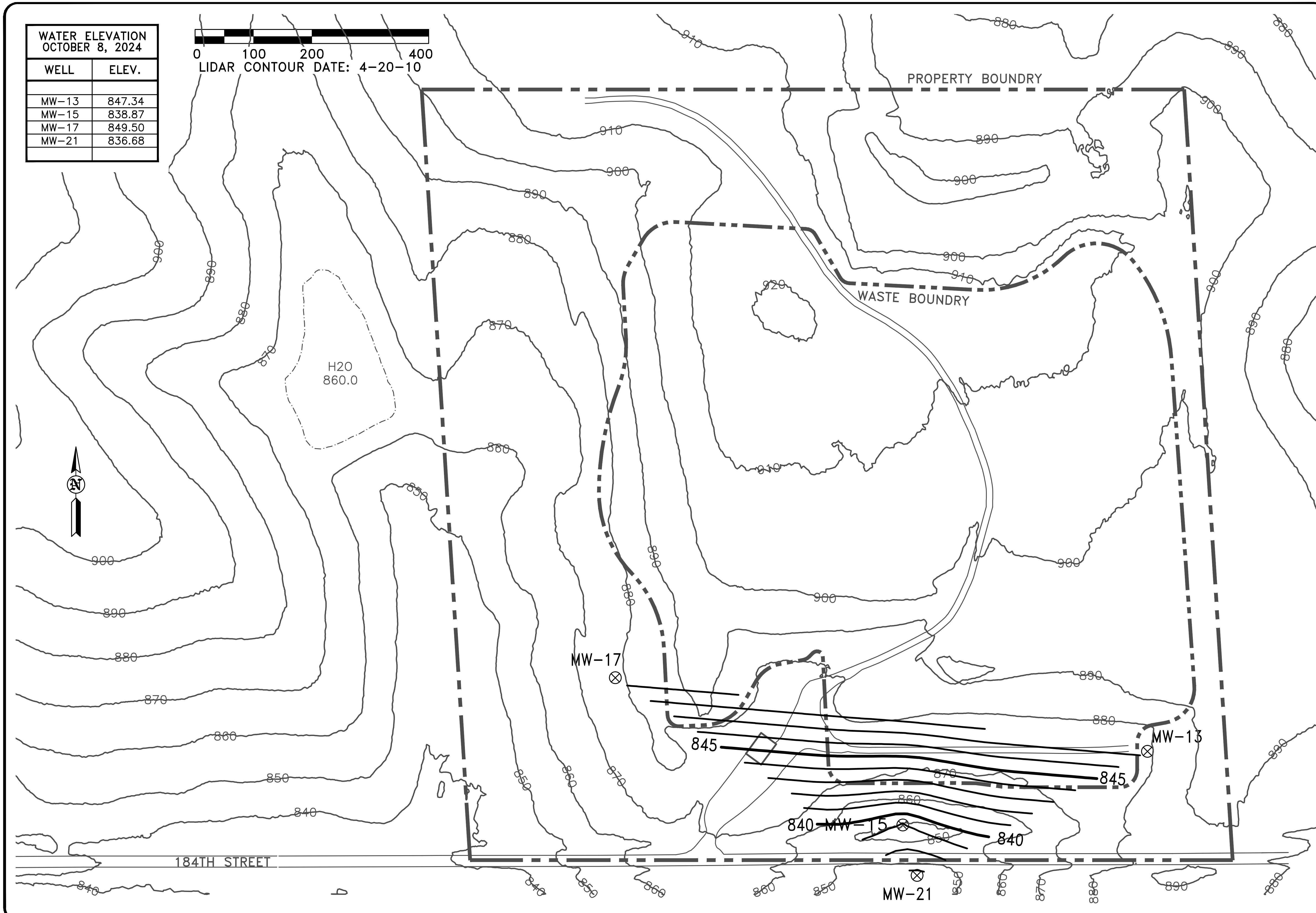
DRAWN	PROJECT NO.	DATE
DRA	6040	10-14-24

SITE PLAN AND GAS PROBE LOCATION MAP

JACKSON COUNTY SANITARY LANDFILL
MAQUOKETA, IOWA

HLW Engineering Group
204 West Broad Street, P.O. Box 314
Story City, Iowa 50248
Phone: (515) 733-4144
Fax: (515) 733-4146

HLW
HLW Engineering Group



WATER ELEVATION
OCTOBER 8, 2024

WELL	ELEV.
MW-13	847.34
MW-15	838.87
MW-17	849.50
MW-21	836.68

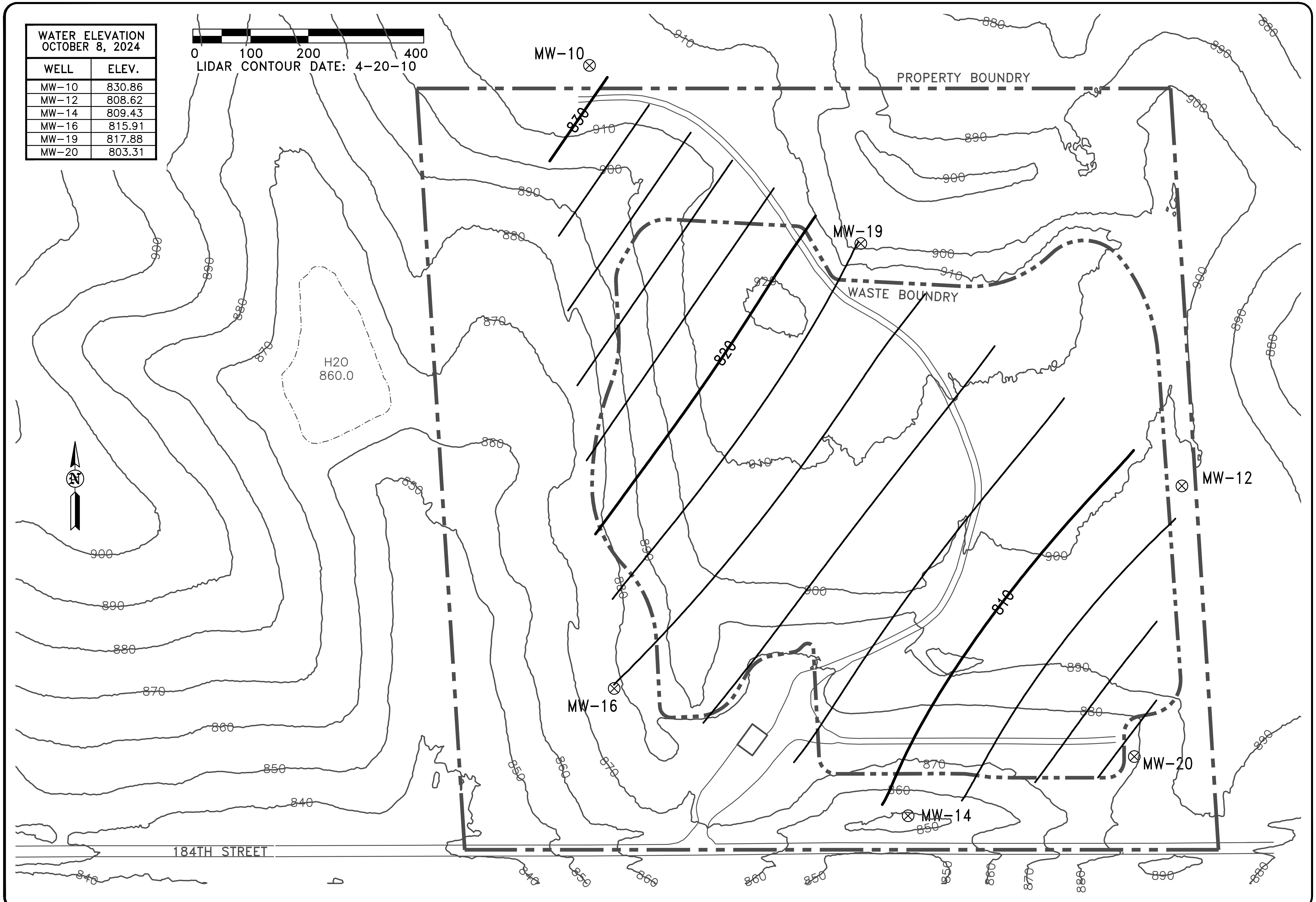
WATER TABLE CONTOUR MAP

JACKSON COUNTY SANITARY LANDFILL
MAQUOKETA, IOWA

FIGURE: 2

REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6040	DATE 10-14-24

HLW Engineering Group
204 West Broad Street, P.O. Box 314
Story City, Iowa 50248
Phone: (515) 733-4144
FAX: (515) 733-4146



WATER ELEVATION OCTOBER 8, 2024	
WELL	ELEV.
MW-10	830.86
MW-12	808.62
MW-14	809.43
MW-16	815.91
MW-19	817.88
MW-20	803.31

FIGURE: 3

REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6040	DATE 10-14-24

BEDROCK POTENTIOMETRIC SURFACE MAP

JACKSON COUNTY SANITARY LANDFILL
MAQUOKETA, IOWA

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HLW
HLW Engineering Group

ATTACHMENT A

Water Quality Results & Summary

2015-2024 Modified HMSP Sampling & Testing Results
Jackson County Sanitary Landfill
Summary of Appendix I Detections

Date	Compound	Statewide Standard IAC-137	Units	MW-10 (upgradient)	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-19	MW-20
10/5/2015	Turbidity (metal sample)	N/A	NTU	0.82	NT	3.27	32.64	11.95	3.58	34.24	5.93	Dry	Dry
4/4/2016	Turbidity (metal sample)	N/A	NTU	3.53	58.07	1.43	4.26	5.46	1.36	82.65	0.17	Dry	Dry
10/4/2016	Turbidity (metal sample)	N/A	NTU	4.07	31.45	1.86	7.45	33.94	2.86	5.13	1.15	2.64	9.23
4/3/2017	Turbidity (metal sample)	N/A	NTU	1.28	11.03	12.06	6.48	25.29	4.65	NT	1.82	3.1	11.45
10/3/2017	Turbidity (metal sample)	N/A	NTU	1.05	0.38	1.17	1.2	79.78	0.28	NT	0.3	3.72	10.27
4/10/2018	Turbidity (metal sample)	N/A	NTU	0.53	0.064	0.6	3.51	53.63	3.35	NT	0.56	3.44	17.69
10/12/2018	Turbidity (metal sample)	N/A	NTU	1.09	5.11	0.7	17.54	3.38	4.42	NT	7.74	2.38	26.98
4/17/2019	Turbidity (metal sample)	N/A	NTU	1.17	4.27	0.72	2.15	172.1	3.12	NT	1.33	3.01	5.93
9/30/2019	Turbidity (metal sample)	N/A	NTU	1.14	1.3	2.34	1.13	32.46	2.06	NT	0.89	1.75	8.42
4/7/2020	Turbidity (metal sample)	N/A	NTU	2.58	3.46	0.73	6.01	32.88	202.7	NT	1.07	2.39	6.34
10/7/2020	Turbidity (metal sample)	N/A	NTU	3.60	1.30	1.61	33.73	61.18	33.38	NT	1.67	2.89	6.36
4/16/2021	Turbidity (metal sample)	N/A	NTU	2.54	1.73	2.06	1.98	23.54	39.6	NT	8.39	2.16	4.06
10/14/2021	Turbidity (metal sample)	N/A	NTU	1.76	4.00	1.79	80.51	214.5	5.04	NT	5.54	3.1	11.99
4/4/2022	Turbidity (metal sample)	N/A	NTU	1.70	3.45	19.73	1.31	10.82	179.4	NT	0.64	38.85	Dry
10/4/2022	Turbidity (metal sample)	N/A	NTU	7.18	2.38	2	7.51	15.98	39.41	NT	1.06	15.21	Dry
4/13/2023	Turbidity (metal sample)	N/A	NTU	2.72	2.97	1.33	1.65	12.34	14.84	NT	1.07	8.92	Dry
10/18/2023	Turbidity (metal sample)	N/A	NTU	1.69	2.25	1.73	15.82	28.29	49.52	NT	1.76	Dry	Dry
4/8/2024	Turbidity (metal sample)	N/A	NTU	3.32	1.88	7.97	3.44	3.6	2.63	NT	2.28	Dry	Dry
10/8/2024	Turbidity (metal sample)	N/A	NTU	2.06	2.29	3.69	2.82	19.33	7.41	NT	2.46	Dry	Dry
10/5/2015	cloroethane	2,800	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	cloroethane	2,800	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	cloroethane	2,800	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	**3.2**	<1
4/3/2017	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.4**	<1
10/3/2017	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.2**	<1
4/10/2018	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.5**	<1
10/12/2018	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.7**	<1
4/17/2019	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.8**	<1
9/30/2019	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.2**	<1
4/7/2020	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.6**	<1
10/7/2020	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**4.0**	<1
4/16/2021	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.1**	<1
10/14/2021	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.0**	<1
4/4/2022	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/4/2022	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.7**	Dry
4/13/2023	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/18/2023	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	cloroethane	2,800	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	acetone	6,300	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	acetone	6,300	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	acetone	6,300	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	**19.0**	**72.9**
4/3/2017	acetone	6,300	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**49.6**	**10.4**
10/3/2017	acetone	6,300	ug/L	NT	NT	NT	NT	NT	NT	NT	NT	<10	**34.0**
4/10/2018	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	**32.9**
10/12/2018	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	**13.0**	**28.7**
4/17/2019	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	**27.2**
9/30/2019	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	<10
4/7/2020	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	<10
10/7/2020	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	<10
4/16/2021	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	<10
10/14/2021	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	**180.0**
4/4/2022	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	**35.2**	Dry
10/4/2022	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	**17.0**	Dry
4/13/2023	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	<10	Dry
10/18/2023	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	Dry	Dry
4/8/2024	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	Dry	Dry
10/8/2024	acetone	6,300	ug/L	NT	<10	<10	NT	NT	NT	NT	<10	Dry	Dry
10/5/2015	1,1-dichloroethane	140	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	1,1-dichloroethane	140	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	1,1-dichloroethane	140	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	**3.2**	<1
4/3/2017	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**6.3**	<1
10/3/2017	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.1**	<1
4/10/2018	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.6**	<1
10/12/2018	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**4.2**	<1
4/17/2019	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**5.2**	<1
9/30/2019	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**6.4**	<1
4/7/2020	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**5.4**	<1
10/7/2020	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**9.3**	<1
4/16/2021	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.7**	<1
10/14/2021	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.8**	<1
4/4/2022	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.3**	Dry
10/4/2022	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**2.4**	Dry
4/13/2023	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**<1**	Dry
10/18/2023	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	1,1-dichloroethane	140	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	cis-1,2-DCE	70	ug/L	<1	NT	**1.2**	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	cis-1,2-DCE	70	ug/L	<1	<1	**1.4**	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	cis-1,2-DCE	70	ug/L	<1	<1	**1.1**	<1	<1	<1	<1	<1	**23.4**	**1.0**
4/3/2017	cis-1,2-DCE	70	ug/L	NT	<1	**1.8**	NT	NT	NT	NT	<1	**4.5**	**1.1**
10/3/2017	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	**1.0**	**36.0**	<1
4/10/2018	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**46.2**	<1
10/12/2018	cis-1,2-DCE	70	ug/L	NT	<1	**2.8**	NT	NT	NT	NT	**3.1**	**34.7**	**6.0**
4/17/2019	cis-1,2-DCE	70	ug/L	NT	<1	**1.0**	NT	NT	NT	NT	<1	**43.1**	**3.8**
9/30/2019	cis-1,2-DCE	70	ug/L	NT	<1	**1.1**	NT	NT	NT	NT	**1.1**	**39.9**	**3.7**
4/7/2020	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**54.4**	**3.4**
10/7/2020	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**98.0**	**9.1**
4/16/2021	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**23.4**	**4.5**
10/14/2021	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**26.8**	**3.9**
4/4/2022	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**6.6**	Dry
10/4/2022	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**7.6**	Dry
4/13/2023	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.8**	Dry
10/18/2023	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	cis-1,2-DCE	70	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry

2015-2024 Modified HMSP Sampling & Testing Results
Jackson County Sanitary Landfill
Summary of Appendix I Detections

Date	Compound	Statewide Standard IAC-137	Units	MW-10 (upgradient)	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-19	MW-20
10/5/2015	benzene	5	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	benzene	5	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	benzene	5	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	**1.1**	<1
4/3/2017	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/3/2017	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/10/2018	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/12/2018	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/17/2019	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.1**	<1
9/30/2019	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/7/2020	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.5**	<1
10/7/2020	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.1**	<1
4/16/2021	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**1.7**	<1
10/14/2021	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/4/2022	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/4/2022	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
4/13/2023	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/18/2023	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	benzene	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	TCE	5	ug/L	<1	NT	**3.3**	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	TCE	5	ug/L	<1	<1	**5.0**	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	TCE	5	ug/L	<1	<1	**3.8**	<1	<1	<1	<1	<1	**2.8**	<1
4/3/2017	TCE	5	ug/L	NT	<1	**4.5**	NT	NT	NT	NT	<1	**7.9**	<1
10/3/2017	TCE	5	ug/L	NT	<1	**5.6**	NT	NT	NT	NT	<1	<1	**2.2**
4/10/2018	TCE	5	ug/L	NT	<1	**4.9**	NT	NT	NT	NT	<1	<1	<1
10/12/2018	TCE	5	ug/L	NT	<1	**5.1**	NT	NT	NT	NT	<1	**5.1**	**1.7**
4/17/2019	TCE	5	ug/L	NT	<1	**3.9**	NT	NT	NT	NT	<1	**3.9**	**3.1**
9/30/2019	TCE	5	ug/L	NT	<1	**2.4**	NT	NT	NT	NT	<1	**11.8**	<1
4/7/2020	TCE	5	ug/L	NT	<1	**3.5**	NT	NT	NT	NT	<1	**2.2**	**1.1**
10/7/2020	TCE	5	ug/L	NT	<1	**2.6**	NT	NT	NT	NT	<1	**2.0**	<1
4/16/2021	TCE	5	ug/L	NT	<1	**2.7**	NT	NT	NT	NT	<1	**10.6**	<1
10/14/2021	TCE	5	ug/L	NT	<1	**2.2**	NT	NT	NT	NT	<1	**3.6**	<1
4/4/2022	TCE	5	ug/L	NT	<1	**2.5**	NT	NT	NT	NT	<1	**2.1**	Dry
10/4/2022	TCE	5	ug/L	NT	<1	**3**	NT	NT	NT	NT	<1	**5.1**	Dry
4/13/2023	TCE	5	ug/L	NT	<1	**2.2**	NT	NT	NT	NT	<1	**2.3**	Dry
10/18/2023	TCE	5	ug/L	NT	<1	**2.1**	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	TCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	TCE	5	ug/L	NT	<1	**2.2**	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	toluene	1,000	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	toluene	1,000	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	toluene	1,000	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	**6.7**
4/3/2017	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	**1.3**
10/3/2017	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/10/2018	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/12/2018	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/17/2019	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
9/30/2019	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/7/2020	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/7/2020	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/16/2021	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/14/2021	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/4/2022	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/4/2022	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
4/13/2023	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
10/18/2023	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/8/2024	toluene	1,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	PCE	5	ug/L	<1	NT	<1	<1	<1	<1	<1	**1.7**	Dry	Dry
4/4/2016	PCE	5	ug/L	<1	<1	<1	<1	<1	<1	<1	**1.1**	Dry	Dry
10/4/2016	PCE	5	ug/L	<1	**1.4**	<1	<1	<1	<1	<1	**1.2**	**6.6**	<1
4/3/2017	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	**1.6**	**43.2**	<1
10/3/2017	PCE	5	ug/L	NT	**2.3**	<1	NT	NT	NT	NT	**1.7**	<1	**1.7**
4/10/2018	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/12/2018	PCE	5	ug/L	NT	**3.1**	<1	NT	NT	NT	NT	**2.3**	**2.8**	<1
4/17/2019	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	**1.2**	**1.9**	<1
9/30/2019	PCE	5	ug/L	NT	**2.0**	<1	NT	NT	NT	NT	**1.0**	<1	<1
4/7/2020	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	**1.4**	<1	<1
10/7/2020	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/16/2021	PCE	5	ug/L	NT	**1.4**	<1	NT	NT	NT	NT	**1.2**	<1	<1
10/14/2021	PCE	5	ug/L	NT	**1.4**	<1	NT	NT	NT	NT	<1	**1.0**	<1
4/4/2022	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	**1.2**	<1	Dry
10/4/2022	PCE	5	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	Dry
4/13/2023	PCE	5	ug/L	NT	**2.0**	<1	NT	NT	NT	NT	**1.2**	<1	Dry
10/18/2023	PCE	5	ug/L	NT	**1.3**	<1	NT	NT	NT	NT	<1	Dry	Dry
4/8/2024	PCE	5	ug/L	NT	<1	**1.8**	NT	NT	NT	NT	**1.2**	Dry	Dry
10/8/2024	PCE	5	ug/L	NT	**1.1**	<1	NT	NT	NT	NT	<1	Dry	Dry
10/5/2015	xylenes	10,000	ug/L	<1	NT	<1	<1	<1	<1	<1	<1	Dry	Dry
4/4/2016	xylenes	10,000	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	Dry	Dry
10/4/2016	xylenes	10,000	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	**6.7**
4/3/2017	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	**1.3**
10/3/2017	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/10/2018	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/12/2018	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/17/2019	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
9/30/2019	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
4/7/2020	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	<1	<1
10/7/2020	xylenes	10,000	ug/L	NT	<1	<1	NT	NT	NT	NT	<1	**3.0**	<1
4/16/2021	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	<2	<2
10/14/2021	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	<2	<2
4/4/2022	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	<2	Dry
10/4/2022	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	<2	Dry
4/13/2023	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	<2	Dry
10/18/2023	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	Dry	Dry
4/8/2024	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	Dry	Dry
10/8/2024	xylenes	10,000	ug/L	NT	<2	<2	NT	NT	NT	NT	<2	Dry	Dry

2015-2024 Modified HMSP Sampling & Testing Results
Jackson County Sanitary Landfill
Summary of Appendix I Detections

Date	Compound	Statewide Standard IAC-137	Units	MW-10 (upgradient)	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-19	MW-20
10/5/2015	Arsenic, total	0.01	mg/L	<0.004	NT	<0.004	0.0223	<0.004	<0.004	<0.004	<0.004	Dry	Dry
4/4/2016	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0166	<0.004	<0.004	<0.004	<0.004	Dry	Dry
10/4/2016	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0148	<0.004	<0.004	<0.004	<0.004	0.0062	0.0069
4/3/2017	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0116	<0.004	0.0131	NT	<0.004	0.0066	0.0074
10/3/2017	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0152	<0.004	0.0164	NT	<0.004	0.0109	0.0090
4/10/2018	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0203	0.0299	<0.004	NT	<0.004	0.0119	0.0064
10/12/2018	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0160	<0.004	<0.004	NT	<0.004	0.0058	0.0054
4/17/2019	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0187	0.0186	0.0139	NT	<0.004	0.0064	0.0051
9/30/2019	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0215	0.0323	0.0046	NT	<0.004	0.0080	0.0073
4/7/2020	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0313	0.0278	0.0301	NT	<0.004	0.0061	0.0057
10/7/2020	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0271	0.0080	0.0045	NT	<0.004	0.0059	0.0054
4/16/2021	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0174	0.0133	0.0045	NT	<0.004	0.0045	0.0045
10/14/2021	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0338	0.0587	0.0124	NT	<0.004	0.0044	0.0049
4/4/2022	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0256	0.1390	<0.004	NT	<0.004	<0.004	Dry
10/4/2022	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0188	0.0125	0.0111	NT	<0.004	<0.004	Dry
4/13/2023	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0103	<0.004	<0.004	NT	<0.004	<0.004	Dry
10/18/2023	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0157	0.0077	0.0130	NT	<0.004	Dry	Dry
4/8/2024	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0088	<0.004	<0.004	NT	<0.004	Dry	Dry
10/8/2024	Arsenic, total	0.01	mg/L	<0.004	<0.004	<0.004	0.0095	0.0076	<0.004	NT	<0.004	Dry	Dry
10/5/2015	Barium, total	2	mg/L	0.103	NT	0.208	0.856	0.641	0.284	0.0535	0.179	Dry	Dry
4/4/2016	Barium, total	2	mg/L	0.0989	0.117	0.217	0.482	0.479	0.251	0.0469	0.161	Dry	Dry
10/4/2016	Barium, total	2	mg/L	0.0889	0.0863	0.229	0.986	0.428	0.352	0.0401	0.18	0.946	3.01
4/3/2017	Barium, total	2	mg/L	0.0920	0.103	0.310	1.64	0.609	0.300	NT	0.222	0.880	3.66
10/3/2017	Barium, total	2	mg/L	0.0950	0.0926	0.518	3.36	0.677	0.199	NT	0.379	1.050	4.30
4/10/2018	Barium, total	2	mg/L	0.0929	0.112	0.644	2.50	1.08	0.363	NT	0.447	0.878	3.41
10/12/2018	Barium, total	2	mg/L	0.0889	0.102	0.407	2.43	0.785	0.239	NT	0.201	0.843	4.13
4/17/2019	Barium, total	2	mg/L	0.0968	0.113	0.448	4.22	1.11	0.235	NT	0.239	1.12	4.54
9/30/2019	Barium, total	2	mg/L	0.1040	0.0982	0.584	3.20	1.38	0.298	NT	0.320	1.24	5.30
4/7/2020	Barium, total	2	mg/L	0.0998	0.0969	0.516	3.18	1.23	0.307	NT	0.288	0.940	4.99
10/7/2020	Barium, total	2	mg/L	0.0958	0.0838	0.443	3.80	0.825	0.279	NT	0.220	1.15	5.05
4/16/2021	Barium, total	2	mg/L	0.0848	0.0996	0.422	2.94	0.913	0.305	NT	0.202	1.040	4.37
10/14/2021	Barium, total	2	mg/L	0.0854	0.0916	0.403	3.31	1.44	0.235	NT	0.241	1.05	4.43
4/4/2022	Barium, total	2	mg/L	0.0893	0.0817	0.405	1.80	2.36	0.311	NT	0.182	0.862	Dry
10/4/2022	Barium, total	2	mg/L	0.0945	0.0970	0.407	0.971	1.08	0.327	NT	0.192	1.12	Dry
4/13/2023	Barium, total	2	mg/L	0.0799	0.0967	0.337	0.444	0.765	0.222	NT	0.187	0.550	Dry
10/18/2023	Barium, total	2	mg/L	0.0837	0.0976	0.319	0.752	0.800	0.226	NT	0.193	Dry	Dry
4/8/2024	Barium, total	2	mg/L	0.0868	0.0850	0.353	0.715	0.691	0.356	NT	0.202	Dry	Dry
10/8/2024	Barium, total	2	mg/L	0.0792	0.0859	0.287	0.391	0.740	0.327	NT	0.212	Dry	Dry
10/5/2015	Cadmium, total	0.005	mg/L	0.0063	NT	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	Dry	Dry
4/4/2016	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	Dry	Dry
10/4/2016	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
4/3/2017	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	0.0018	<0.0008	<0.0008
10/3/2017	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
4/10/2018	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
10/12/2018	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
4/17/2019	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
9/30/2019	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
4/7/2020	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
10/7/2020	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
4/16/2021	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
10/14/2021	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	<0.0008
4/4/2022	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	Dry
10/4/2022	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	Dry
4/13/2023	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	<0.0008	Dry
10/18/2023	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	Dry	Dry
4/8/2024	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	Dry	Dry
10/8/2024	Cadmium, total	0.005	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	NT	<0.0008	Dry	Dry
10/5/2015	Cobalt, total	0.0028	mg/L	<0.0008	NT	0.0025	0.0172	0.0012	0.0061	<0.0008	0.0021	Dry	Dry
4/4/2016	Cobalt, total	0.0028	mg/L	<0.0008	0.0013	0.0015	0.0131	0.0014	0.0112	<0.0008	<0.0008	Dry	Dry
10/4/2016	Cobalt, total	0.0028	mg/L	<0.0008	<0.0008	0.0010	0.0084	0.0008	0.0086	<0.0008	0.0022	0.0043	0.0066
4/3/2017	Cobalt, total	0.0028	mg/L	<0.0008	<0.0008	0.0137	0.0069	0.0036	0.0144	NT	0.0013	0.004	0.0027
10/3/2017	Cobalt, total	0.0028	mg/L	<0.0008	<0.0008	0.0073	0.0092	0.0012	0.0046	NT	0.0107	0.0023	0.0023
4/10/2018	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0020	0.0134	0.0016	0.0031	NT	0.0095	0.0039	0.0033
10/12/2018	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0010	0.0082	0.0011	0.0027	NT	0.0013	0.0025	0.0027
4/17/2019	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0011	0.0048	0.0012	0.0097	NT	0.0038	0.0032	0.0025
9/30/2019	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0019	0.0043	0.0010	0.0048	NT	0.0093	0.0035	0.0024
4/7/2020	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0026	0.0079	0.0005	0.0111	NT	0.0079	0.0023	0.0018
10/7/2020	Cobalt, total	0.0021	mg/L	<0.0008	<0.0008	0.0024	0.0105	<0.0008	0.0044	NT	<0.0004	0.0020	0.0021
4/16/2021	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0023	0.0044	0.0005	0.0101	NT	0.0011	0.0025	0.0015
10/14/2021	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0021	0.0174	0.0007	0.0044	NT	0.0090	0.0024	0.0022
4/4/2022	Cobalt, total	0.0021	mg/L	0.0005	<0.0004	0.0014	0.0161	0.0017	0.0079	NT	<0.0004	0.0042	Dry
10/4/2022	Cobalt, total	0.0021	mg/L	0.002	0.0021	0.0029	0.0115	0.0024	0.0066	NT	0.0019	0.0052	Dry
4/13/2023	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0012	0.0063	0.0005	0.0053	NT	0.0019	0.0017	Dry
10/18/2023	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0013	0.0090	<0.0004	0.0051	NT	<0.0004	Dry	Dry
4/8/2024	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0013	0.0064	<0.0004	0.0022	NT	0.0011	Dry	Dry
10/8/2024	Cobalt, total	0.0021	mg/L	<0.0004	<0.0004	0.0011	0.0064	0.0005	0.0079	NT	0.0054	Dry	Dry
10/5/2015	Copper, total	1.3	mg/L	0.0042	NT	<0.004	<0.004	<0.004	<0.004	0.0043	<0.004	Dry	Dry
4/4/2016	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	Dry	Dry
10/4/2016	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0084
4/3/2017	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	0.0080
10/3/2017	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	0.0060
4/10/2018	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	0.0066
10/12/2018	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	0.0069
4/17/2019	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
9/30/2019	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/7/2020	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	0.0081	<0.004	<0.004
10/7/2020	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/16/2021	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
10/14/2021	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/4/2022	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	Dry
10/4/2022	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	0.0082	Dry
4/13/2023	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	Dry
10/18/2023	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry
4/8/2024	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry
10/8/2024	Copper, total	1.3	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry

2015-2024 Modified HMSP Sampling & Testing Results
Jackson County Sanitary Landfill

Summary of Appendix I Detections

Date	Compound	Statewide Standard IAC-137	Units	MW-10 (upgradient)	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-19	MW-20
10/5/2015	Nickel, total	0.1	mg/L	<0.004	NT	**0.0063**	**0.0161**	<0.004	**0.0126**	**0.0041**	**0.0047**	Dry	Dry
4/4/2016	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0046**	**0.0060**	**0.0049**	**0.0121**	<0.004	**0.0058**	Dry	Dry
10/4/2016	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0056**	<0.004	**0.0067**	<0.004	<0.004	<0.004	**0.0216**
4/3/2017	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0088**	**0.0046**	0.0057	**0.0122**	NT	0.0204	0.0066	**0.0104**
10/3/2017	Nickel, total	0.1	mg/L	**0.0089**	<0.004	**0.0086**	**0.0051**	<0.004	**0.0072**	NT	**0.0283**	<0.004	**0.0076**
4/10/2018	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0059**	<0.004	<0.004	**0.0088**	NT	**0.0333**	**0.0194**	**0.0271**
10/12/2018	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	**0.0084**	NT	<0.008	<0.004	**0.0134**
4/17/2019	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0045**	**0.0052**	<0.004	**0.0091**	NT	**0.0074**	**0.007**	**0.0075**
9/30/2019	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0063**	**0.0051**	<0.004	**0.0079**	NT	**0.0108**	**0.0112**	**0.0079**
4/7/2020	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0069**	**0.0046**	<0.004	**0.0127**	NT	**0.0097**	**0.0092**	**0.0060**
10/7/2020	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0053**	**0.0104**	<0.004	**0.0082**	NT	<0.008	**0.0048**	**0.0072**
4/16/2021	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0047**	<0.004	<0.004	**0.0122**	NT	**0.0048**	**0.0072**	<0.004
10/14/2021	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0207**	<0.004	**0.0084**	NT	**0.0142**	**0.0110**	**0.0074**
4/4/2022	Nickel, total	0.1	mg/L	<0.004	<0.004	**0.0042**	**0.0208**	**0.0055**	**0.0122**	NT	<0.004	**0.0306**	Dry
10/4/2022	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0062**	<0.004	**0.0086**	NT	<0.004	**0.0294**	Dry
4/13/2023	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0044**	<0.004	**0.0100**	NT	**0.0079**	**0.0053**	Dry
10/18/2023	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.009**	<0.004	**0.0092**	NT	**0.0121**	Dry	Dry
4/8/2024	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0068**	<0.004	**0.0097**	NT	**0.0204**	Dry	Dry
10/8/2024	Nickel, total	0.1	mg/L	<0.004	<0.004	<0.004	**0.0051**	<0.004	**0.0111**	NT	**0.0239**	Dry	Dry
10/5/2015	Lead, total	0.015	mg/L	<0.004	NT	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	Dry	Dry
4/4/2016	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	Dry	Dry
10/4/2016	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
4/3/2017	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
10/3/2017	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/10/2018	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
10/12/2018	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/17/2019	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
9/30/2019	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/7/2020	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
10/7/2020	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/16/2021	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
10/14/2021	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	<0.004
4/4/2022	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	**0.0127**	Dry
10/4/2022	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	Dry
4/13/2023	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	<0.004	Dry
10/18/2023	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry
4/8/2024	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry
10/8/2024	Lead, total	0.015	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NT	<0.004	Dry	Dry
10/5/2015	Zinc, total	2	mg/L	**0.01**	NT	**0.0121**	<0.008	**0.0083**	<0.008	**0.0218**	**0.009**	Dry	Dry
4/4/2016	Zinc, total	2	mg/L	<0.008	**0.073**	<0.008	<0.008	**0.0150**	<0.008	**0.0123**	**0.0123**	Dry	Dry
10/4/2016	Zinc, total	2	mg/L	<0.008	**0.135**	**0.0099**	<0.008	**0.0112**	<0.008	**0.0161**	<0.008	<0.008	**0.0166**
4/3/2017	Zinc, total	2	mg/L	<0.008	**0.0373**	<0.008	<0.008	<0.008	<0.008	NT	**0.0164**	<0.008	**0.0116**
10/3/2017	Zinc, total	2	mg/L	<0.008	**0.0168**	<0.008	<0.008	<0.008	<0.008	NT	**0.0084**	**0.0132**	**0.0085**
4/10/2018	Zinc, total	2	mg/L	<0.008	**0.0144**	**0.0122**	<0.008	<0.008	<0.008	NT	<0.020	<0.020	<0.020
10/12/2018	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.008	NT	<0.020	<0.020	<0.020
4/17/2019	Zinc, total	2	mg/L	<0.008	**0.0092**	<0.008	<0.008	<0.008	<0.008	NT	<0.008	<0.008	**0.0089**
9/30/2019	Zinc, total	2	mg/L	<0.008	**0.0098**	<0.008	<0.020	**0.0097**	<0.008	NT	<0.008	**0.0109**	**0.0104**
4/7/2020	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	<0.020
10/7/2020	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	<0.020
4/16/2021	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	<0.020
10/14/2021	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	**0.0291**
4/4/2022	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	Dry
10/4/2022	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	Dry
4/13/2023	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	<0.020	Dry
10/18/2023	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	Dry	Dry
4/8/2024	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	Dry	Dry
10/8/2024	Zinc, total	2	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NT	<0.020	Dry	Dry

= value exceeds the Statewide Standard for PROTECTED Groundwater

= value exceeds the Statewide Standard for NON-PROTECTED Groundwater

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HD0949

Project Description

6040

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

Heather Murphy

Customer Relationship Specialist

Wednesday, April 24, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HD0949

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: 6040

Project / PO Number: N/A
Received: 04/10/2024
Reported: 04/24/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
MW-10	1HD0949-01	Aqueous	GRAB		04/08/24 17:27	04/10/24 10:08
MW-11	1HD0949-02	Aqueous	GRAB		04/08/24 16:50	04/10/24 10:08
MW-12	1HD0949-03	Aqueous	GRAB		04/08/24 17:00	04/10/24 10:08
MW-13	1HD0949-04	Aqueous	GRAB		04/08/24 18:26	04/10/24 10:08
MW-14	1HD0949-05	Aqueous	GRAB		04/08/24 18:11	04/10/24 10:08
MW-15	1HD0949-06	Aqueous	GRAB		04/08/24 18:17	04/10/24 10:08
MW-17	1HD0949-07	Aqueous	GRAB		04/08/24 17:57	04/10/24 10:08
Field Duplicate	1HD0949-08	Aqueous	GRAB		04/08/24 00:00	04/10/24 10:08

Analytical Testing Parameters

Client Sample ID:	MW-10		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-01	**Collection Date:**	04/08/2024 17:27

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Barium, total	**0.0868**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2143	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2143	RVV

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-02	**Collection Date:**	04/08/2024 16:50

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Bromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Chloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Acetone	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Chloroform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-02	**Collection Date:**	04/08/2024 16:50

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Benzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Dibromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Toluene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Xylenes, total	<2.0	2.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Styrene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Bromoform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: Dibromofluoromethane	114	Limit: 75-136	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: Dibromofluoromethane	114	Limit: 80-126	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 63-138	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 61-142	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: 4-Bromofluorobenzene	103	Limit: 85-111	% Rec	1		04/15/24 0000	04/15/24 1500	LJS
Surrogate: 4-Bromofluorobenzene	103	Limit: 80-116	% Rec	1		04/15/24 0000	04/15/24 1500	LJS

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Barium, total	**0.0850**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV

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CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-02	**Collection Date:**	04/08/2024 16:50

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2208	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2208	RVV

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CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	MW-12		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-03	**Collection Date:**	04/08/2024 17:00

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Bromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Chloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Acetone	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Chloroform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Benzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Dibromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Toluene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Tetrachloroethylene	**1.8**	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Xylenes, total	<2.0	2.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Styrene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Bromoform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS

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CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	MW-12		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-03	**Collection Date:**	04/08/2024 17:00

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: Dibromofluoromethane	114	Limit: 75-136	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: Dibromofluoromethane	114	Limit: 80-126	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 61-142	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 63-138	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: 4-Bromofluorobenzene	102	Limit: 80-116	% Rec	1		04/15/24 0000	04/15/24 1526	LJS
Surrogate: 4-Bromofluorobenzene	102	Limit: 85-111	% Rec	1		04/15/24 0000	04/15/24 1526	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Barium, total	**0.353**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Cobalt, total	**0.0013**	0.0004	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2214	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2214	RVV

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CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	MW-13		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-04	**Collection Date:**	04/08/2024 18:26

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Arsenic, total	**0.0088**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Barium, total	**0.715**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Cobalt, total	**0.0064**	0.0004	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Nickel, total	**0.0068**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2232	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2232	RVV

Client Sample ID:	MW-14		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-05	**Collection Date:**	04/08/2024 18:11

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Barium, total	**0.691**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2239	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2239	RVV

Client Sample ID:	MW-15		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-06	**Collection Date:**	04/08/2024 18:17

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Barium, total	**0.356**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Cobalt, total	**0.0022**	0.0004	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Nickel, total	**0.0097**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2245	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2245	RVV

Client Sample ID:	MW-17		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-07	**Collection Date:**	04/08/2024 17:57

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Bromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Chloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Acetone	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Chloroform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Benzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Dibromomethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Toluene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Tetrachloroethylene	**1.2**	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Xylenes, total	<2.0	2.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Styrene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Bromoform	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	MW-17		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-07	**Collection Date:**	04/08/2024 17:57

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: Dibromofluoromethane	111	Limit: 75-136	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: Dibromofluoromethane	111	Limit: 80-126	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: 1,2-Dichloroethane-d4	115	Limit: 63-138	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: 1,2-Dichloroethane-d4	115	Limit: 61-142	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: Toluene-d8	102	Limit: 87-116	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: Toluene-d8	102	Limit: 82-121	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: 4-Bromofluorobenzene	102	Limit: 85-111	% Rec	1		04/15/24 0000	04/15/24 1553	LJS
Surrogate: 4-Bromofluorobenzene	102	Limit: 80-116	% Rec	1		04/15/24 0000	04/15/24 1553	LJS

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Barium, total	**0.202**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Cobalt, total	**0.0011**	0.0004	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Nickel, total	**0.0204**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2251	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2251	RVV

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HD0949

Client Sample ID:	Field Duplicate		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HD0949-08	**Collection Date:**	04/08/2024

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Barium, total	**0.0866**	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Copper, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Lead, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Silver, total	<0.0040	0.0040	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2257	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		04/12/24 1625	04/15/24 2257	RVV

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1HD0843	1HD0843-BLK1	
		1HD0843-BS1	
		1HD0949-01	MW-10
		1HD0843-MS1	1HD0949-01
		1HD0843-MSD1	1HD0949-01
		1HD0843-PS1	1HD0949-01
		1HD0949-02	MW-11
		1HD0949-03	MW-12
		1HD0949-04	MW-13
		1HD0949-05	MW-14
		1HD0949-06	MW-15
		1HD0949-07	MW-17
		1HD0949-08	Field Duplicate

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1HD0944	1HD0944-BS1	
		1HD0944-BSD1	
		1HD0944-BLK1	
		1HD0949-02	MW-11
		1HD0949-03	MW-12
		1HD0949-07	MW-17

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0944 - EPA 5030B - EPA 8260B										
Blank (1HD0944-BLK1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 10:55							
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	<10.0	10.0	ug/L							
Methyl Iodide	<1.0	1.0	ug/L							
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0944 - EPA 5030B - EPA 8260B										
Blank (1HD0944-BLK1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 10:55							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
1,1,1-Trichloroethane	<1.0	1.0	ug/L							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	*59.0*		ug/L	*50.2*		*118*	*80-126*			
Surrogate: Dibromofluoromethane	*59.0*		ug/L	*50.2*		*118*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*60.2*		ug/L	*50.1*		*120*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*60.2*		ug/L	*50.1*		*120*	*61-142*			
Surrogate: Toluene-d8	*52.0*		ug/L	*50.4*		*103*	*87-116*			
Surrogate: Toluene-d8	*52.0*		ug/L	*50.4*		*103*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*51.0*		ug/L	*50.1*		*102*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*51.0*		ug/L	*50.1*		*102*	*80-116*			
LCS (1HD0944-BS1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 09:35							**QM-18**
Chloromethane	43.47	1.0	ug/L	30.6		142	63-155			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0944 - EPA 5030B - EPA 8260B										
LCS (1HD0944-BS1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 09:35							**QM-18**
Vinyl Chloride	39.95	1.0	ug/L	30.2		132	70-154			
Bromomethane	37.62	1.0	ug/L	28.8		131	52-176			
Chloroethane	42.75	1.0	ug/L	31.6		135	72-148			
Trichlorofluoromethane	40.36	1.0	ug/L	32.6		124	70-152			
1,1-Dichloroethylene	62.35	1.0	ug/L	50.0		125	70-148			
Acetone	177.2	10.0	ug/L	102		174	43-172			QS-02
Methyl Iodide	113.0	1.0	ug/L	99.7		113	69-170			
Carbon Disulfide	112.9	1.0	ug/L	101		112	72-162			
Methylene Chloride	55.13	5.0	ug/L	50.0		110	68-142			
Acrylonitrile	121.2	5.0	ug/L	100		121	67-144			
trans-1,2-Dichloroethylene	61.74	1.0	ug/L	50.0		123	66-148			
1,1-Dichloroethane	60.70	1.0	ug/L	50.0		121	66-143			
Vinyl Acetate	134.5	5.0	ug/L	102		132	43-153			
cis-1,2-Dichloroethylene	60.07	1.0	ug/L	50.0		120	71-149			
2-Butanone (MEK)	157.9	10.0	ug/L	103		153	52-159			
Bromochloromethane	60.87	1.0	ug/L	50.0		122	69-143			
Chloroform	58.04	1.0	ug/L	50.0		116	69-144			
1,1,1-Trichloroethane	57.20	1.0	ug/L	50.0		114	62-129			
Carbon Tetrachloride	57.93	1.0	ug/L	50.0		116	63-141			
Benzene	52.57	1.0	ug/L	50.0		105	71-134			
1,2-Dichloroethane	49.77	1.0	ug/L	50.0		99.5	72-132			
Trichloroethylene	51.44	1.0	ug/L	50.0		103	71-135			
1,2-Dichloropropane	52.62	1.0	ug/L	50.0		105	69-136			
Dibromomethane	52.31	1.0	ug/L	50.0		105	73-147			
Bromodichloromethane	50.73	1.0	ug/L	50.0		101	68-129			
cis-1,3-Dichloropropene	51.12	1.0	ug/L	50.0		102	65-134			
4-Methyl-2-pentanone (MIBK)	115.8	5.0	ug/L	101		114	58-147			
Toluene	51.92	1.0	ug/L	50.0		104	72-133			
trans-1,3-Dichloropropene	52.17	1.0	ug/L	50.0		104	67-130			
1,1,2-Trichloroethane	51.49	1.0	ug/L	50.0		103	69-135			
Tetrachloroethylene	48.53	1.0	ug/L	50.0		97.1	69-130			
2-Hexanone (MBK)	122.2	5.0	ug/L	103		118	55-144			
Dibromochloromethane	47.64	1.0	ug/L	50.0		95.3	73-127			
1,2-Dibromoethane	47.72	1.0	ug/L	50.0		95.4	67-132			
Chlorobenzene	48.26	1.0	ug/L	50.0		96.5	72-123			
1,1,1,2-Tetrachloroethane	48.71	1.0	ug/L	50.0		97.4	73-127			
Ethylbenzene	49.70	1.0	ug/L	50.0		99.4	71-127			
Xylenes, total	148.9	2.0	ug/L	150		99.3	74-127			
Styrene	49.00	1.0	ug/L	50.0		98.0	66-126			
Bromoform	46.62	1.0	ug/L	50.0		93.2	68-130			
1,2,3-Trichloropropane	51.06	1.0	ug/L	50.0		102	63-136			
trans-1,4-Dichloro-2-butene	95.01	5.0	ug/L	104		91.4	54-134			
1,1,2,2-Tetrachloroethane	52.47	1.0	ug/L	50.0		105	61-131			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0944 - EPA 5030B - EPA 8260B										
LCS (1HD0944-BS1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 09:35							**QM-18**
1,4-Dichlorobenzene	48.14	1.0	ug/L	50.0		96.3	70-129			
1,2-Dichlorobenzene	50.33	1.0	ug/L	50.0		101	69-126			
1,2-Dibromo-3-chloropropane	51.40	5.0	ug/L	50.0		103	50-143			
Surrogate: Dibromofluoromethane	*58.8*		ug/L	*50.2*		*117*	*80-126*			
Surrogate: Dibromofluoromethane	*58.8*		ug/L	*50.2*		*117*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*59.1*		ug/L	*50.1*		*118*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*59.1*		ug/L	*50.1*		*118*	*61-142*			
Surrogate: Toluene-d8	*53.7*		ug/L	*50.4*		*107*	*87-116*			
Surrogate: Toluene-d8	*53.7*		ug/L	*50.4*		*107*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.7*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.7*	*80-116*			
LCS Dup (1HD0944-BSD1)			Prepared: 04/15/24 00:00 Analyzed: 04/15/24 10:01							
Chloromethane	39.72	1.0	ug/L	30.6		130	63-155	9.02	24	QM-18
Vinyl Chloride	36.19	1.0	ug/L	30.2		120	70-154	9.88	25	QM-18
Bromomethane	36.05	1.0	ug/L	28.8		125	52-176	4.26	27	QM-18
Chloroethane	39.82	1.0	ug/L	31.6		126	72-148	7.10	25	QM-18
Trichlorofluoromethane	37.30	1.0	ug/L	32.6		114	70-152	7.88	26	QM-18
1,1-Dichloroethylene	58.03	1.0	ug/L	50.0		116	70-148	7.18	24	QM-18
Acetone	159.3	10.0	ug/L	102		156	43-172	10.7	30	QM-18
Methyl Iodide	107.8	1.0	ug/L	99.7		108	69-170	4.78	30	QM-18
Carbon Disulfide	105.6	1.0	ug/L	101		105	72-162	6.75	24	QM-18
Methylene Chloride	54.25	5.0	ug/L	50.0		108	68-142	1.61	21	QM-18
Acrylonitrile	119.0	5.0	ug/L	100		119	67-144	1.82	24	QM-18
trans-1,2-Dichloroethylene	58.08	1.0	ug/L	50.0		116	66-148	6.11	27	QM-18
1,1-Dichloroethane	57.81	1.0	ug/L	50.0		116	66-143	4.88	24	QM-18
Vinyl Acetate	144.0	5.0	ug/L	102		141	43-153	6.81	30	QM-18
cis-1,2-Dichloroethylene	59.52	1.0	ug/L	50.0		119	71-149	0.920	26	QM-18
2-Butanone (MEK)	150.0	10.0	ug/L	103		145	52-159	5.14	27	QM-18
Bromochloromethane	59.05	1.0	ug/L	50.0		118	69-143	3.04	23	QM-18
Chloroform	56.00	1.0	ug/L	50.0		112	69-144	3.58	23	QM-18
1,1,1-Trichloroethane	54.20	1.0	ug/L	50.0		108	62-129	5.39	24	QM-18
Carbon Tetrachloride	54.42	1.0	ug/L	50.0		109	63-141	6.25	25	QM-18
Benzene	50.18	1.0	ug/L	50.0		100	71-134	4.65	24	QM-18
1,2-Dichloroethane	49.25	1.0	ug/L	50.0		98.5	72-132	1.05	24	QM-18
Trichloroethylene	48.68	1.0	ug/L	50.0		97.4	71-135	5.51	24	QM-18
1,2-Dichloropropane	50.98	1.0	ug/L	50.0		102	69-136	3.17	24	QM-18
Dibromomethane	51.82	1.0	ug/L	50.0		104	73-147	0.941	25	QM-18
Bromodichloromethane	49.59	1.0	ug/L	50.0		99.2	68-129	2.27	22	QM-18
cis-1,3-Dichloropropene	49.99	1.0	ug/L	50.0		100	65-134	2.24	23	QM-18
4-Methyl-2-pentanone (MIBK)	115.2	5.0	ug/L	101		114	58-147	0.554	27	QM-18
Toluene	49.70	1.0	ug/L	50.0		99.4	72-133	4.37	24	QM-18
trans-1,3-Dichloropropene	51.25	1.0	ug/L	50.0		102	67-130	1.78	24	QM-18
1,1,2-Trichloroethane	51.30	1.0	ug/L	50.0		103	69-135	0.370	23	QM-18

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0944 - EPA 5030B - EPA 8260B										
LCS Dup (1HD0944-BSD1)				Prepared: 04/15/24 00:00 Analyzed: 04/15/24 10:01						
Tetrachloroethylene	46.56	1.0	ug/L	50.0		93.1	69-130	4.14	25	QM-18
2-Hexanone (MBK)	118.9	5.0	ug/L	103		115	55-144	2.74	25	QM-18
Dibromochloromethane	47.05	1.0	ug/L	50.0		94.1	73-127	1.25	22	QM-18
1,2-Dibromoethane	47.78	1.0	ug/L	50.0		95.6	67-132	0.126	24	QM-18
Chlorobenzene	47.14	1.0	ug/L	50.0		94.3	72-123	2.35	23	QM-18
1,1,1,2-Tetrachloroethane	47.80	1.0	ug/L	50.0		95.6	73-127	1.89	24	QM-18
Ethylbenzene	48.20	1.0	ug/L	50.0		96.4	71-127	3.06	26	QM-18
Xylenes, total	143.8	2.0	ug/L	150		95.8	74-127	3.55	25	QM-18
Styrene	48.10	1.0	ug/L	50.0		96.2	66-126	1.85	23	QM-18
Bromoform	46.20	1.0	ug/L	50.0		92.4	68-130	0.905	23	QM-18
1,2,3-Trichloropropane	50.56	1.0	ug/L	50.0		101	63-136	0.984	24	QM-18
trans-1,4-Dichloro-2-butene	94.42	5.0	ug/L	104		90.9	54-134	0.623	27	QM-18
1,1,2,2-Tetrachloroethane	51.72	1.0	ug/L	50.0		103	61-131	1.44	29	QM-18
1,4-Dichlorobenzene	47.39	1.0	ug/L	50.0		94.8	70-129	1.57	24	QM-18
1,2-Dichlorobenzene	49.19	1.0	ug/L	50.0		98.4	69-126	2.29	26	QM-18
1,2-Dibromo-3-chloropropane	51.64	5.0	ug/L	50.0		103	50-143	0.466	30	QM-18
Surrogate: Dibromofluoromethane	*58.4*		ug/L	*50.2*		*116*	*80-126*			*QM-18*
Surrogate: Dibromofluoromethane	*58.4*		ug/L	*50.2*		*116*	*75-136*			*QM-18*
Surrogate: 1,2-Dichloroethane-d4	*58.5*		ug/L	*50.1*		*117*	*63-138*			*QM-18*
Surrogate: 1,2-Dichloroethane-d4	*58.5*		ug/L	*50.1*		*117*	*61-142*			*QM-18*
Surrogate: Toluene-d8	*53.0*		ug/L	*50.4*		*105*	*87-116*			*QM-18*
Surrogate: Toluene-d8	*53.0*		ug/L	*50.4*		*105*	*82-121*			*QM-18*
Surrogate: 4-Bromofluorobenzene	*49.8*		ug/L	*50.1*		*99.2*	*85-111*			*QM-18*
Surrogate: 4-Bromofluorobenzene	*49.8*		ug/L	*50.1*		*99.2*	*80-116*			*QM-18*

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0843 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1HD0843-BLK1)				Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:25						
Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0040	0.0040	mg/L							
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0843 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1HD0843-BLK1)			Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:25							
Zinc, total	<0.0200	0.0200	mg/L							
LCS (1HD0843-BS1)			Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:31							
Antimony, total	0.0958	0.0020	mg/L	0.100		95.8	80-120			
Arsenic, total	0.0968	0.0040	mg/L	0.100		96.8	80-120			
Barium, total	0.106	0.0040	mg/L	0.100		106	80-120			
Beryllium, total	0.0962	0.0040	mg/L	0.100		96.2	80-120			
Cadmium, total	0.0972	0.0008	mg/L	0.100		97.2	80-120			
Chromium, total	0.0940	0.0080	mg/L	0.100		94.0	80-120			
Cobalt, total	0.0973	0.0004	mg/L	0.100		97.3	80-120			
Copper, total	0.0970	0.0040	mg/L	0.100		97.0	80-120			
Lead, total	0.0980	0.0040	mg/L	0.100		98.0	80-120			
Nickel, total	0.0958	0.0040	mg/L	0.100		95.8	80-120			
Selenium, total	0.0983	0.0040	mg/L	0.100		98.3	80-120			
Silver, total	0.0971	0.0040	mg/L	0.100		97.1	80-120			
Thallium, total	0.0969	0.0020	mg/L	0.100		96.9	80-120			
Vanadium, total	0.0976	0.0200	mg/L	0.100		97.6	80-120			
Zinc, total	0.101	0.0200	mg/L	0.100		101	80-120			
Matrix Spike (1HD0843-MS1)	**Source: 1HD0949-01**		Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:50							
Antimony, total	0.0944	0.0020	mg/L	0.100	ND	94.4	75-125			
Arsenic, total	0.0990	0.0040	mg/L	0.100	0.0020	97.0	75-125			
Barium, total	0.195	0.0040	mg/L	0.100	0.0868	108	75-125			
Beryllium, total	0.0897	0.0040	mg/L	0.100	ND	89.7	75-125			
Cadmium, total	0.0935	0.0008	mg/L	0.100	ND	93.5	75-125			
Chromium, total	0.0908	0.0080	mg/L	0.100	0.0009	89.9	75-125			
Cobalt, total	0.0983	0.0004	mg/L	0.100	ND	98.3	75-125			
Copper, total	0.0931	0.0040	mg/L	0.100	ND	93.1	75-125			
Lead, total	0.0923	0.0040	mg/L	0.100	ND	92.3	75-125			
Nickel, total	0.0947	0.0040	mg/L	0.100	ND	94.7	75-125			
Selenium, total	0.0976	0.0040	mg/L	0.100	ND	97.6	75-125			
Silver, total	0.0940	0.0040	mg/L	0.100	ND	94.0	75-125			
Thallium, total	0.0933	0.0020	mg/L	0.100	ND	93.3	75-125			
Vanadium, total	0.100	0.0200	mg/L	0.100	ND	100	75-125			
Zinc, total	0.0996	0.0200	mg/L	0.100	ND	99.6	75-125			
Matrix Spike Dup (1HD0843-MSD1)	**Source: 1HD0949-01**		Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:56							
Antimony, total	0.0968	0.0020	mg/L	0.100	ND	96.8	75-125	2.51	20	
Arsenic, total	0.0979	0.0040	mg/L	0.100	0.0020	95.9	75-125	1.11	20	
Barium, total	0.199	0.0040	mg/L	0.100	0.0868	112	75-125	2.19	20	
Beryllium, total	0.0947	0.0040	mg/L	0.100	ND	94.7	75-125	5.48	20	
Cadmium, total	0.0952	0.0008	mg/L	0.100	ND	95.2	75-125	1.85	20	
Chromium, total	0.0921	0.0080	mg/L	0.100	0.0009	91.3	75-125	1.44	20	
Cobalt, total	0.0980	0.0004	mg/L	0.100	ND	98.0	75-125	0.352	20	
Copper, total	0.0924	0.0040	mg/L	0.100	ND	92.4	75-125	0.755	20	
Lead, total	0.0954	0.0040	mg/L	0.100	ND	95.4	75-125	3.23	20	

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0843 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike Dup (1HD0843-MSD1)	**Source: 1HD0949-01**	Prepared: 04/12/24 16:25 Analyzed: 04/15/24 21:56								
Nickel, total	0.0944	0.0040	mg/L	0.100	ND	94.4	75-125	0.309	20	
Selenium, total	0.0936	0.0040	mg/L	0.100	ND	93.6	75-125	4.23	20	
Silver, total	0.0967	0.0040	mg/L	0.100	ND	96.7	75-125	2.82	20	
Thallium, total	0.0959	0.0020	mg/L	0.100	ND	95.9	75-125	2.80	20	
Vanadium, total	0.102	0.0200	mg/L	0.100	ND	102	75-125	1.78	20	
Zinc, total	0.0958	0.0200	mg/L	0.100	ND	95.8	75-125	3.91	20	
Post Spike (1HD0843-PS1)	**Source: 1HD0949-01**	Prepared: 04/12/24 16:25 Analyzed: 04/15/24 22:02								
Antimony, total	0.0766		mg/L	0.0800	0.00005	95.6	80-120			
Arsenic, total	0.0787		mg/L	0.0800	0.0020	95.8	80-120			
Barium, total	0.171		mg/L	0.0800	0.0851	108	80-120			
Beryllium, total	0.0763		mg/L	0.0800	0.000003	95.3	80-120			
Cadmium, total	0.0757		mg/L	0.0800	-0.0001	94.6	80-120			
Chromium, total	0.0745		mg/L	0.0800	0.0008	92.1	80-120			
Cobalt, total	0.0784		mg/L	0.0800	0.00006	97.9	80-120			
Copper, total	0.0742		mg/L	0.0800	0.0005	92.1	80-120			
Lead, total	0.0763		mg/L	0.0800	0.00009	95.3	80-120			
Nickel, total	0.0759		mg/L	0.0800	0.0002	94.6	80-120			
Selenium, total	0.0763		mg/L	0.0800	0.0002	95.1	80-120			
Silver, total	0.0772		mg/L	0.0800	0.0002	96.2	80-120			
Thallium, total	0.0773		mg/L	0.0800	-0.000007	96.6	80-120			
Vanadium, total	0.0851		mg/L	0.0800	0.0098	94.1	80-120			
Zinc, total	0.0747		mg/L	0.0800	-0.0012	93.4	80-120			

Definitions

QM-18: LCS/LCSD were analyzed in place of MS/MSD due to instrument malfunction.

QS-02: The spike recovery for this QC sample exceeded established acceptance limits. However, all samples were below the reporting and/or regulatory limit so the data is acceptable.

RL: Reporting Limit

RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler   Temp: 1.0°C

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HD0949

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
04/24/24 15:57

CH

1 H D 0 9 4 9
HLW Engineering
PM: Heather Murphy

Keystone LABORATORIES
A Microbac Company

600 East 17th
Newton, IA 50
641-792-8451

Printed: 3/4/2024 10:33:42A

www.keystonelabs.com

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jackson Co. Landfill-New Regs
6040

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Frank Frieberg
Waste Authority of Jackson County
201 W Platt St
Maquoketa, IA 52060

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1HD0949
Temperature 1.0
Turn-Cooler: No

☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	MW-10	Water	GRAB	4/8/24	17:27	1	lndfll-app1-metals-6020	01
-001	MW-11	Water	GRAB	4/8/24	16:50	7	lndfll-app1-voc-group lndfll-app1-metals-6020	02
-001	MW-12	Water	GRAB	4/8/24	17:00	7	lndfll-app1-voc-group lndfll-app1-metals-6020	03
-001	MW-13	Water	GRAB	4/8/24	18:26	1	lndfll-app1-metals-6020	04
-001	MW-14	Water	GRAB	4/8/24	18:11	1	lndfll-app1-metals-6020	05
-001	MW-15	Water	GRAB	4/8/24	18:17	1	lndfll-app1-metals-6020	06
-001	MW-17	Water	GRAB	4/8/24	17:57	7	lndfll-app1-voc-group lndfll-app1-metals-6020	07

Relinquished By: Todd Whipple Date/Time: 4/10/24

Relinquished By Date/Time

Received By Date/Time

Received for Lab By: Maher Date/Time: 4/10/24 10:08

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF C

Keystone LABORATORIES
A Microbac Company

600 East 17th Street S
Newton, IA 50208
641-792-8451

1HD0949
HLW Engineering
PM: Heather Murphy

Printed: 3/4/2024 10:33:42A

www.keystonelabs.com

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jackson Co. Landfill-New Regs
6040

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Frank Frieberg
Waste Authority of Jackson County
201 W Platt St
Maquoketa, IA 52060

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order 1HD0949
Temperature 6.0
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
-001	MW-19 DRY	Water	GRAB	4/8/24	—	~~0~~	lndfill-app1-voc-group	lndfll-app1-metals-6020	00
-001	MW-20 DRY	Water	GRAB	4/8/24	—	~~0~~	lndfill-app1-voc-group	lndfll-app1-metals-6020	00
-001	Field Duplicate	Water	GRAB	4/8/24	✓	1	~~lndfill-app1-voc-group~~	lndfll-app1-metals-6020	08

Relinquished By: Todd Whipple Date/Time: 4/10/24

Received By Date/Time

Relinquished By Date/Time

Received for Lab By: Maher Date/Time: 4/10/24 10:00

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1076

Project Description

6040

For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248

Heather Murphy

Customer Relationship Specialist

Monday, October 28, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1076

HLW Engineering

Todd Whipple
204 West Broad St
Story City, IA 50248

Project Name: 6040

Project / PO Number: N/A
Received: 10/09/2024
Reported: 10/28/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
MW-10	1HJ1076-01	Aqueous	GRAB		10/08/24 12:26	10/09/24 10:10
MW-11	1HJ1076-02	Aqueous	GRAB		10/08/24 13:03	10/09/24 10:10
MW-12	1HJ1076-03	Aqueous	GRAB		10/08/24 12:52	10/09/24 10:10
MW-13	1HJ1076-04	Aqueous	GRAB		10/08/24 13:22	10/09/24 10:10
MW-14	1HJ1076-05	Aqueous	GRAB		10/08/24 13:40	10/09/24 10:10
MW-15	1HJ1076-06	Aqueous	GRAB		10/08/24 13:47	10/09/24 10:10
MW-17	1HJ1076-07	Aqueous	GRAB		10/08/24 11:55	10/09/24 10:10
Field Duplicate	1HJ1076-08	Aqueous	GRAB		10/08/24 00:00	10/09/24 10:10

Analytical Testing Parameters

Client Sample ID:	MW-10		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-01	**Collection Date:**	10/08/2024 12:26

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Barium, total	**0.0792**	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 1954	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 1954	RVV

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-02	**Collection Date:**	10/08/2024 13:03

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Vinyl Chloride	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Bromomethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Chloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Acetone	<10.0	10.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Methyl Iodide	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Carbon Disulfide	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Methylene Chloride	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Acrylonitrile	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2127	CSM
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Vinyl Acetate	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Bromochloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Chloroform	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-02	**Collection Date:**	10/08/2024 13:03

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Benzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Trichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Dibromomethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Bromodichloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Toluene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Tetrachloroethylene	**1.1**	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Dibromochloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Chlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Ethylbenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Xylenes, total	<2.0	2.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Styrene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Bromoform	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1820	BDF
Surrogate: Dibromofluoromethane	102	Limit: 57-134	% Rec	1		10/14/24 0000	10/14/24 2127	CSM
Surrogate: Dibromofluoromethane	96.7	Limit: 75-136	% Rec	1		10/17/24 0000	10/17/24 1820	BDF
Surrogate: 1,2-Dichloroethane-d4	104	Limit: 53-140	% Rec	1		10/14/24 0000	10/14/24 2127	CSM
Surrogate: 1,2-Dichloroethane-d4	97.5	Limit: 61-142	% Rec	1		10/17/24 0000	10/17/24 1820	BDF
Surrogate: Toluene-d8	101	Limit: 86-114	% Rec	1		10/14/24 0000	10/14/24 2127	CSM
Surrogate: Toluene-d8	97.7	Limit: 82-121	% Rec	1		10/17/24 0000	10/17/24 1820	BDF
Surrogate: 4-Bromofluorobenzene	106	Limit: 78-121	% Rec	1		10/14/24 0000	10/14/24 2127	CSM
Surrogate: 4-Bromofluorobenzene	96.5	Limit: 80-116	% Rec	1		10/17/24 0000	10/17/24 1820	BDF

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Barium, total	**0.0859**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	MW-11		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-02	**Collection Date:**	10/08/2024 13:03

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2000	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2000	RVV

Client Sample ID:	MW-12		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-03	**Collection Date:**	10/08/2024 12:52

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Vinyl Chloride	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Bromomethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Chloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Acetone	<10.0	10.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Methyl Iodide	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Carbon Disulfide	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Methylene Chloride	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Acrylonitrile	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Vinyl Acetate	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Bromochloromethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Chloroform	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Benzene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Trichloroethylene	**2.2**	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Dibromomethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Bromodichloromethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Toluene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Dibromochloromethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Chlorobenzene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Ethylbenzene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Xylenes, total	<2.0	2.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Styrene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Bromoform	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM

Client Sample ID:	MW-12		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-03	**Collection Date:**	10/08/2024 12:52

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: Dibromofluoromethane	104	Limit: 57-134	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: Dibromofluoromethane	104	Limit: 75-136	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: 1,2-Dichloroethane-d4	104	Limit: 61-142	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: 1,2-Dichloroethane-d4	104	Limit: 53-140	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: Toluene-d8	102	Limit: 86-114	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: Toluene-d8	102	Limit: 82-121	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: 4-Bromofluorobenzene	106	Limit: 80-116	% Rec	1		10/14/24 0000	10/14/24 2149	CSM
Surrogate: 4-Bromofluorobenzene	106	Limit: 78-121	% Rec	1		10/14/24 0000	10/14/24 2149	CSM

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Barium, total	**0.287**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Cobalt, total	**0.0011**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2006	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2006	RVV

Client Sample ID:	MW-13		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-04	**Collection Date:**	10/08/2024 13:22

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Arsenic, total	**0.0095**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Barium, total	**0.391**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Cobalt, total	**0.0064**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Nickel, total	**0.0051**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2012	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2012	RVV

Client Sample ID:	MW-14		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-05	**Collection Date:**	10/08/2024 13:40

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Arsenic, total	**0.0076**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Barium, total	**0.740**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Cobalt, total	**0.0005**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2031	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2031	RVV

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	MW-15		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-06	**Collection Date:**	10/08/2024 13:47

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Barium, total	**0.327**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Cobalt, total	**0.0079**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Nickel, total	**0.0111**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2037	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2037	RVV

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	MW-17		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-07	**Collection Date:**	10/08/2024 11:55

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Vinyl Chloride	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Bromomethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Chloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Acetone	<10.0	10.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Methyl Iodide	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Carbon Disulfide	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Methylene Chloride	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Acrylonitrile	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Vinyl Acetate	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Bromochloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Chloroform	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Benzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Trichloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Dibromomethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Bromodichloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Toluene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Dibromochloromethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Chlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Ethylbenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Xylenes, total	<2.0	2.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Styrene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Bromoform	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	MW-17		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-07	**Collection Date:**	10/08/2024 11:55

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: Dibromofluoromethane	97.5	Limit: 75-136	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: Dibromofluoromethane	97.5	Limit: 57-134	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: 1,2-Dichloroethane-d4	97.8	Limit: 61-142	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: 1,2-Dichloroethane-d4	97.8	Limit: 53-140	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: Toluene-d8	97.7	Limit: 82-121	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: Toluene-d8	97.7	Limit: 86-114	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: 4-Bromofluorobenzene	96.3	Limit: 80-116	% Rec	1		10/17/24 0000	10/17/24 1906	BDF
Surrogate: 4-Bromofluorobenzene	96.3	Limit: 78-121	% Rec	1		10/17/24 0000	10/17/24 1906	BDF

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Barium, total	**0.212**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Cobalt, total	**0.0054**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Nickel, total	**0.0239**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2043	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2043	RVV

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1076

Client Sample ID:	Field Duplicate		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1HJ1076-08	**Collection Date:**	10/08/2024

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Barium, total	**0.203**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Cobalt, total	**0.0044**	0.0004	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Nickel, total	**0.0222**	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2049	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/14/24 0757	10/14/24 2049	RVV

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1HJ0766	1HJ0766-BLK1	
		1HJ0766-BS1	
		1HJ0766-MS1	1HJ1038-01
		1HJ0766-MSD1	1HJ1038-01
		1HJ0766-PS1	1HJ1038-01
		1HJ1076-01	MW-10
		1HJ1076-02	MW-11
		1HJ1076-03	MW-12
		1HJ1076-04	MW-13
		1HJ1076-05	MW-14
		1HJ1076-06	MW-15
		1HJ1076-07	MW-17
		1HJ1076-08	Field Duplicate

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1HJ0887	1HJ0887-BS1	
		1HJ0887-BSD1	
		1HJ0887-BLK1	
		1HJ1076-02	MW-11
		1HJ1076-03RE1	MW-12
		1HJ1076-03	MW-12
		1HJ0887-MS1	1HJ1076-07
		1HJ0887-MSD1	1HJ1076-07

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1HJ1173	1HJ1173-BS1	
		1HJ1173-BSD1	
		1HJ1173-BLK1	
		1HJ1076-02	MW-11
		1HJ1076-07	MW-17
		1HJ1076-07	MW-17
		1HJ1173-MS1	1HJ1076-02
		1HJ1173-MSD1	1HJ1076-02

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Blank (1HJ0887-BLK1)				Prepared: 10/14/24 00:00 Analyzed: 10/14/24 14:43						

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Blank (1HJ0887-BLK1)				Prepared: 10/14/24 00:00 Analyzed: 10/14/24 14:43						
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	<10.0	10.0	ug/L							
Methyl Iodide	<1.0	1.0	ug/L							
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
1,1,1-Trichloroethane	<1.0	1.0	ug/L							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Blank (1HJ0887-BLK1)			Prepared: 10/14/24 00:00 Analyzed: 10/14/24 14:43							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	*48.1*		ug/L	*50.2*		*95.8*	*57-134*			
Surrogate: Dibromofluoromethane	*48.1*		ug/L	*50.2*		*95.8*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*48.8*		ug/L	*50.4*		*96.9*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*48.8*		ug/L	*50.4*		*96.9*	*61-142*			
Surrogate: Toluene-d8	*50.4*		ug/L	*50.5*		*99.8*	*86-114*			
Surrogate: Toluene-d8	*50.4*		ug/L	*50.5*		*99.8*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*52.7*		ug/L	*50.2*		*105*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*52.7*		ug/L	*50.2*		*105*	*80-116*			
LCS (1HJ0887-BS1)			Prepared: 10/14/24 00:00 Analyzed: 10/14/24 13:36							
Chloromethane	30.28	1.0	ug/L	30.3		99.9	63-155			
Vinyl Chloride	26.97	1.0	ug/L	30.2		89.2	70-154			
Bromomethane	20.35	1.0	ug/L	30.1		67.6	52-176			
Chloroethane	33.22	1.0	ug/L	30.3		110	72-148			
Trichlorofluoromethane	31.91	1.0	ug/L	30.3		105	70-152			
1,1-Dichloroethylene	53.15	1.0	ug/L	50.1		106	70-148			
Acetone	92.18	10.0	ug/L	100		92.1	43-172			
Methyl Iodide	79.74	1.0	ug/L	100		79.6	69-170			
Carbon Disulfide	117.6	1.0	ug/L	100		117	72-162			
Methylene Chloride	51.31	5.0	ug/L	50.2		102	68-142			
Acrylonitrile	48.69	5.0	ug/L	50.2		97.0	56-135			
trans-1,2-Dichloroethylene	50.92	1.0	ug/L	50.3		101	66-148			
1,1-Dichloroethane	50.97	1.0	ug/L	50.3		101	66-143			
Vinyl Acetate	157.7	5.0	ug/L	156		101	43-153			
cis-1,2-Dichloroethylene	44.46	1.0	ug/L	50.5		88.0	71-149			
2-Butanone (MEK)	82.56	10.0	ug/L	100		82.4	52-159			
Bromochloromethane	50.11	1.0	ug/L	50.4		99.4	69-143			
Chloroform	46.67	1.0	ug/L	50.2		93.0	69-144			
1,1,1-Trichloroethane	45.21	1.0	ug/L	50.3		89.9	62-129			
Carbon Tetrachloride	45.79	1.0	ug/L	50.2		91.2	63-141			
Benzene	52.16	1.0	ug/L	50.4		103	71-134			
1,2-Dichloroethane	48.77	1.0	ug/L	50.2		97.2	72-132			
Trichloroethylene	48.83	1.0	ug/L	50.3		97.0	71-135			
1,2-Dichloropropane	47.94	1.0	ug/L	50.2		95.5	69-136			
Dibromomethane	44.86	1.0	ug/L	50.5		88.9	73-147			
Bromodichloromethane	47.19	1.0	ug/L	50.3		93.9	68-129			
cis-1,3-Dichloropropene	49.33	1.0	ug/L	50.2		98.2	65-134			
4-Methyl-2-pentanone (MIBK)	93.62	5.0	ug/L	100		93.4	58-147			
Toluene	49.10	1.0	ug/L	50.5		97.3	72-133			
trans-1,3-Dichloropropene	47.59	1.0	ug/L	50.3		94.7	67-130			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
LCS (1HJ0887-BS1)			Prepared: 10/14/24 00:00 Analyzed: 10/14/24 13:36							
1,1,2-Trichloroethane	46.30	1.0	ug/L	50.2		92.2	69-135			
Tetrachloroethylene	49.51	1.0	ug/L	50.2		98.6	69-130			
2-Hexanone (MBK)	87.60	5.0	ug/L	100		87.5	55-144			
Dibromochloromethane	46.16	1.0	ug/L	50.3		91.7	73-127			
1,2-Dibromoethane	44.32	1.0	ug/L	50.4		87.9	67-132			
Chlorobenzene	48.64	1.0	ug/L	50.2		96.8	72-123			
1,1,1,2-Tetrachloroethane	45.78	1.0	ug/L	50.4		90.8	73-127			
Ethylbenzene	48.23	1.0	ug/L	50.5		95.6	71-127			
Xylenes, total	151.2	2.0	ug/L	151		99.9	74-127			
Styrene	49.09	1.0	ug/L	50.4		97.4	66-126			
Bromoform	44.34	1.0	ug/L	50.2		88.3	68-130			
1,2,3-Trichloropropane	44.26	1.0	ug/L	50.4		87.7	63-136			
trans-1,4-Dichloro-2-butene	84.64	5.0	ug/L	100		84.4	54-134			
1,1,2,2-Tetrachloroethane	45.53	1.0	ug/L	50.2		90.7	61-131			
1,4-Dichlorobenzene	48.56	1.0	ug/L	50.2		96.8	70-129			
1,2-Dichlorobenzene	45.30	1.0	ug/L	50.2		90.3	69-126			
1,2-Dibromo-3-chloropropane	40.15	5.0	ug/L	50.5		79.5	50-143			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.8*	*57-134*			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.8*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*46.1*		ug/L	*50.4*		*91.5*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*46.1*		ug/L	*50.4*		*91.5*	*61-142*			
Surrogate: Toluene-d8	*51.7*		ug/L	*50.5*		*102*	*86-114*			
Surrogate: Toluene-d8	*51.7*		ug/L	*50.5*		*102*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*51.0*		ug/L	*50.2*		*102*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*51.0*		ug/L	*50.2*		*102*	*80-116*			
LCS Dup (1HJ0887-BSD1)			Prepared: 10/14/24 00:00 Analyzed: 10/14/24 13:58							
Chloromethane	27.66	1.0	ug/L	30.3		91.2	63-155	9.04	24	
Vinyl Chloride	25.27	1.0	ug/L	30.2		83.5	70-154	6.51	25	
Bromomethane	18.41	1.0	ug/L	30.1		61.1	52-176	10.0	27	
Chloroethane	31.14	1.0	ug/L	30.3		103	72-148	6.46	25	
Trichlorofluoromethane	30.25	1.0	ug/L	30.3		99.8	70-152	5.34	26	
1,1-Dichloroethylene	49.94	1.0	ug/L	50.1		99.6	70-148	6.23	24	
Acetone	103.5	10.0	ug/L	100		103	43-172	11.5	30	
Methyl Iodide	81.04	1.0	ug/L	100		80.9	69-170	1.62	30	
Carbon Disulfide	112.4	1.0	ug/L	100		112	72-162	4.54	24	
Methylene Chloride	51.33	5.0	ug/L	50.2		102	68-142	0.0390	21	
Acrylonitrile	55.35	5.0	ug/L	50.2		110	56-135	12.8	16	
trans-1,2-Dichloroethylene	50.25	1.0	ug/L	50.3		99.9	66-148	1.32	27	
1,1-Dichloroethane	51.82	1.0	ug/L	50.3		103	66-143	1.65	24	
Vinyl Acetate	172.6	5.0	ug/L	156		111	43-153	9.03	30	
cis-1,2-Dichloroethylene	45.59	1.0	ug/L	50.5		90.3	71-149	2.51	26	
2-Butanone (MEK)	101.9	10.0	ug/L	100		102	52-159	20.9	27	
Bromochloromethane	52.15	1.0	ug/L	50.4		103	69-143	3.99	23	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
LCS Dup (1HJ0887-BSD1)			Prepared: 10/14/24 00:00 Analyzed: 10/14/24 13:58							
Chloroform	47.73	1.0	ug/L	50.2		95.1	69-144	2.25	23	
1,1,1-Trichloroethane	46.78	1.0	ug/L	50.3		93.0	62-129	3.41	24	
Carbon Tetrachloride	47.46	1.0	ug/L	50.2		94.5	63-141	3.58	25	
Benzene	53.78	1.0	ug/L	50.4		107	71-134	3.06	24	
1,2-Dichloroethane	50.98	1.0	ug/L	50.2		102	72-132	4.43	24	
Trichloroethylene	49.70	1.0	ug/L	50.3		98.7	71-135	1.77	24	
1,2-Dichloropropane	49.68	1.0	ug/L	50.2		98.9	69-136	3.56	24	
Dibromomethane	49.03	1.0	ug/L	50.5		97.1	73-147	8.88	25	
Bromodichloromethane	49.47	1.0	ug/L	50.3		98.4	68-129	4.72	22	
cis-1,3-Dichloropropene	51.76	1.0	ug/L	50.2		103	65-134	4.81	23	
4-Methyl-2-pentanone (MIBK)	115.3	5.0	ug/L	100		115	58-147	20.8	27	
Toluene	50.98	1.0	ug/L	50.5		101	72-133	3.76	24	
trans-1,3-Dichloropropene	50.75	1.0	ug/L	50.3		101	67-130	6.43	24	
1,1,2-Trichloroethane	51.13	1.0	ug/L	50.2		102	69-135	9.91	23	
Tetrachloroethylene	50.52	1.0	ug/L	50.2		101	69-130	2.02	25	
2-Hexanone (MBK)	110.9	5.0	ug/L	100		111	55-144	23.5	25	
Dibromochloromethane	50.01	1.0	ug/L	50.3		99.3	73-127	8.01	22	
1,2-Dibromoethane	48.67	1.0	ug/L	50.4		96.5	67-132	9.36	24	
Chlorobenzene	50.86	1.0	ug/L	50.2		101	72-123	4.46	23	
1,1,1,2-Tetrachloroethane	47.98	1.0	ug/L	50.4		95.1	73-127	4.69	24	
Ethylbenzene	49.69	1.0	ug/L	50.5		98.5	71-127	2.98	26	
Xylenes, total	155.9	2.0	ug/L	151		103	74-127	3.05	25	
Styrene	51.20	1.0	ug/L	50.4		102	66-126	4.21	23	
Bromoform	49.86	1.0	ug/L	50.2		99.3	68-130	11.7	23	
1,2,3-Trichloropropane	53.18	1.0	ug/L	50.4		105	63-136	18.3	24	
trans-1,4-Dichloro-2-butene	100.4	5.0	ug/L	100		100	54-134	17.1	27	
1,1,2,2-Tetrachloroethane	54.56	1.0	ug/L	50.2		109	61-131	18.0	29	
1,4-Dichlorobenzene	50.96	1.0	ug/L	50.2		102	70-129	4.82	24	
1,2-Dichlorobenzene	48.23	1.0	ug/L	50.2		96.1	69-126	6.27	26	
1,2-Dibromo-3-chloropropane	52.03	5.0	ug/L	50.5		103	50-143	25.8	30	
Surrogate: Dibromofluoromethane	*48.2*		ug/L	*50.2*		*95.9*	*57-134*			
Surrogate: Dibromofluoromethane	*48.2*		ug/L	*50.2*		*95.9*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*47.9*		ug/L	*50.4*		*95.2*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*47.9*		ug/L	*50.4*		*95.2*	*61-142*			
Surrogate: Toluene-d8	*52.4*		ug/L	*50.5*		*104*	*86-114*			
Surrogate: Toluene-d8	*52.4*		ug/L	*50.5*		*104*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*52.2*		ug/L	*50.2*		*104*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*52.2*		ug/L	*50.2*		*104*	*80-116*			
Matrix Spike (1HJ0887-MS1)	**Source: 1HJ1076-07**		Prepared: 10/14/24 00:00 Analyzed: 10/15/24 07:50							
Chloromethane	326.6	10.0	ug/L	303	ND	108	61-152			
Vinyl Chloride	194.4	10.0	ug/L	302	ND	64.3	66-149			M2
Bromomethane	118.8	10.0	ug/L	301	ND	39.4	43-171			M2
Chloroethane	282.8	10.0	ug/L	303	ND	93.3	69-148			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Matrix Spike (1HJ0887-MS1)		**Source: 1HJ1076-07**	Prepared: 10/14/24 00:00 Analyzed: 10/15/24 07:50							
Trichlorofluoromethane	366.3	10.0	ug/L	303	ND	121	62-163			
1,1-Dichloroethylene	593.2	10.0	ug/L	501	ND	118	70-148			
Acetone	1134	100	ug/L	1000	ND	113	45-173			
Methyl Iodide	476.1	10.0	ug/L	1000	ND	47.5	62-167			M2
Carbon Disulfide	1269	10.0	ug/L	1000	ND	127	71-163			
Methylene Chloride	558.6	50.0	ug/L	502	ND	111	69-140			
Acrylonitrile	589.9	50.0	ug/L	502	ND	118	38-147			
trans-1,2-Dichloroethylene	564.3	10.0	ug/L	503	ND	112	69-144			
1,1-Dichloroethane	577.0	10.0	ug/L	503	ND	115	70-138			
Vinyl Acetate	1744	50.0	ug/L	1560	ND	112	58-142			
cis-1,2-Dichloroethylene	484.8	10.0	ug/L	505	ND	96.0	68-151			
2-Butanone (MEK)	1106	100	ug/L	1000	ND	110	50-160			
Bromochloromethane	530.6	10.0	ug/L	504	ND	105	65-143			
Chloroform	511.4	10.0	ug/L	502	ND	102	71-143			
1,1,1-Trichloroethane	508.4	10.0	ug/L	503	ND	101	63-133			
Carbon Tetrachloride	515.0	10.0	ug/L	502	ND	103	63-142			
Benzene	577.2	10.0	ug/L	504	ND	114	69-133			
1,2-Dichloroethane	519.3	10.0	ug/L	502	ND	103	63-138			
Trichloroethylene	524.8	10.0	ug/L	503	ND	104	71-133			
1,2-Dichloropropane	510.9	10.0	ug/L	502	ND	102	69-132			
Dibromomethane	504.1	10.0	ug/L	505	ND	99.9	70-147			
Bromodichloromethane	511.0	10.0	ug/L	503	ND	102	67-130			
cis-1,3-Dichloropropene	505.6	10.0	ug/L	502	ND	101	61-126			
4-Methyl-2-pentanone (MIBK)	1266	50.0	ug/L	1000	ND	126	55-147			
Toluene	547.4	10.0	ug/L	505	ND	108	71-133			
trans-1,3-Dichloropropene	489.5	10.0	ug/L	503	ND	97.4	63-124			
1,1,2-Trichloroethane	521.5	10.0	ug/L	502	ND	104	69-133			
Tetrachloroethylene	543.0	10.0	ug/L	502	ND	108	70-124			
2-Hexanone (MBK)	1219	50.0	ug/L	1000	ND	122	53-141			
Dibromochloromethane	492.2	10.0	ug/L	503	ND	97.8	74-122			
1,2-Dibromoethane	491.3	10.0	ug/L	504	ND	97.4	66-127			
Chlorobenzene	528.6	10.0	ug/L	502	ND	105	76-116			
1,1,1,2-Tetrachloroethane	483.7	10.0	ug/L	504	ND	95.9	77-121			
Ethylbenzene	514.2	10.0	ug/L	505	ND	102	73-124			
Xylenes, total	1597	20.0	ug/L	1510	ND	106	75-123			
Styrene	517.6	10.0	ug/L	504	ND	103	70-120			
Bromoform	498.4	10.0	ug/L	502	ND	99.2	70-124			
1,2,3-Trichloropropane	545.1	10.0	ug/L	504	ND	108	62-135			
trans-1,4-Dichloro-2-butene	929.6	50.0	ug/L	1000	ND	92.7	50-120			
1,1,2,2-Tetrachloroethane	555.3	10.0	ug/L	502	ND	111	63-126			
1,4-Dichlorobenzene	511.9	10.0	ug/L	502	ND	102	72-119			
1,2-Dichlorobenzene	492.1	10.0	ug/L	502	ND	98.1	71-117			
1,2-Dibromo-3-chloropropane	537.4	50.0	ug/L	505	ND	106	49-134			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Matrix Spike (1HJ0887-MS1)	**Source: 1HJ1076-07**	Prepared: 10/14/24 00:00 Analyzed: 10/15/24 07:50								
Surrogate: Dibromofluoromethane	*491*		ug/L	*502*		*97.7*	*57-134*			
Surrogate: Dibromofluoromethane	*491*		ug/L	*502*		*97.7*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*482*		ug/L	*504*		*95.6*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*482*		ug/L	*504*		*95.6*	*61-142*			
Surrogate: Toluene-d8	*540*		ug/L	*505*		*107*	*86-114*			
Surrogate: Toluene-d8	*540*		ug/L	*505*		*107*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*513*		ug/L	*502*		*102*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*513*		ug/L	*502*		*102*	*80-116*			
Matrix Spike Dup (1HJ0887-MSD1)	**Source: 1HJ1076-07**	Prepared: 10/14/24 00:00 Analyzed: 10/15/24 08:12								
Chloromethane	262.9	10.0	ug/L	303	ND	86.7	61-152	21.6	26	
Vinyl Chloride	240.1	10.0	ug/L	302	ND	79.4	66-149	21.0	23	
Bromomethane	166.3	10.0	ug/L	301	ND	55.2	43-171	33.3	29	R1
Chloroethane	312.4	10.0	ug/L	303	ND	103	69-148	9.95	25	
Trichlorofluoromethane	307.3	10.0	ug/L	303	ND	101	62-163	17.5	25	
1,1-Dichloroethylene	499.1	10.0	ug/L	501	ND	99.5	70-148	17.2	22	
Acetone	1064	100	ug/L	1000	ND	106	45-173	6.42	30	
Methyl Iodide	782.8	10.0	ug/L	1000	ND	78.1	62-167	48.7	24	R1
Carbon Disulfide	1110	10.0	ug/L	1000	ND	111	71-163	13.4	22	
Methylene Chloride	501.7	50.0	ug/L	502	ND	100	69-140	10.7	19	
Acrylonitrile	549.3	50.0	ug/L	502	ND	109	38-147	7.13	30	
trans-1,2-Dichloroethylene	498.9	10.0	ug/L	503	ND	99.2	69-144	12.3	22	
1,1-Dichloroethane	512.5	10.0	ug/L	503	ND	102	70-138	11.8	20	
Vinyl Acetate	1622	50.0	ug/L	1560	ND	104	58-142	7.28	24	
cis-1,2-Dichloroethylene	430.1	10.0	ug/L	505	ND	85.2	68-151	12.0	22	
2-Butanone (MEK)	1054	100	ug/L	1000	ND	105	50-160	4.88	23	
Bromochloromethane	517.4	10.0	ug/L	504	ND	103	65-143	2.52	22	
Chloroform	484.1	10.0	ug/L	502	ND	96.5	71-143	5.48	21	
1,1,1-Trichloroethane	473.7	10.0	ug/L	503	ND	94.2	63-133	7.07	23	
Carbon Tetrachloride	486.0	10.0	ug/L	502	ND	96.8	63-142	5.79	22	
Benzene	518.0	10.0	ug/L	504	ND	103	69-133	10.8	18	
1,2-Dichloroethane	489.8	10.0	ug/L	502	ND	97.6	63-138	5.85	20	
Trichloroethylene	487.9	10.0	ug/L	503	ND	96.9	71-133	7.29	23	
1,2-Dichloropropane	481.2	10.0	ug/L	502	ND	95.8	69-132	5.99	20	
Dibromomethane	471.0	10.0	ug/L	505	ND	93.3	70-147	6.79	22	
Bromodichloromethane	477.1	10.0	ug/L	503	ND	94.9	67-130	6.86	21	
cis-1,3-Dichloropropene	468.0	10.0	ug/L	502	ND	93.2	61-126	7.72	21	
4-Methyl-2-pentanone (MIBK)	1117	50.0	ug/L	1000	ND	111	55-147	12.5	23	
Toluene	494.3	10.0	ug/L	505	ND	97.9	71-133	10.2	19	
trans-1,3-Dichloropropene	459.3	10.0	ug/L	503	ND	91.4	63-124	6.37	21	
1,1,2-Trichloroethane	491.0	10.0	ug/L	502	ND	97.8	69-133	6.02	19	
Tetrachloroethylene	479.3	10.0	ug/L	502	ND	95.4	70-124	12.5	24	
2-Hexanone (MBK)	1064	50.0	ug/L	1000	ND	106	53-141	13.6	24	
Dibromochloromethane	469.5	10.0	ug/L	503	ND	93.3	74-122	4.72	21	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0887 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1HJ0887-MSD1)	**Source: 1HJ1076-07**		Prepared: 10/14/24 00:00 Analyzed: 10/15/24 08:12							
1,2-Dibromoethane	465.5	10.0	ug/L	504	ND	92.3	66-127	5.39	23	
Chlorobenzene	477.6	10.0	ug/L	502	ND	95.1	76-116	10.1	21	
1,1,1,2-Tetrachloroethane	459.4	10.0	ug/L	504	ND	91.1	77-121	5.15	25	
Ethylbenzene	472.4	10.0	ug/L	505	ND	93.6	73-124	8.47	20	
Xylenes, total	1482	20.0	ug/L	1510	ND	98.0	75-123	7.45	20	
Styrene	482.3	10.0	ug/L	504	ND	95.7	70-120	7.06	23	
Bromoform	478.1	10.0	ug/L	502	ND	95.2	70-124	4.16	22	
1,2,3-Trichloropropane	510.4	10.0	ug/L	504	ND	101	62-135	6.58	28	
trans-1,4-Dichloro-2-butene	848.8	50.0	ug/L	1000	ND	84.7	50-120	9.09	26	
1,1,2,2-Tetrachloroethane	509.3	10.0	ug/L	502	ND	101	63-126	8.64	24	
1,4-Dichlorobenzene	476.7	10.0	ug/L	502	ND	95.0	72-119	7.12	24	
1,2-Dichlorobenzene	458.2	10.0	ug/L	502	ND	91.3	71-117	7.13	24	
1,2-Dibromo-3-chloropropane	496.5	50.0	ug/L	505	ND	98.4	49-134	7.91	28	
Surrogate: Dibromofluoromethane	*498*		ug/L	*502*		*99.3*	*57-134*			
Surrogate: Dibromofluoromethane	*498*		ug/L	*502*		*99.3*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*491*		ug/L	*504*		*97.5*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*491*		ug/L	*504*		*97.5*	*61-142*			
Surrogate: Toluene-d8	*529*		ug/L	*505*		*105*	*86-114*			
Surrogate: Toluene-d8	*529*		ug/L	*505*		*105*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*520*		ug/L	*502*		*104*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*520*		ug/L	*502*		*104*	*80-116*			
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
Blank (1HJ1173-BLK1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 12:48							
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	<10.0	10.0	ug/L							
Methyl Iodide	<1.0	1.0	ug/L							
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
1,1,1-Trichloroethane	<1.0	1.0	ug/L							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
Blank (1HJ1173-BLK1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 12:48							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	*48.1*		ug/L	*50.2*		*95.8*	*57-134*			
Surrogate: Dibromofluoromethane	*48.1*		ug/L	*50.2*		*95.8*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*49.2*		ug/L	*50.4*		*97.6*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*49.2*		ug/L	*50.4*		*97.6*	*61-142*			
Surrogate: Toluene-d8	*48.9*		ug/L	*50.5*		*96.9*	*86-114*			
Surrogate: Toluene-d8	*48.9*		ug/L	*50.5*		*96.9*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*48.5*		ug/L	*50.2*		*96.7*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*48.5*		ug/L	*50.2*		*96.7*	*80-116*			
LCS (1HJ1173-BS1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 11:40							
Chloromethane	22.05	1.0	ug/L	30.0		73.5	63-155			
Vinyl Chloride	22.82	1.0	ug/L	30.0		76.1	70-154			
Bromomethane	22.95	1.0	ug/L	30.0		76.5	52-176			
Chloroethane	26.55	1.0	ug/L	30.0		88.5	72-148			
Trichlorofluoromethane	25.67	1.0	ug/L	30.0		85.6	70-152			
1,1-Dichloroethylene	44.68	1.0	ug/L	50.0		89.4	70-148			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
LCS (1HJ1173-BS1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 11:40							
Acetone	99.17	10.0	ug/L	101		98.0	43-172			
Methyl Iodide	97.97	1.0	ug/L	102		96.2	69-170			
Carbon Disulfide	68.29	1.0	ug/L	103		66.5	72-162			S
Methylene Chloride	46.61	5.0	ug/L	50.0		93.2	68-142			
Acrylonitrile	87.42	5.0	ug/L	100		87.1	56-135			
trans-1,2-Dichloroethylene	44.81	1.0	ug/L	50.0		89.6	66-148			
1,1-Dichloroethane	44.82	1.0	ug/L	50.0		89.6	66-143			
Vinyl Acetate	97.23	5.0	ug/L	100		97.2	43-153			
cis-1,2-Dichloroethylene	43.79	1.0	ug/L	50.0		87.6	71-149			
2-Butanone (MEK)	88.92	10.0	ug/L	102		87.3	52-159			
Bromochloromethane	42.95	1.0	ug/L	50.0		85.9	69-143			
Chloroform	42.09	1.0	ug/L	50.0		84.2	69-144			
1,1,1-Trichloroethane	45.27	1.0	ug/L	50.0		90.5	62-129			
Carbon Tetrachloride	48.70	1.0	ug/L	50.0		97.4	63-141			
Benzene	44.38	1.0	ug/L	50.0		88.8	71-134			
1,2-Dichloroethane	44.14	1.0	ug/L	50.0		88.3	72-132			
Trichloroethylene	45.42	1.0	ug/L	50.0		90.8	71-135			
1,2-Dichloropropane	45.72	1.0	ug/L	50.0		91.4	69-136			
Dibromomethane	48.01	1.0	ug/L	50.0		96.0	73-147			
Bromodichloromethane	47.33	1.0	ug/L	50.0		94.7	68-129			
cis-1,3-Dichloropropene	44.19	1.0	ug/L	50.0		88.4	65-134			
4-Methyl-2-pentanone (MIBK)	99.24	5.0	ug/L	100		99.1	58-147			
Toluene	43.92	1.0	ug/L	50.0		87.8	72-133			
trans-1,3-Dichloropropene	45.70	1.0	ug/L	50.0		91.4	67-130			
1,1,2-Trichloroethane	46.39	1.0	ug/L	50.0		92.8	69-135			
Tetrachloroethylene	46.73	1.0	ug/L	50.0		93.5	69-130			
2-Hexanone (MBK)	101.3	5.0	ug/L	99.3		102	55-144			
Dibromochloromethane	47.83	1.0	ug/L	50.0		95.7	73-127			
1,2-Dibromoethane	46.60	1.0	ug/L	50.0		93.2	67-132			
Chlorobenzene	44.61	1.0	ug/L	50.0		89.2	72-123			
1,1,1,2-Tetrachloroethane	47.25	1.0	ug/L	50.0		94.5	73-127			
Ethylbenzene	46.50	1.0	ug/L	50.0		93.0	71-127			
Xylenes, total	141.1	2.0	ug/L	150		94.1	74-127			
Styrene	48.95	1.0	ug/L	50.0		97.9	66-126			
Bromoform	48.29	1.0	ug/L	50.0		96.6	68-130			
1,2,3-Trichloropropane	48.97	1.0	ug/L	50.0		97.9	63-136			
trans-1,4-Dichloro-2-butene	88.67	5.0	ug/L	103		86.3	54-134			
1,1,2,2-Tetrachloroethane	47.83	1.0	ug/L	50.0		95.7	61-131			
1,4-Dichlorobenzene	44.21	1.0	ug/L	50.0		88.4	70-129			
1,2-Dichlorobenzene	46.15	1.0	ug/L	50.0		92.3	69-126			
1,2-Dibromo-3-chloropropane	49.94	5.0	ug/L	50.0		99.9	50-143			
Surrogate: Dibromofluoromethane	*47.7*		ug/L	*50.2*		*95.1*	*57-134*			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
LCS (1HJ1173-BS1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 11:40							
Surrogate: Dibromofluoromethane	*47.7*		ug/L	*50.2*		*95.1*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*47.6*		ug/L	*50.4*		*94.4*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*47.6*		ug/L	*50.4*		*94.4*	*61-142*			
Surrogate: Toluene-d8	*50.0*		ug/L	*50.5*		*99.0*	*86-114*			
Surrogate: Toluene-d8	*50.0*		ug/L	*50.5*		*99.0*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.6*		ug/L	*50.2*		*101*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*50.6*		ug/L	*50.2*		*101*	*80-116*			
LCS Dup (1HJ1173-BSD1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 12:03							
Chloromethane	21.14	1.0	ug/L	30.0		70.5	63-155	4.21	24	
Vinyl Chloride	22.06	1.0	ug/L	30.0		73.5	70-154	3.39	25	
Bromomethane	22.43	1.0	ug/L	30.0		74.8	52-176	2.29	27	
Chloroethane	25.81	1.0	ug/L	30.0		86.0	72-148	2.83	25	
Trichlorofluoromethane	24.45	1.0	ug/L	30.0		81.5	70-152	4.87	26	
1,1-Dichloroethylene	43.34	1.0	ug/L	50.0		86.7	70-148	3.04	24	
Acetone	94.71	10.0	ug/L	101		93.6	43-172	4.60	30	
Methyl Iodide	94.99	1.0	ug/L	102		93.2	69-170	3.09	30	
Carbon Disulfide	65.46	1.0	ug/L	103		63.7	72-162	4.23	24	S
Methylene Chloride	46.51	5.0	ug/L	50.0		93.0	68-142	0.215	21	
Acrylonitrile	89.07	5.0	ug/L	100		88.7	56-135	1.87	16	
trans-1,2-Dichloroethylene	43.30	1.0	ug/L	50.0		86.6	66-148	3.43	27	
1,1-Dichloroethane	43.64	1.0	ug/L	50.0		87.3	66-143	2.67	24	
Vinyl Acetate	96.62	5.0	ug/L	100		96.6	43-153	0.629	30	
cis-1,2-Dichloroethylene	43.29	1.0	ug/L	50.0		86.6	71-149	1.15	26	
2-Butanone (MEK)	92.96	10.0	ug/L	102		91.3	52-159	4.44	27	
Bromochloromethane	42.53	1.0	ug/L	50.0		85.1	69-143	0.983	23	
Chloroform	41.17	1.0	ug/L	50.0		82.3	69-144	2.21	23	
1,1,1-Trichloroethane	43.58	1.0	ug/L	50.0		87.2	62-129	3.80	24	
Carbon Tetrachloride	47.31	1.0	ug/L	50.0		94.6	63-141	2.90	25	
Benzene	43.22	1.0	ug/L	50.0		86.4	71-134	2.65	24	
1,2-Dichloroethane	44.04	1.0	ug/L	50.0		88.1	72-132	0.227	24	
Trichloroethylene	43.86	1.0	ug/L	50.0		87.7	71-135	3.49	24	
1,2-Dichloropropane	44.76	1.0	ug/L	50.0		89.5	69-136	2.12	24	
Dibromomethane	47.38	1.0	ug/L	50.0		94.8	73-147	1.32	25	
Bromodichloromethane	46.68	1.0	ug/L	50.0		93.4	68-129	1.38	22	
cis-1,3-Dichloropropene	43.68	1.0	ug/L	50.0		87.4	65-134	1.16	23	
4-Methyl-2-pentanone (MIBK)	99.52	5.0	ug/L	100		99.4	58-147	0.282	27	
Toluene	42.62	1.0	ug/L	50.0		85.2	72-133	3.00	24	
trans-1,3-Dichloropropene	45.40	1.0	ug/L	50.0		90.8	67-130	0.659	24	
1,1,2-Trichloroethane	46.49	1.0	ug/L	50.0		93.0	69-135	0.215	23	
Tetrachloroethylene	45.40	1.0	ug/L	50.0		90.8	69-130	2.89	25	
2-Hexanone (MBK)	102.1	5.0	ug/L	99.3		103	55-144	0.777	25	
Dibromochloromethane	47.86	1.0	ug/L	50.0		95.7	73-127	0.0627	22	
1,2-Dibromoethane	46.42	1.0	ug/L	50.0		92.8	67-132	0.387	24	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
LCS Dup (1HJ1173-BSD1)			Prepared: 10/17/24 00:00 Analyzed: 10/17/24 12:03							
Chlorobenzene	43.99	1.0	ug/L	50.0		88.0	72-123	1.40	23	
1,1,1,2-Tetrachloroethane	46.73	1.0	ug/L	50.0		93.5	73-127	1.11	24	
Ethylbenzene	45.22	1.0	ug/L	50.0		90.4	71-127	2.79	26	
Xylenes, total	137.9	2.0	ug/L	150		91.9	74-127	2.28	25	
Styrene	48.08	1.0	ug/L	50.0		96.2	66-126	1.79	23	
Bromoform	48.21	1.0	ug/L	50.0		96.4	68-130	0.166	23	
1,2,3-Trichloropropane	48.37	1.0	ug/L	50.0		96.7	63-136	1.23	24	
trans-1,4-Dichloro-2-butene	88.14	5.0	ug/L	103		85.7	54-134	0.600	27	
1,1,2,2-Tetrachloroethane	47.36	1.0	ug/L	50.0		94.7	61-131	0.988	29	
1,4-Dichlorobenzene	43.54	1.0	ug/L	50.0		87.1	70-129	1.53	24	
1,2-Dichlorobenzene	45.78	1.0	ug/L	50.0		91.6	69-126	0.805	26	
1,2-Dibromo-3-chloropropane	49.82	5.0	ug/L	50.0		99.6	50-143	0.241	30	
Surrogate: Dibromofluoromethane	*47.7*		ug/L	*50.2*		*94.9*	*57-134*			
Surrogate: Dibromofluoromethane	*47.7*		ug/L	*50.2*		*94.9*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.4*		*94.7*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.4*		*94.7*	*61-142*			
Surrogate: Toluene-d8	*49.7*		ug/L	*50.5*		*98.5*	*86-114*			
Surrogate: Toluene-d8	*49.7*		ug/L	*50.5*		*98.5*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.2*		ug/L	*50.2*		*100*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*50.2*		ug/L	*50.2*		*100*	*80-116*			
Matrix Spike (1HJ1173-MS1)	**Source: 1HJ1076-02**		Prepared: 10/17/24 00:00 Analyzed: 10/18/24 00:47							
Chloromethane	214.8	10.0	ug/L	300	ND	71.6	61-152			
Vinyl Chloride	225.4	10.0	ug/L	300	ND	75.1	66-149			
Bromomethane	211.0	10.0	ug/L	300	ND	70.3	43-171			
Chloroethane	266.5	10.0	ug/L	300	ND	88.8	69-148			
Trichlorofluoromethane	251.4	10.0	ug/L	300	ND	83.8	62-163			
1,1-Dichloroethylene	448.8	10.0	ug/L	500	ND	89.8	70-148			
Acetone	928.5	100	ug/L	1010	ND	91.7	45-173			
Methyl Iodide	929.4	10.0	ug/L	1020	ND	91.2	62-167			
Carbon Disulfide	690.5	10.0	ug/L	1030	ND	67.2	71-163			S
Methylene Chloride	504.5	50.0	ug/L	500	ND	101	69-140			
Acrylonitrile	898.4	50.0	ug/L	1000	ND	89.5	38-147			
trans-1,2-Dichloroethylene	450.0	10.0	ug/L	500	ND	90.0	69-144			
1,1-Dichloroethane	444.9	10.0	ug/L	500	ND	89.0	70-138			
Vinyl Acetate	969.3	50.0	ug/L	1000	ND	96.9	58-142			
cis-1,2-Dichloroethylene	434.2	10.0	ug/L	500	ND	86.8	68-151			
2-Butanone (MEK)	862.1	100	ug/L	1020	ND	84.7	50-160			
Bromochloromethane	428.4	10.0	ug/L	500	ND	85.7	65-143			
Chloroform	427.1	10.0	ug/L	500	ND	85.4	71-143			
1,1,1-Trichloroethane	454.7	10.0	ug/L	500	ND	90.9	63-133			
Carbon Tetrachloride	430.2	10.0	ug/L	500	ND	86.0	63-142			
Benzene	439.6	10.0	ug/L	500	ND	87.9	69-133			
1,2-Dichloroethane	441.0	10.0	ug/L	500	ND	88.2	63-138			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
Matrix Spike (1HJ1173-MS1)	**Source: 1HJ1076-02**	Prepared: 10/17/24 00:00 Analyzed: 10/18/24 00:47								
Trichloroethylene	450.1	10.0	ug/L	500	ND	90.0	71-133			
1,2-Dichloropropane	453.2	10.0	ug/L	500	ND	90.6	69-132			
Dibromomethane	476.6	10.0	ug/L	500	ND	95.3	70-147			
Bromodichloromethane	456.5	10.0	ug/L	500	ND	91.3	67-130			
cis-1,3-Dichloropropene	408.8	10.0	ug/L	500	ND	81.8	61-126			
4-Methyl-2-pentanone (MIBK)	967.8	50.0	ug/L	1000	ND	96.7	55-147			
Toluene	434.6	10.0	ug/L	500	ND	86.9	71-133			
trans-1,3-Dichloropropene	432.0	10.0	ug/L	500	ND	86.4	63-124			
1,1,2-Trichloroethane	454.0	10.0	ug/L	500	ND	90.8	69-133			
Tetrachloroethylene	461.5	10.0	ug/L	500	ND	92.3	70-124			
2-Hexanone (MBK)	988.9	50.0	ug/L	993	ND	99.6	53-141			
Dibromochloromethane	464.9	10.0	ug/L	500	ND	93.0	74-122			
1,2-Dibromoethane	458.5	10.0	ug/L	500	ND	91.7	66-127			
Chlorobenzene	443.1	10.0	ug/L	500	ND	88.6	76-116			
1,1,1,2-Tetrachloroethane	464.2	10.0	ug/L	500	ND	92.8	77-121			
Ethylbenzene	460.8	10.0	ug/L	500	ND	92.2	73-124			
Xylenes, total	1393	20.0	ug/L	1500	ND	92.9	75-123			
Styrene	481.2	10.0	ug/L	500	ND	96.2	70-120			
Bromoform	462.5	10.0	ug/L	500	ND	92.5	70-124			
1,2,3-Trichloropropane	483.3	10.0	ug/L	500	ND	96.7	62-135			
trans-1,4-Dichloro-2-butene	811.4	50.0	ug/L	1030	ND	78.9	50-120			
1,1,2,2-Tetrachloroethane	458.5	10.0	ug/L	500	ND	91.7	63-126			
1,4-Dichlorobenzene	429.8	10.0	ug/L	500	ND	86.0	72-119			
1,2-Dichlorobenzene	454.2	10.0	ug/L	500	ND	90.8	71-117			
1,2-Dibromo-3-chloropropane	496.9	50.0	ug/L	500	ND	99.4	49-134			
Surrogate: Dibromofluoromethane	*480*		ug/L	*502*		*95.5*	*57-134*			
Surrogate: Dibromofluoromethane	*480*		ug/L	*502*		*95.5*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*487*		ug/L	*504*		*96.7*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*487*		ug/L	*504*		*96.7*	*61-142*			
Surrogate: Toluene-d8	*500*		ug/L	*505*		*99.1*	*86-114*			
Surrogate: Toluene-d8	*500*		ug/L	*505*		*99.1*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*504*		ug/L	*502*		*100*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*504*		ug/L	*502*		*100*	*80-116*			
Matrix Spike Dup (1HJ1173-MSD1)	**Source: 1HJ1076-02**	Prepared: 10/17/24 00:00 Analyzed: 10/18/24 01:10								
Chloromethane	206.8	10.0	ug/L	300	ND	68.9	61-152	3.80	26	
Vinyl Chloride	216.9	10.0	ug/L	300	ND	72.3	66-149	3.84	23	
Bromomethane	213.1	10.0	ug/L	300	ND	71.0	43-171	0.990	29	
Chloroethane	256.4	10.0	ug/L	300	ND	85.5	69-148	3.86	25	
Trichlorofluoromethane	238.6	10.0	ug/L	300	ND	79.5	62-163	5.22	25	
1,1-Dichloroethylene	428.7	10.0	ug/L	500	ND	85.7	70-148	4.58	22	
Acetone	908.7	100	ug/L	1010	ND	89.8	45-173	2.16	30	
Methyl Iodide	915.7	10.0	ug/L	1020	ND	89.9	62-167	1.49	24	
Carbon Disulfide	654.1	10.0	ug/L	1030	ND	63.7	71-163	5.41	22	S

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1HJ1173-MSD1)	**Source: 1HJ1076-02**	Prepared: 10/17/24 00:00 Analyzed: 10/18/24 01:10								
Methylene Chloride	493.3	50.0	ug/L	500	ND	98.7	69-140	2.24	19	
Acrylonitrile	851.3	50.0	ug/L	1000	ND	84.8	38-147	5.38	30	
trans-1,2-Dichloroethylene	428.8	10.0	ug/L	500	ND	85.8	69-144	4.82	22	
1,1-Dichloroethane	430.5	10.0	ug/L	500	ND	86.1	70-138	3.29	20	
Vinyl Acetate	968.3	50.0	ug/L	1000	ND	96.8	58-142	0.103	24	
cis-1,2-Dichloroethylene	419.9	10.0	ug/L	500	ND	84.0	68-151	3.35	22	
2-Butanone (MEK)	846.5	100	ug/L	1020	ND	83.2	50-160	1.83	23	
Bromochloromethane	417.2	10.0	ug/L	500	ND	83.4	65-143	2.65	22	
Chloroform	415.0	10.0	ug/L	500	ND	83.0	71-143	2.87	21	
1,1,1-Trichloroethane	434.7	10.0	ug/L	500	ND	86.9	63-133	4.50	23	
Carbon Tetrachloride	427.3	10.0	ug/L	500	ND	85.5	63-142	0.676	22	
Benzene	424.9	10.0	ug/L	500	ND	85.0	69-133	3.40	18	
1,2-Dichloroethane	430.5	10.0	ug/L	500	ND	86.1	63-138	2.41	20	
Trichloroethylene	431.7	10.0	ug/L	500	ND	86.3	71-133	4.17	23	
1,2-Dichloropropane	441.2	10.0	ug/L	500	ND	88.2	69-132	2.68	20	
Dibromomethane	465.9	10.0	ug/L	500	ND	93.2	70-147	2.27	22	
Bromodichloromethane	450.6	10.0	ug/L	500	ND	90.1	67-130	1.30	21	
cis-1,3-Dichloropropene	406.1	10.0	ug/L	500	ND	81.2	61-126	0.663	21	
4-Methyl-2-pentanone (MIBK)	963.8	50.0	ug/L	1000	ND	96.3	55-147	0.414	23	
Toluene	420.6	10.0	ug/L	500	ND	84.1	71-133	3.27	19	
trans-1,3-Dichloropropene	428.2	10.0	ug/L	500	ND	85.6	63-124	0.884	21	
1,1,2-Trichloroethane	458.4	10.0	ug/L	500	ND	91.7	69-133	0.964	19	
Tetrachloroethylene	447.5	10.0	ug/L	500	ND	89.5	70-124	3.08	24	
2-Hexanone (MBK)	990.3	50.0	ug/L	993	ND	99.7	53-141	0.141	24	
Dibromochloromethane	469.3	10.0	ug/L	500	ND	93.9	74-122	0.942	21	
1,2-Dibromoethane	458.2	10.0	ug/L	500	ND	91.6	66-127	0.0654	23	
Chlorobenzene	432.3	10.0	ug/L	500	ND	86.5	76-116	2.47	21	
1,1,1,2-Tetrachloroethane	455.8	10.0	ug/L	500	ND	91.2	77-121	1.83	25	
Ethylbenzene	445.6	10.0	ug/L	500	ND	89.1	73-124	3.35	20	
Xylenes, total	1355	20.0	ug/L	1500	ND	90.3	75-123	2.75	20	
Styrene	469.9	10.0	ug/L	500	ND	94.0	70-120	2.38	23	
Bromoform	474.2	10.0	ug/L	500	ND	94.8	70-124	2.50	22	
1,2,3-Trichloropropane	478.5	10.0	ug/L	500	ND	95.7	62-135	0.998	28	
trans-1,4-Dichloro-2-butene	813.0	50.0	ug/L	1030	ND	79.1	50-120	0.197	26	
1,1,2,2-Tetrachloroethane	460.1	10.0	ug/L	500	ND	92.0	63-126	0.348	24	
1,4-Dichlorobenzene	425.2	10.0	ug/L	500	ND	85.0	72-119	1.08	24	
1,2-Dichlorobenzene	446.3	10.0	ug/L	500	ND	89.3	71-117	1.75	24	
1,2-Dibromo-3-chloropropane	484.7	50.0	ug/L	500	ND	96.9	49-134	2.49	28	
Surrogate: Dibromofluoromethane	*482*		ug/L	*502*		*96.0*	*57-134*			
Surrogate: Dibromofluoromethane	*482*		ug/L	*502*		*96.0*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*481*		ug/L	*504*		*95.5*	*53-140*			
Surrogate: 1,2-Dichloroethane-d4	*481*		ug/L	*504*		*95.5*	*61-142*			
Surrogate: Toluene-d8	*498*		ug/L	*505*		*98.6*	*86-114*			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1173 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1HJ1173-MSD1)	**Source: 1HJ1076-02**	Prepared: 10/17/24 00:00 Analyzed: 10/18/24 01:10								
Surrogate: Toluene-d8	*498*		ug/L	*505*		*98.6*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*499*		ug/L	*502*		*99.5*	*78-121*			
Surrogate: 4-Bromofluorobenzene	*499*		ug/L	*502*		*99.5*	*80-116*			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0766 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1HJ0766-BLK1)		Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:22								
Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0040	0.0040	mg/L							
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							
Zinc, total	<0.0200	0.0200	mg/L							
LCS (1HJ0766-BS1)		Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:28								
Antimony, total	0.0968	0.0020	mg/L	0.100		96.8	80-120			
Arsenic, total	0.0953	0.0040	mg/L	0.100		95.3	80-120			
Barium, total	0.106	0.0040	mg/L	0.100		106	80-120			
Beryllium, total	0.101	0.0040	mg/L	0.100		101	80-120			
Cadmium, total	0.0958	0.0008	mg/L	0.100		95.8	80-120			
Chromium, total	0.0962	0.0080	mg/L	0.100		96.2	80-120			
Cobalt, total	0.0975	0.0004	mg/L	0.100		97.5	80-120			
Copper, total	0.0981	0.0040	mg/L	0.100		98.1	80-120			
Lead, total	0.0963	0.0040	mg/L	0.100		96.3	80-120			
Nickel, total	0.0984	0.0040	mg/L	0.100		98.4	80-120			
Selenium, total	0.0942	0.0040	mg/L	0.100		94.2	80-120			
Silver, total	0.0994	0.0040	mg/L	0.100		99.4	80-120			
Thallium, total	0.0860	0.0020	mg/L	0.100		86.0	80-120			
Vanadium, total	0.0965	0.0200	mg/L	0.100		96.5	80-120			
Zinc, total	0.0952	0.0200	mg/L	0.100		95.2	80-120			
Matrix Spike (1HJ0766-MS1)	**Source: 1HJ1038-01**	Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:40								
Antimony, total	0.0976	0.0020	mg/L	0.100	ND	97.6	75-125			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0766 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike (1HJ0766-MS1)	**Source: 1HJ1038-01**	Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:40								
Arsenic, total	0.0994	0.0040	mg/L	0.100	ND	99.4	75-125			
Barium, total	0.357	0.0040	mg/L	0.100	0.253	105	75-125			
Beryllium, total	0.104	0.0040	mg/L	0.100	ND	104	75-125			
Cadmium, total	0.0937	0.0008	mg/L	0.100	0.0001	93.5	75-125			
Chromium, total	0.0953	0.0080	mg/L	0.100	0.0008	94.5	75-125			
Cobalt, total	0.0990	0.0004	mg/L	0.100	ND	99.0	75-125			
Copper, total	0.0951	0.0040	mg/L	0.100	0.0015	93.6	75-125			
Lead, total	0.0953	0.0040	mg/L	0.100	ND	95.3	75-125			
Nickel, total	0.0975	0.0040	mg/L	0.100	ND	97.5	75-125			
Selenium, total	0.0966	0.0040	mg/L	0.100	ND	96.6	75-125			
Silver, total	0.0981	0.0040	mg/L	0.100	ND	98.1	75-125			
Thallium, total	0.0878	0.0020	mg/L	0.100	0.0003	87.5	75-125			
Vanadium, total	0.100	0.0200	mg/L	0.100	ND	100	75-125			
Zinc, total	0.0972	0.0200	mg/L	0.100	ND	97.2	75-125			
Matrix Spike Dup (1HJ0766-MSD1)	**Source: 1HJ1038-01**	Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:47								
Antimony, total	0.0955	0.0020	mg/L	0.100	ND	95.5	75-125	2.17	20	
Arsenic, total	0.0959	0.0040	mg/L	0.100	ND	95.9	75-125	3.64	20	
Barium, total	0.357	0.0040	mg/L	0.100	0.253	105	75-125	0.0571	20	
Beryllium, total	0.100	0.0040	mg/L	0.100	ND	100	75-125	3.36	20	
Cadmium, total	0.0929	0.0008	mg/L	0.100	0.0001	92.8	75-125	0.789	20	
Chromium, total	0.0927	0.0080	mg/L	0.100	0.0008	91.9	75-125	2.73	20	
Cobalt, total	0.0985	0.0004	mg/L	0.100	ND	98.5	75-125	0.465	20	
Copper, total	0.0917	0.0040	mg/L	0.100	0.0015	90.2	75-125	3.63	20	
Lead, total	0.0934	0.0040	mg/L	0.100	ND	93.4	75-125	2.01	20	
Nickel, total	0.0959	0.0040	mg/L	0.100	ND	95.9	75-125	1.67	20	
Selenium, total	0.0878	0.0040	mg/L	0.100	ND	87.8	75-125	9.53	20	
Silver, total	0.0952	0.0040	mg/L	0.100	ND	95.2	75-125	2.95	20	
Thallium, total	0.0860	0.0020	mg/L	0.100	0.0003	85.7	75-125	2.07	20	
Vanadium, total	0.0993	0.0200	mg/L	0.100	ND	99.3	75-125	1.12	20	
Zinc, total	0.0949	0.0200	mg/L	0.100	ND	94.9	75-125	2.45	20	
Post Spike (1HJ0766-PS1)	**Source: 1HJ1038-01**	Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:53								
Antimony, total	0.0785		mg/L	0.0800	0.0002	97.9	80-120			
Arsenic, total	0.0810		mg/L	0.0800	0.0008	100	80-120			
Barium, total	0.341		mg/L	0.0800	0.247	117	80-120			
Beryllium, total	0.0836		mg/L	0.0800	-0.000007	104	80-120			
Cadmium, total	0.0770		mg/L	0.0800	0.0001	96.1	80-120			
Chromium, total	0.0783		mg/L	0.0800	0.0008	96.9	80-120			
Cobalt, total	0.0839		mg/L	0.0800	0.00004	105	80-120			
Copper, total	0.0795		mg/L	0.0800	0.0015	97.5	80-120			
Lead, total	0.0795		mg/L	0.0800	0.000004	99.4	80-120			
Nickel, total	0.0823		mg/L	0.0800	0.0008	102	80-120			
Selenium, total	0.0759		mg/L	0.0800	-0.0001	94.9	80-120			
Silver, total	0.0818		mg/L	0.0800	0.00009	102	80-120			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ0766 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Post Spike (1HJ0766-PS1)	**Source: 1HJ1038-01**	Prepared: 10/14/24 07:57 Analyzed: 10/14/24 18:53								
Thallium, total	0.0727		mg/L	0.0800	0.0003	90.5	80-120			
Vanadium, total	0.0861		mg/L	0.0800	0.0028	104	80-120			
Zinc, total	0.0816		mg/L	0.0800	0.0067	93.6	80-120			

Definitions

H:	Sample was analyzed past holding time.
M2:	Matrix spike recovery is below acceptance limits.
R1:	Duplicate RPD is outside acceptance criteria.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S:	Spike recovery outside of acceptance limits.

Cooler Receipt Log

Cooler ID: Default Cooler   Temp: 0.0°C

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

Heather Murphy

Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
10/28/24 15:51

CHAIN OF CUST

MICROBAC®

600 East 17th Street Sout
Newton, IA 50208
641-792-8451

1HJ1076
HLW Engineering
PM: Heather Murphy

Page 1 of
nted: 9/30/2024 2:56:03P
www.keystonelabs.com

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jackson Co. Landfill-New Regs
6040

REPORT TO

Todd Whipple
HLW Engineering
204 West Broad St
Story City, IA 50248

INVOICE TO

Frank Frieberg
Waste Authority of Jackson County
201 W Platt St
Maquoketa, IA 52060

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order: 1HJ1076
Temperature: 0.0
Turn-Cooler: No

☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
-001	MW-10	Aqueous	GRAB	10/8/24	12:26	1	lndfll-app1-metals-6020		01
-001	MW-11	Aqueous	GRAB	10/8/24	13:03	7	lndfll-app1-voc-group	lndfll-app1-metals-6020	02
-001	MW-12	Aqueous	GRAB	10/8/24	12:52	7	lndfll-app1-voc-group	lndfll-app1-metals-6020	03
-001	MW-13	Aqueous	GRAB	10/8/24	13:22	1	lndfll-app1-metals-6020		04
-001	MW-14	Aqueous	GRAB	10/8/24	13:40	1	lndfll-app1-metals-6020		05
-001	MW-15	Aqueous	GRAB	10/8/24	13:47	1	lndfll-app1-metals-6020		06
-001	MW-17	Aqueous	GRAB	10/8/24	11:55	7	lndfll-app1-voc-group	lndfll-app1-metals-6020	07

Relinquished By: Todd Whipple Date/Time: 10/9/24

Received By Date/Time

Relinquished By Date/Time

Received for Lab By: [signature] Date/Time: 10/9/2024 10:10 Am

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF CUSTODY RECO[RD]

MICROBAC®

600 East 17th Street Sout[h]
Newton, IA 50208
641-792-8451

1HJ1076
HLW Engineering
PM: Heather Murphy

[Pri]nted: 9/30/2024 2:56:03P
www.keystonelabs.com

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jackson Co. Landfill-New Regs
6040

REPORT TO

Todd Whipple
HLW Engineering
204 West Broad St
Story City, IA 50248

INVOICE TO

Frank Frieberg
Waste Authority of Jackson County
201 W Platt St
Maquoketa, IA 52060

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order: 1HJ1076
Temperature: 0.0
Turn-Cooler: No

☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
-001	MW-19 DRY	Aqueous	GRAB	10/8/24	—	0	lndfill-app1-voc-group	lndfll-app1-metals-6020	—
-001	MW-20 DRY	Aqueous	GRAB	10/8/24	—	0	lndfill-app1-voc-group	lndfll-app1-metals-6020	—
-001	Field Duplicate	Aqueous	GRAB	10/8/24	✓	1	~~lndfill-app1-voc-group~~	lndfll-app1-metals-6020	08

Relinquished By	Date/Time	Relinquished By	Date/Time
Todd Whipple	10/9/24		
Received By	**Date/Time**	**Received for Lab By**	**Date/Time**
		[signature]	10/9/2024 10:10 AM

Remarks:

Original - Lab Copy Yellow - Sampler Copy

ATTACHMENT B

Field Sampling Forms

JACKSON COUNTY SANITARY LANDFILL
PERMIT # 49-SDP-01-74

4/8/2024 Sampled by: T. Whipple Weather conditions: Sunny, windy 65 degrees

IDNR Form 542-1322

Monitoring Well: MW 11 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	899.8
Well Depth	132.67
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	899.8
Well Depth	132.67
Top Screen	778.00
Bottom Screen	768.00
Bottom Well	767.13
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	120.00
Top sample	779.80
Bottom sample	775.80
Turbidity(NTU)	1.88

Date	Time	Water Level	Water Elevation
4/8/2024	16:50	91.21	808.59

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.88
Appendix I	Metals	250	150		1.88
Appendix I	VOC	120	240		1.88
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	899.8	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	132.67	Before purging	4/8/2024	16:50	91.21	808.59		0.0	No
		After purging				899.80			
		Top of Screen				778.00			
						121.80	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				767.13			
		Bottom of Well	4/8/2024		131.10	768.70			
						1.57	feet sedimentation		
		Before Sampling				899.80			
		Recovery				899.80			
		Recovery				899.80			
		Recovery				899.80			
		Recovery				899.80			
		Recovery				899.80			

IDNR Form 542-1322

Monitoring Well: MW 10 (Ug)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	919.16
Well Depth	114.30
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	919.16
Well Depth	114.30
Top Screen	814.86
Bottom Screen	804.86
Bottom Well	804.86
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	105.00
Top sample	814.16
Bottom sample	810.16
Turbidity(NTU)	3.32

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	17:27	90.91	828.25	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		3.32
Appendix I	Metals	250	250		3.32
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	919.16	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	114.30	Before purging	4/8/2024	17:27	90.91	828.25		0.0	No
		After purging				919.16			
		Top of Screen				814.86			
						104.30	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				804.86			
		Bottom of Well	4/8/2024		114.00	805.16			
						0.30	feet sedimentation		
		Before Sampling				919.16			
		Recovery				919.16			
		Recovery				919.16			
		Recovery				919.16			
		Recovery				919.16			
		Recovery				919.16			

IDNR Form 542-1322

Monitoring Well: MW 12(dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	898.17
Well Depth	109.90
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	898.17
Well Depth	109.90
Top Screen	793.27
Bottom Screen	788.27
Bottom Well	788.27
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	104.00
Top sample	794.17
Bottom sample	790.17
Turbidity(NTU)	7.97

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	17:00	91.4	806.77	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		7.97
Appendix I	Metals	250	250		7.97
Appendix I	VOC	120	120		7.97
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	898.17
Well Depth	109.90

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	17:00	91.4	806.77		0.0	No
After purging				898.17			
Top of Screen				793.27			
				104.90	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				788.27			
Bottom of Well	4/8/2024		110.10	788.07			
				-0.20	feet sedimentation		
Before Sampling				898.17			
Recovery				898.17			
Recovery				898.17			
Recovery				898.17			
Recovery				898.17			
Recovery				898.17			

IDNR Form 542-1322

Monitoring Well: MW 13 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	882.02
Well Depth	47.70
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	882.02
Well Depth	47.70
Top Screen	844.32
Bottom Screen	834.32
Bottom Well	834.32
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	41.00
Top sample	841.02
Bottom sample	837.02
Turbidity(NTU)	3.44

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	18:26	35.41	846.61	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		3.44
Appendix I	Metals	250	250		3.44
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	882.02
Well Depth	47.70

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	18:26	35.41	846.61		0.0	No
After purging				882.02			
Top of Screen				844.32			
				37.70	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				834.32			
Bottom of Well	4/8/2024		47.60	834.42			
				0.10	feet sedimentation		
Before Sampling				882.02			
Recovery				882.02			
Recovery				882.02			
Recovery				882.02			
Recovery				882.02			
Recovery				882.02			

IDNR Form 542-1322

Monitoring Well: MW 14 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	849.16
Well Depth	69.65
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	849.16
Well Depth	69.65
Top Screen	799.51
Bottom Screen	779.51
Bottom Well	779.51
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	64.00
Top sample	785.16
Bottom sample	781.16
Turbidity(NTU)	3.60

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	18:11	42.55	806.61	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		3.60
Appendix I	Metals	250	250		3.60
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	849.16
Well Depth	69.65

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	18:11	42.55	806.61		0.0	No
After purging				849.16			
Top of Screen				799.51			
				49.65	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				779.51			
Bottom of Well	4/8/2024		69.50	779.66			
				0.15	feet sedimentation		
Before Sampling				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			

IDNR Form 542-1322

Primary Sampling Method: No-Purge for Appendix I

Monitoring Well: MW 15 (dg) **Secondary Sampling Method:** Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	849.91
Well Depth	19.75
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	849.91
Well Depth	19.75
Top Screen	840.16
Bottom Screen	830.16
Bottom Well	830.16
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	14.00
Top sample	835.91
Bottom sample	831.91
Turbidity(NTU)	2.63

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	18:17	3.51	846.4	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.63
Appendix I	Metals	250	250		2.63
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	849.91
Well Depth	19.75

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	18:17	3.51	846.40		0.0	No
After purging				849.91			
Top of Screen				840.16			
				9.75	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				830.16			
Bottom of Well	4/8/2024		19.45	830.46			
				0.30	feet sedimentation		
Before Sampling				849.91			
Recovery				849.91			
Recovery				849.91			
Recovery				849.91			
Recovery				849.91			
Recovery				849.91			

IDNR Form 542-1322

Monitoring Well: MW 17 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	879.05
Well Depth	45.15
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	879.05
Well Depth	45.15
Top Screen	843.90
Bottom Screen	833.90
Bottom Well	833.90
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	39.00
Top sample	840.05
Bottom sample	836.05
Turbidity(NTU)	2.28

Date	Time	Water Level	Water Elevation	Notes
4/8/2024	17:57	30.19	848.86	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.28
Appendix I	Metals	250	250		2.28
Appendix I	VOC	120	120		2.28
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	879.05
Well Depth	45.15

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	17:57	30.19	848.86		0.0	No
After purging				879.05			
Top of Screen				843.90			
				35.15	feet above (+) or below (-) top screen		
Bottom of Well _ Record Info				833.90			
Bottom of Well	4/8/2024		44.7	834.35			
				0.45	feet sedimentation		
Before Sampling				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			

IDNR Form 542-1322

Monitoring Well: MW 19 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	896.4
Well Depth	79.42
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	896.4
Well Depth	79.42
Top Screen	826.98
Bottom Screen	816.98
Bottom Well	816.98
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	896.40
Bottom sample	892.40
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
4/8/2024		80.1	816.3	No sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		0.00
Appendix I	Metals	250	250		0.00
Appendix I	VOC	120	120		0.00
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	896.4
Well Depth	79.42

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/8/2024	0:00	80.1	816.30		0.0	
After purging				896.40			
Top of Screen				826.98			
				69.42	feet above (+) or below (-) top screen		
Bottom of Well -Record Info				816.98			
Bottom of Well	4/8/2024		80.1	816.30			
				-0.68	feet sedimentation		
Before Sampling				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			

IDNR Form 542-1322

Monitoring Well: MW 20 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	881.86
Well Depth	79.47
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	881.86	
Well Depth	79.47	
Top Screen	812.39	
Bottom Screen	802.39	
Bottom Well	802.39	
Sampler Length (ft)	4.00	
Sampler Volume (mL)	440.00	
Feet cordage		
Top sample	881.86	
Bottom sample	877.86	
Turbidity(NTU)		No Sample

Date	Time	Water Level	Water Elevation	Notes
4/8/2024		79.65	802.21	No sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10			0.00
Appendix I	Metals	250			0.00
Appendix I	VOC	120			0.00
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			0	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	881.86	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	79.47	Before purging	4/8/2024	0:00	79.65	802.21		0.0	
		After purging				881.86			
		Top of Screen				812.39			
						69.47	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				802.39			
		Bottom of Well	4/8/2024		79.65	802.21			
						-0.18	feet sedimentation		
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			

JACKSON COUNTY SANITARY LANDFILL
PERMIT # 49-SDP-01-74

10/8/2024 Sampled by: T. Whipple Weather conditions: Sunny, breezy 70-75 degrees

IDNR Form 542-1322

Monitoring Well: MW 11 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	899.8
Well Depth	132.67
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	899.8
Well Depth	132.67
Top Screen	778.00
Bottom Screen	768.00
Bottom Well	767.13
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	120.00
Top sample	779.80
Bottom sample	775.80
Turbidity(NTU)	2.29

Date	Time	Water Level	Water Elevation
10/8/2024	13:03	89.35	810.45

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.29
Appendix I	Metals	250	150		2.29
Appendix I	VOC	120	240		2.29
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	899.8
Well Depth	132.67

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/8/2024	13:03	89.35	810.45		0.0	No
After purging				899.80			
Top of Screen				778.00			
				121.80	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				767.13			
Bottom of Well	10/8/2024		131.10	768.70			
				1.57	feet sedimentation		
Before Sampling				899.80			
Recovery				899.80			
Recovery				899.80			
Recovery				899.80			
Recovery				899.80			
Recovery				899.80			

IDNR Form 542-1322

Monitoring Well: MW 10 (Ug)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	919.16
Well Depth	114.30
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	919.16
Well Depth	114.30
Top Screen	814.86
Bottom Screen	804.86
Bottom Well	804.86
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	105.00
Top sample	814.16
Bottom sample	810.16
Turbidity(NTU)	2.06

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	12:26	88.3	830.86	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.06
Appendix I	Metals	250	250		2.06
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	919.16
Well Depth	114.30

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/8/2024	12:26	88.3	830.86		0.0	No
After purging				919.16			
Top of Screen				814.86			
				104.30	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				804.86			
Bottom of Well	10/8/2024		114.00	805.16			
				0.30	feet sedimentation		
Before Sampling				919.16			
Recovery				919.16			
Recovery				919.16			
Recovery				919.16			
Recovery				919.16			
Recovery				919.16			

IDNR Form 542-1322

Monitoring Well: MW 12(dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	898.17
Well Depth	109.90
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	898.17
Well Depth	109.90
Top Screen	793.27
Bottom Screen	788.27
Bottom Well	788.27
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	104.00
Top sample	794.17
Bottom sample	790.17
Turbidity(NTU)	3.69

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	12:52	89.55	808.62	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		3.69
Appendix I	Metals	250	250		3.69
Appendix I	VOC	120	120		3.69
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	898.17	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	109.90	Before purging	10/8/2024	12:52	89.55	808.62		0.0	No
		After purging				898.17			
		Top of Screen				793.27			
						104.90	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				788.27			
		Bottom of Well	10/8/2024		110.10	788.07			
						-0.20	feet sedimentation		
		Before Sampling				898.17			
		Recovery				898.17			
		Recovery				898.17			
		Recovery				898.17			
		Recovery				898.17			
		Recovery				898.17			

IDNR Form 542-1322

Monitoring Well: MW 13 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	882.02
Well Depth	47.70
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	882.02
Well Depth	47.70
Top Screen	844.32
Bottom Screen	834.32
Bottom Well	834.32
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	42.00
Top sample	840.02
Bottom sample	836.02
Turbidity(NTU)	2.82

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	13:22	34.68	847.34	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.82
Appendix I	Metals	250	250		2.82
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

		2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
TOC	882.02								
Well Depth	47.70	Before purging	10/8/2024	13:22	34.68	847.34		0.0	No
		After purging				882.02			
		Top of Screen				844.32			
						37.70	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				834.32			
		Bottom of Well	10/8/2024		47.60	834.42			
						0.10	feet sedimentation		
		Before Sampling				882.02			
		Recovery				882.02			
		Recovery				882.02			
		Recovery				882.02			
		Recovery				882.02			
		Recovery				882.02			

IDNR Form 542-1322

Monitoring Well: MW 14 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	849.16
Well Depth	69.65
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	849.16
Well Depth	69.65
Top Screen	799.51
Bottom Screen	779.51
Bottom Well	779.51
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	62.00
Top sample	787.16
Bottom sample	783.16
Turbidity(NTU)	19.33

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	13:40	39.75	809.41	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		19.33
Appendix I	Metals	250	250		19.33
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	849.16
Well Depth	69.65

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/8/2024	13:40	39.75	809.41		0.0	No
After purging				849.16			
Top of Screen				799.51			
				49.65	feet above (+) or below (-) top screen		
Bottom of Well - Record Info				779.51			
Bottom of Well	10/8/2024		69.50	779.66			
				0.15	feet sedimentation		
Before Sampling				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			
Recovery				849.16			

IDNR Form 542-1322

Monitoring Well: MW 15 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	849.91
Well Depth	19.75
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	849.91
Well Depth	19.75
Top Screen	840.16
Bottom Screen	830.16
Bottom Well	830.16
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	14.00
Top sample	835.91
Bottom sample	831.91
Turbidity(NTU)	7.41

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	13:47	11.04	838.87	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		7.41
Appendix I	Metals	250	250		7.41
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

		2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
TOC	849.91								
Well Depth	19.75	Before purging	10/8/2024	13:47	11.04	838.87		0.0	No
		After purging				849.91			
		Top of Screen				840.16			
						9.75	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				830.16			
		Bottom of Well	10/8/2024		19.45	830.46			
						0.30	feet sedimentation		
		Before Sampling				849.91			
		Recovery				849.91			
		Recovery				849.91			
		Recovery				849.91			
		Recovery				849.91			
		Recovery				849.91			

IDNR Form 542-1322

Monitoring Well: MW 17 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	879.05
Well Depth	45.15
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	879.05
Well Depth	45.15
Top Screen	843.90
Bottom Screen	833.90
Bottom Well	833.90
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	39.00
Top sample	840.05
Bottom sample	836.05
Turbidity(NTU)	2.46

Date	Time	Water Level	Water Elevation	Notes
10/8/2024	11:55	29.55	849.5	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.46
Appendix I	Metals	250	250		2.46
Appendix I	VOC	120	120		2.46
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	879.05
Well Depth	45.15

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/8/2024	11:55	29.55	849.50		0.0	No
After purging				879.05			
Top of Screen				843.90			
				35.15	feet above (+) or below (-) top screen		
Bottom of Well _ Record Info				833.90			
Bottom of Well	10/8/2024		44.7	834.35			
				0.45	feet sedimentation		
Before Sampling				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			
Recovery				879.05			

IDNR Form 542-1322

Monitoring Well: MW 19 (dg)

Primary Sampling Method: No-Purge for Appendix I

Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	896.4
Well Depth	79.42
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	896.4
Well Depth	79.42
Top Screen	826.98
Bottom Screen	816.98
Bottom Well	816.98
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	896.40
Bottom sample	892.40
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
10/8/2024		78.2	818.2	No sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		0.00
Appendix I	Metals	250	250		0.00
Appendix I	VOC	120	120		0.00
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			380	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	896.4
Well Depth	79.42

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/8/2024	0:00	78.2	818.20		0.0	
After purging				896.40			
Top of Screen				826.98			
				69.42	feet above (+) or below (-) top screen		
Bottom of Well -Record Info				816.98			
Bottom of Well	10/8/2024		80.1	816.30			
				-0.68	feet sedimentation		
Before Sampling				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			
Recovery				896.40			

IDNR Form 542-1322

Monitoring Well: MW 20 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	881.86
Well Depth	79.47
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	881.86	
Well Depth	79.47	
Top Screen	812.39	
Bottom Screen	802.39	
Bottom Well	802.39	
Sampler Length (ft)	4.00	
Sampler Volume (mL)	440.00	
Feet cordage		
Top sample	881.86	
Bottom sample	877.86	
Turbidity(NTU)		No Sample

Date	Time	Water Level	Water Elevation	Notes
10/8/2024		78.55	803.31	No sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10			0.00
Appendix I	Metals	250			0.00
Appendix I	VOC	120			0.00
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			0	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

		2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
TOC	881.86								
Well Depth	79.47	Before purging	10/8/2024	0:00	78.55	803.31		0.0	
		After purging				881.86			
		Top of Screen				812.39			
						69.47	feet above (+) or below (-) top screen		
		Bottom of Well - Record Info				802.39			
		Bottom of Well	10/8/2024		79.65	802.21			
						-0.18	feet sedimentation		
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			
		Recovery				881.86			

ATTACHMENT C

Statistical Reports, Spring 2024 & Fall, 2024

Results of the Ground Water Statistics

for Jackson County Sanitary Landfill

First Semi-Annual Monitoring Event in 2024

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May 2024

INTRODUCTION

This report contains the results of the statistical analyses used to evaluate the ground water data obtained during the first semi-annual monitoring event in 2024 at Jackson County Sanitary Landfill. The ground water at Jackson County Sanitary Landfill is monitored by a network of wells including MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21. Monitoring wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17 were sampled on April 8, 2024 and analyzed for the parameters required by permit. At the request of the Iowa DNR, trend analysis and confidence intervals are computed for wells with historical volatile organic compound (VOC) detections.

Ground Water Monitoring Program

The groundwater monitoring network for Jackson County Sanitary Landfill includes MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21. The groundwater monitoring wells is to be sampled and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized below.

Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	*trans*-1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	*cis*-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	*trans*-1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	*cis*-1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	*trans*-1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water data obtained during the first semi-annual monitoring event in 2024 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The intrawell method using combined Shewhart-CUSUM control charts was applied to the Jackson County Landfill trace metals data using the DUMPStat® statistical program. DUMPStat® is a program for the statistical analysis of groundwater monitoring data using methods described in "Statistical Methods for Groundwater Monitoring" by Dr. Robert D. Gibbons. The DUMPStat program is completely consistent with all USEPA regulations and guidance and the ASTM D6312-98 guidance. The wells impacted with VOCs are evaluated with confidence intervals using the DUMPStat statistical program.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring.

VOCs detected in the ground water at Jackson County Sanitary Landfill during the first semi-annual monitoring event in 2024 are summarized below.

VOCs detected during the first semi-annual monitoring period in 2024

Well	VOC Detected	Result, µg/L	Reporting Limit, µg/L	Verified/ Awaiting verification	Water Quality Standard
MW-12	Tetrachloroethene	1.8	1	Awaiting verification	5[a]
MW-17	Tetrachloroethene	1.2	1	Awaiting verification	5[a]

a - USEPA MCL
b- Iowa Statewide Standard for a protected groundwater source

Tetrachloroethene was previously detected multiple times at MW-17 with the most recent being in April 2023. Historical VOC detections are summarized in Attachment B.

The verified VOC detections were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009. The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The calculated 95% LCLs for each of the verified VOCs are below the respective GWPS (Attachment C). No increasing trends were detected.

Trace Metals

The historical Appendix I trace metals data obtained from monitoring wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21 are plotted in Attachment D.

Intrawell statistics

Intrawell statistics are appropriate for facilities where the upgradient wells do not accurately characterize the natural ground water conditions downgradient from the facility. This may be due to different hydrogeological conditions where the wells are screened, having too few upgradient wells to account for the spatial variability, or the site exhibiting no definable hydraulic gradient. Intrawell statistics compare new measurements to the historical data at each ground water monitoring well independently. It is recommended that at least eight background samples be obtained prior to performing the statistics.

The most useful technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure is useful because it will detect releases both in terms of the constituent concentration and cumulative increases. This method is also extremely sensitive to sudden and gradual releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined.

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is extremely robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

It is recommended that at least eight rounds of data be available to provide a reliable estimate of the mean and standard deviation of the parameter concentration, although the control charts will be generated with as few as four data points. Having only four data points may produce greater uncertainty in the mean and standard deviation of the background data, leading to higher control limits, thus having a potentially high false negative rate.

Many groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data should be plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sampling error, analytical error, or simply by chance alone. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat® program screens for outliers using the Dixon test. If the Dixon test indicates an outlier, the value is compared to three times the median value for intrawell analyses. If the value fails both criteria of the two-stage screening, the value is considered a statistical outlier and will not be used in the mean and variance determinations. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established, is indicative of a landfill release.

The background data for each well and constituent is tested for existing trends using Sen's nonparametric estimate of trend. If contamination exists prior to completing the background, the control limits could be potentially high and this control chart method would not be able to detect an increasing trend unless the increase is severe.

Results of the Intrawell Statistics

The Appendix I trace metals data from wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17 were evaluated using the combined Shewhart-CUSUM control chart method. The previous background included the data obtained from 2014 through 2019. Even for wells with eight rounds of background, there is insufficient data to determine control limits given the approved resample program. For constituents that are detected less than 25% of the time at a particular well, thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. The background was extended to include data obtained from 2014 through April 2022.

A summary of the intrawell statistics is included in Attachment E, Table 1 “Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts.” The control charts or time series graphs follow the summary table. For the parameters compared to background, there were no control limit exceedances detected. Increasing trends were detected in the historical data for arsenic at MW-13 and barium at MW-14.

A control chart factor was selected to provide a balance of the site-wide false positive and false negative rates. A statistical power curve indicates the expected false assessments for the site as a whole. For intrawell analysis, the site-wide false positive rate is 19% and the test becomes sensitive to 3 standard deviation units over background.

The past and current verified trace metal exceedances were evaluated against the GWPS using confidence limits. The 95% LCL for cobalt at MW-13 (5.392 μg/L) exceeds the GWPS of 2.1 μg/L. The 95% LCL for cobalt at MW-15 (2.616 μg/L) exceeds the GWPS of 2.1 μg/L. The calculated 95% LCL for each of the remaining trace metal exceedances are below the respective GWPS (Attachment F).

Attachment A

Ground Water Data obtained during the First Semi-Annual Monitoring Event in 2024

Table 1

Analytical Data Summary for 4/8/2024

Constituents	Units	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17
1,1,1,2-tetrachloroethane	ug/L		<1	<1				<1
1,1,1-trichloroethane	ug/L		<1	<1				<1
1,1,2,2-tetrachloroethane	ug/L		<1	<1				<1
1,1,2-trichloroethane	ug/L		<1	<1				<1
1,1-dichloroethane	ug/L		<1	<1				<1
1,1-dichloroethene	ug/L		<1	<1				<1
1,2,3-trichloropropane	ug/L		<1	<1				<1
1,2-dibromo-3-chloropropane	ug/L		<5	<5				<5
1,2-dibromoethane	ug/L		<1	<1				<1
1,2-dichlorobenzene	ug/L		<1	<1				<1
1,2-dichloroethane	ug/L		<1	<1				<1
1,2-dichloropropane	ug/L		<1	<1				<1
1,4-dichlorobenzene	ug/L		<1	<1				<1
2-butanone	ug/L		<10	<10				<10
2-hexanone	ug/L		<5	<5				<5
4-methyl-2-pentanone	ug/L		<5	<5				<5
Acetone	ug/L		<10	<10				<10
Acrylonitrile	ug/L		<5	<5				<5
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	<4.0	<4.0	<4.0	8.8	<4.0	<4.0	<4.0
Barium, total	ug/L	86.8	85.0	353.0	715.0	691.0	356.0	202.0
Benzene	ug/L		<1	<1				<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L		<1	<1				<1
Bromodichloromethane	ug/L		<1	<1				<1
Bromoform	ug/L		<1	<1				<1
Bromomethane	ug/L		<1	<1				<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Carbon disulfide	ug/L		<1	<1				<1
Carbon tetrachloride	ug/L		<1	<1				<1
Chlorobenzene	ug/L		<1	<1				<1
Chloroethane	ug/L		<1	<1				<1
Chloroform	ug/L		<1	<1				<1
Chloromethane	ug/L		<1	<1				<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethene	ug/L		<1	<1				<1
Cis-1,3-dichloropropene	ug/L		<1	<1				<1
Cobalt, total	ug/L	<.4	<.4	1.3	6.4	<.4	2.2	1.1
Copper, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Dibromochloromethane	ug/L		<1	<1				<1
Dibromomethane	ug/L		<1	<1				<1
Ethylbenzene	ug/L		<1	<1				<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Methyl iodide	ug/L		<1	<1				<1
Methylene chloride	ug/L		<5	<5				<5
Nickel, total	ug/L	<4.0	<4.0	<4.0	6.8	<4.0	9.7	20.4
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Styrene	ug/L		<1	<1				<1
Tetrachloroethene	ug/L		<1.0	1.8				1.2
Thallium, total	ug/L	<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L		<1	<1				<1
Trans-1,2-dichloroethene	ug/L		<1	<1				<1
Trans-1,3-dichloropropene	ug/L		<1	<1				<1
Trans-1,4-dichloro-2-butene	ug/L		<5	<5				<5
Trichloroethene	ug/L		<1	<1				<1
Trichlorofluoromethane	ug/L		<1	<1				<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L		<5	<5				<5
Vinyl chloride	ug/L		<1	<1				<1
Xylenes, total	ug/L		<2	<2				<2
Zinc, total	ug/L	<20	<20	<20	<20	<20	<20	<20

* - The displayed value is the arithmetic mean of multiple database matches.

Attachment B

Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Tetrachloroethene	MW-11	10/04/2016		1.4	1.0	ug/L
Tetrachloroethene	MW-11	10/03/2017		2.3	1.0	ug/L
Tetrachloroethene	MW-11	10/12/2018		3.1	1.0	ug/L
Tetrachloroethene	MW-11	9/30/2019		2.0	1.0	ug/L
Tetrachloroethene	MW-11	4/16/2021		1.4	1.0	ug/L
Tetrachloroethene	MW-11	10/14/2021		1.4	1.0	ug/L
Tetrachloroethene	MW-11	4/13/2023		2.0	1.0	ug/L
Tetrachloroethene	MW-11	10/18/2023		1.3	1.0	ug/L
Acetone	MW-12	10/03/2017		15.4	10.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/04/2016		1.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	10/04/2016		1.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/03/2017		1.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	10/12/2018		2.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/17/2019		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	9/30/2019		1.1	1.0	ug/L
Tetrachloroethene	MW-12	4/08/2024		1.8	1.0	ug/L
Trichloroethene	MW-12	4/04/2016		5.0	1.0	ug/L
Trichloroethene	MW-12	10/04/2016		3.8	1.0	ug/L
Trichloroethene	MW-12	4/03/2017		4.5	1.0	ug/L
Trichloroethene	MW-12	10/03/2017		5.6	1.0	ug/L
Trichloroethene	MW-12	4/10/2018		4.9	1.0	ug/L
Trichloroethene	MW-12	10/12/2018		5.1	1.0	ug/L
Trichloroethene	MW-12	4/17/2019		3.9	1.0	ug/L
Trichloroethene	MW-12	9/30/2019		2.4	1.0	ug/L
Trichloroethene	MW-12	4/07/2020		3.5	1.0	ug/L
Trichloroethene	MW-12	10/07/2020		2.6	1.0	ug/L
Trichloroethene	MW-12	4/16/2021		2.7	1.0	ug/L
Trichloroethene	MW-12	10/14/2021		2.2	1.0	ug/L
Trichloroethene	MW-12	4/04/2022		2.5	1.0	ug/L
Trichloroethene	MW-12	10/04/2022		3.0	1.0	ug/L
Trichloroethene	MW-12	4/13/2023		2.2	1.0	ug/L
Trichloroethene	MW-12	10/18/2023		2.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	10/03/2017		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	10/12/2018		3.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	9/30/2019		1.1	1.0	ug/L
Tetrachloroethene	MW-17	4/04/2016		1.1	1.0	ug/L
Tetrachloroethene	MW-17	10/04/2016		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/03/2017		1.6	1.0	ug/L
Tetrachloroethene	MW-17	10/03/2017		1.7	1.0	ug/L
Tetrachloroethene	MW-17	10/12/2018		2.3	1.0	ug/L
Tetrachloroethene	MW-17	4/17/2019		1.2	1.0	ug/L
Tetrachloroethene	MW-17	9/30/2019		1.0	1.0	ug/L
Tetrachloroethene	MW-17	4/07/2020		1.4	1.0	ug/L
Tetrachloroethene	MW-17	4/16/2021		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/04/2022		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/13/2023		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/08/2024		1.2	1.0	ug/L
1,1-dichloroethane	MW-19	10/04/2016		3.2	1.0	ug/L
1,1-dichloroethane	MW-19	4/03/2017		6.3	1.0	ug/L
1,1-dichloroethane	MW-19	10/03/2017		3.1	1.0	ug/L
1,1-dichloroethane	MW-19	4/10/2018		3.6	1.0	ug/L
1,1-dichloroethane	MW-19	10/12/2018		4.2	1.0	ug/L
1,1-dichloroethane	MW-19	4/17/2019		5.2	1.0	ug/L
1,1-dichloroethane	MW-19	9/30/2019		6.4	1.0	ug/L
1,1-dichloroethane	MW-19	4/07/2020		5.4	1.0	ug/L
1,1-dichloroethane	MW-19	10/07/2020		9.3	1.0	ug/L
1,1-dichloroethane	MW-19	4/16/2021		3.7	1.0	ug/L
1,1-dichloroethane	MW-19	10/14/2021		3.8	1.0	ug/L
1,1-dichloroethane	MW-19	4/04/2022		1.3	1.0	ug/L
1,1-dichloroethane	MW-19	10/04/2022		2.4	1.0	ug/L
Acetone	MW-19	10/04/2016		19.0	10.0	ug/L
Acetone	MW-19	4/03/2017		49.6	10.0	ug/L
Acetone	MW-19	10/12/2018		13.0	10.0	ug/L
Acetone	MW-19	4/04/2022		35.2	10.0	ug/L
Acetone	MW-19	10/04/2022		17.0	10.0	ug/L
Benzene	MW-19	3/17/2009		1.2	1.0	ug/L
Benzene	MW-19	10/04/2016		1.1	1.0	ug/L
Benzene	MW-19	4/17/2019		1.1	1.0	ug/L
Benzene	MW-19	4/07/2020		1.5	1.0	ug/L
Benzene	MW-19	10/07/2020		3.1	1.0	ug/L
Benzene	MW-19	4/16/2021		1.7	1.0	ug/L
Chloroethane	MW-19	10/04/2016		3.2	1.0	ug/L
Chloroethane	MW-19	4/03/2017		2.4	1.0	ug/L
Chloroethane	MW-19	10/03/2017		2.2	1.0	ug/L
Chloroethane	MW-19	4/10/2018		3.5	1.0	ug/L
Chloroethane	MW-19	10/12/2018		2.7	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chloroethane	MW-19	4/17/2019		2.8	1.0	ug/L
Chloroethane	MW-19	9/30/2019		3.2	1.0	ug/L
Chloroethane	MW-19	4/07/2020		2.6	1.0	ug/L
Chloroethane	MW-19	10/07/2020		4.0	1.0	ug/L
Chloroethane	MW-19	4/16/2021		2.1	1.0	ug/L
Chloroethane	MW-19	10/14/2021		2.0	1.0	ug/L
Chloroethane	MW-19	10/04/2022		1.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/04/2016		23.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/03/2017		4.5	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/03/2017		36.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/10/2018		46.2	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/12/2018		34.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/17/2019		43.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	9/30/2019		39.9	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/07/2020		54.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/07/2020		98.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/16/2021		23.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/14/2021		26.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/04/2022		6.6	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/04/2022		7.6	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/13/2023		1.8	1.0	ug/L
Tetrachloroethene	MW-19	10/04/2016		6.6	1.0	ug/L
Tetrachloroethene	MW-19	4/03/2017		43.2	1.0	ug/L
Tetrachloroethene	MW-19	10/12/2018		2.8	1.0	ug/L
Tetrachloroethene	MW-19	4/17/2019		1.9	1.0	ug/L
Tetrachloroethene	MW-19	10/14/2021		1.0	1.0	ug/L
Trichloroethene	MW-19	3/17/2009		8.5	1.0	ug/L
Trichloroethene	MW-19	10/04/2016		2.8	1.0	ug/L
Trichloroethene	MW-19	4/03/2017		7.9	1.0	ug/L
Trichloroethene	MW-19	10/12/2018		5.1	1.0	ug/L
Trichloroethene	MW-19	4/17/2019		3.9	1.0	ug/L
Trichloroethene	MW-19	9/30/2019		11.8	1.0	ug/L
Trichloroethene	MW-19	4/07/2020		2.2	1.0	ug/L
Trichloroethene	MW-19	10/07/2020		2.0	1.0	ug/L
Trichloroethene	MW-19	4/16/2021		10.6	1.0	ug/L
Trichloroethene	MW-19	10/14/2021		3.6	1.0	ug/L
Trichloroethene	MW-19	4/04/2022		2.1	1.0	ug/L
Trichloroethene	MW-19	10/04/2022		5.1	1.0	ug/L
Trichloroethene	MW-19	4/13/2023		2.3	1.0	ug/L
Vinyl chloride	MW-19	10/07/2020		1.2	1.0	ug/L
Xylenes, total	MW-19	4/17/2019		2.4	2.0	ug/L
Xylenes, total	MW-19	10/07/2020		3.0	2.0	ug/L
Acetone	MW-20	10/04/2016		72.9	10.0	ug/L
Acetone	MW-20	4/03/2017		10.4	10.0	ug/L
Acetone	MW-20	10/03/2017		34.0	10.0	ug/L
Acetone	MW-20	4/10/2018		32.9	10.0	ug/L
Acetone	MW-20	10/12/2018		28.7	10.0	ug/L
Acetone	MW-20	4/17/2019		27.2	10.0	ug/L
Acetone	MW-20	10/14/2021		180.0	10.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/04/2016		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/03/2017		1.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/12/2018		6.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/17/2019		3.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	9/30/2019		3.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/07/2020		3.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/07/2020		9.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/16/2021		4.5	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/14/2021		3.9	1.0	ug/L
Tetrachloroethene	MW-20	10/03/2017		1.7	1.0	ug/L
Toluene	MW-20	10/04/2016		6.7	1.0	ug/L
Toluene	MW-20	4/03/2017		1.3	1.0	ug/L
Trichloroethene	MW-20	3/17/2009		1.6	1.0	ug/L
Trichloroethene	MW-20	10/03/2017		2.2	1.0	ug/L
Trichloroethene	MW-20	10/12/2018		3.1	1.0	ug/L
Trichloroethene	MW-20	4/17/2019		1.7	1.0	ug/L
Trichloroethene	MW-20	4/07/2020		1.1	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Attachment C

Assessment Statistics for VOCs

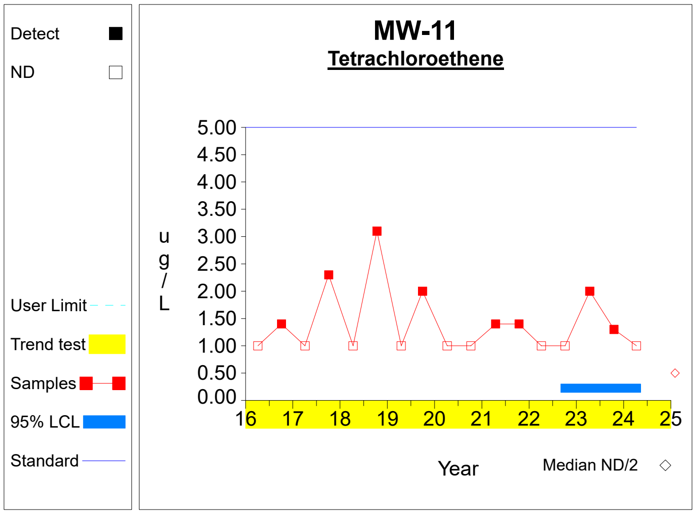
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

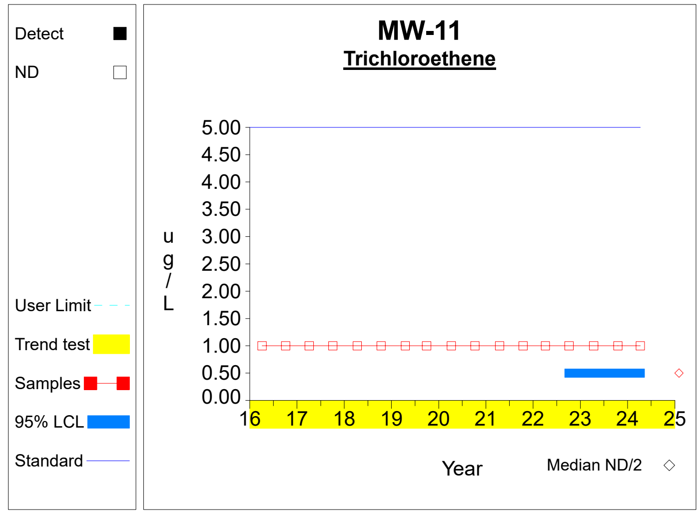
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Tetrachloroethene	ug/L	MW-11	4	1.075	0.723	1.176	0.225	1.925	5.000	
Trichloroethene	ug/L	MW-11	4	0.500	0.000	1.176	0.500	0.500	5.000	
Tetrachloroethene	ug/L	MW-12	4	0.825	0.650	1.176	0.060	1.590	5.000	
Trichloroethene	ug/L	MW-12	4	1.950	1.047	1.176	0.718	3.182	5.000	dec
Tetrachloroethene	ug/L	MW-17	4	0.850	0.404	1.176	0.375	1.325	5.000	
Trichloroethene	ug/L	MW-17	4	0.500	0.000	1.176	0.500	0.500	5.000	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

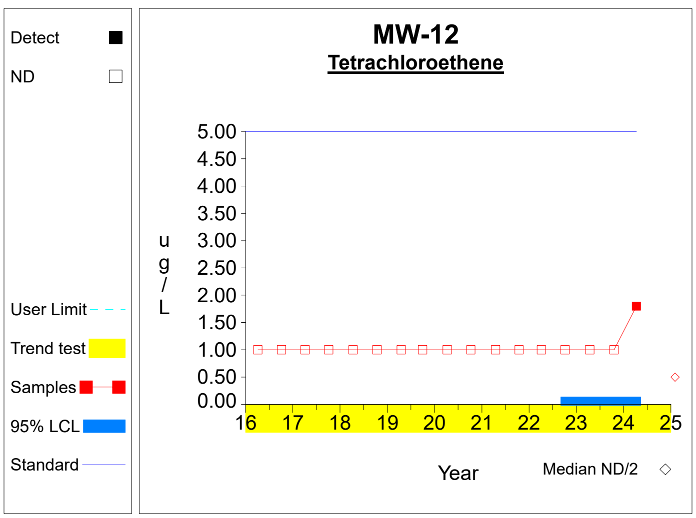
Confidence Limits (Assessment)



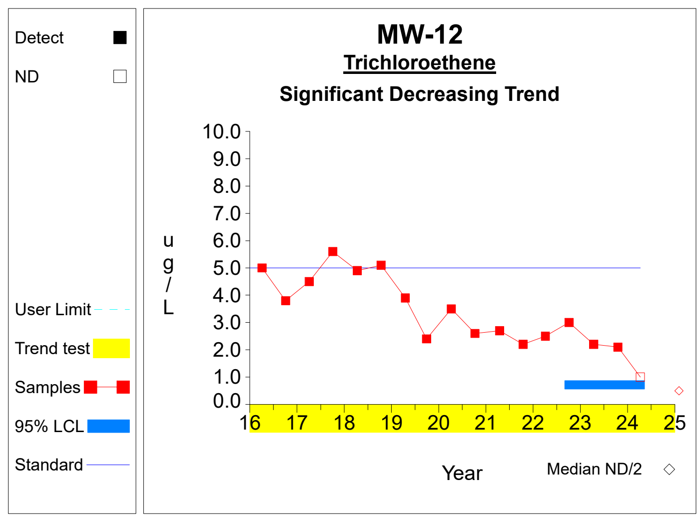
Graph 1



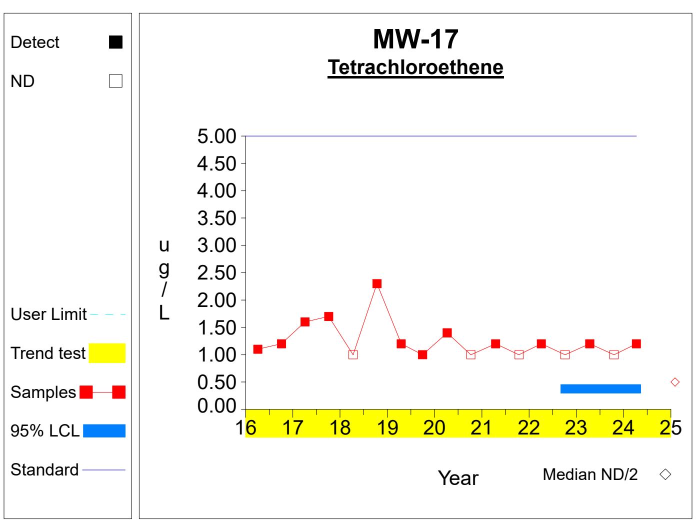
Graph 2



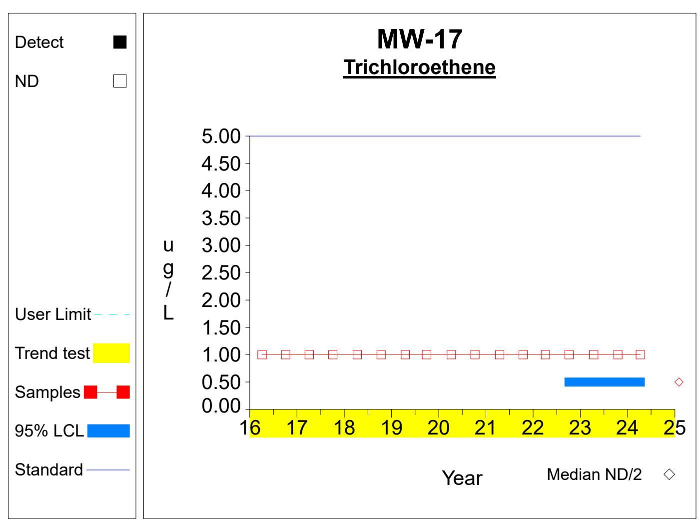
Graph 3



Graph 4



Graph 5



Graph 6

Prepared by: Otter Creek Environmental

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-11

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{4.3} / \mathbf{4}$ $= \mathbf{1.075}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{6.19} - \mathbf{18.49/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{0.723}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS/N}^{1/2}$ $= \mathbf{1.075} - \mathbf{2.353} * \mathbf{0.723/4}^{1/2}$ $= \mathbf{0.225}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS/N}^{1/2}$ $= \mathbf{1.075} + \mathbf{2.353} * \mathbf{0.723/4}^{1/2}$ $= \mathbf{1.925}$	Compute upper confidence limit for the mean of the last 4 measurements.
5	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{17} * (\mathbf{17}-1) / 2$ $= \mathbf{136}$	Number of sample pairs during trend detection period.
6	$S = \mathbf{0.0}$	Sen's estimator of trend.
7	$var(S) = \mathbf{492.667}$	Variance estimate for slope.
8	$M(S) = (\mathbf{N'} \pm \mathbf{Z}_{.995} * \mathbf{var(S)}^{1/2}) / 2$ $= (\mathbf{136} \pm \mathbf{2.576} * \mathbf{492.667}^{1/2}) / 2$ $= [\ \mathbf{39.411}, \mathbf{96.589}\ ]$	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	$CL(S) = [\ \mathbf{-0.236}, \mathbf{0.172}\ ]$	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.0** / **4** = **0.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))$^{1/2}$ = ((**1.0** - **4.0**/**4**) / (**4**-1))$^{1/2}$ = **0.0**	Compute sd of the last 4 measurements.
3	LCL = $\overline{X}$ - **tS**/**N**$^{1/2}$ = **0.5** - **2.353** * **0.0**/**4**$^{1/2}$ = **0.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{X}$ + **tS**/**N**$^{1/2}$ = **0.5** + **2.353** * **0.0**/**4**$^{1/2}$ = **0.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **17** * (**17**-1) / 2 = **136**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**136** ± **2.576** * **0.0**$^{1/2}$) / 2 = [**68.0**, **68.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **3.3** / **4**	
	= **0.825**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½}	Compute sd of the last 4 measurements.
	= ((**3.99** - **10.89/4**) / (**4**-1))^{½}	
	= **0.65**	
3	LCL = $\bar{X}$ - **tS/N**^{½}	Compute lower confidence limit for the mean of the last 4 measurements.
	= **0.825** - **2.353** * **0.65/4**^{½}	
	= **0.06**	
4	UCL = $\bar{X}$ + **tS/N**^{½}	Compute upper confidence limit for the mean of the last 4 measurements.
	= **0.825** + **2.353** * **0.65/4**^{½}	
	= **1.59**	
5	N' = **N** * (**N**-1) / 2	Number of sample pairs during trend detection period.
	= **17** * (**17**-1) / 2	
	= **136**	
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **96.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
	= (**136** ± **2.576** * **96.0**^{½}) / 2	
	= [**55.38**, **80.62**]	
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{7.8} / \mathbf{4}$ $= \mathbf{1.95}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{18.5} - \mathbf{60.84/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{1.047}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS/N}^{1/2}$ $= \mathbf{1.95} - \mathbf{2.353} * \mathbf{1.047/4}^{1/2}$ $= \mathbf{0.718}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS/N}^{1/2}$ $= \mathbf{1.95} + \mathbf{2.353} * \mathbf{1.047/4}^{1/2}$ $= \mathbf{3.182}$	Compute upper confidence limit for the mean of the last 4 measurements.
5	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{17} * (\mathbf{17}-1) / 2$ $= \mathbf{136}$	Number of sample pairs during trend detection period.
6	$S = \mathbf{-0.443}$	Sen's estimator of trend.
7	$var(S) = \mathbf{588.333}$	Variance estimate for slope.
8	$M(S) = (\mathbf{N'} \pm \mathbf{Z}_{.995} * \mathbf{var(S)}^{1/2}) / 2$ $= (\mathbf{136} \pm \mathbf{2.576} * \mathbf{588.333}^{1/2}) / 2$ $= [\ \mathbf{36.759}, \mathbf{99.241}\ ]$	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	$CL(S) = [\ \mathbf{-0.74}, \mathbf{-0.239}\ ]$	Two-sided confidence interval for slope.
10	$UCL(S) < 0$	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.4** / **4** = **0.85**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$ = ((**3.38** - **11.56/4**) / (**4**-1))$^{1/2}$ = **0.404**	Compute sd of the last 4 measurements.
3	LCL = **$\overline{X}$ - tS/N**$^{1/2}$ = **0.85** - **2.353** * **0.404/4**$^{1/2}$ = **0.375**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\overline{X}$** + **tS/N**$^{1/2}$ = **0.85** + **2.353** * **0.404/4**$^{1/2}$ = **1.325**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **17** * (**17**-1) / 2 = **136**	Number of sample pairs during trend detection period.
6	S = **-0.053**	Sen's estimator of trend.
7	var(S) = **544.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**136** ± **2.576** * **544.333**$^{1/2}$) / 2 = [**37.95**, **98.05**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.204**, **0.017**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

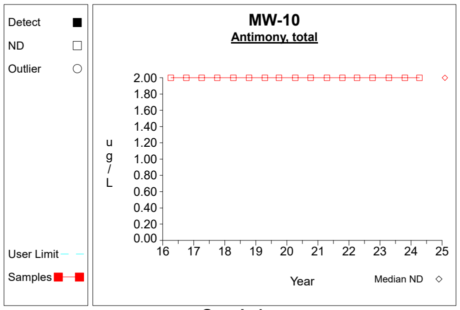
Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.0** / **4** = **0.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½} = ((**1.0 - 4.0/4**) / (**4**-1))^{½} = **0.0**	Compute sd of the last 4 measurements.
3	LCL = **$\overline{X}$ - tS/N^{½}** = **0.5** - **2.353** * **0.0/4^{½}** = **0.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\overline{X}$ + tS/N^{½}** = **0.5** + **2.353** * **0.0/4^{½}** = **0.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **17** * (**17**-1) / 2 = **136**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)^{½}**) / 2 = (**136** ± **2.576** * **0.0**^{½}) / 2 = [**68.0**, **68.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

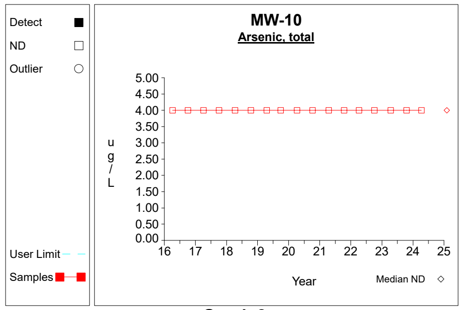
Attachment D

Time Series Plots of Trace Metals Data

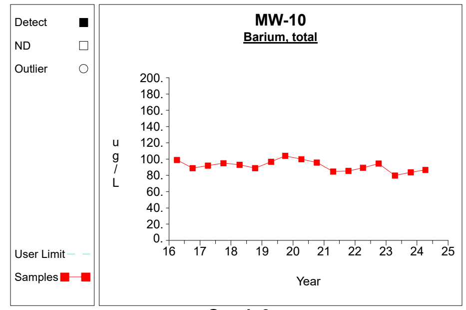
Time Series



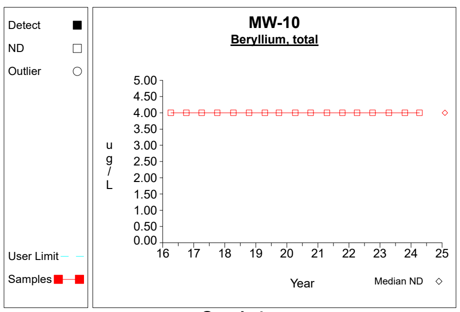
Graph 1



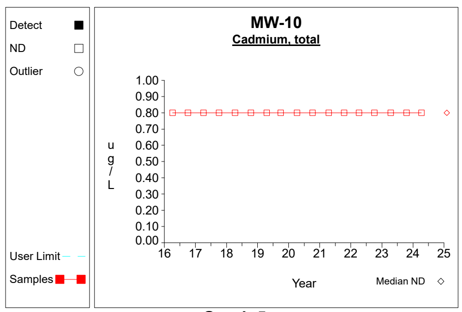
Graph 2



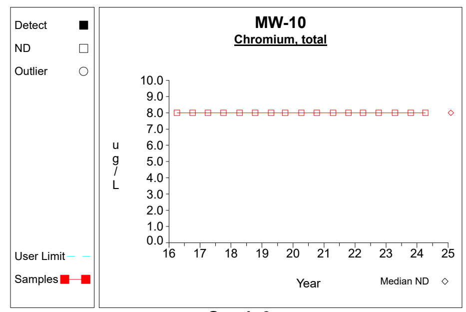
Graph 3



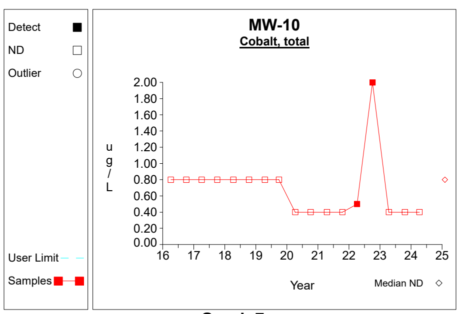
Graph 4



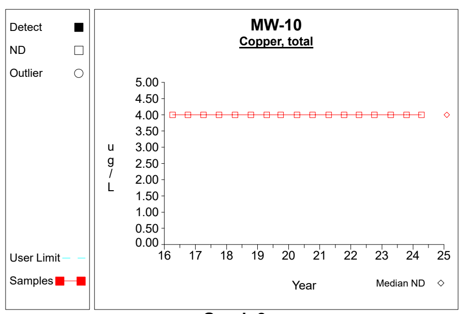
Graph 5



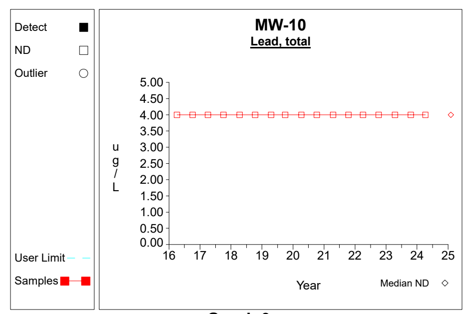
Graph 6



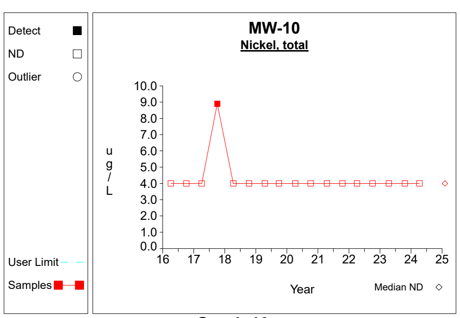
Graph 7



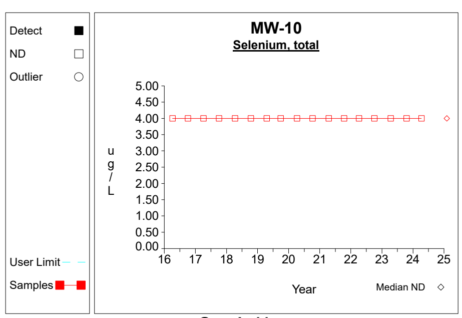
Graph 8



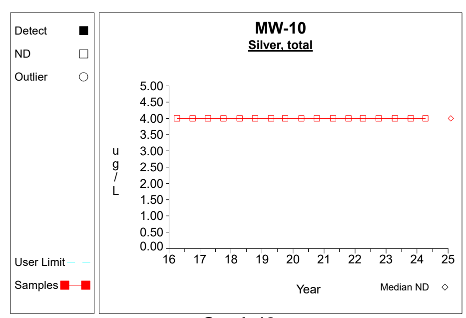
Graph 9



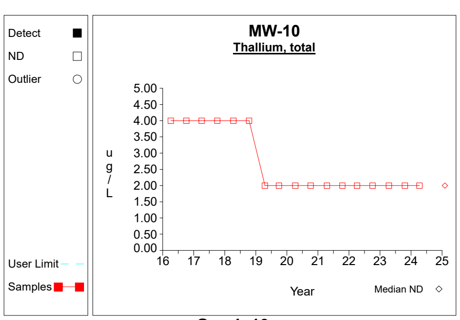
Graph 10



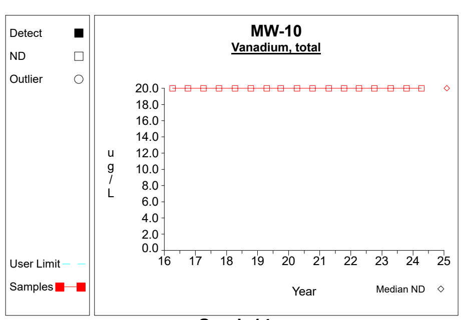
Graph 11



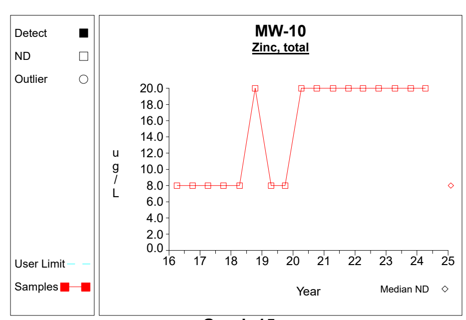
Graph 12



Graph 13

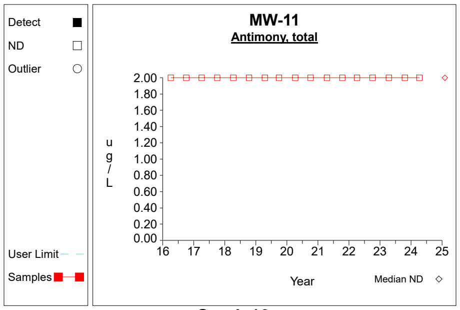


Graph 14

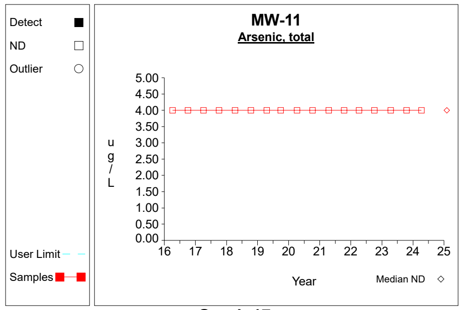


Graph 15

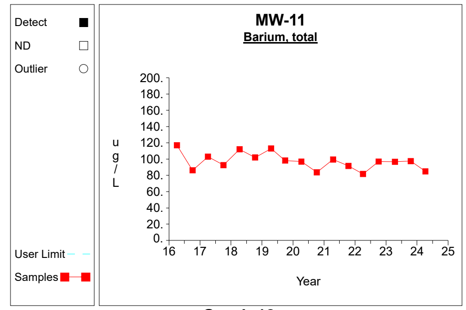
Time Series



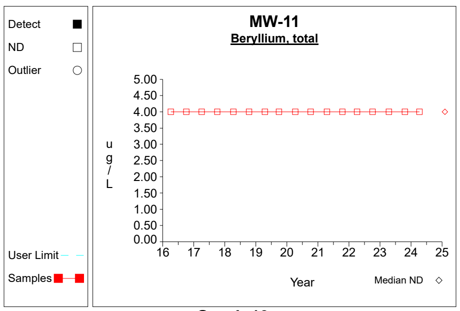
Graph 16



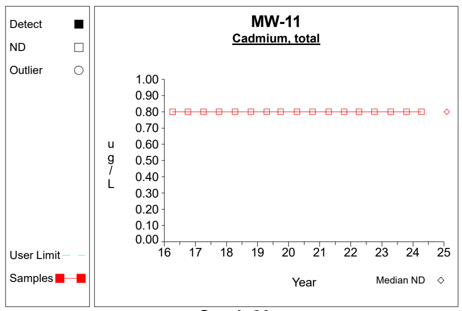
Graph 17



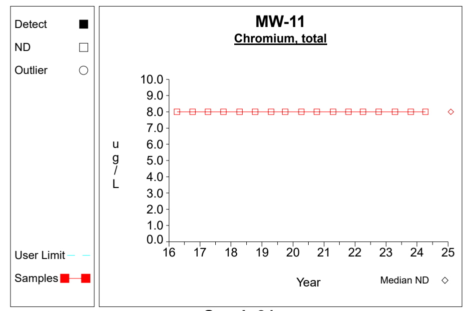
Graph 18



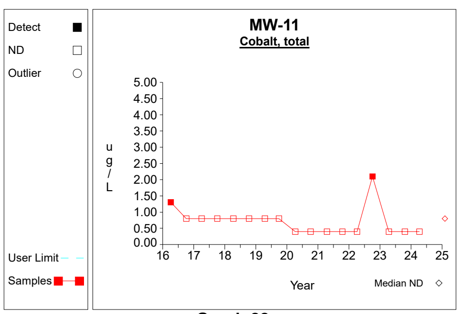
Graph 19



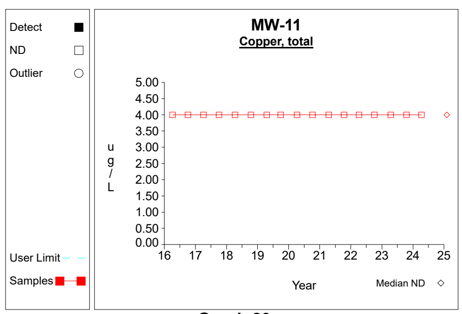
Graph 20



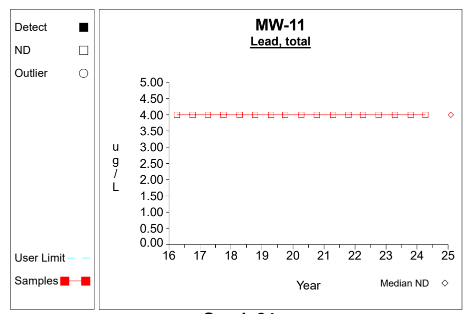
Graph 21



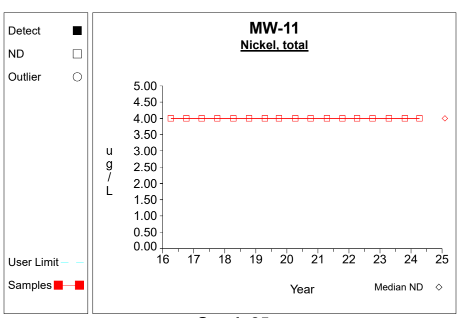
Graph 22



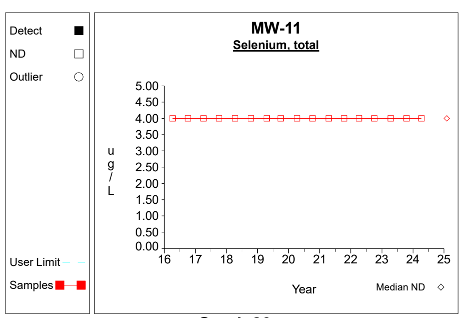
Graph 23



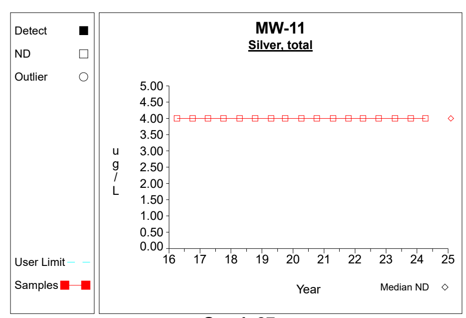
Graph 24



Graph 25



Graph 26



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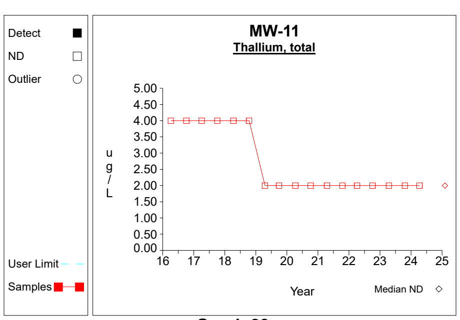

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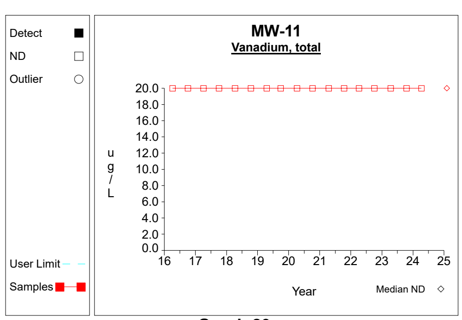
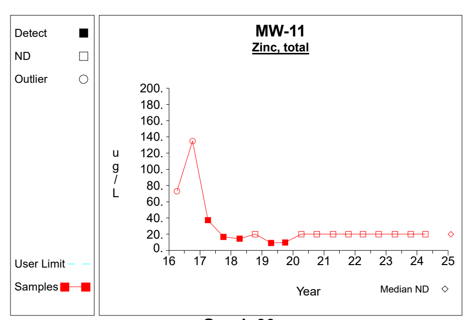
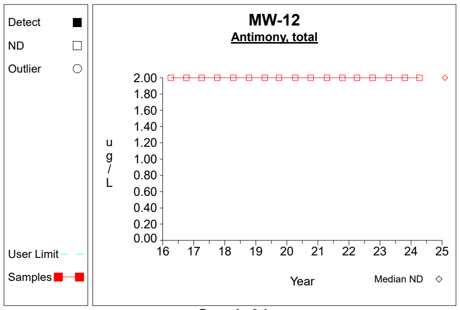


Graph 29

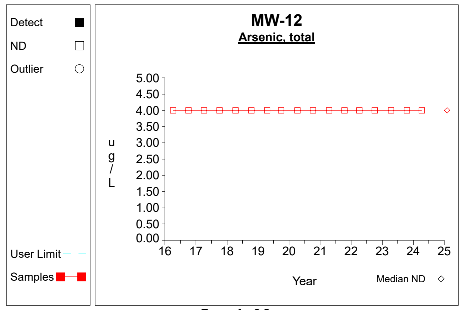


Graph 30

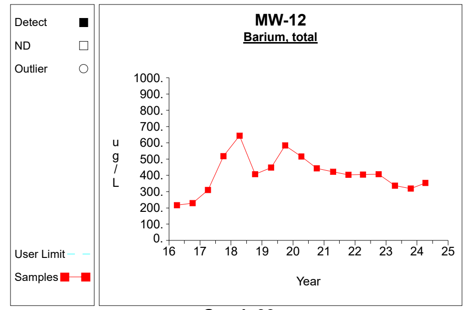
Time Series



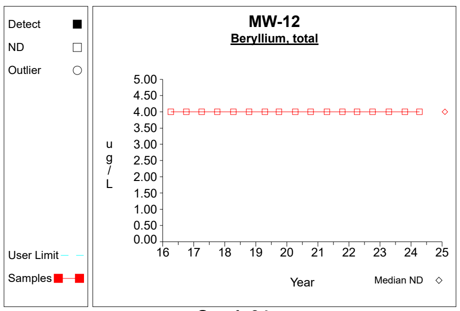
Graph 31



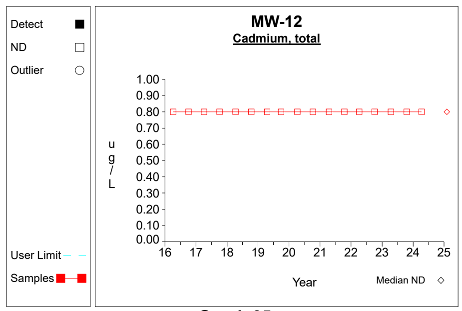
Graph 32



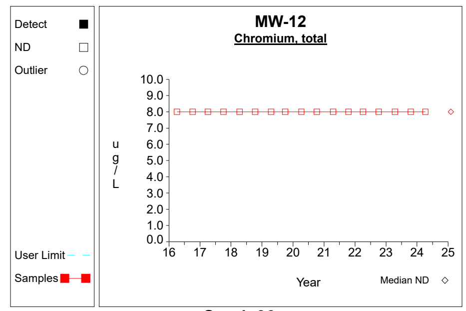
Graph 33



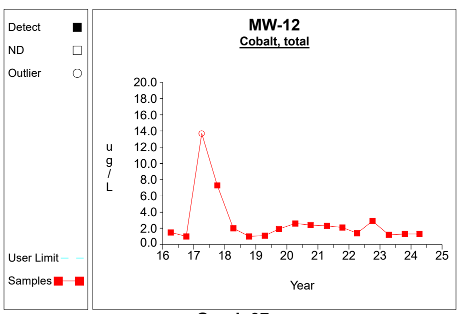
Graph 34



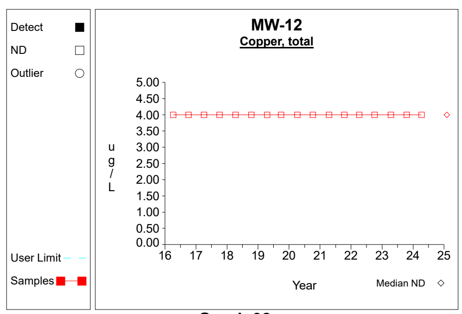
Graph 35



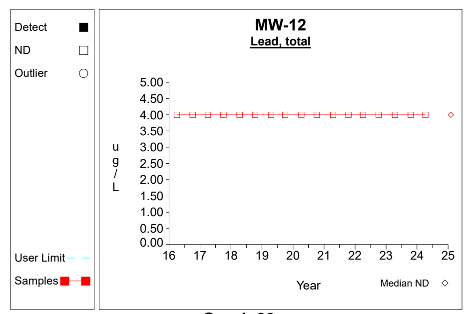
Graph 36



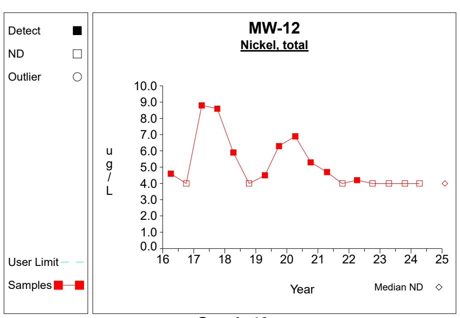
Graph 37



Graph 38



Graph 39



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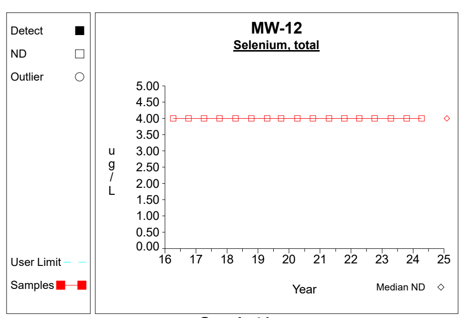
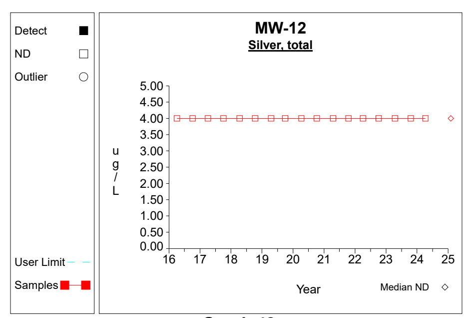
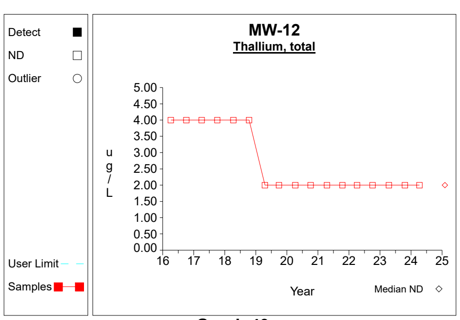


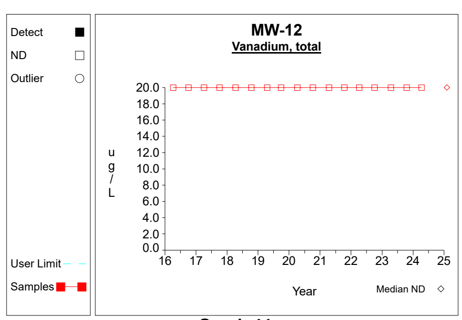
Graph 41



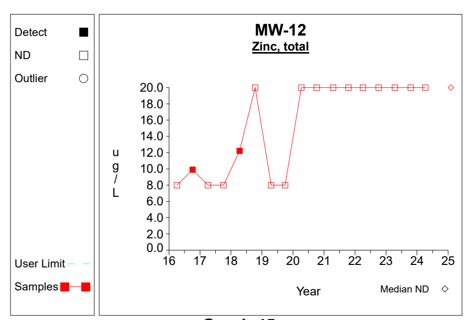
Graph 42



Graph 43

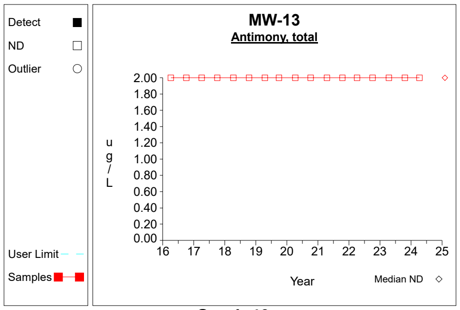


Graph 44

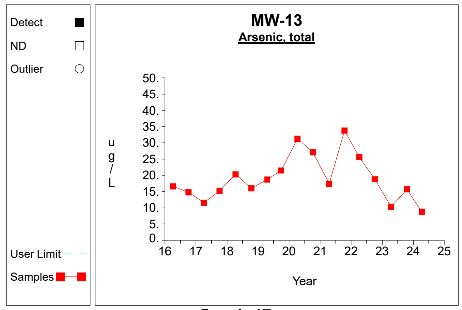


Graph 45

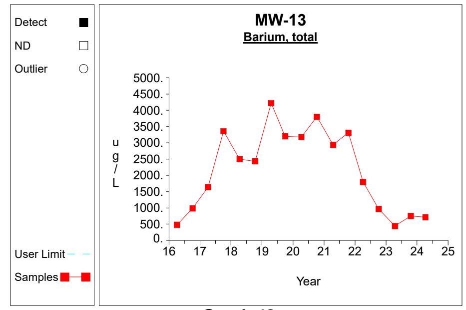
Time Series



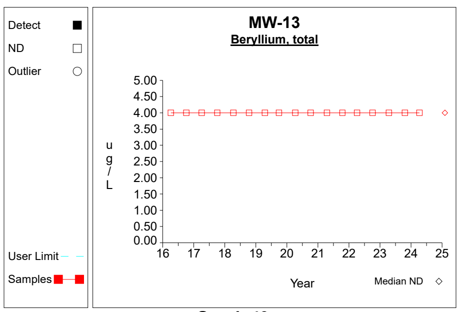
Graph 46



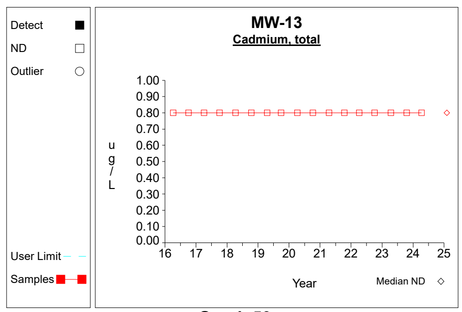
Graph 47



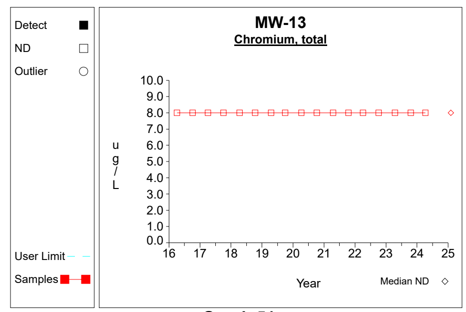
Graph 48



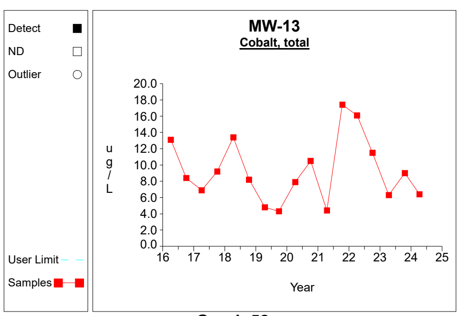
Graph 49



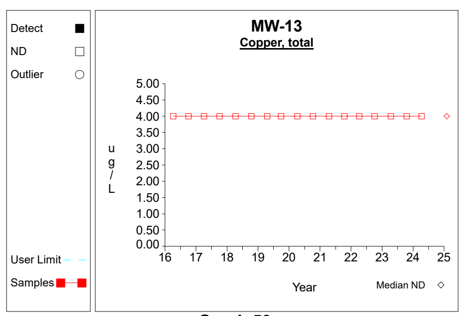
Graph 50



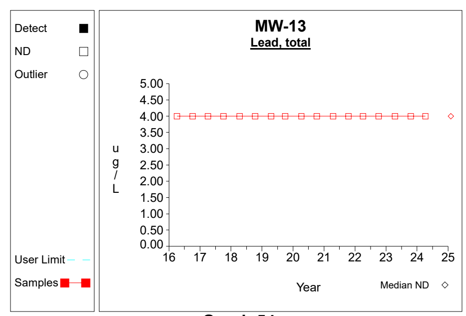
Graph 51



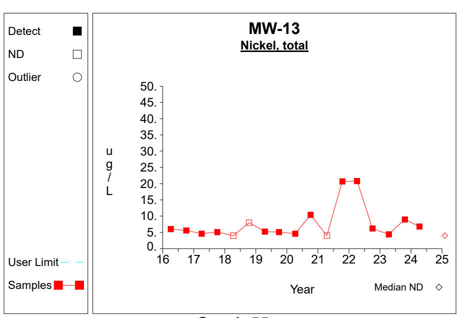
Graph 52



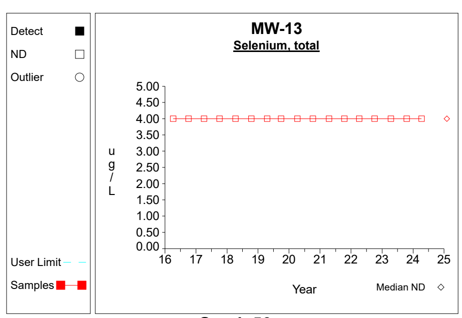
Graph 53



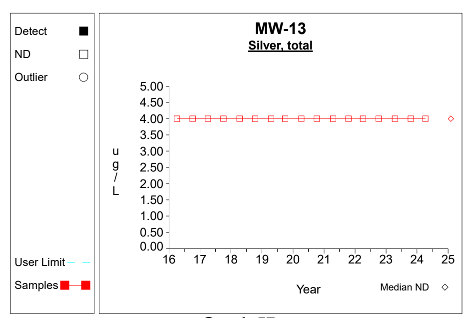
Graph 54



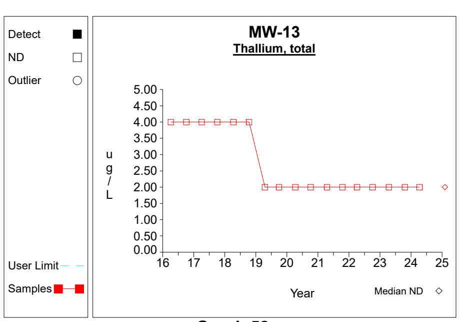
Graph 55



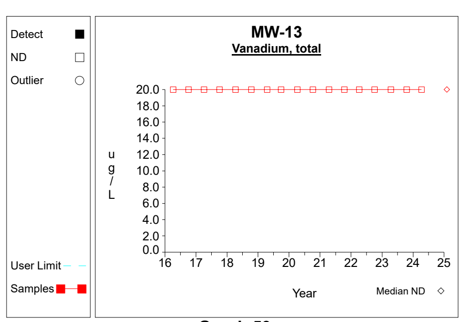
Graph 56



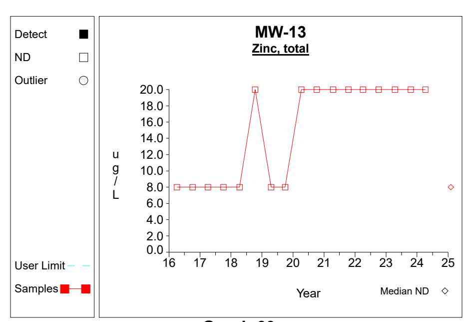
Graph 57



Graph 58

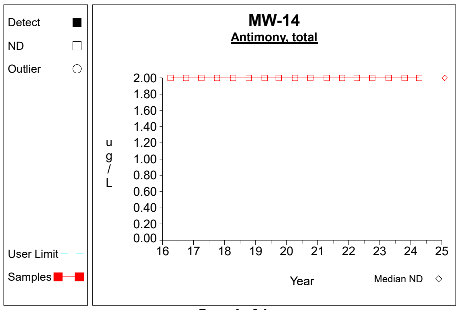


Graph 59

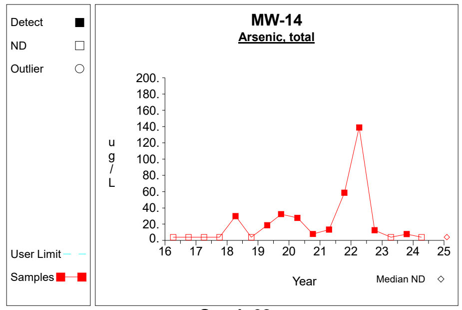


Graph 60

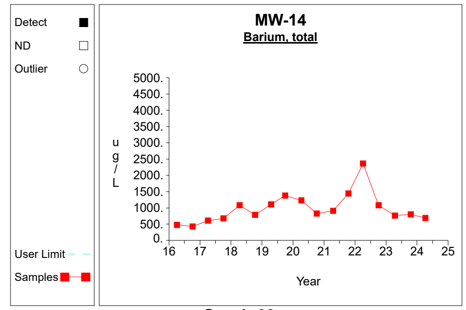
Time Series



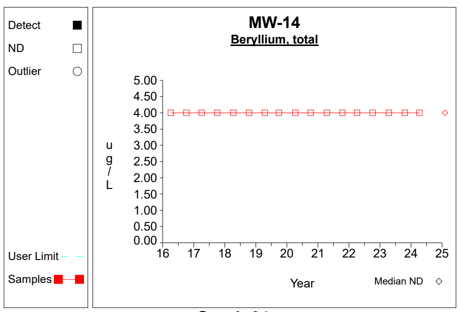
Graph 61



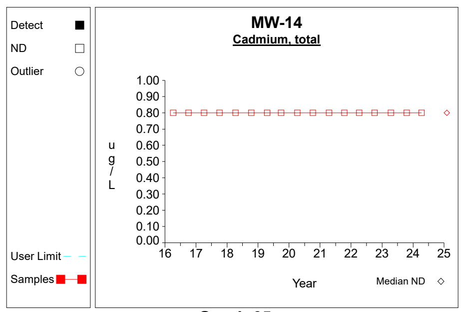
Graph 62



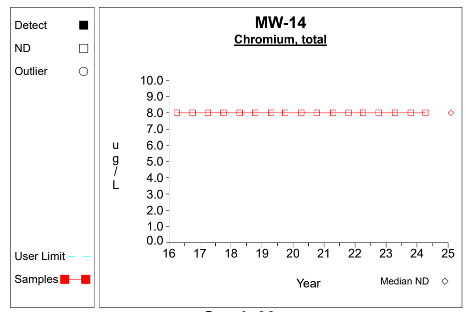
Graph 63



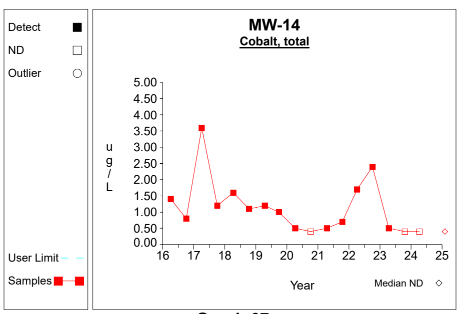
Graph 64



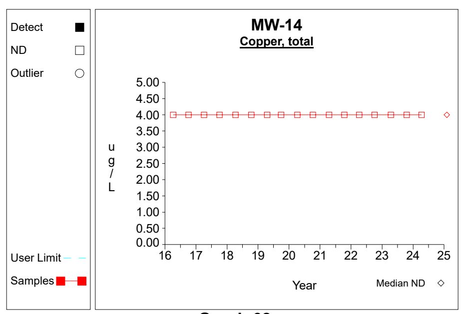
Graph 65



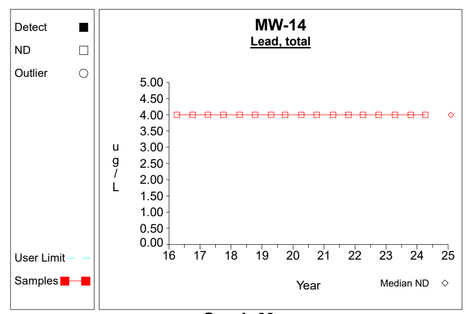
Graph 66



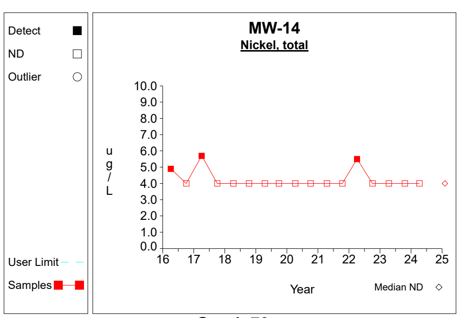
Graph 67



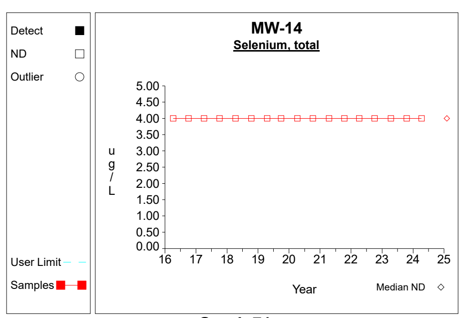
Graph 68



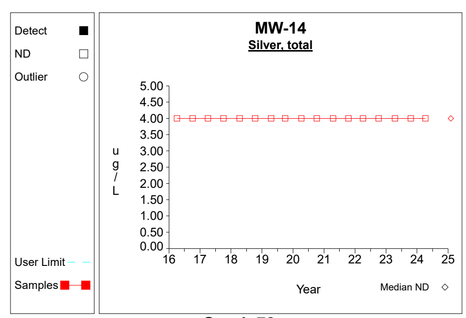
Graph 69



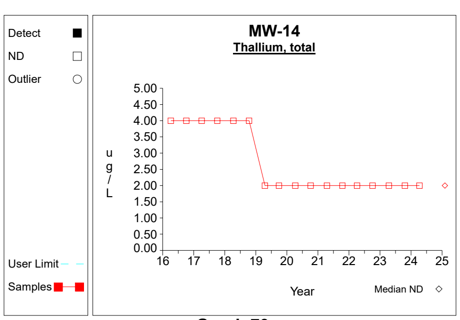
Graph 70



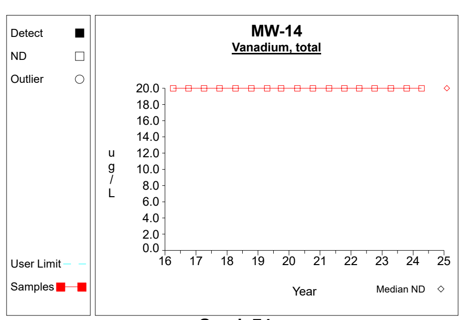
Graph 71



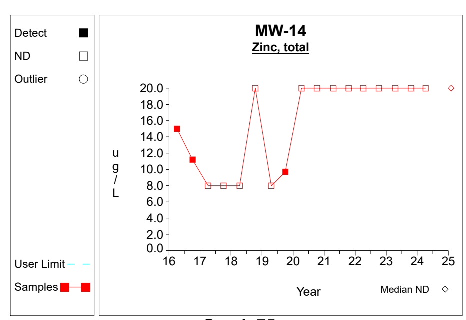
Graph 72



Graph 73

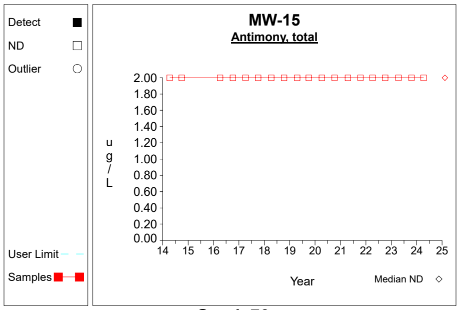


Graph 74

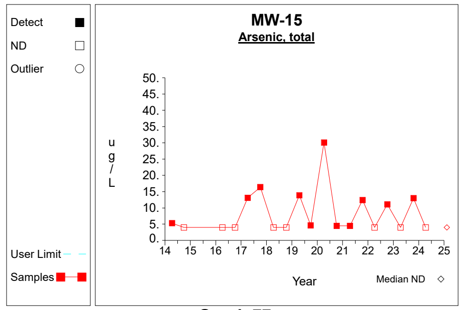


Graph 75

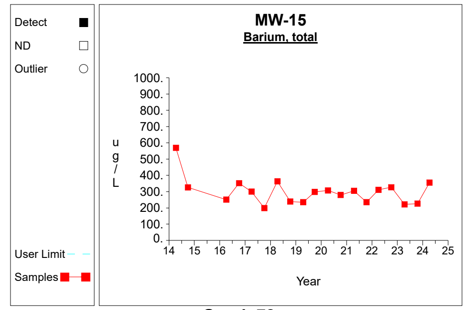
Time Series



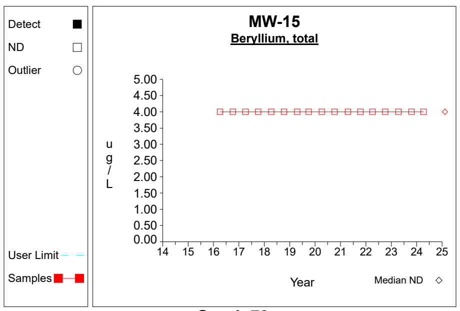
Graph 76



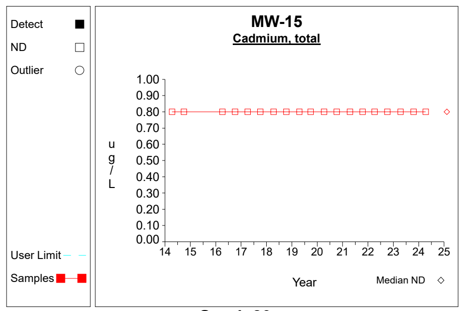
Graph 77



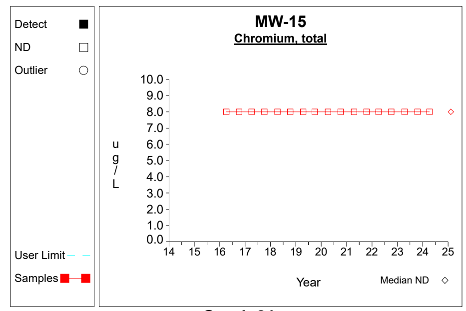
Graph 78



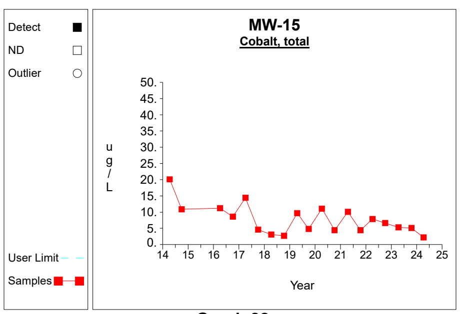
Graph 79



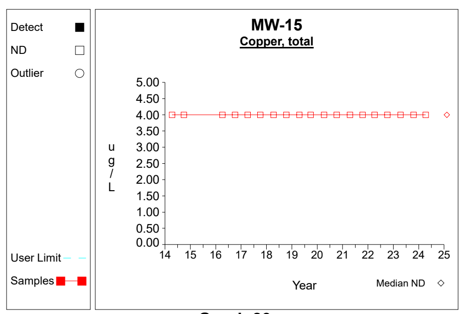
Graph 80



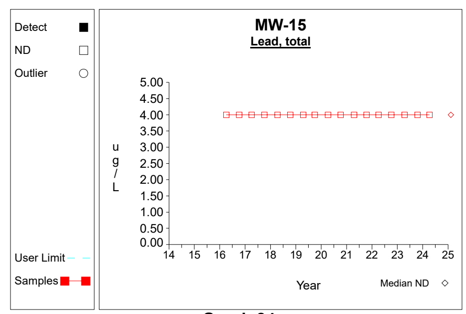
Graph 81



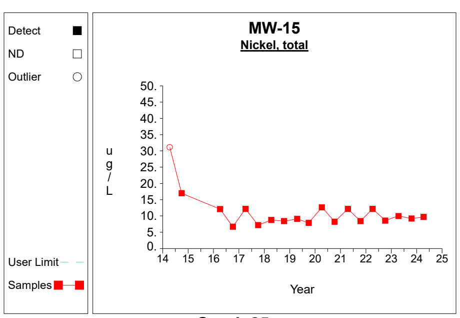
Graph 82



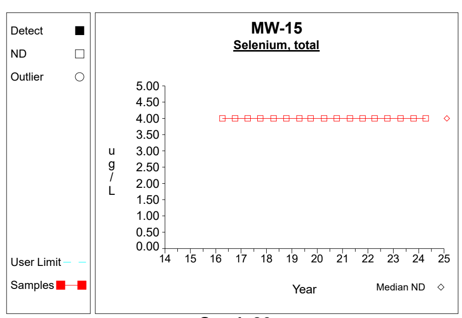
Graph 83



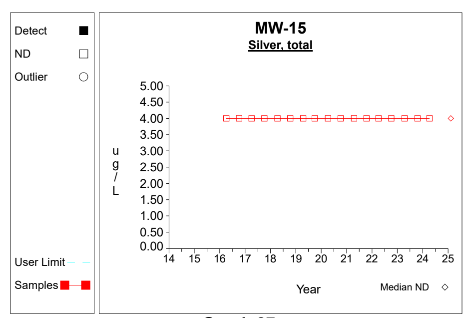
Graph 84



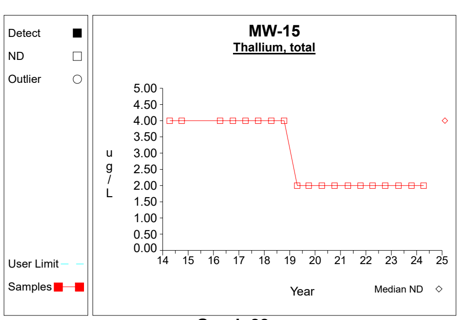
Graph 85



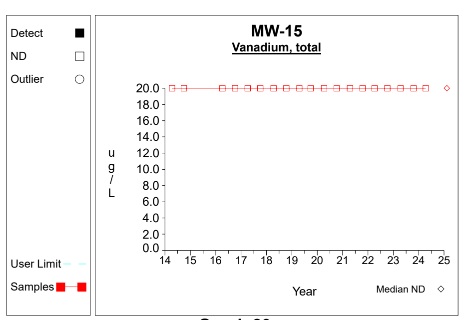
Graph 86



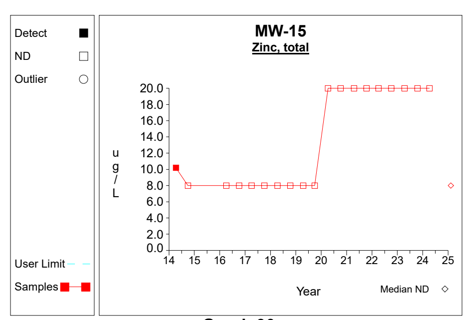
Graph 87



Graph 88

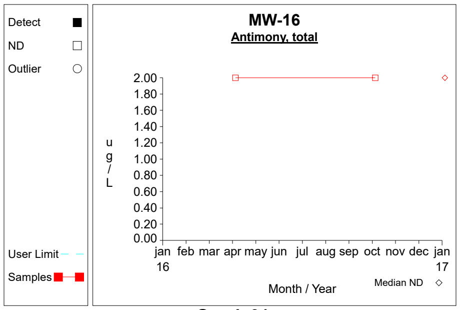


Graph 89

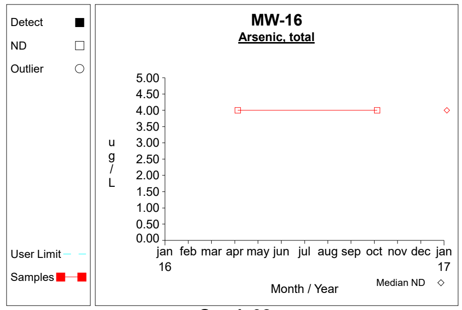


Graph 90

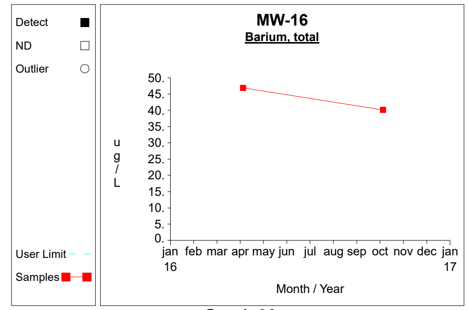
Time Series



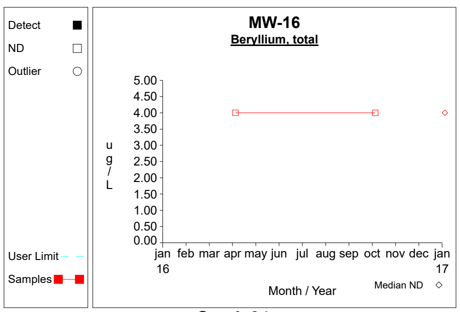
Graph 91



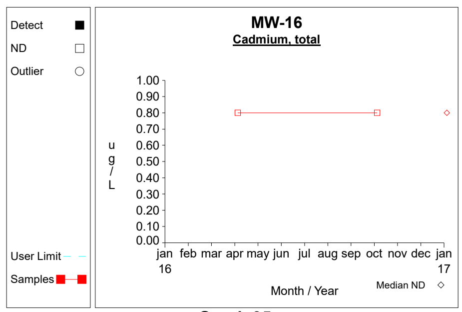
Graph 92



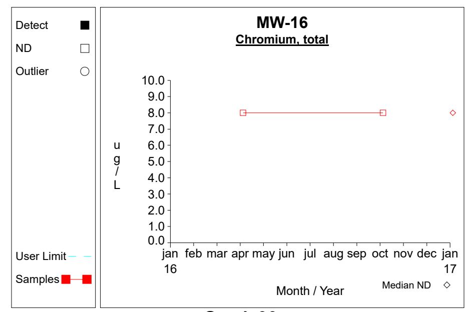
Graph 93



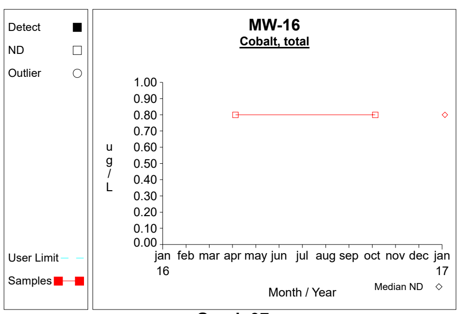
Graph 94



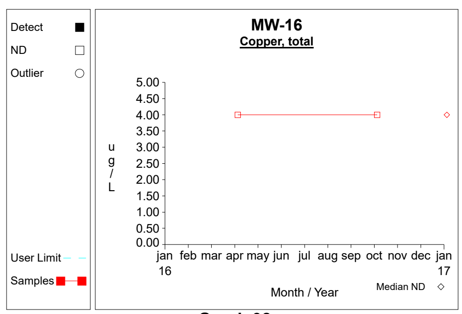
Graph 95



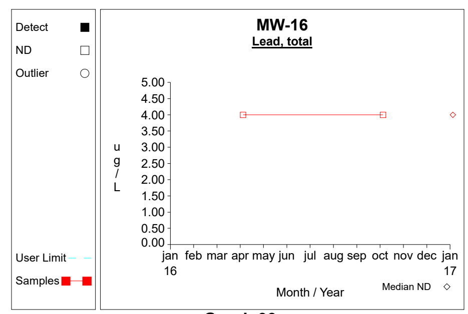
Graph 96



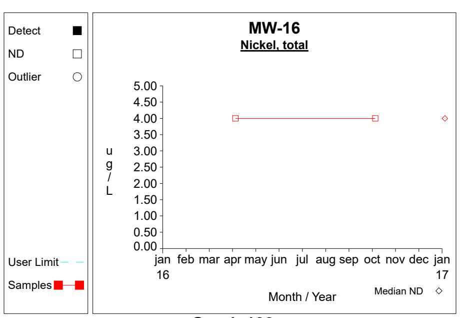
Graph 97



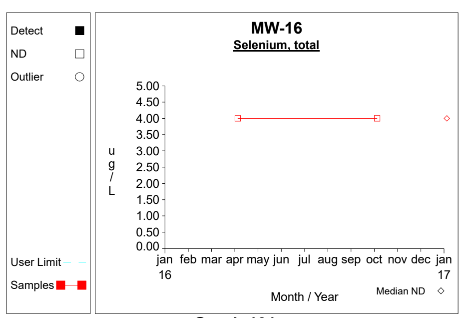
Graph 98



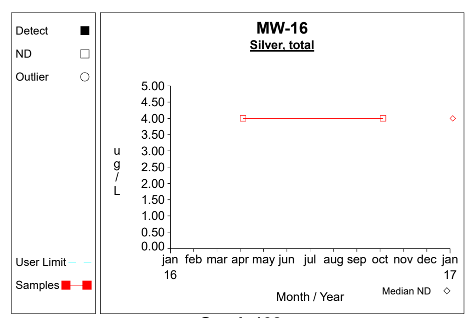
Graph 99



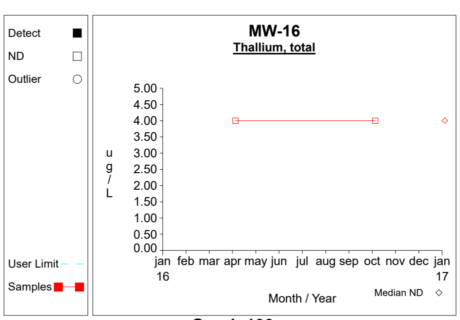
Graph 100



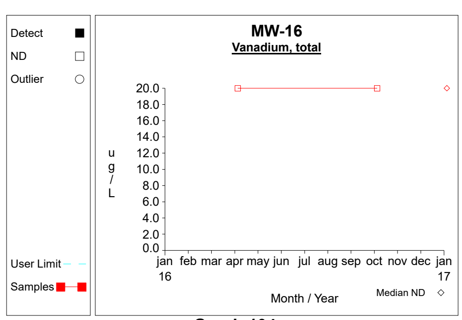
Graph 101



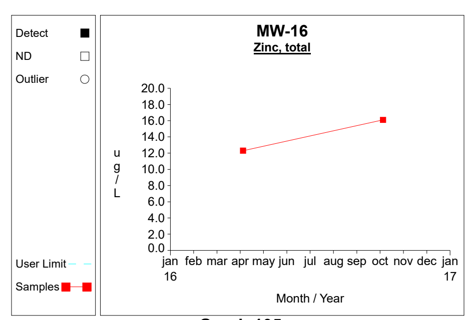
Graph 102



Graph 103

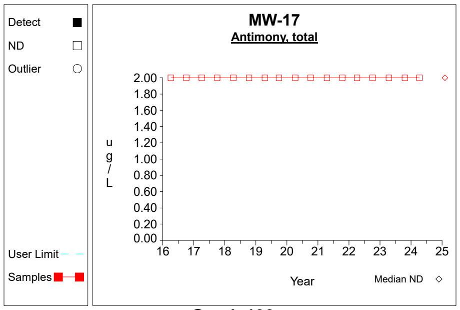


Graph 104

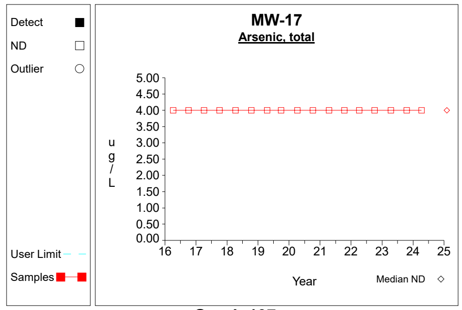


Graph 105

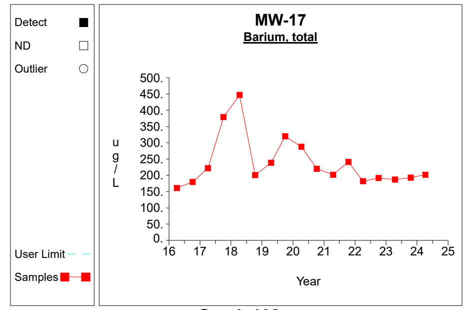
Time Series



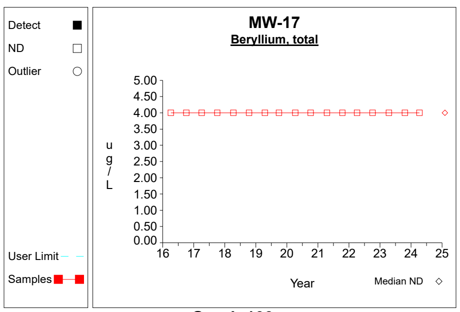
Graph 106



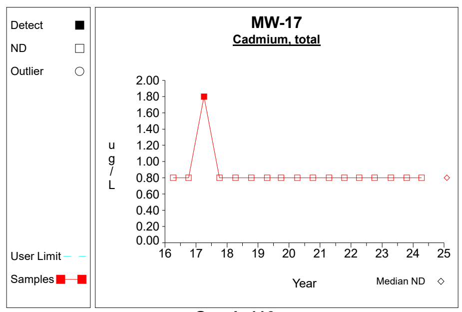
Graph 107



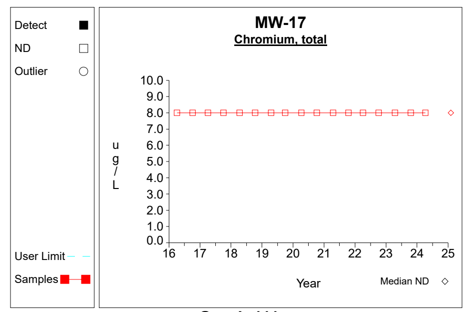
Graph 108



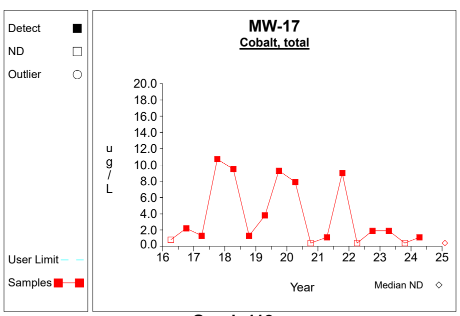
Graph 109



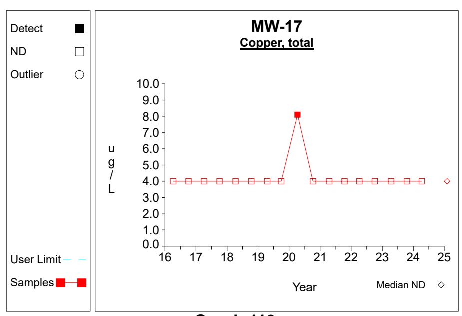
Graph 110



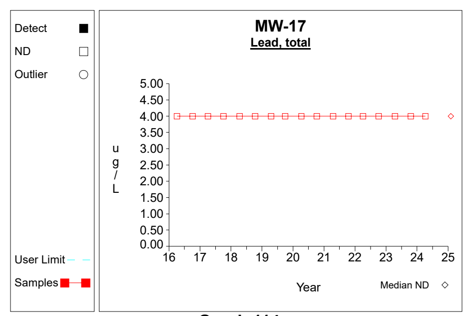
Graph 111



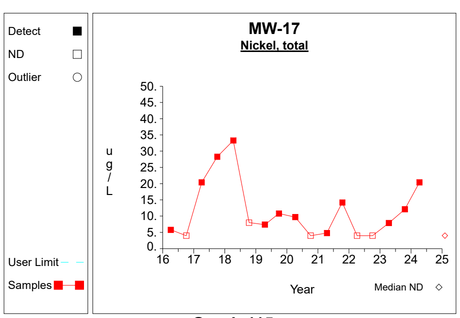
Graph 112



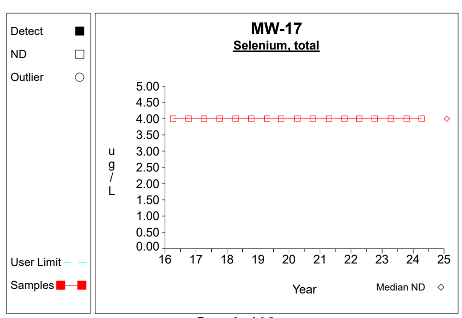
Graph 113



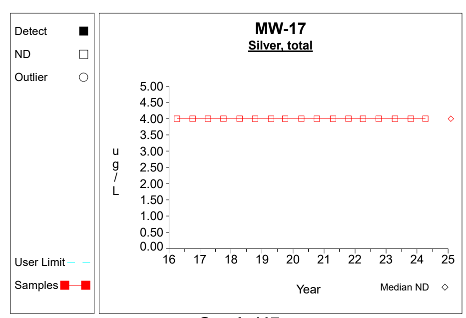
Graph 114



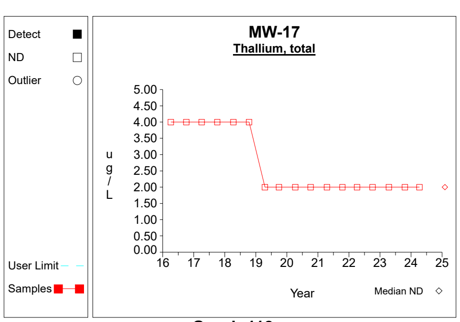
Graph 115



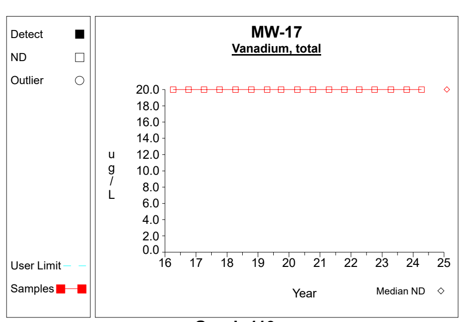
Graph 116



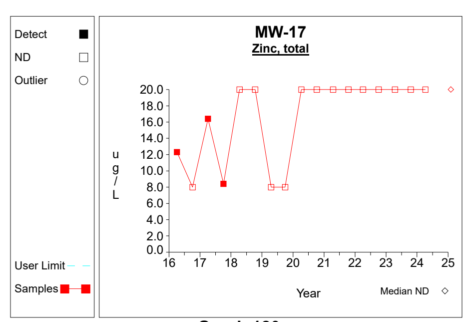
Graph 117



Graph 118

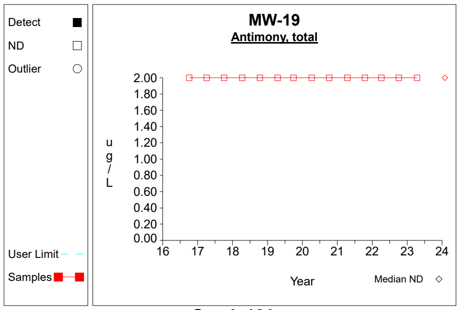


Graph 119

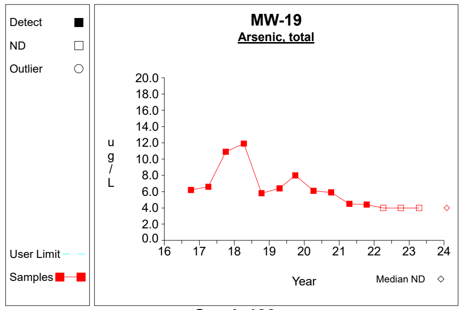


Graph 120

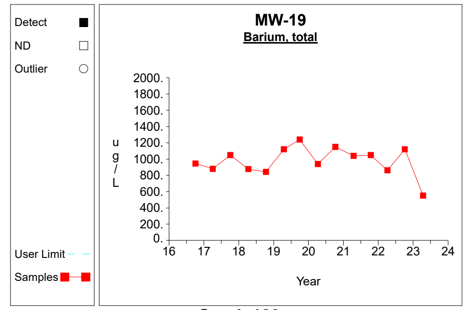
Time Series



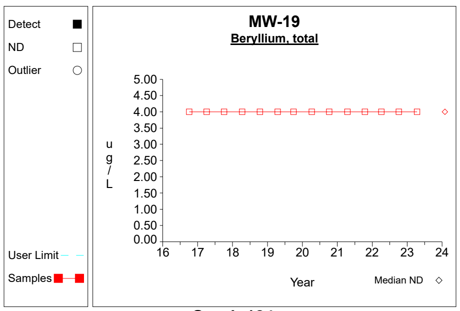
Graph 121



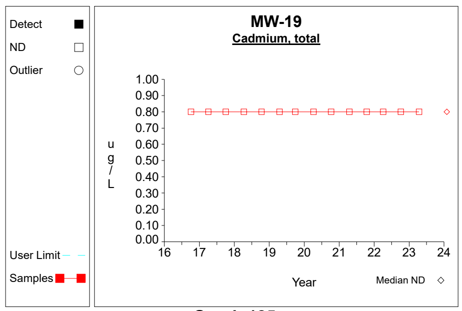
Graph 122



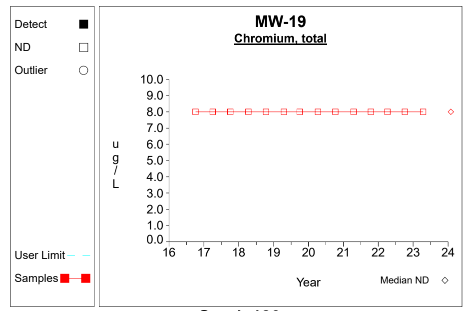
Graph 123



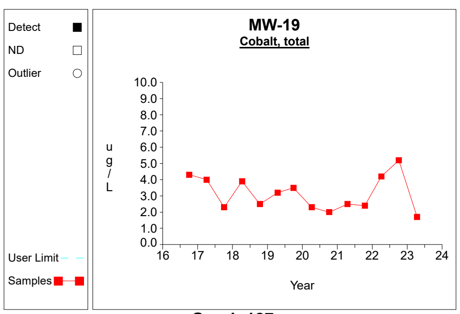
Graph 124



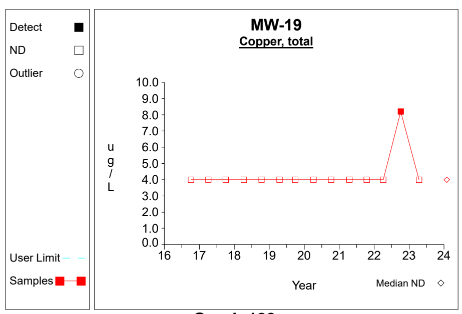
Graph 125



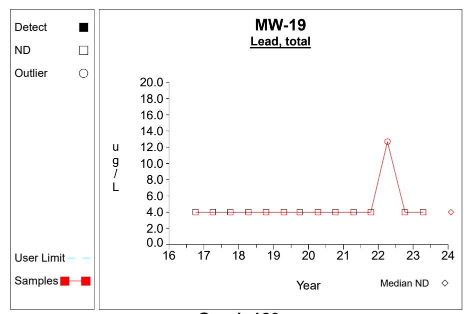
Graph 126



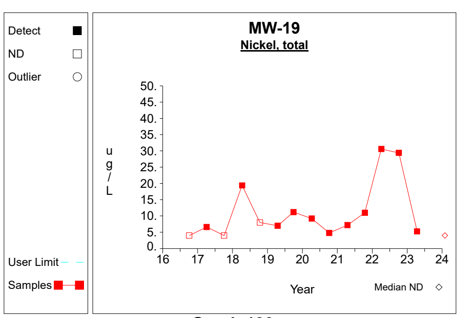
Graph 127



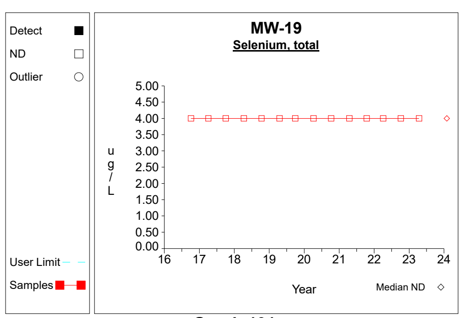
Graph 128



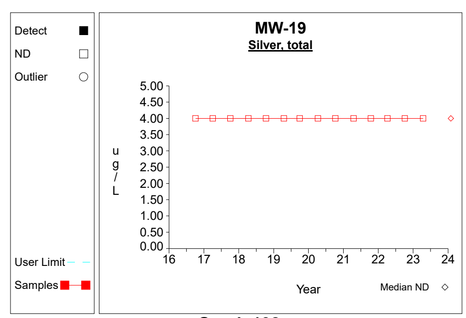
Graph 129



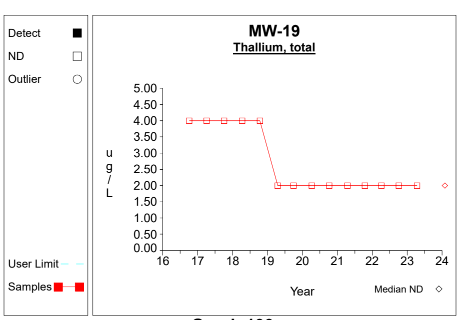
Graph 130



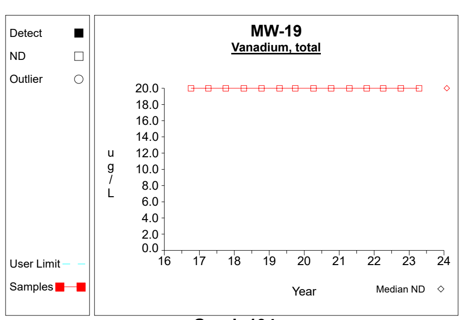
Graph 131



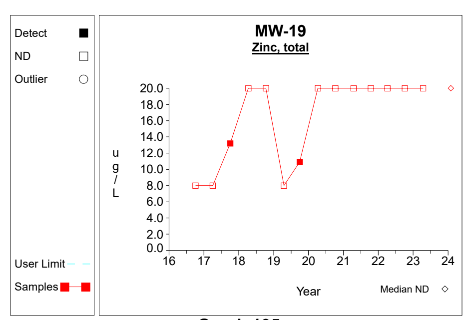
Graph 132



Graph 133

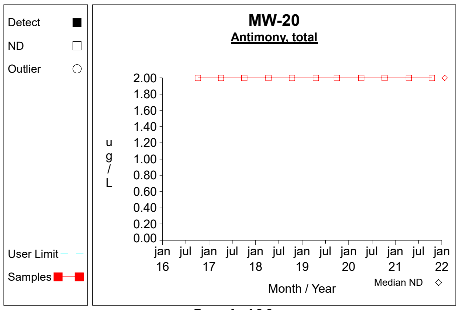


Graph 134

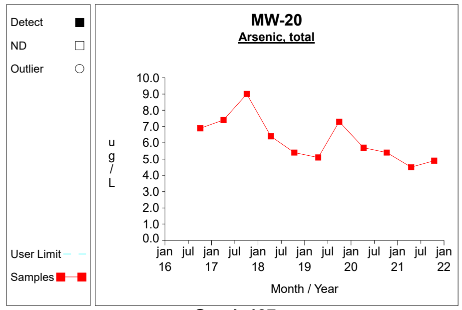


Graph 135

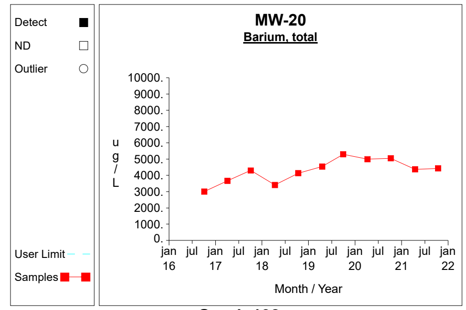
Time Series



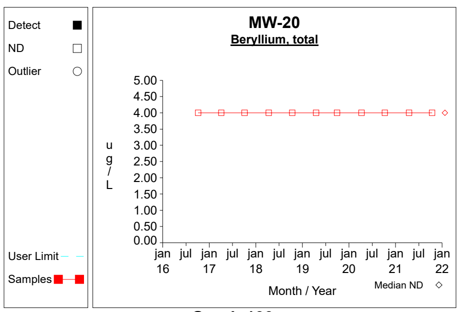
Graph 136



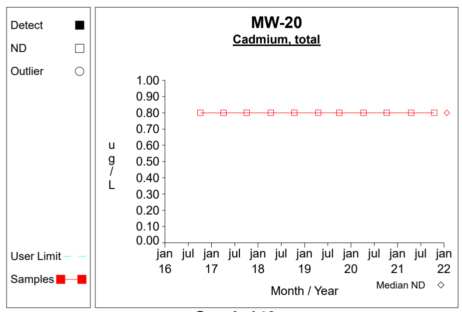
Graph 137



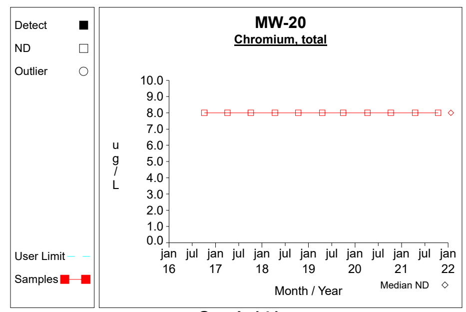
Graph 138



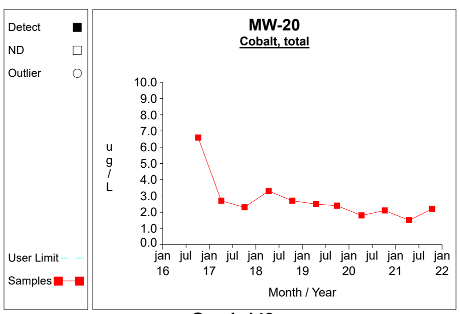
Graph 139



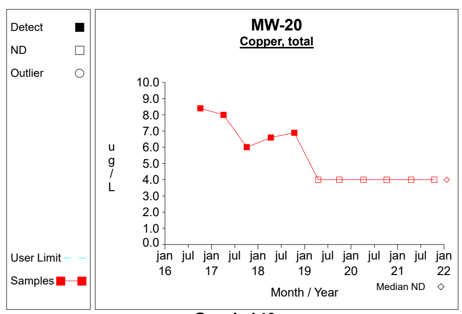
Graph 140



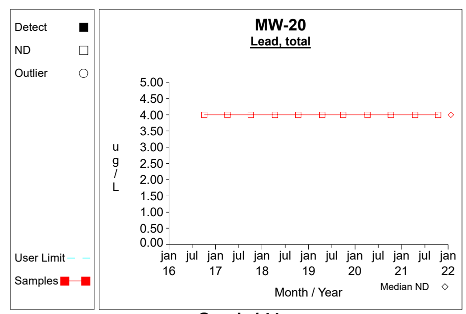
Graph 141



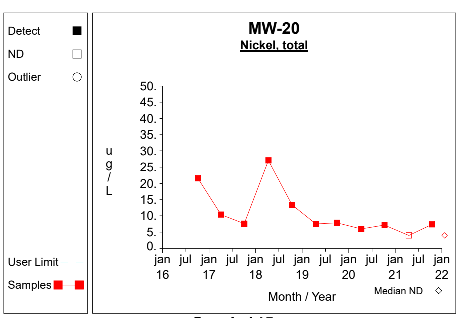
Graph 142



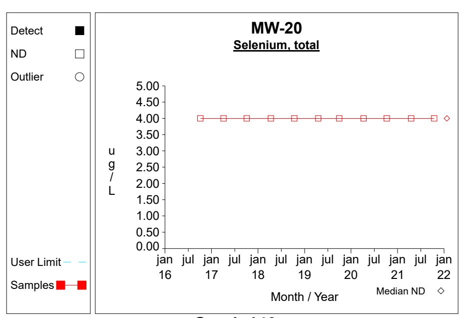
Graph 143



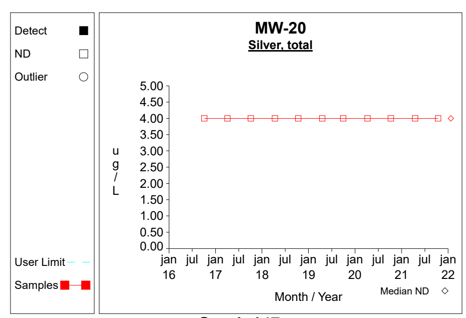
Graph 144



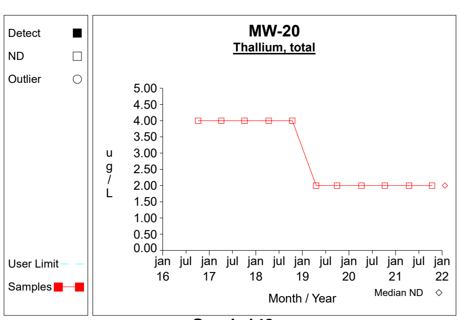
Graph 145



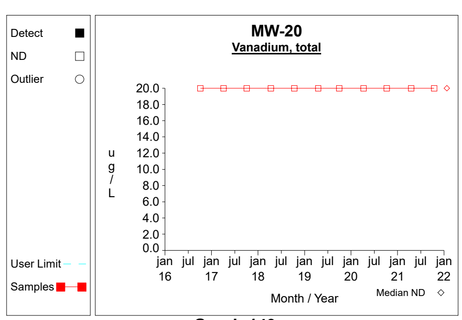
Graph 146



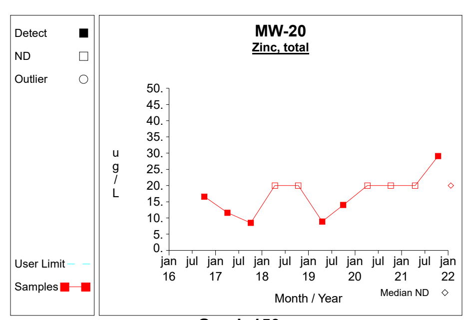
Graph 147



Graph 148

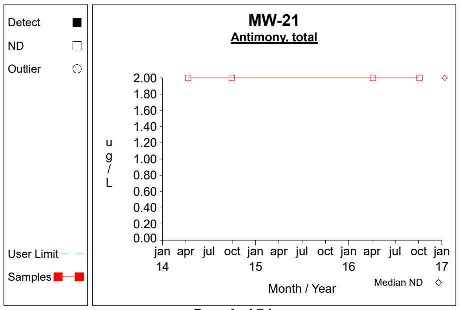


Graph 149

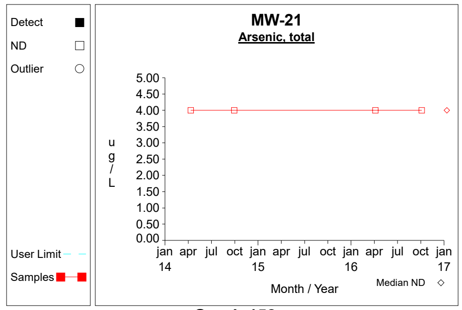


Graph 150

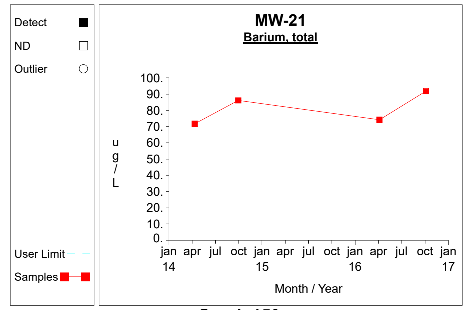
Time Series



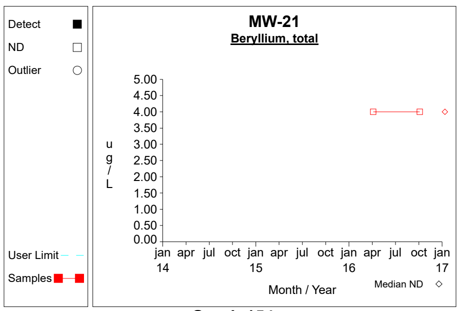
Graph 151



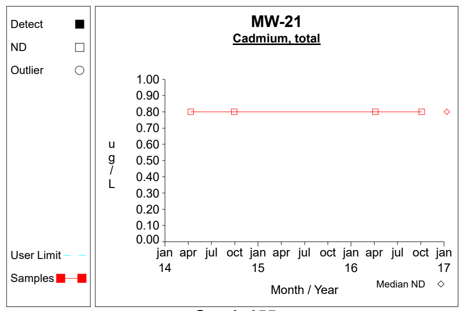
Graph 152



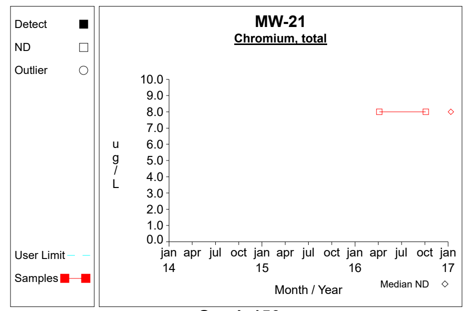
Graph 153



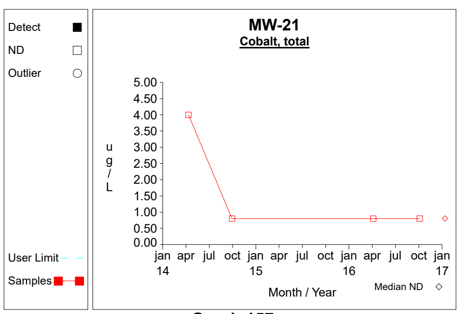
Graph 154



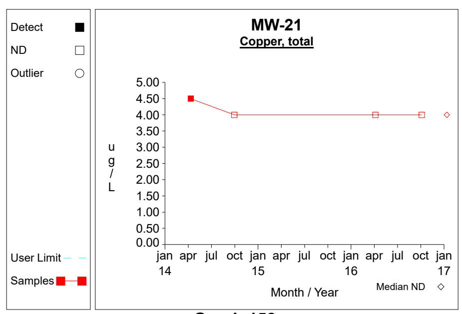
Graph 155



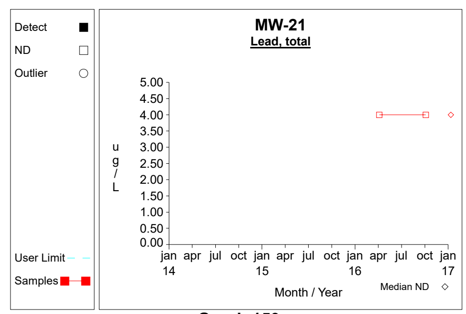
Graph 156



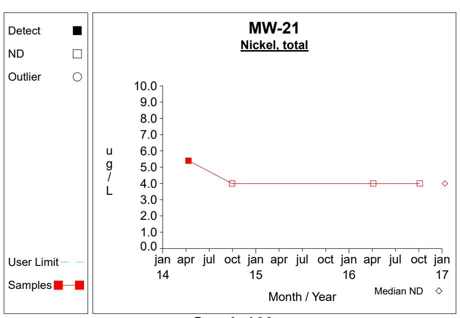
Graph 157



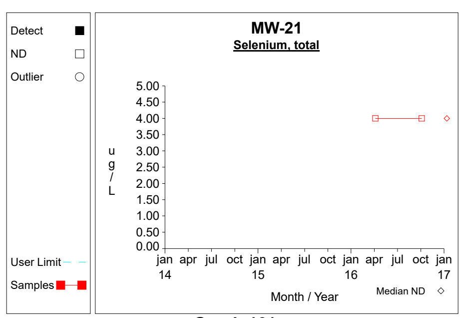
Graph 158



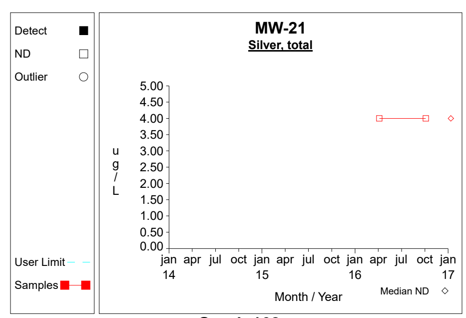
Graph 159



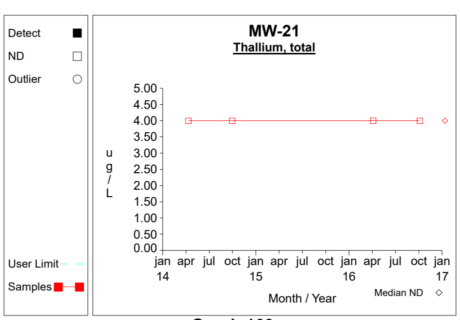
Graph 160



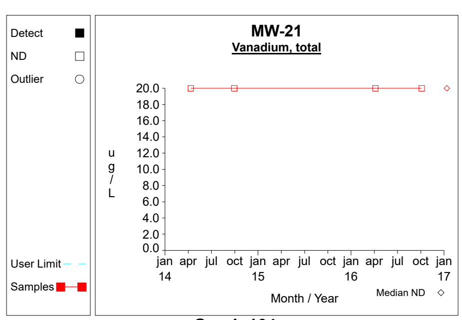
Graph 161



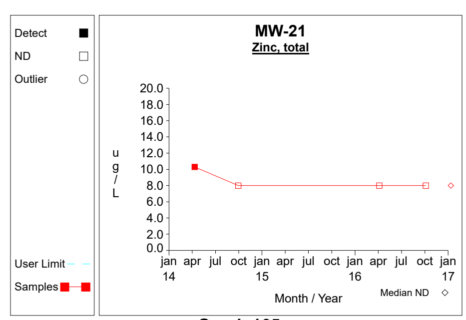
Graph 162



Graph 163



Graph 164



Graph 165

Attachment E

Statistics for Trace Metals

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Antimony, total	ug/L	MW-10	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-10	13	4	17	93.2692	5.7786	83.7000	86.8000	93.2692	93.2692	130.8302	normal		
Beryllium, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-10	13	4	17			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-10	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-10	13	4	17			0.4000	0.4000			0.8000	nonpar	.99	**
Copper, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-10	13	4	17			4.0000	4.0000			8.9000	nonpar	.99	**
Selenium, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-10	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-10	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-10	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-10	13	4	17			20.0000	20.0000			8.0000	nonpar	.99	**
Antimony, total	ug/L	MW-11	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-11	13	4	17	98.2846	11.1807	97.6000	85.0000	98.2846	98.2846	170.9592	normal		
Beryllium, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-11	13	4	17			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-11	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-11	13	4	17			0.4000	0.4000			1.3000	nonpar	.99	**
Copper, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Selenium, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-11	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-11	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-11	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-11	11	4	17	18.8636	7.3984	20.0000	20.0000	18.8636	18.8636	66.9533	normal		
Antimony, total	ug/L	MW-12	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-12	13	4	17	426.6154	124.8710	319.0000	353.0000	426.6154	426.6154	1238.2766	normal		
Beryllium, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-12	13	4	17			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-12	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-12	12	4	17	2.2167	1.6943	1.3000	1.3000	2.2167	2.2167	13.2295	normal		
Copper, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-12	13	4	17	5.5231	1.6878	4.0000	4.0000	5.5231	5.5231	16.4936	normal		
Selenium, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-12	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-12	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-12	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-12	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Antimony, total	ug/L	MW-13	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Arsenic, total	ug/L	MW-13	13	4	17	20.7615	6.7783	15.7000	8.8000	20.7615	20.7615	64.8208	normal		
Barium, total	ug/L	MW-13	13	4	17	2603.6923	1104.8885	752.0000	715.0000	2603.6923	2603.6923	9785.4675	normal		
Beryllium, total	ug/L	MW-13	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-13	13	4	17			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-13	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-13	13	4	17	9.5846	4.3060	9.0000	6.4000	9.5846	9.5846	37.5734	normal		
Copper, total	ug/L	MW-13	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-13	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-13	13	4	17	7.7000	6.0226	9.0000	6.8000	7.7000	7.7000	46.8469	normal		
Selenium, total	ug/L	MW-13	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-13	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-13	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-13	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-13	13	4	17			20.0000	20.0000			8.0000	nonpar	.99	**
Antimony, total	ug/L	MW-14	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-14	13	4	17	26.7385	37.4715	7.7000	4.0000	26.7385	26.7385	270.3034	normal		
Barium, total	ug/L	MW-14	13	4	17	1024.3077	515.7174	800.0000	691.0000	1024.3077	1024.3077	4376.4705	normal		
Beryllium, total	ug/L	MW-14	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-14	13	4	17			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-14	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-14	13	4	17	1.2077	0.8311	0.4000	0.4000	1.2077	1.2077	6.6100	normal		
Copper, total	ug/L	MW-14	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-14	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-14	13	4	17			4.0000	4.0000			5.7000	nonpar	.99	**
Selenium, total	ug/L	MW-14	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-14	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-14	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-14	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-14	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Antimony, total	ug/L	MW-15	15	4	20			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-15	15	4	20	8.5867	7.4323	13.0000	4.0000	8.5867	8.5867	56.8963	normal		
Barium, total	ug/L	MW-15	15	4	20	304.6000	86.5223	226.0000	356.0000	304.6000	304.6000	866.9952	normal		
Beryllium, total	ug/L	MW-15	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-15	15	4	20			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-15	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-15	15	4	20	8.5333	4.7723	5.1000	2.2000	8.5333	8.5333	39.5535	normal		
Copper, total	ug/L	MW-15	15	4	20			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-15	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-15	14	4	20	10.2214	2.8861	9.2000	9.7000	10.2214	10.2214	28.9810	normal		
Selenium, total	ug/L	MW-15	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-15	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-15	15	4	20			2.0000	2.0000			4.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-15	15	4	20			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-15	15	4	20			20.0000	20.0000			10.2000	nonpar	.99	**
Antimony, total	ug/L	MW-17	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-17	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

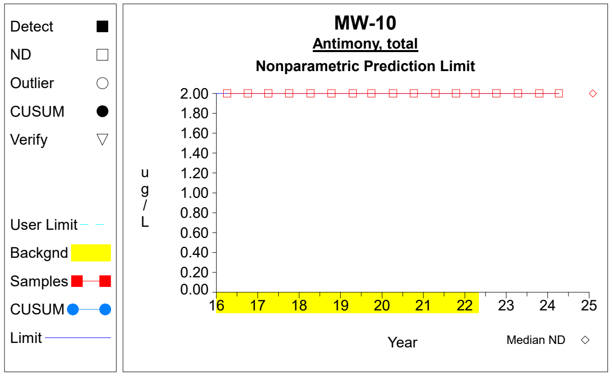
Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

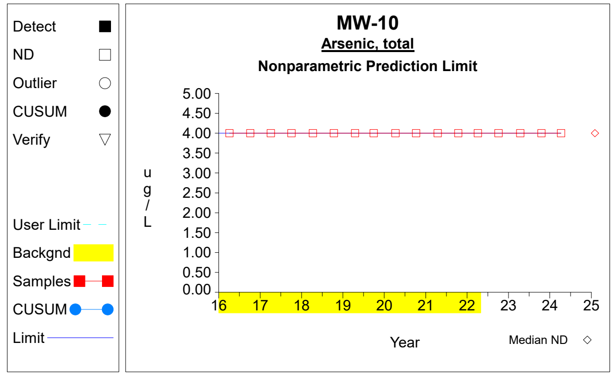
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Barium, total	ug/L	MW-17	13	4	17	252.4615	84.5336	193.0000	202.0000	252.4615	252.4615	801.9302	normal		
Beryllium, total	ug/L	MW-17	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-17	13	4	17			0.8000	0.8000			1.8000	nonpar	.99	**
Chromium, total	ug/L	MW-17	13	4	17			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-17	13	4	17	4.4077	4.1476	0.4000	1.1000	4.4077	4.4077	31.3670	normal		
Copper, total	ug/L	MW-17	13	4	17			4.0000	4.0000			8.1000	nonpar	.99	**
Lead, total	ug/L	MW-17	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-17	13	4	17	11.5923	9.8607	12.1000	20.4000	11.5923	13.0045	75.6865	normal		
Selenium, total	ug/L	MW-17	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-17	13	4	17			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-17	13	4	17			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-17	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-17	13	4	17			20.0000	20.0000			20.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

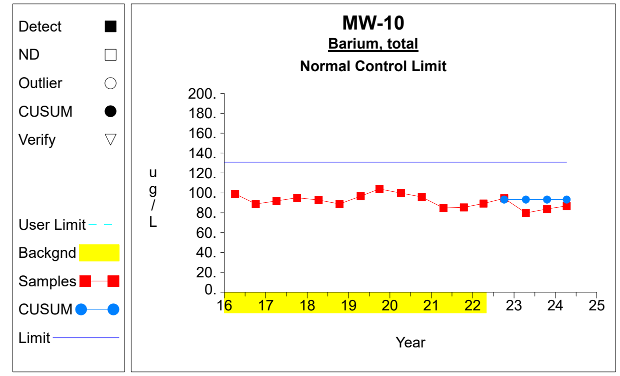
Intra-Well Control Charts / Prediction Limits



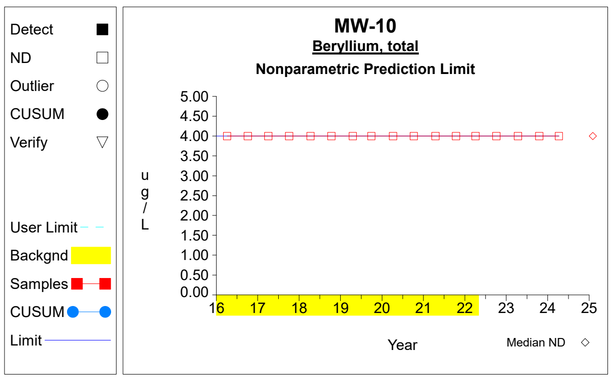
Graph 1



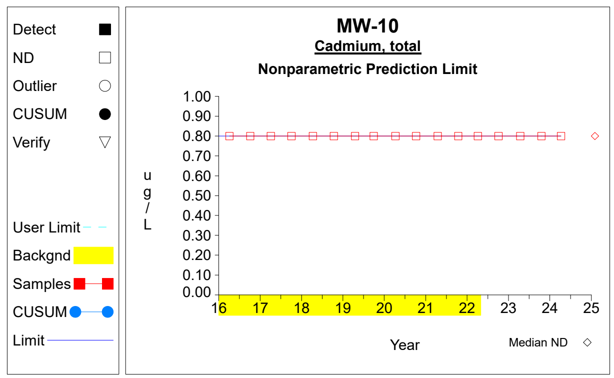
Graph 2



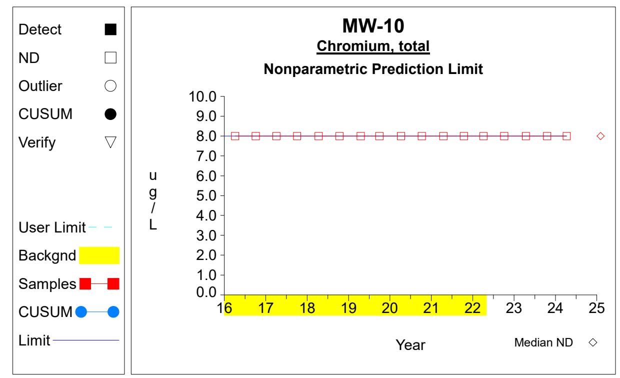
Graph 3



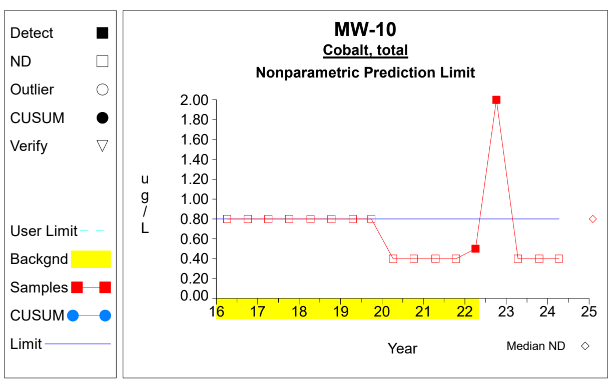
Graph 4



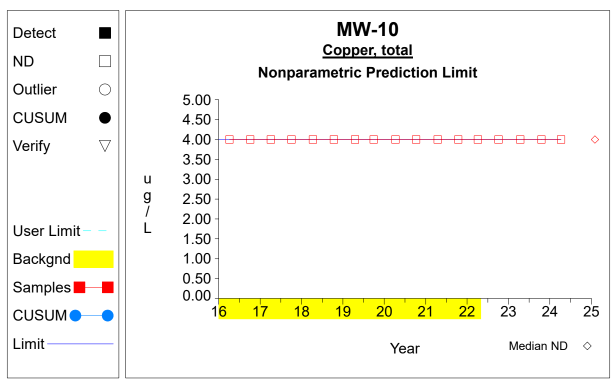
Graph 5



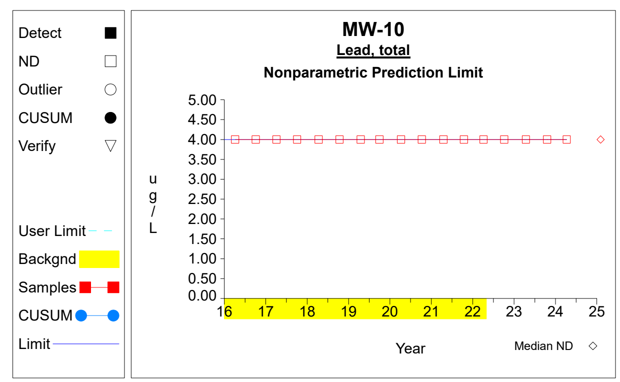
Graph 6



Graph 7



Graph 8



Graph 9

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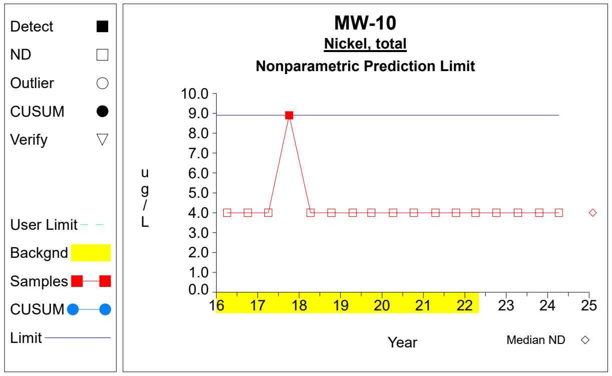
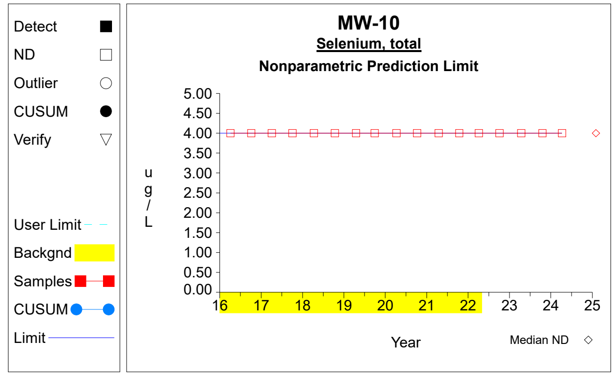
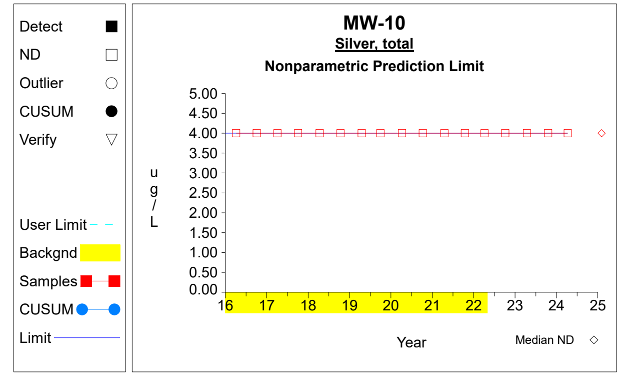
Intra-Well Control Charts / Prediction Limits



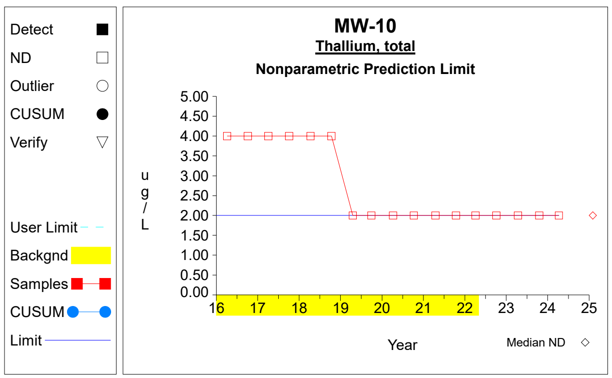
Graph 10



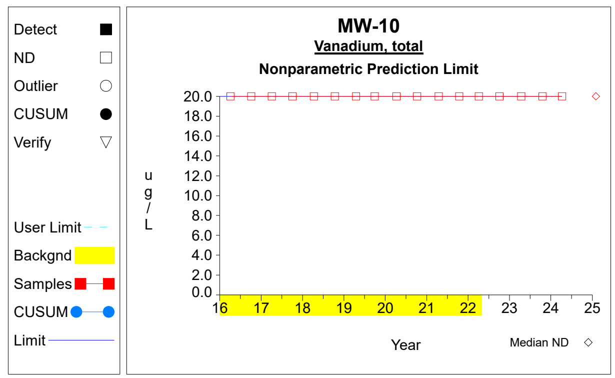
Graph 11



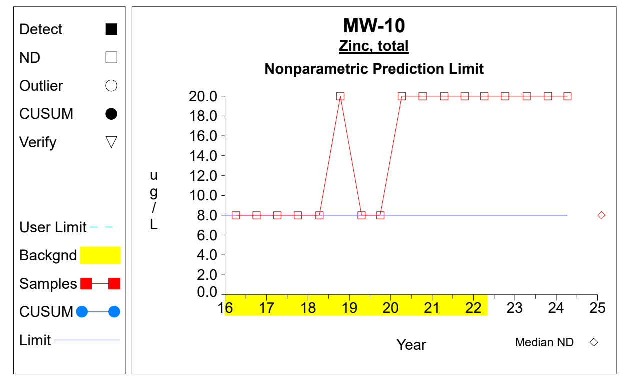
Graph 12



Graph 13



Graph 14

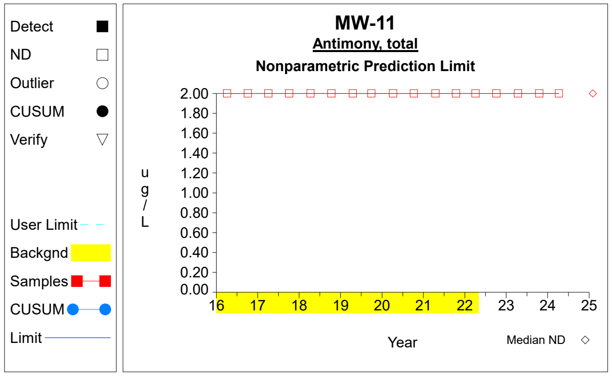


Graph 15

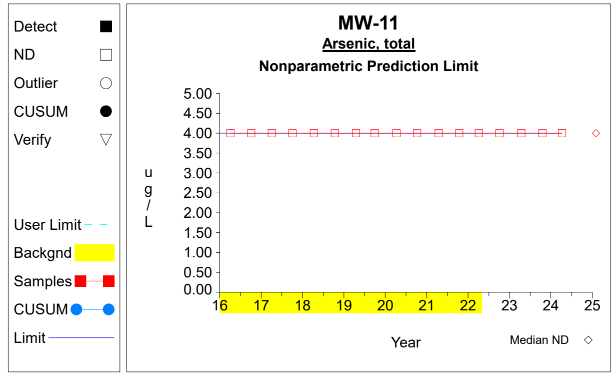
Jackson County [GW]

May 2024

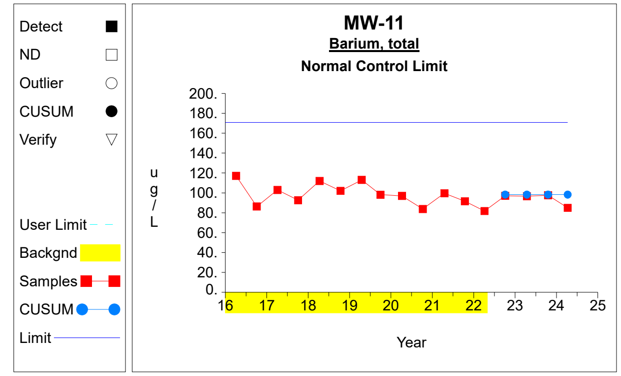
Intra-Well Control Charts / Prediction Limits



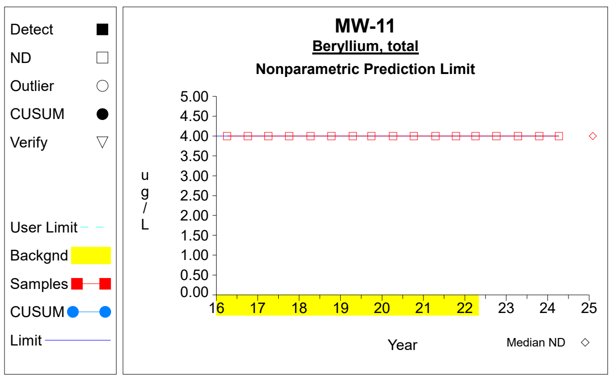
Graph 16



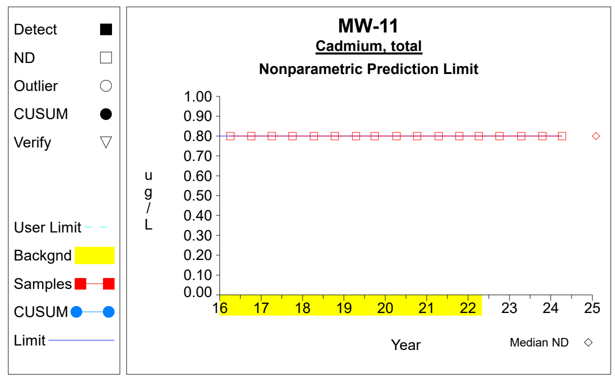
Graph 17



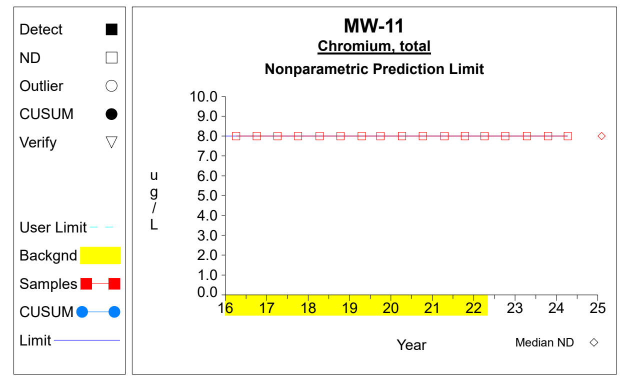
Graph 18



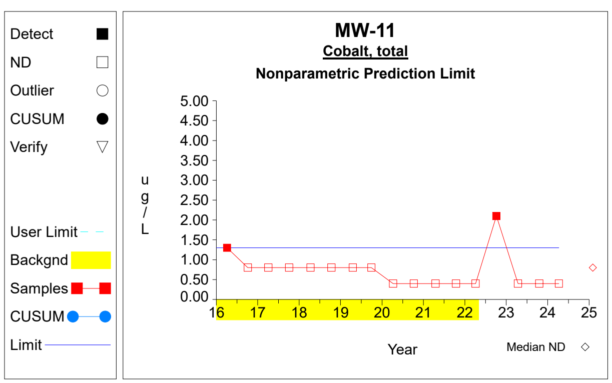
Graph 19



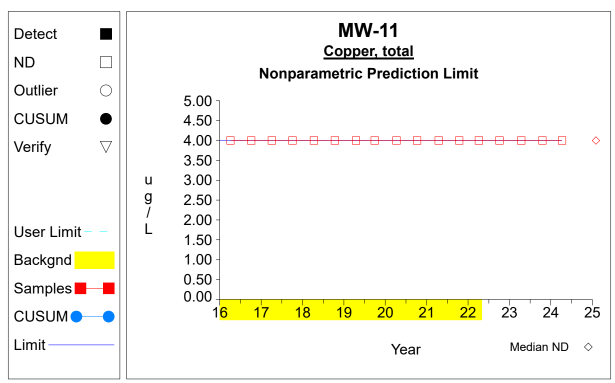
Graph 20



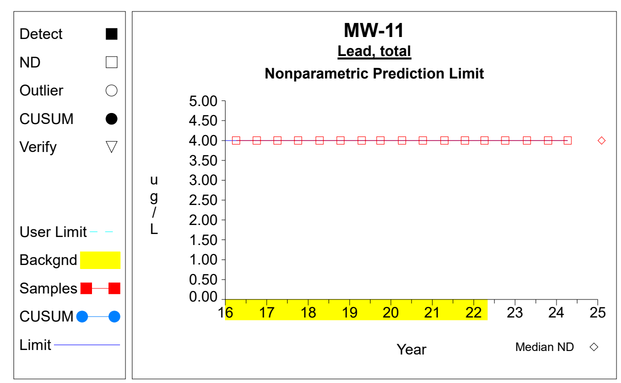
Graph 21



Graph 22



Graph 23



Graph 24

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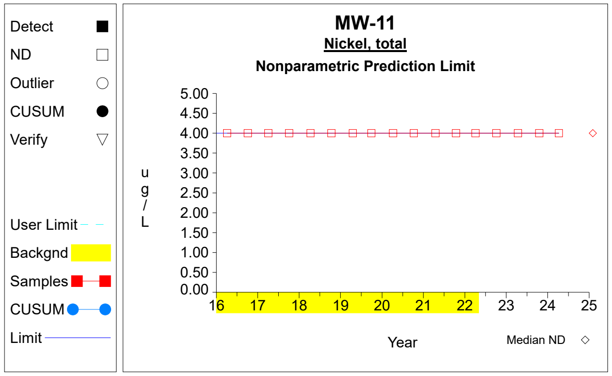
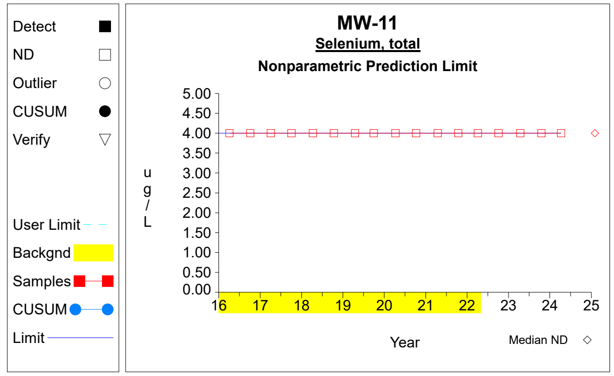
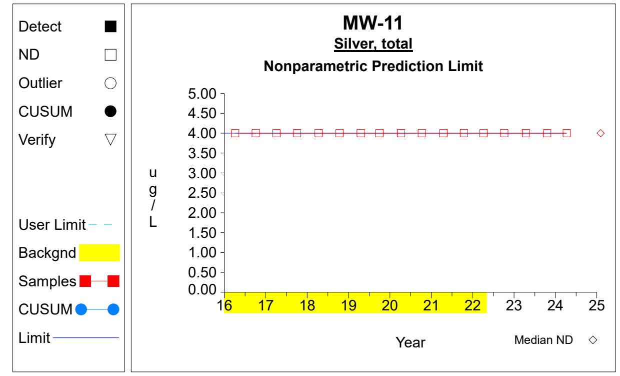
Intra-Well Control Charts / Prediction Limits



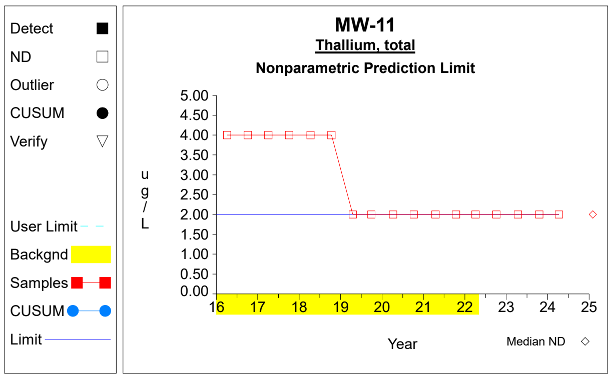
Graph 25



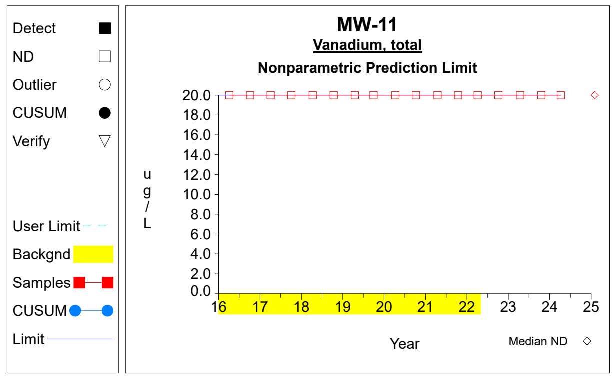
Graph 26



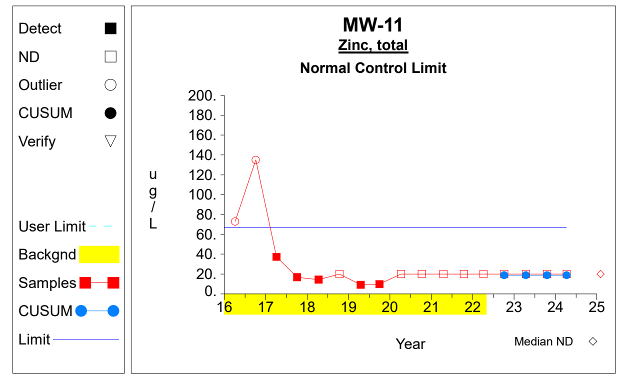
Graph 27



Graph 28



Graph 29



Graph 30

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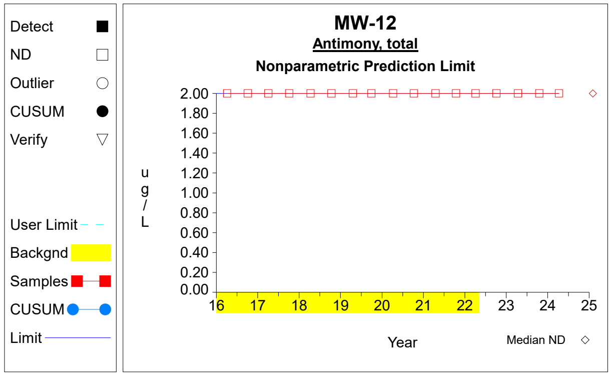
Jackson County [GW] May 2024

Intra-Well Control Charts / Prediction Limits



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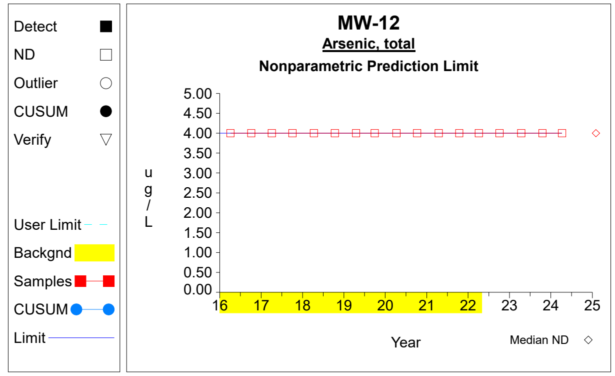
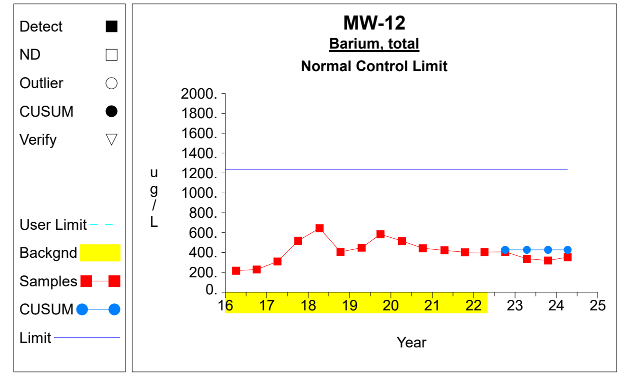
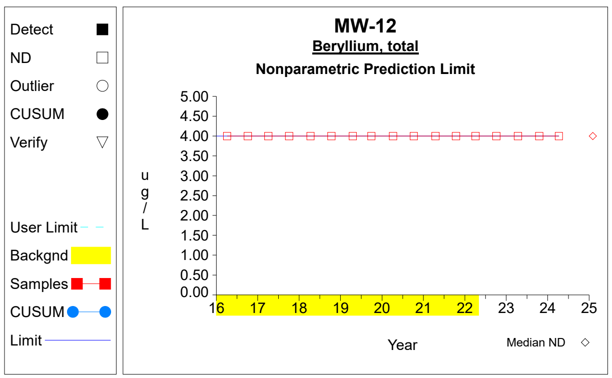


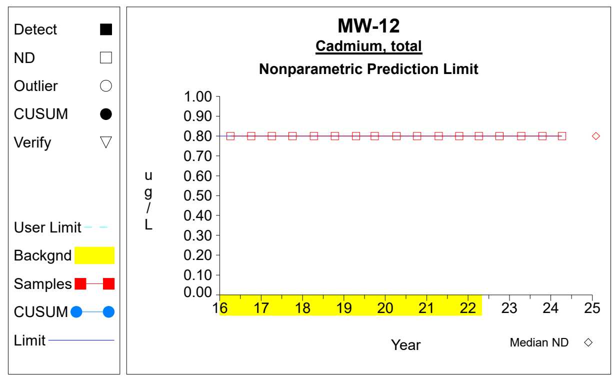
Graph 32



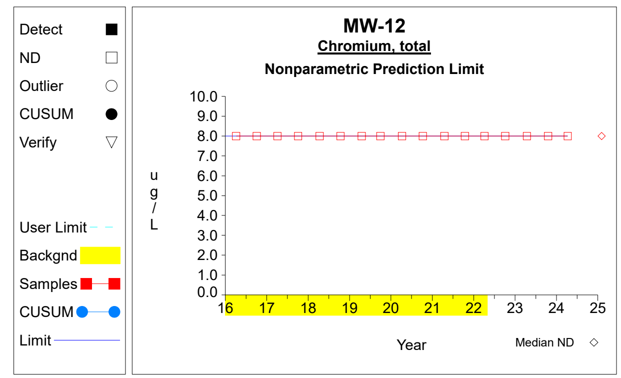
Graph 33



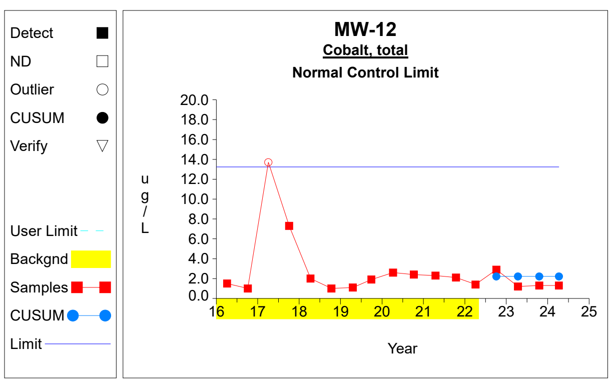
Graph 34



Graph 35



Graph 36



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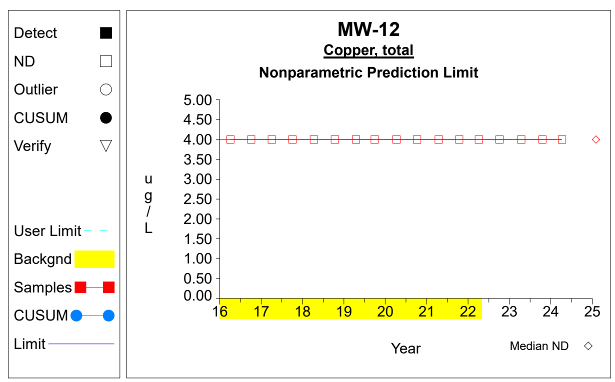

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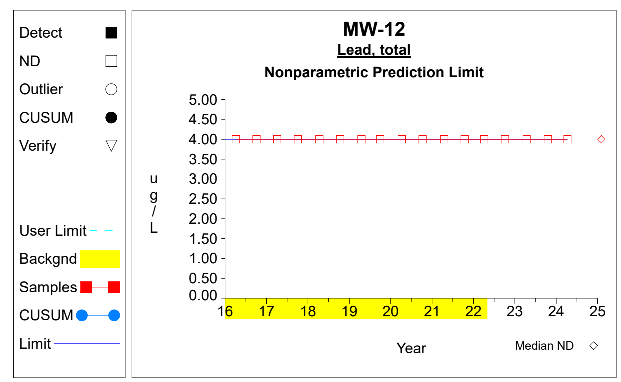

Graph 39

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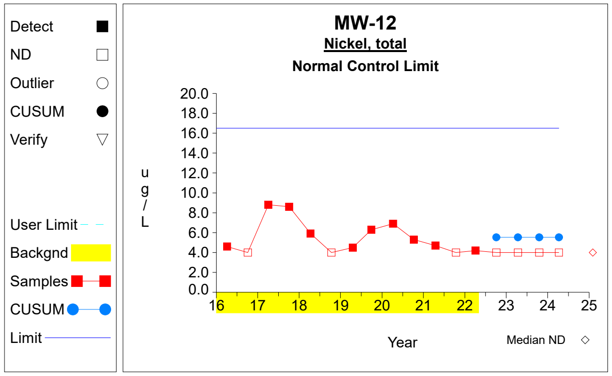
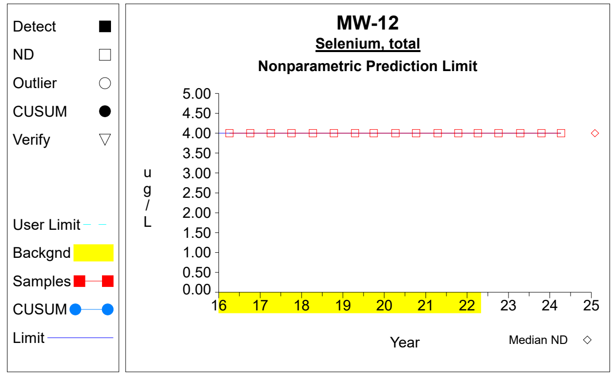
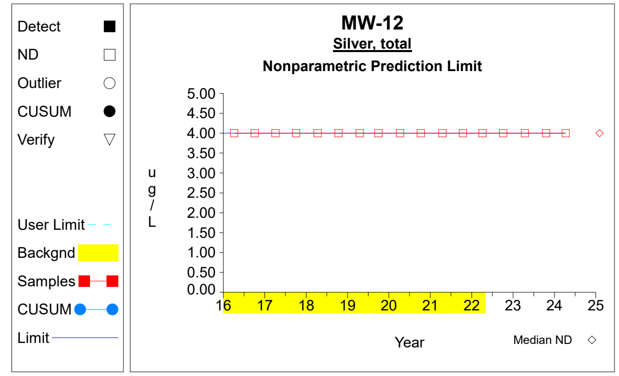
Intra-Well Control Charts / Prediction Limits



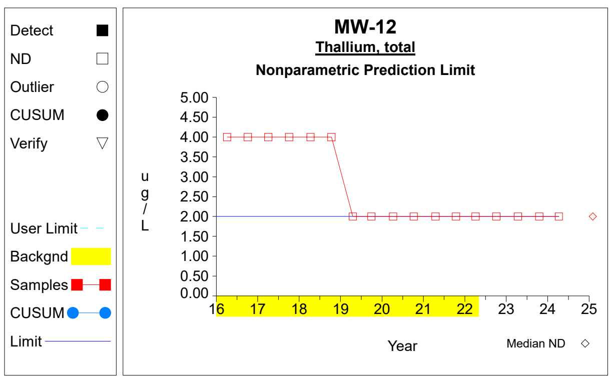
Graph 40



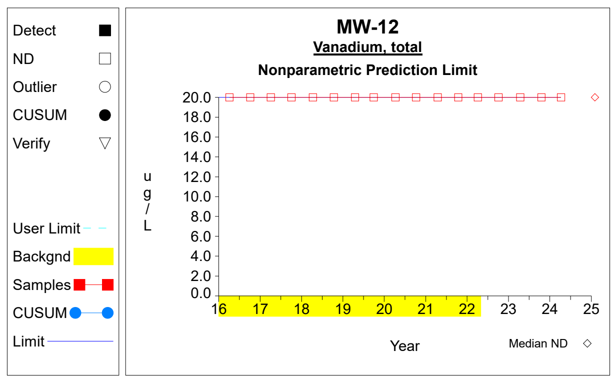
Graph 41



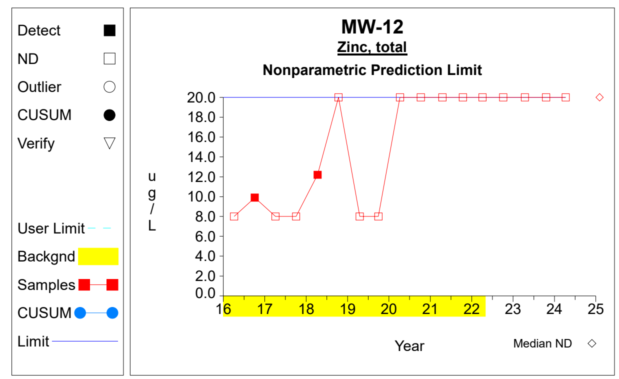
Graph 42



Graph 43

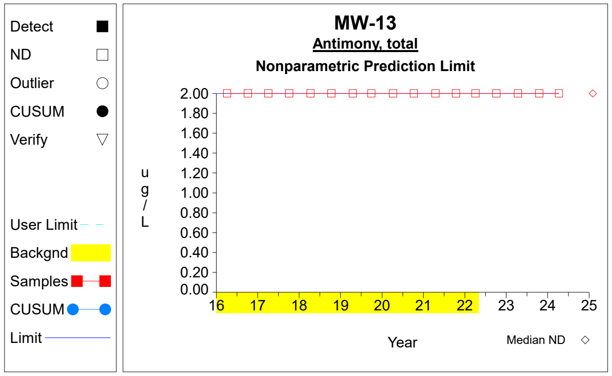


Graph 44

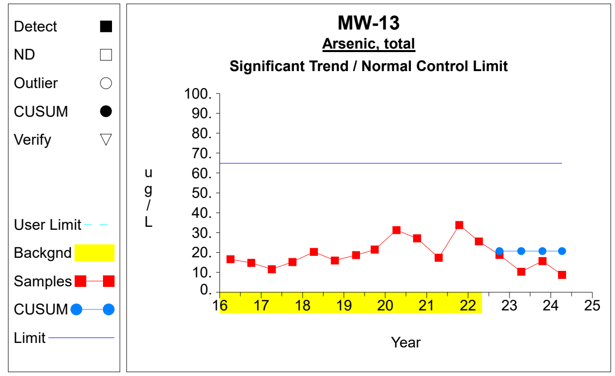


Graph 45

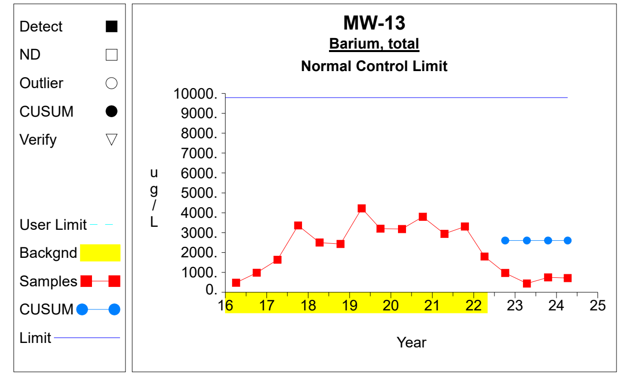
Intra-Well Control Charts / Prediction Limits



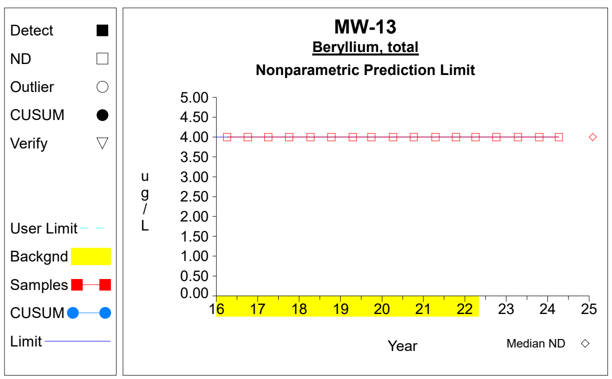
Graph 46



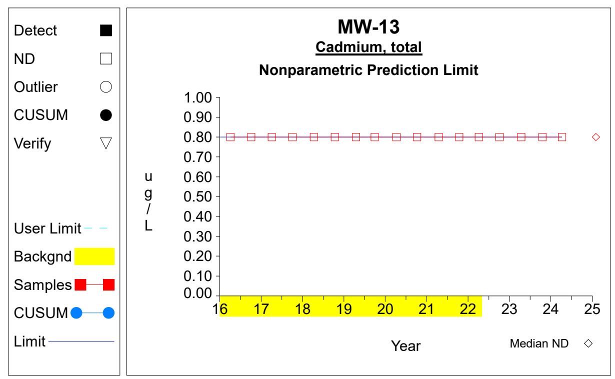
Graph 47



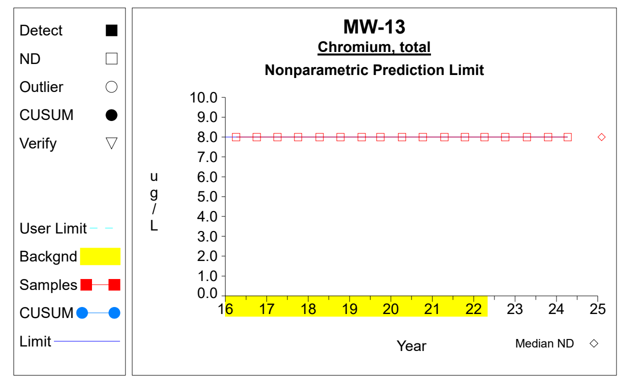
Graph 48



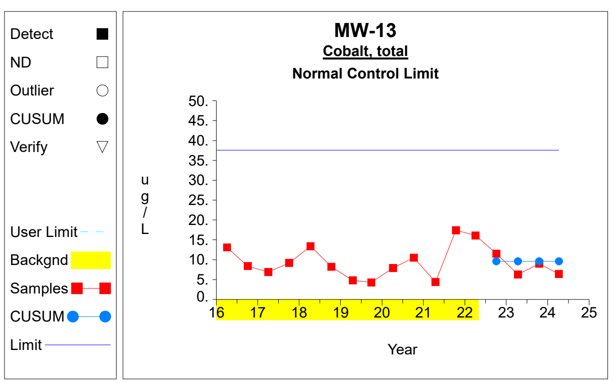
Graph 49



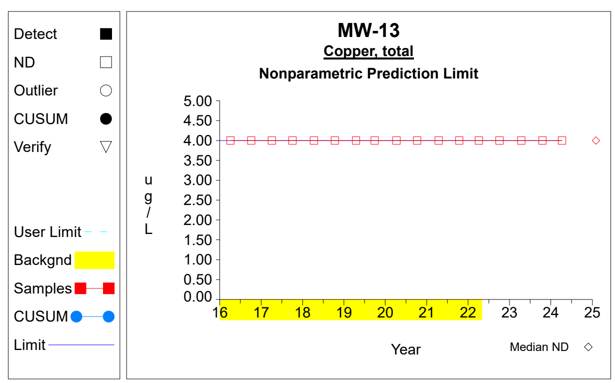
Graph 50



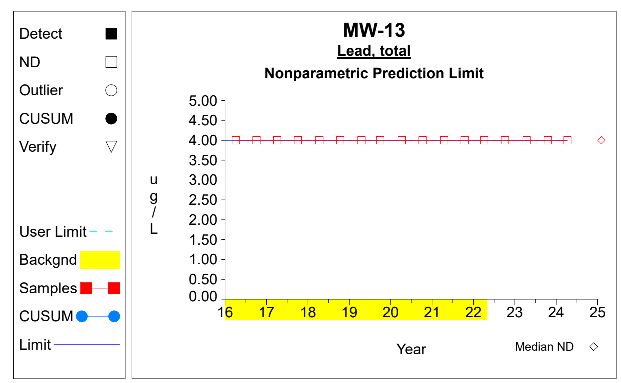
Graph 51



Graph 52



Graph 53



Graph 54

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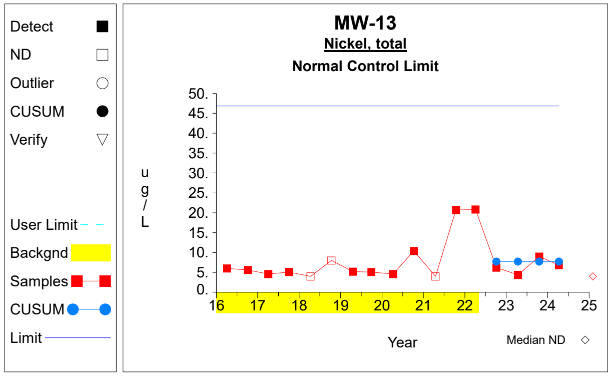
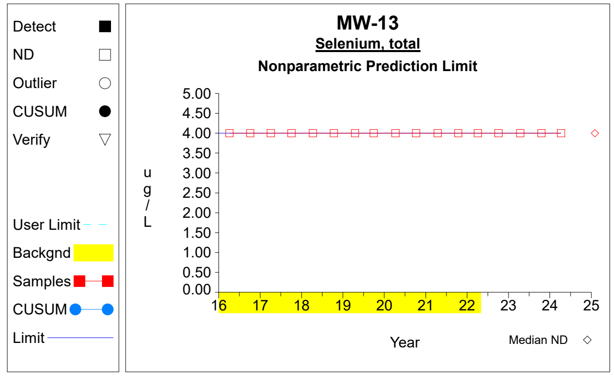
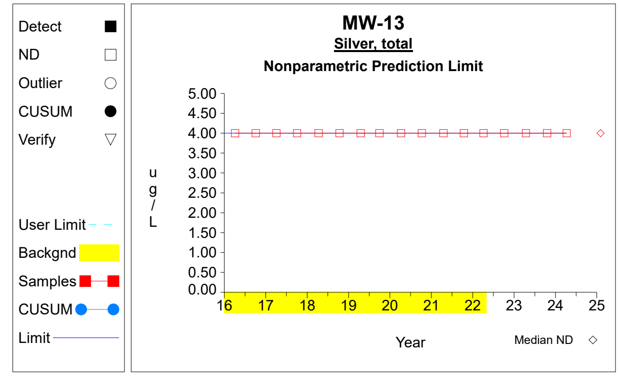
Intra-Well Control Charts / Prediction Limits



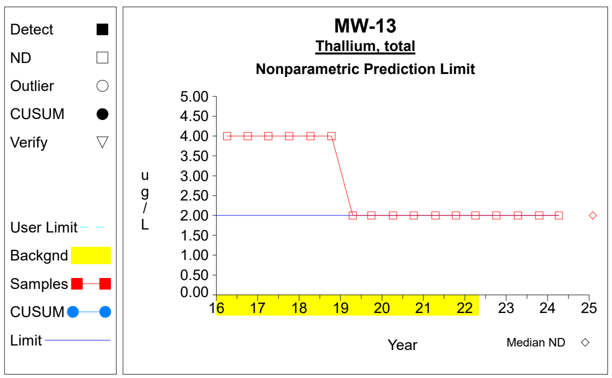
Graph 55



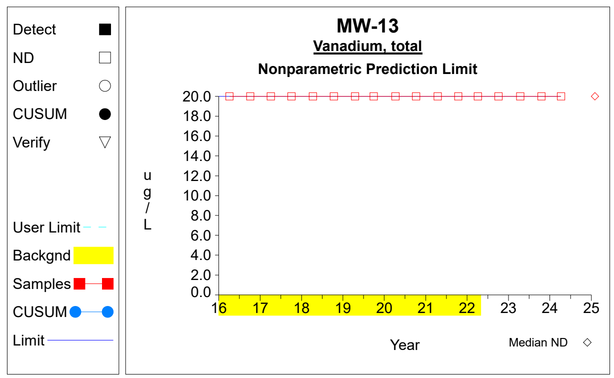
Graph 56



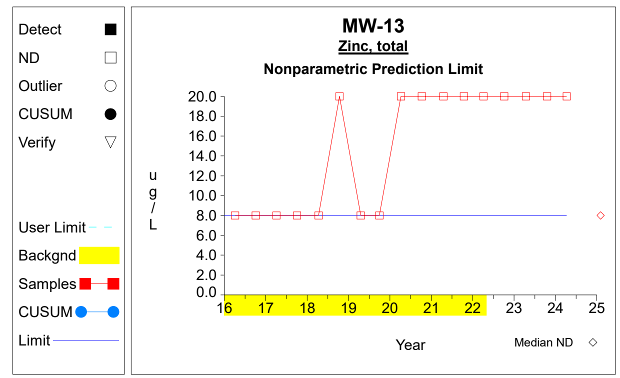
Graph 57



Graph 58

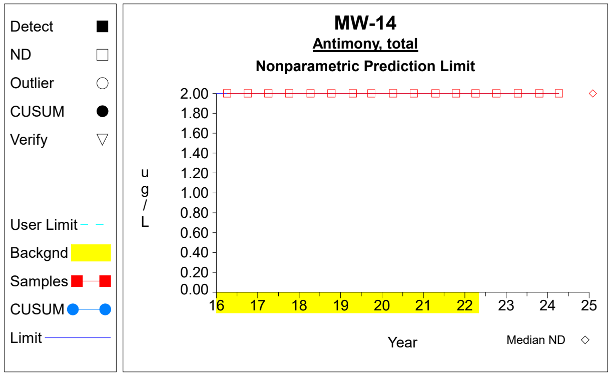


Graph 59

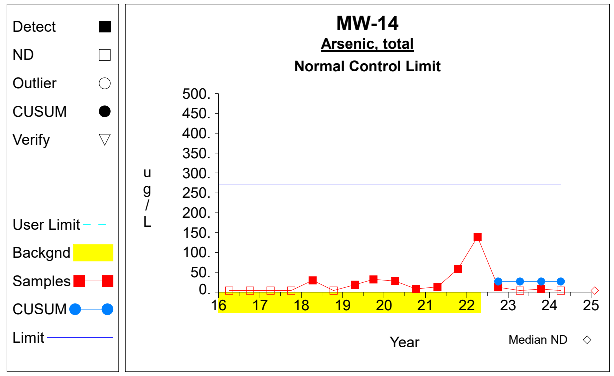


Graph 60

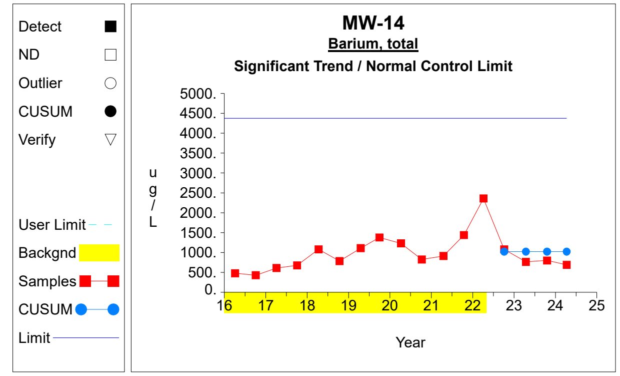
Intra-Well Control Charts / Prediction Limits



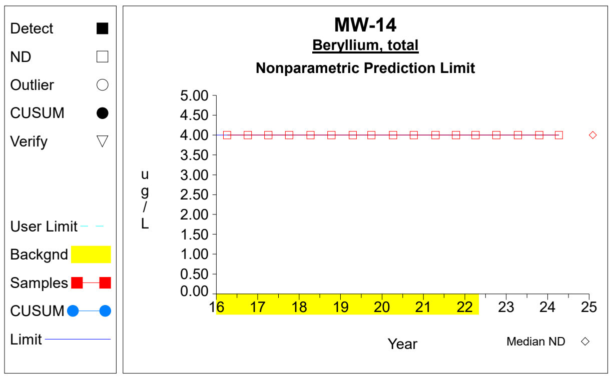
Graph 61



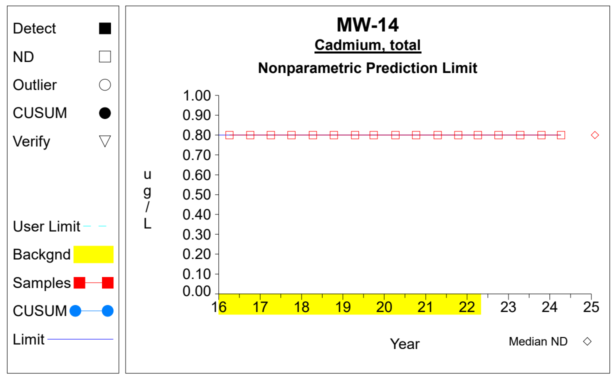
Graph 62



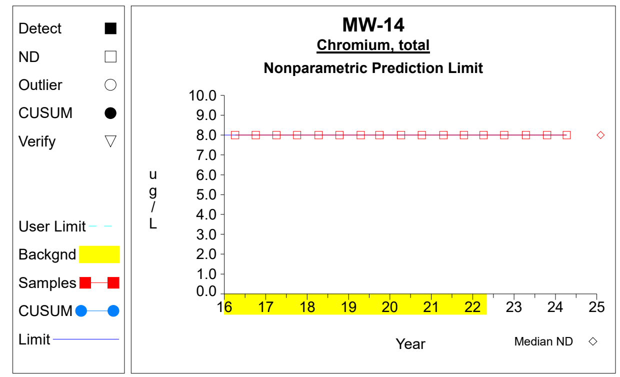
Graph 63



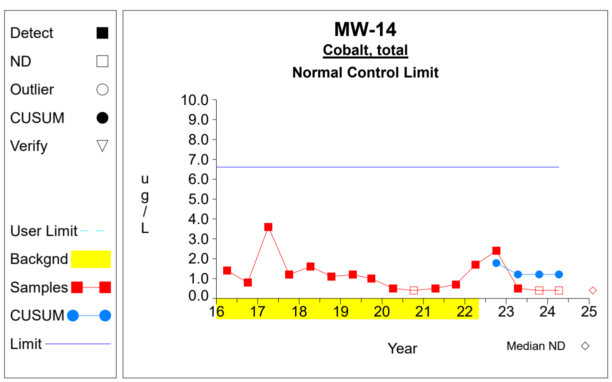
Graph 64



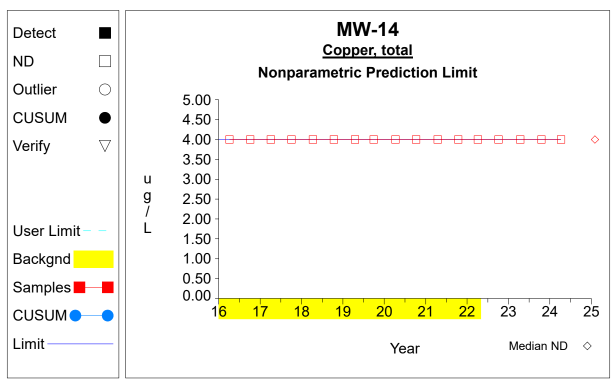
Graph 65



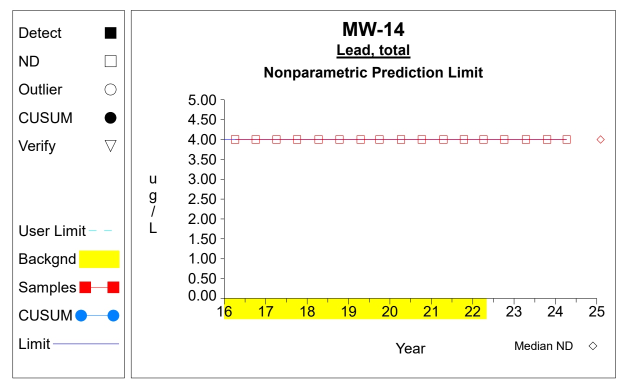
Graph 66



Graph 67

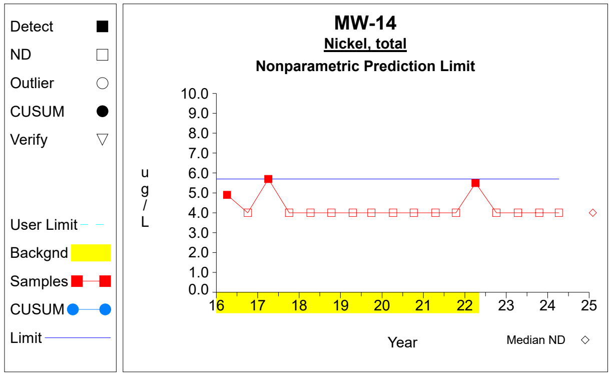


Graph 68

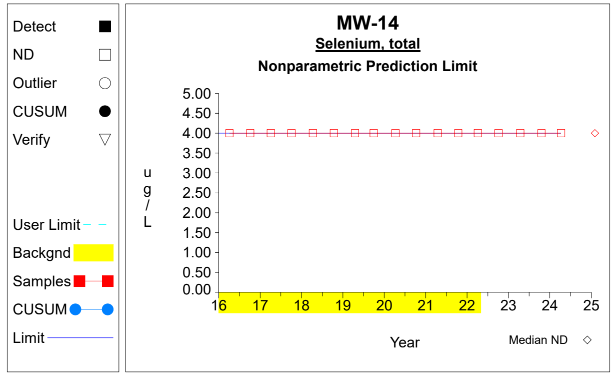


Graph 69

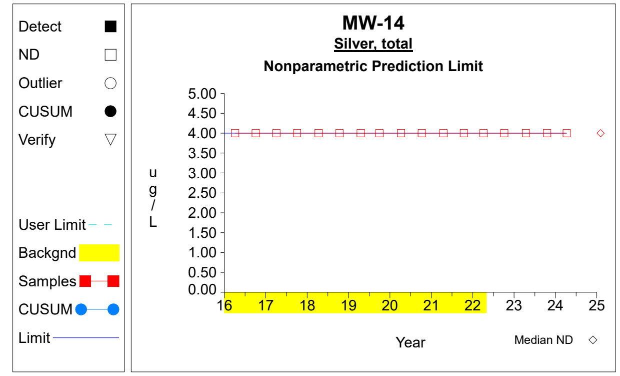
Intra-Well Control Charts / Prediction Limits



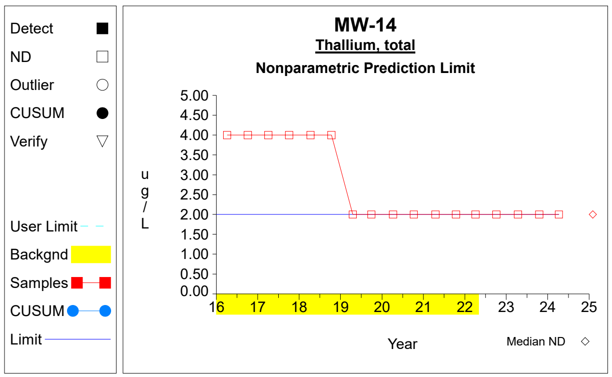
Graph 70



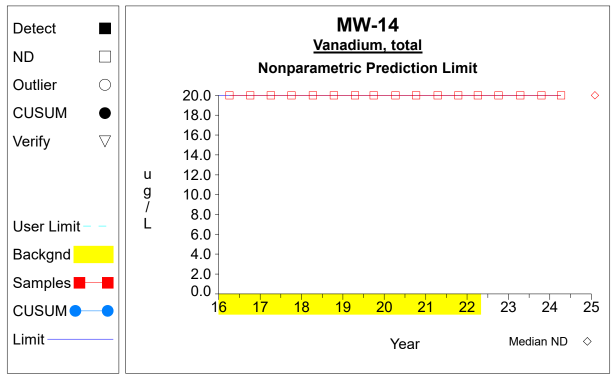
Graph 71



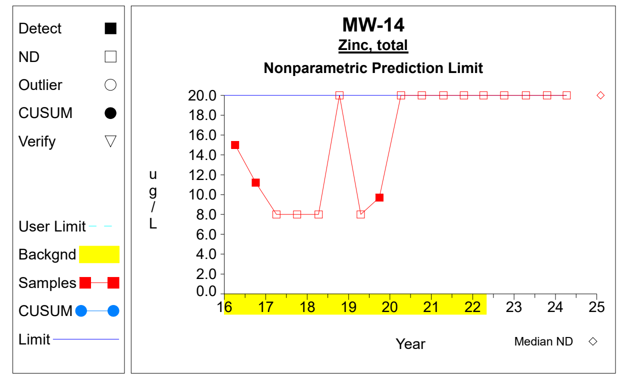
Graph 72



Graph 73



Graph 74

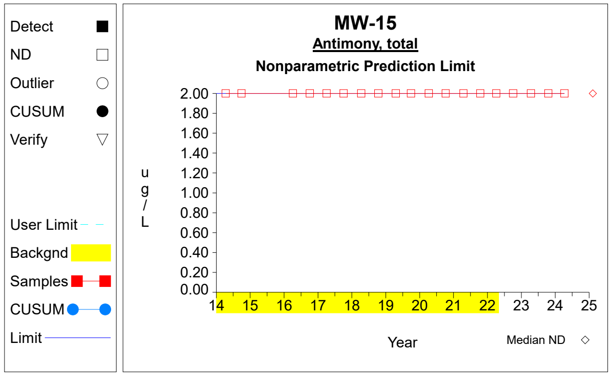


Graph 75

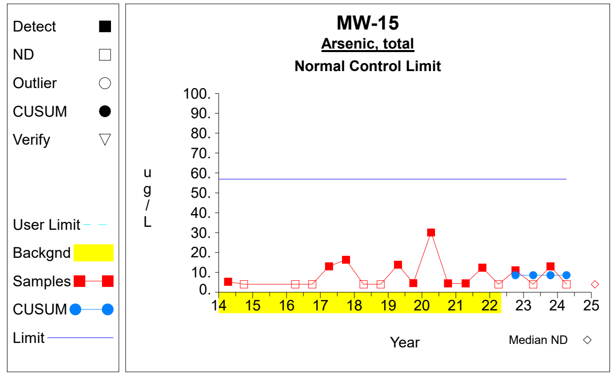
Prepared by: Otter Creek Environmental

Jackson County [GW] May 2024

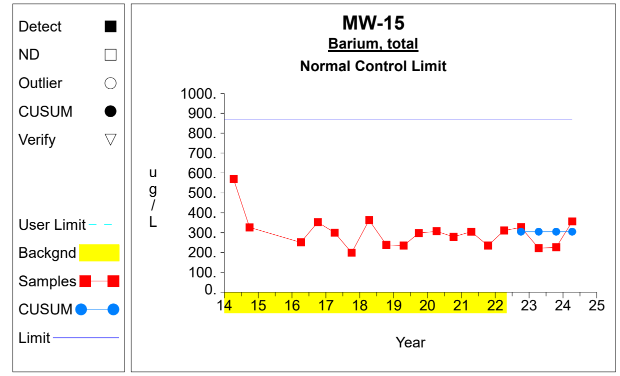
Intra-Well Control Charts / Prediction Limits



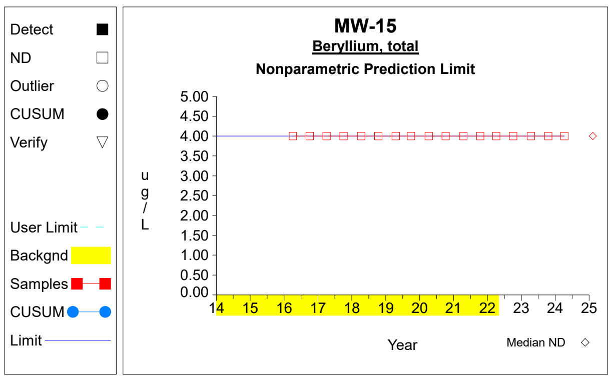
Graph 76



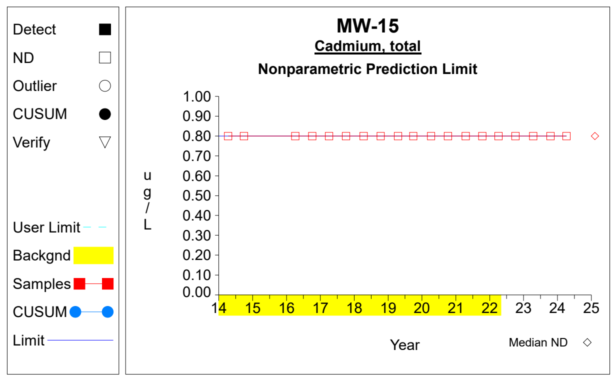
Graph 77



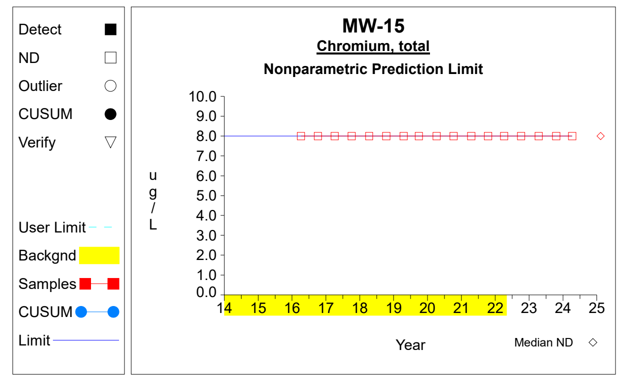
Graph 78



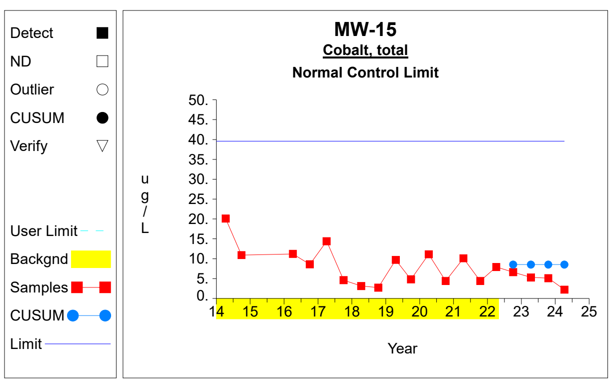
Graph 79



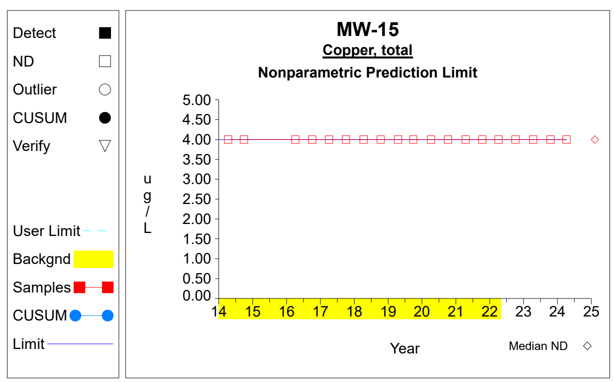
Graph 80



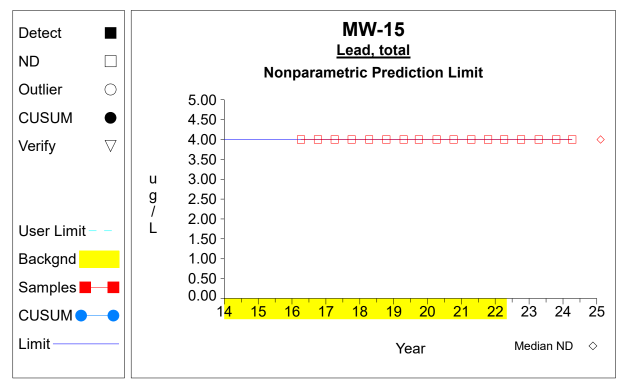
Graph 81



Graph 82



Graph 83



Graph 84

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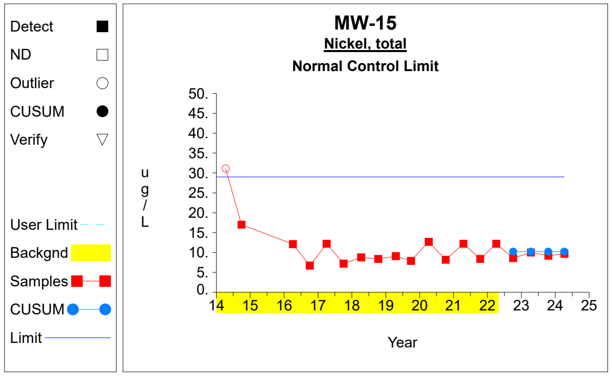
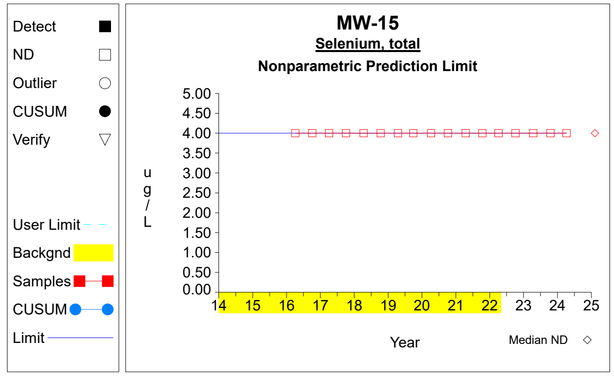
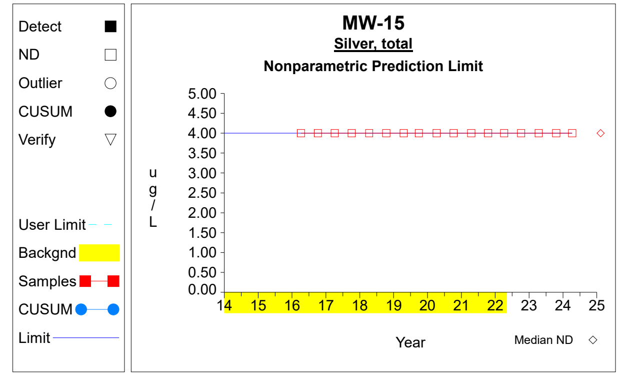
Intra-Well Control Charts / Prediction Limits



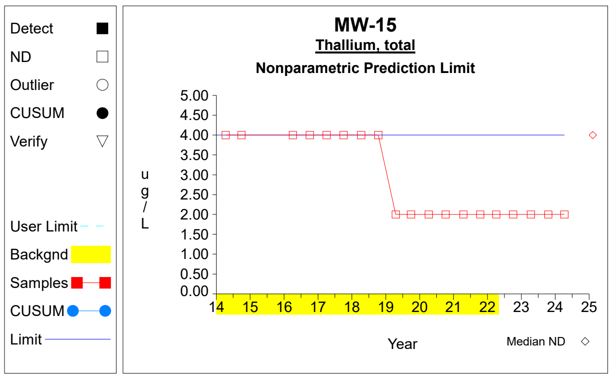
Graph 85



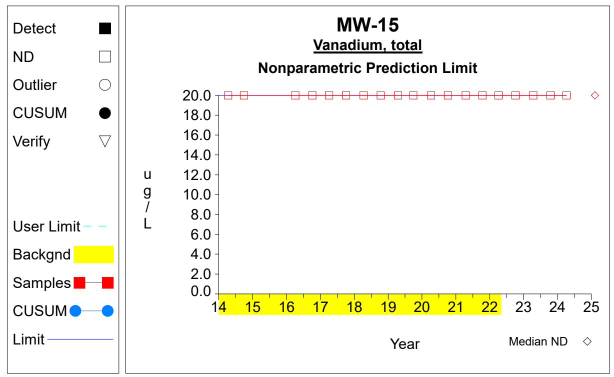
Graph 86



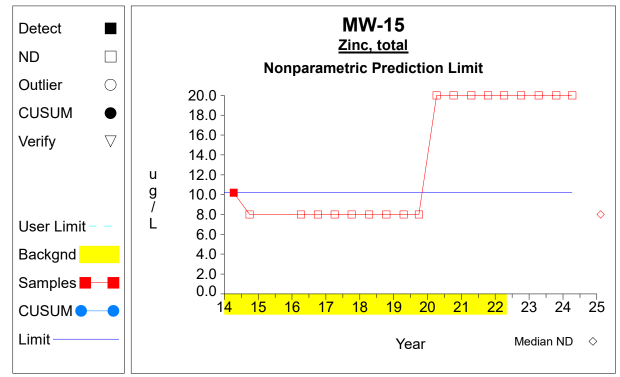
Graph 87



Graph 88

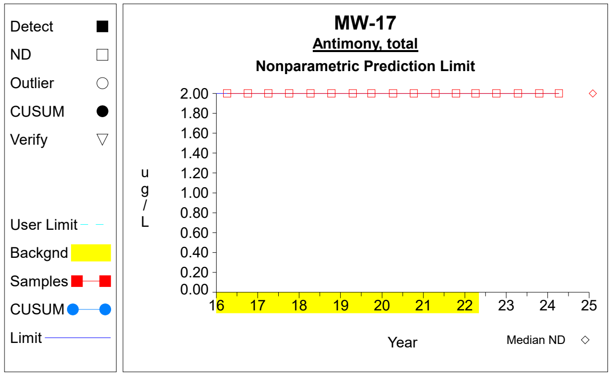


Graph 89

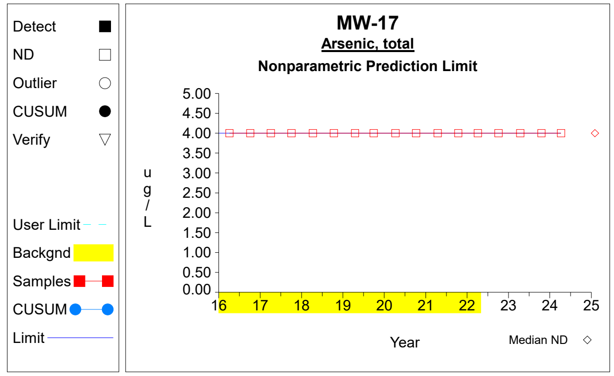


Graph 90

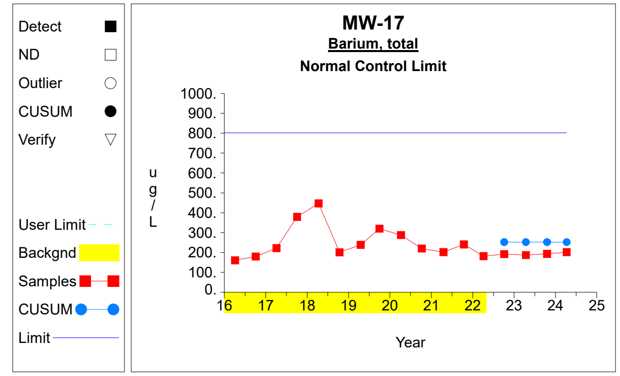
Intra-Well Control Charts / Prediction Limits



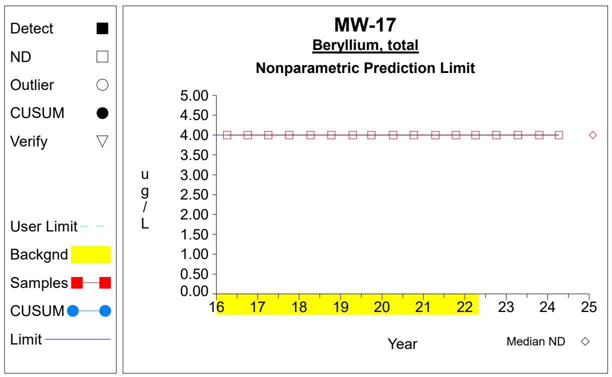
Graph 91



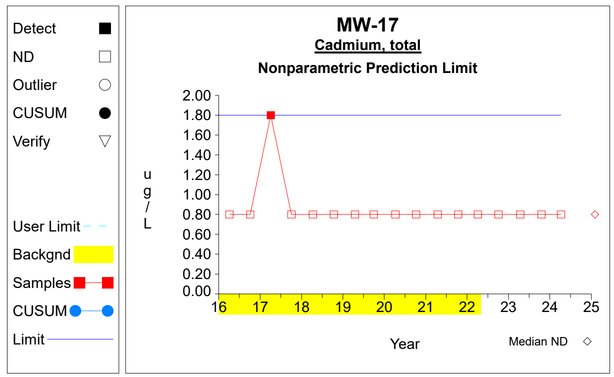
Graph 92



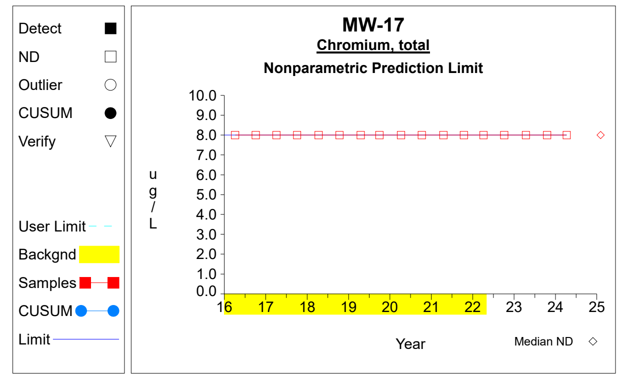
Graph 93



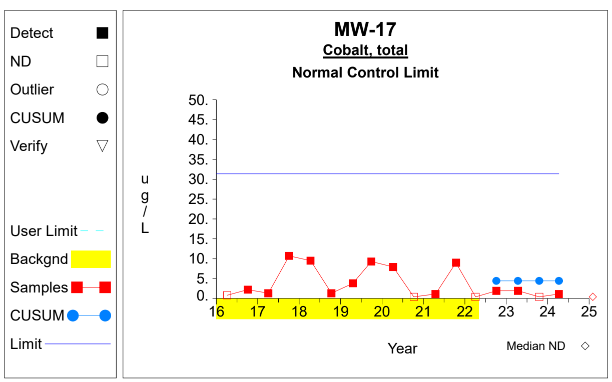
Graph 94



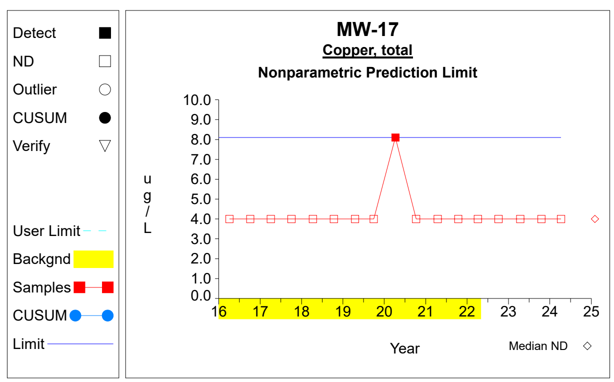
Graph 95



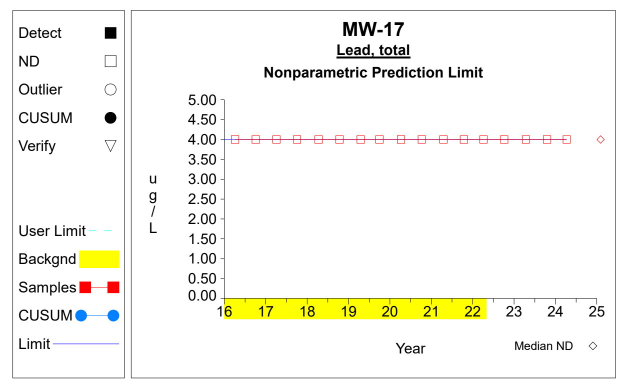
Graph 96



Graph 97

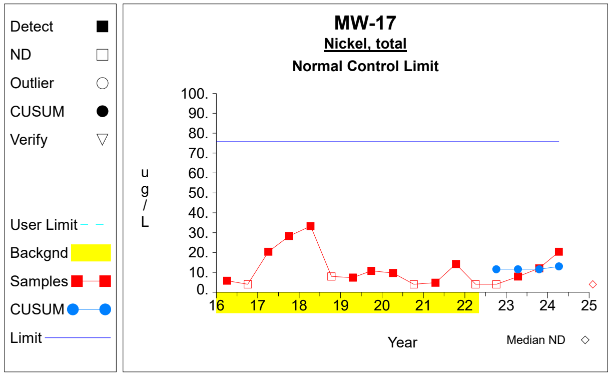


Graph 98

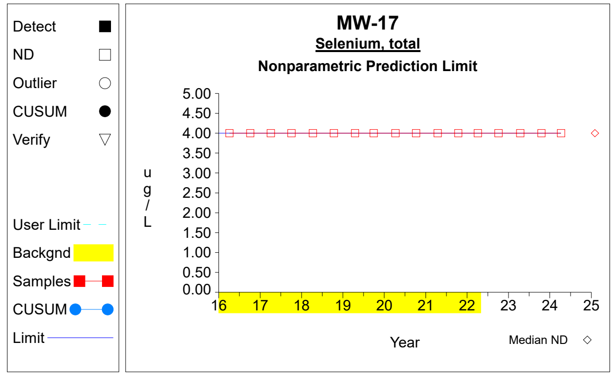


Graph 99

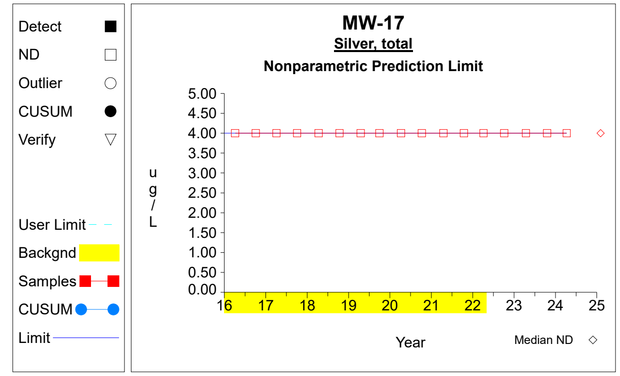
Intra-Well Control Charts / Prediction Limits



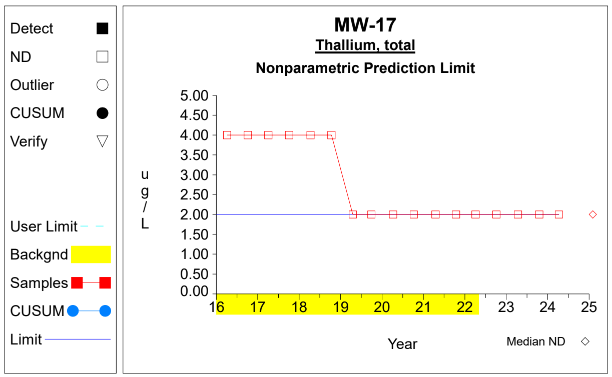
Graph 100



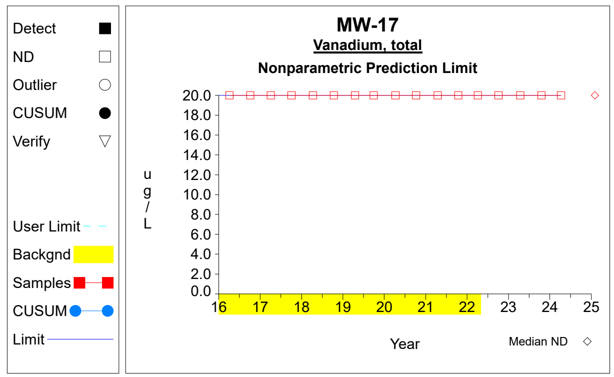
Graph 101



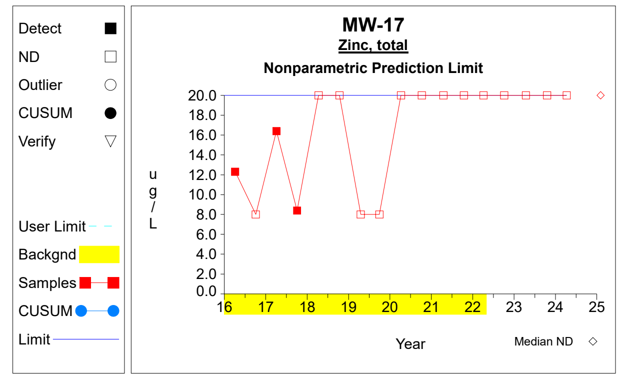
Graph 102



Graph 103



Graph 104



Graph 105

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program

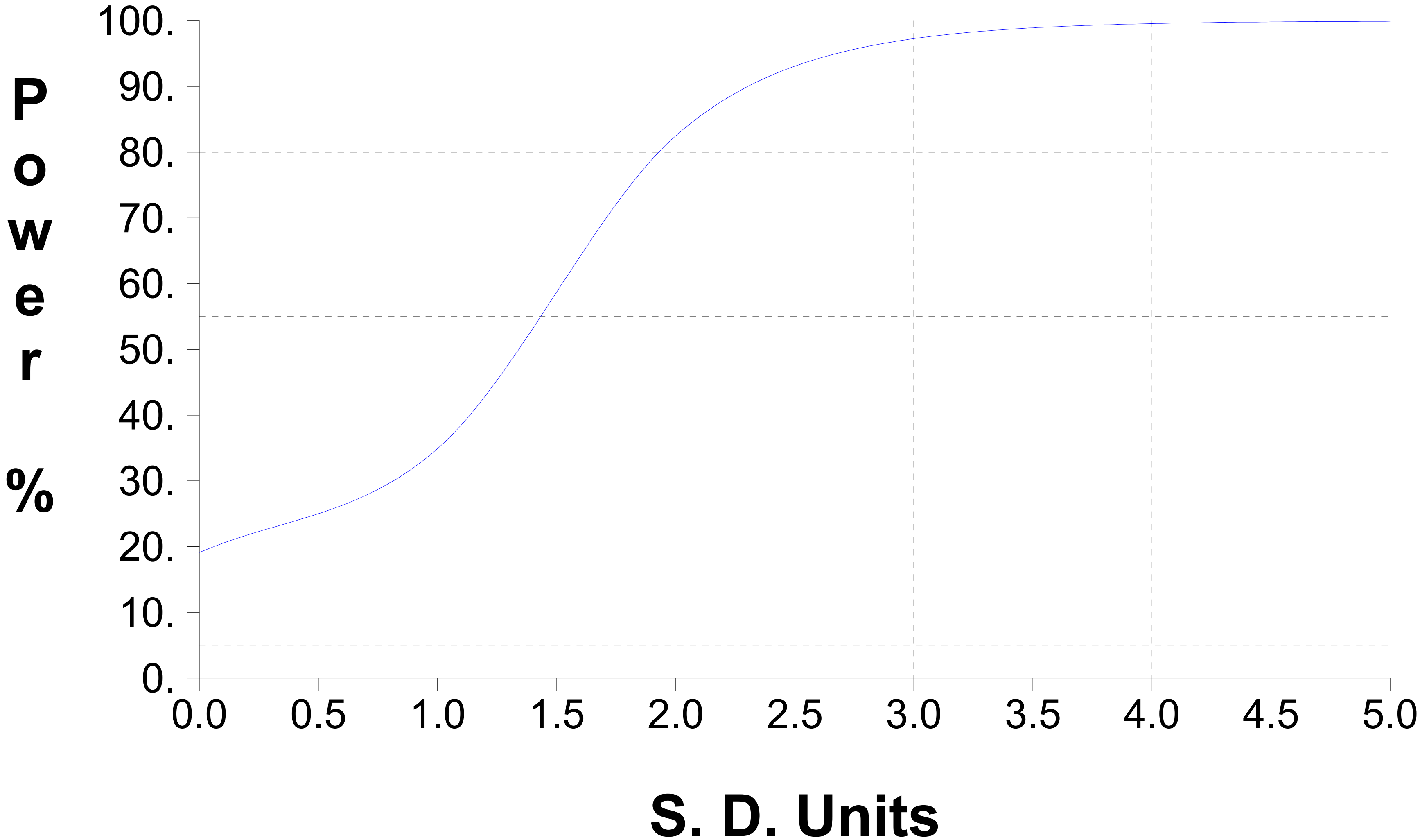


Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-10	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-10	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-10	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-10	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Barium, total	ug/L	MW-10	04/04/2016	yes	98.9000					
Barium, total	ug/L	MW-10	10/04/2016	yes	88.9000					
Barium, total	ug/L	MW-10	04/03/2017	yes	92.0000					
Barium, total	ug/L	MW-10	10/03/2017	yes	95.0000					
Barium, total	ug/L	MW-10	04/10/2018	yes	92.9000					
Barium, total	ug/L	MW-10	10/12/2018	yes	88.9000					
Barium, total	ug/L	MW-10	04/17/2019	yes	96.8000					
Barium, total	ug/L	MW-10	09/30/2019	yes	104.0000					
Barium, total	ug/L	MW-10	04/07/2020	yes	99.8000					
Barium, total	ug/L	MW-10	10/07/2020	yes	95.8000					
Barium, total	ug/L	MW-10	04/16/2021	yes	84.8000					
Barium, total	ug/L	MW-10	10/14/2021	yes	85.4000					
Barium, total	ug/L	MW-10	04/04/2022	yes	89.3000					
Barium, total	ug/L	MW-10	10/04/2022		94.5000			93.2692		
Barium, total	ug/L	MW-10	04/13/2023		79.9000			93.2692		
Barium, total	ug/L	MW-10	10/18/2023		83.7000			93.2692		

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-10	04/08/2024		86.8000			93.2692		
Beryllium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-10	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-10	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-10	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-10	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-10	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-10	04/13/2023		8.0000	ND				

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-10	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-10	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-10	04/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/10/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/12/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/17/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	09/30/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	10/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	04/16/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	10/14/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	04/04/2022	yes	0.5000					
Cobalt, total	ug/L	MW-10	10/04/2022		2.0000					**
Cobalt, total	ug/L	MW-10	04/13/2023		0.4000	ND				
Cobalt, total	ug/L	MW-10	10/18/2023		0.4000	ND				
Cobalt, total	ug/L	MW-10	04/08/2024		0.4000	ND				
Copper, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/04/2022		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/03/2017	yes	8.9000					
Nickel, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-10	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-10	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-10	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-10	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-10	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-10	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-10	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-10	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/12/2018	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/14/2021	yes	20.0000	ND			8.0000	***

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-10	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-10	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-10	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-10	04/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-11	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-11	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-11	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-11	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Barium, total	ug/L	MW-11	04/04/2016	yes	117.0000					
Barium, total	ug/L	MW-11	10/04/2016	yes	86.3000					
Barium, total	ug/L	MW-11	04/03/2017	yes	103.0000					
Barium, total	ug/L	MW-11	10/03/2017	yes	92.6000					
Barium, total	ug/L	MW-11	04/10/2018	yes	112.0000					
Barium, total	ug/L	MW-11	10/12/2018	yes	102.0000					
Barium, total	ug/L	MW-11	04/17/2019	yes	113.0000					
Barium, total	ug/L	MW-11	09/30/2019	yes	98.2000					
Barium, total	ug/L	MW-11	04/07/2020	yes	96.9000					
Barium, total	ug/L	MW-11	10/07/2020	yes	83.8000					
Barium, total	ug/L	MW-11	04/16/2021	yes	99.6000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-11	10/14/2021	yes	91.6000					
Barium, total	ug/L	MW-11	04/04/2022	yes	81.7000					
Barium, total	ug/L	MW-11	10/04/2022		97.0000			98.2846		
Barium, total	ug/L	MW-11	04/13/2023		96.7000			98.2846		
Barium, total	ug/L	MW-11	10/18/2023		97.6000			98.2846		
Barium, total	ug/L	MW-11	04/08/2024		85.0000			98.2846		
Beryllium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-11	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-11	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-11	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-11	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-11	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/07/2020	yes	8.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-11	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-11	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-11	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-11	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-11	04/04/2016	yes	1.3000					
Cobalt, total	ug/L	MW-11	10/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	10/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/10/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	10/12/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/17/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	09/30/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	04/16/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/14/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	04/04/2022	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/04/2022		2.1000					**
Cobalt, total	ug/L	MW-11	04/13/2023		0.4000	ND				
Cobalt, total	ug/L	MW-11	10/18/2023		0.4000	ND				
Cobalt, total	ug/L	MW-11	04/08/2024		0.4000	ND				
Copper, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-11	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-11	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-11	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-11	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-11	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-11	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-11	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-11	04/04/2016	yes	73.0000		yes			*
Zinc, total	ug/L	MW-11	10/04/2016	yes	135.0000		yes			*
Zinc, total	ug/L	MW-11	04/03/2017	yes	37.3000					
Zinc, total	ug/L	MW-11	10/03/2017	yes	16.8000					
Zinc, total	ug/L	MW-11	04/10/2018	yes	14.4000					
Zinc, total	ug/L	MW-11	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/17/2019	yes	9.2000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-11	09/30/2019	yes	9.8000					
Zinc, total	ug/L	MW-11	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/04/2022		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	04/13/2023		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	10/18/2023		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	04/08/2024		20.0000	ND		18.8636		
Antimony, total	ug/L	MW-12	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-12	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-12	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-12	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Barium, total	ug/L	MW-12	04/04/2016	yes	217.0000					
Barium, total	ug/L	MW-12	10/04/2016	yes	229.0000					
Barium, total	ug/L	MW-12	04/03/2017	yes	310.0000					
Barium, total	ug/L	MW-12	10/03/2017	yes	518.0000					
Barium, total	ug/L	MW-12	04/10/2018	yes	644.0000					
Barium, total	ug/L	MW-12	10/12/2018	yes	407.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-12	04/17/2019	yes	448.0000					
Barium, total	ug/L	MW-12	09/30/2019	yes	584.0000					
Barium, total	ug/L	MW-12	04/07/2020	yes	516.0000					
Barium, total	ug/L	MW-12	10/07/2020	yes	443.0000					
Barium, total	ug/L	MW-12	04/16/2021	yes	422.0000					
Barium, total	ug/L	MW-12	10/14/2021	yes	403.0000					
Barium, total	ug/L	MW-12	04/04/2022	yes	405.0000					
Barium, total	ug/L	MW-12	10/04/2022		407.0000			426.6154		
Barium, total	ug/L	MW-12	04/13/2023		337.0000			426.6154		
Barium, total	ug/L	MW-12	10/18/2023		319.0000			426.6154		
Barium, total	ug/L	MW-12	04/08/2024		353.0000			426.6154		
Beryllium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-12	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-12	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-12	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-12	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-12	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/10/2018	yes	8.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-12	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-12	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-12	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-12	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-12	04/04/2016	yes	1.5000					
Cobalt, total	ug/L	MW-12	10/04/2016	yes	1.0000					
Cobalt, total	ug/L	MW-12	04/03/2017	yes	13.7000		yes			*
Cobalt, total	ug/L	MW-12	10/03/2017	yes	7.3000					
Cobalt, total	ug/L	MW-12	04/10/2018	yes	2.0000					
Cobalt, total	ug/L	MW-12	10/12/2018	yes	1.0000					
Cobalt, total	ug/L	MW-12	04/17/2019	yes	1.1000					
Cobalt, total	ug/L	MW-12	09/30/2019	yes	1.9000					
Cobalt, total	ug/L	MW-12	04/07/2020	yes	2.6000					
Cobalt, total	ug/L	MW-12	10/07/2020	yes	2.4000					
Cobalt, total	ug/L	MW-12	04/16/2021	yes	2.3000					
Cobalt, total	ug/L	MW-12	10/14/2021	yes	2.1000					
Cobalt, total	ug/L	MW-12	04/04/2022	yes	1.4000					
Cobalt, total	ug/L	MW-12	10/04/2022		2.9000			2.2167		
Cobalt, total	ug/L	MW-12	04/13/2023		1.2000			2.2167		
Cobalt, total	ug/L	MW-12	10/18/2023		1.3000			2.2167		
Cobalt, total	ug/L	MW-12	04/08/2024		1.3000			2.2167		
Copper, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-12	04/04/2016	yes	4.6000					
Nickel, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/03/2017	yes	8.8000					
Nickel, total	ug/L	MW-12	10/03/2017	yes	8.6000					
Nickel, total	ug/L	MW-12	04/10/2018	yes	5.9000					
Nickel, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/17/2019	yes	4.5000					
Nickel, total	ug/L	MW-12	09/30/2019	yes	6.3000					
Nickel, total	ug/L	MW-12	04/07/2020	yes	6.9000					
Nickel, total	ug/L	MW-12	10/07/2020	yes	5.3000					
Nickel, total	ug/L	MW-12	04/16/2021	yes	4.7000					
Nickel, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/04/2022	yes	4.2000					
Nickel, total	ug/L	MW-12	10/04/2022		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	04/13/2023		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	10/18/2023		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	04/08/2024		4.0000	ND		5.5231		
Selenium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-12	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-12	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-12	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-12	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-12	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-12	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-12	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-12	04/04/2016	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	10/04/2016	yes	9.9000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-12	04/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	10/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	04/10/2018	yes	12.2000					
Zinc, total	ug/L	MW-12	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	09/30/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-12	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-12	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-12	04/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-13	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-13	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-13	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-13	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-13	04/04/2016	yes	16.6000					
Arsenic, total	ug/L	MW-13	10/04/2016	yes	14.8000					
Arsenic, total	ug/L	MW-13	04/03/2017	yes	11.6000					
Arsenic, total	ug/L	MW-13	10/03/2017	yes	15.2000					
Arsenic, total	ug/L	MW-13	04/10/2018	yes	20.3000					
Arsenic, total	ug/L	MW-13	10/12/2018	yes	16.0000					
Arsenic, total	ug/L	MW-13	04/17/2019	yes	18.7000					
Arsenic, total	ug/L	MW-13	09/30/2019	yes	21.5000					
Arsenic, total	ug/L	MW-13	04/07/2020	yes	31.3000					
Arsenic, total	ug/L	MW-13	10/07/2020	yes	27.1000					
Arsenic, total	ug/L	MW-13	04/16/2021	yes	17.4000					
Arsenic, total	ug/L	MW-13	10/14/2021	yes	33.8000					
Arsenic, total	ug/L	MW-13	04/04/2022	yes	25.6000					
Arsenic, total	ug/L	MW-13	10/04/2022		18.8000			20.7615		
Arsenic, total	ug/L	MW-13	04/13/2023		10.3000			20.7615		
Arsenic, total	ug/L	MW-13	10/18/2023		15.7000			20.7615		
Arsenic, total	ug/L	MW-13	04/08/2024		8.8000			20.7615		
Barium, total	ug/L	MW-13	04/04/2016	yes	482.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-13	10/04/2016	yes	986.0000					
Barium, total	ug/L	MW-13	04/03/2017	yes	1640.0000					
Barium, total	ug/L	MW-13	10/03/2017	yes	3360.0000					
Barium, total	ug/L	MW-13	04/10/2018	yes	2500.0000					
Barium, total	ug/L	MW-13	10/12/2018	yes	2430.0000					
Barium, total	ug/L	MW-13	04/17/2019	yes	4220.0000					
Barium, total	ug/L	MW-13	09/30/2019	yes	3200.0000					
Barium, total	ug/L	MW-13	04/07/2020	yes	3180.0000					
Barium, total	ug/L	MW-13	10/07/2020	yes	3800.0000					
Barium, total	ug/L	MW-13	04/16/2021	yes	2940.0000					
Barium, total	ug/L	MW-13	10/14/2021	yes	3310.0000					
Barium, total	ug/L	MW-13	04/04/2022	yes	1800.0000					
Barium, total	ug/L	MW-13	10/04/2022		971.0000			2603.6923		
Barium, total	ug/L	MW-13	04/13/2023		444.0000			2603.6923		
Barium, total	ug/L	MW-13	10/18/2023		752.0000			2603.6923		
Barium, total	ug/L	MW-13	04/08/2024		715.0000			2603.6923		
Beryllium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-13	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-13	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-13	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-13	04/08/2024		0.8000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-13	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-13	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-13	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-13	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-13	04/04/2016	yes	13.1000					
Cobalt, total	ug/L	MW-13	10/04/2016	yes	8.4000					
Cobalt, total	ug/L	MW-13	04/03/2017	yes	6.9000					
Cobalt, total	ug/L	MW-13	10/03/2017	yes	9.2000					
Cobalt, total	ug/L	MW-13	04/10/2018	yes	13.4000					
Cobalt, total	ug/L	MW-13	10/12/2018	yes	8.2000					
Cobalt, total	ug/L	MW-13	04/17/2019	yes	4.8000					
Cobalt, total	ug/L	MW-13	09/30/2019	yes	4.3000					
Cobalt, total	ug/L	MW-13	04/07/2020	yes	7.9000					
Cobalt, total	ug/L	MW-13	10/07/2020	yes	10.5000					
Cobalt, total	ug/L	MW-13	04/16/2021	yes	4.4000					
Cobalt, total	ug/L	MW-13	10/14/2021	yes	17.4000					
Cobalt, total	ug/L	MW-13	04/04/2022	yes	16.1000					
Cobalt, total	ug/L	MW-13	10/04/2022		11.5000			9.5846		
Cobalt, total	ug/L	MW-13	04/13/2023		6.3000			9.5846		
Cobalt, total	ug/L	MW-13	10/18/2023		9.0000			9.5846		
Cobalt, total	ug/L	MW-13	04/08/2024		6.4000			9.5846		
Copper, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-13	10/18/2023		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Copper, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-13	04/04/2016	yes	6.0000					
Nickel, total	ug/L	MW-13	10/04/2016	yes	5.6000					
Nickel, total	ug/L	MW-13	04/03/2017	yes	4.6000					
Nickel, total	ug/L	MW-13	10/03/2017	yes	5.1000					
Nickel, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-13	10/12/2018	yes	8.0000	ND			4.0000	***
Nickel, total	ug/L	MW-13	04/17/2019	yes	5.2000					
Nickel, total	ug/L	MW-13	09/30/2019	yes	5.1000					
Nickel, total	ug/L	MW-13	04/07/2020	yes	4.6000					
Nickel, total	ug/L	MW-13	10/07/2020	yes	10.4000					
Nickel, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-13	10/14/2021	yes	20.7000					
Nickel, total	ug/L	MW-13	04/04/2022	yes	20.8000					
Nickel, total	ug/L	MW-13	10/04/2022		6.2000			7.7000		
Nickel, total	ug/L	MW-13	04/13/2023		4.4000			7.7000		
Nickel, total	ug/L	MW-13	10/18/2023		9.0000			7.7000		
Nickel, total	ug/L	MW-13	04/08/2024		6.8000			7.7000		
Selenium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-13	04/13/2023		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Selenium, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-13	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-13	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-13	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-13	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/04/2022		20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Vanadium, total	ug/L	MW-13	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-13	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-13	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-13	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/12/2018	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/14/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-13	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-13	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-13	04/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-14	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-14	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-14	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-14	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	04/10/2018	yes	29.9000					
Arsenic, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	04/17/2019	yes	18.6000					
Arsenic, total	ug/L	MW-14	09/30/2019	yes	32.3000					
Arsenic, total	ug/L	MW-14	04/07/2020	yes	27.8000					
Arsenic, total	ug/L	MW-14	10/07/2020	yes	8.0000					
Arsenic, total	ug/L	MW-14	04/16/2021	yes	13.3000					
Arsenic, total	ug/L	MW-14	10/14/2021	yes	58.7000					
Arsenic, total	ug/L	MW-14	04/04/2022	yes	139.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	ug/L	MW-14	10/04/2022		12.5000			26.7385		
Arsenic, total	ug/L	MW-14	04/13/2023		4.0000	ND		26.7385		
Arsenic, total	ug/L	MW-14	10/18/2023		7.7000			26.7385		
Arsenic, total	ug/L	MW-14	04/08/2024		4.0000	ND		26.7385		
Barium, total	ug/L	MW-14	04/04/2016	yes	479.0000					
Barium, total	ug/L	MW-14	10/04/2016	yes	428.0000					
Barium, total	ug/L	MW-14	04/03/2017	yes	609.0000					
Barium, total	ug/L	MW-14	10/03/2017	yes	677.0000					
Barium, total	ug/L	MW-14	04/10/2018	yes	1080.0000					
Barium, total	ug/L	MW-14	10/12/2018	yes	785.0000					
Barium, total	ug/L	MW-14	04/17/2019	yes	1110.0000					
Barium, total	ug/L	MW-14	09/30/2019	yes	1380.0000					
Barium, total	ug/L	MW-14	04/07/2020	yes	1230.0000					
Barium, total	ug/L	MW-14	10/07/2020	yes	825.0000					
Barium, total	ug/L	MW-14	04/16/2021	yes	913.0000					
Barium, total	ug/L	MW-14	10/14/2021	yes	1440.0000					
Barium, total	ug/L	MW-14	04/04/2022	yes	2360.0000					
Barium, total	ug/L	MW-14	10/04/2022		1080.0000			1024.3077		
Barium, total	ug/L	MW-14	04/13/2023		765.0000			1024.3077		
Barium, total	ug/L	MW-14	10/18/2023		800.0000			1024.3077		
Barium, total	ug/L	MW-14	04/08/2024		691.0000			1024.3077		
Beryllium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-14	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/14/2021	yes	0.8000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cadmium, total	ug/L	MW-14	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-14	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-14	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-14	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-14	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-14	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-14	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-14	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-14	04/04/2016	yes	1.4000					
Cobalt, total	ug/L	MW-14	10/04/2016	yes	0.8000					
Cobalt, total	ug/L	MW-14	04/03/2017	yes	3.6000					
Cobalt, total	ug/L	MW-14	10/03/2017	yes	1.2000					
Cobalt, total	ug/L	MW-14	04/10/2018	yes	1.6000					
Cobalt, total	ug/L	MW-14	10/12/2018	yes	1.1000					
Cobalt, total	ug/L	MW-14	04/17/2019	yes	1.2000					
Cobalt, total	ug/L	MW-14	09/30/2019	yes	1.0000					
Cobalt, total	ug/L	MW-14	04/07/2020	yes	0.5000					
Cobalt, total	ug/L	MW-14	10/07/2020	yes	0.4000	ND				
Cobalt, total	ug/L	MW-14	04/16/2021	yes	0.5000					
Cobalt, total	ug/L	MW-14	10/14/2021	yes	0.7000					
Cobalt, total	ug/L	MW-14	04/04/2022	yes	1.7000					
Cobalt, total	ug/L	MW-14	10/04/2022		2.4000			1.7767		
Cobalt, total	ug/L	MW-14	04/13/2023		0.5000			1.2077		
Cobalt, total	ug/L	MW-14	10/18/2023		0.4000	ND		1.2077		
Cobalt, total	ug/L	MW-14	04/08/2024		0.4000	ND		1.2077		
Copper, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Copper, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-14	04/04/2016	yes	4.9000					
Nickel, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/03/2017	yes	5.7000					
Nickel, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/04/2022	yes	5.5000					
Nickel, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Selenium, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-14	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-14	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-14	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-14	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/07/2020	yes	20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Vanadium, total	ug/L	MW-14	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-14	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-14	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-14	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-14	04/04/2016	yes	15.0000					
Zinc, total	ug/L	MW-14	10/04/2016	yes	11.2000					
Zinc, total	ug/L	MW-14	04/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	10/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	04/10/2018	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	09/30/2019	yes	9.7000					
Zinc, total	ug/L	MW-14	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-14	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-14	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-14	04/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-15	04/10/2014	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	09/30/2014	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-15	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-15	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-15	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-15	04/10/2014	yes	5.3000					
Arsenic, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/03/2017	yes	13.1000					
Arsenic, total	ug/L	MW-15	10/03/2017	yes	16.4000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/17/2019	yes	13.9000					
Arsenic, total	ug/L	MW-15	09/30/2019	yes	4.6000					
Arsenic, total	ug/L	MW-15	04/07/2020	yes	30.1000					
Arsenic, total	ug/L	MW-15	10/07/2020	yes	4.5000					
Arsenic, total	ug/L	MW-15	04/16/2021	yes	4.5000					
Arsenic, total	ug/L	MW-15	10/14/2021	yes	12.4000					
Arsenic, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/04/2022		11.1000			8.5867		
Arsenic, total	ug/L	MW-15	04/13/2023		4.0000	ND		8.5867		
Arsenic, total	ug/L	MW-15	10/18/2023		13.0000			8.5867		
Arsenic, total	ug/L	MW-15	04/08/2024		4.0000	ND		8.5867		
Barium, total	ug/L	MW-15	04/10/2014	yes	569.0000					
Barium, total	ug/L	MW-15	09/30/2014	yes	326.0000					
Barium, total	ug/L	MW-15	04/04/2016	yes	251.0000					
Barium, total	ug/L	MW-15	10/04/2016	yes	352.0000					
Barium, total	ug/L	MW-15	04/03/2017	yes	300.0000					
Barium, total	ug/L	MW-15	10/03/2017	yes	199.0000					
Barium, total	ug/L	MW-15	04/10/2018	yes	363.0000					
Barium, total	ug/L	MW-15	10/12/2018	yes	239.0000					
Barium, total	ug/L	MW-15	04/17/2019	yes	235.0000					
Barium, total	ug/L	MW-15	09/30/2019	yes	298.0000					
Barium, total	ug/L	MW-15	04/07/2020	yes	307.0000					
Barium, total	ug/L	MW-15	10/07/2020	yes	279.0000					
Barium, total	ug/L	MW-15	04/16/2021	yes	305.0000					
Barium, total	ug/L	MW-15	10/14/2021	yes	235.0000					
Barium, total	ug/L	MW-15	04/04/2022	yes	311.0000					
Barium, total	ug/L	MW-15	10/04/2022		327.0000			304.6000		
Barium, total	ug/L	MW-15	04/13/2023		222.0000			304.6000		
Barium, total	ug/L	MW-15	10/18/2023		226.0000			304.6000		
Barium, total	ug/L	MW-15	04/08/2024		356.0000			304.6000		
Beryllium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-15	04/10/2014	yes	0.8000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cadmium, total	ug/L	MW-15	09/30/2014	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-15	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-15	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-15	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-15	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-15	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-15	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-15	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-15	04/10/2014	yes	20.1000					
Cobalt, total	ug/L	MW-15	09/30/2014	yes	10.9000					
Cobalt, total	ug/L	MW-15	04/04/2016	yes	11.2000					
Cobalt, total	ug/L	MW-15	10/04/2016	yes	8.6000					
Cobalt, total	ug/L	MW-15	04/03/2017	yes	14.4000					
Cobalt, total	ug/L	MW-15	10/03/2017	yes	4.6000					
Cobalt, total	ug/L	MW-15	04/10/2018	yes	3.1000					
Cobalt, total	ug/L	MW-15	10/12/2018	yes	2.7000					
Cobalt, total	ug/L	MW-15	04/17/2019	yes	9.7000					
Cobalt, total	ug/L	MW-15	09/30/2019	yes	4.8000					
Cobalt, total	ug/L	MW-15	04/07/2020	yes	11.1000					
Cobalt, total	ug/L	MW-15	10/07/2020	yes	4.4000					
Cobalt, total	ug/L	MW-15	04/16/2021	yes	10.1000					
Cobalt, total	ug/L	MW-15	10/14/2021	yes	4.4000					
Cobalt, total	ug/L	MW-15	04/04/2022	yes	7.9000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cobalt, total	ug/L	MW-15	10/04/2022		6.6000			8.5333		
Cobalt, total	ug/L	MW-15	04/13/2023		5.3000			8.5333		
Cobalt, total	ug/L	MW-15	10/18/2023		5.1000			8.5333		
Cobalt, total	ug/L	MW-15	04/08/2024		2.2000			8.5333		
Copper, total	ug/L	MW-15	04/10/2014	yes	4.0000	ND				
Copper, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-15	04/10/2014	yes	31.1000		yes			*
Nickel, total	ug/L	MW-15	09/30/2014	yes	17.0000					
Nickel, total	ug/L	MW-15	04/04/2016	yes	12.1000					
Nickel, total	ug/L	MW-15	10/04/2016	yes	6.7000					
Nickel, total	ug/L	MW-15	04/03/2017	yes	12.2000					
Nickel, total	ug/L	MW-15	10/03/2017	yes	7.2000					
Nickel, total	ug/L	MW-15	04/10/2018	yes	8.8000					
Nickel, total	ug/L	MW-15	10/12/2018	yes	8.4000					
Nickel, total	ug/L	MW-15	04/17/2019	yes	9.1000					
Nickel, total	ug/L	MW-15	09/30/2019	yes	7.9000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Nickel, total	ug/L	MW-15	04/07/2020	yes	12.7000					
Nickel, total	ug/L	MW-15	10/07/2020	yes	8.2000					
Nickel, total	ug/L	MW-15	04/16/2021	yes	12.2000					
Nickel, total	ug/L	MW-15	10/14/2021	yes	8.4000					
Nickel, total	ug/L	MW-15	04/04/2022	yes	12.2000					
Nickel, total	ug/L	MW-15	10/04/2022		8.6000			10.2214		
Nickel, total	ug/L	MW-15	04/13/2023		10.0000			10.2214		
Nickel, total	ug/L	MW-15	10/18/2023		9.2000			10.2214		
Nickel, total	ug/L	MW-15	04/08/2024		9.7000			10.2214		
Selenium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-15	04/10/2014	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Thallium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/17/2019	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	09/30/2019	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/07/2020	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/07/2020	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/16/2021	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/14/2021	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/04/2022	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-15	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-15	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-15	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-15	04/10/2014	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	09/30/2014	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-15	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-15	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-15	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-15	04/10/2014	yes	10.2000					
Zinc, total	ug/L	MW-15	09/30/2014	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/12/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/14/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-15	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-15	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-15	04/08/2024		20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-17	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-17	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-17	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-17	04/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Barium, total	ug/L	MW-17	04/04/2016	yes	161.0000					
Barium, total	ug/L	MW-17	10/04/2016	yes	180.0000					
Barium, total	ug/L	MW-17	04/03/2017	yes	222.0000					
Barium, total	ug/L	MW-17	10/03/2017	yes	379.0000					
Barium, total	ug/L	MW-17	04/10/2018	yes	447.0000					
Barium, total	ug/L	MW-17	10/12/2018	yes	201.0000					
Barium, total	ug/L	MW-17	04/17/2019	yes	239.0000					
Barium, total	ug/L	MW-17	09/30/2019	yes	320.0000					
Barium, total	ug/L	MW-17	04/07/2020	yes	288.0000					
Barium, total	ug/L	MW-17	10/07/2020	yes	220.0000					
Barium, total	ug/L	MW-17	04/16/2021	yes	202.0000					
Barium, total	ug/L	MW-17	10/14/2021	yes	241.0000					
Barium, total	ug/L	MW-17	04/04/2022	yes	182.0000					
Barium, total	ug/L	MW-17	10/04/2022		192.0000			252.4615		
Barium, total	ug/L	MW-17	04/13/2023		187.0000			252.4615		
Barium, total	ug/L	MW-17	10/18/2023		193.0000			252.4615		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-17	04/08/2024		202.0000			252.4615		
Beryllium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-17	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/03/2017	yes	1.8000					
Cadmium, total	ug/L	MW-17	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-17	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-17	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-17	04/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-17	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-17	04/13/2023		8.0000	ND				

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Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-17	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-17	04/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-17	04/04/2016	yes	0.8000	ND			0.4000	***
Cobalt, total	ug/L	MW-17	10/04/2016	yes	2.2000					
Cobalt, total	ug/L	MW-17	04/03/2017	yes	1.3000					
Cobalt, total	ug/L	MW-17	10/03/2017	yes	10.7000					
Cobalt, total	ug/L	MW-17	04/10/2018	yes	9.5000					
Cobalt, total	ug/L	MW-17	10/12/2018	yes	1.3000					
Cobalt, total	ug/L	MW-17	04/17/2019	yes	3.8000					
Cobalt, total	ug/L	MW-17	09/30/2019	yes	9.3000					
Cobalt, total	ug/L	MW-17	04/07/2020	yes	7.9000					
Cobalt, total	ug/L	MW-17	10/07/2020	yes	0.4000	ND				
Cobalt, total	ug/L	MW-17	04/16/2021	yes	1.1000					
Cobalt, total	ug/L	MW-17	10/14/2021	yes	9.0000					
Cobalt, total	ug/L	MW-17	04/04/2022	yes	0.4000	ND				
Cobalt, total	ug/L	MW-17	10/04/2022		1.9000			4.4077		
Cobalt, total	ug/L	MW-17	04/13/2023		1.9000			4.4077		
Cobalt, total	ug/L	MW-17	10/18/2023		0.4000	ND		4.4077		
Cobalt, total	ug/L	MW-17	04/08/2024		1.1000			4.4077		
Copper, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/07/2020	yes	8.1000					
Copper, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/04/2022		4.0000	ND				

* - Outlier for that well and constituent.
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*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-17	04/04/2016	yes	5.8000					
Nickel, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	04/03/2017	yes	20.4000					
Nickel, total	ug/L	MW-17	10/03/2017	yes	28.3000					
Nickel, total	ug/L	MW-17	04/10/2018	yes	33.3000					
Nickel, total	ug/L	MW-17	10/12/2018	yes	8.0000	ND			4.0000	***
Nickel, total	ug/L	MW-17	04/17/2019	yes	7.4000					
Nickel, total	ug/L	MW-17	09/30/2019	yes	10.8000					
Nickel, total	ug/L	MW-17	04/07/2020	yes	9.7000					
Nickel, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	04/16/2021	yes	4.8000					
Nickel, total	ug/L	MW-17	10/14/2021	yes	14.2000					
Nickel, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	10/04/2022		4.0000	ND		11.5923		
Nickel, total	ug/L	MW-17	04/13/2023		7.9000			11.5923		
Nickel, total	ug/L	MW-17	10/18/2023		12.1000			11.5923		
Nickel, total	ug/L	MW-17	04/08/2024		20.4000			13.0045		
Selenium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-17	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-17	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-17	04/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-17	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-17	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-17	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-17	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-17	04/04/2016	yes	12.3000					
Zinc, total	ug/L	MW-17	10/04/2016	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-17	04/03/2017	yes	16.4000					
Zinc, total	ug/L	MW-17	10/03/2017	yes	8.4000					
Zinc, total	ug/L	MW-17	04/10/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-17	09/30/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-17	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/14/2021	yes	20.0000	ND				

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-17	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-17	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-17	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-17	04/08/2024		20.0000	ND				

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 4

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Zinc, total	ug/L	MW-11	04/04/2016	73.0000		04/04/2016-04/04/2022	13	0.6425
Zinc, total	ug/L	MW-11	10/04/2016	135.0000		04/04/2016-04/04/2022	13	0.6425
Cobalt, total	ug/L	MW-12	04/03/2017	13.7000		04/04/2016-04/04/2022	13	0.6174
Nickel, total	ug/L	MW-15	04/10/2014	31.1000		04/10/2014-04/04/2022	15	0.6177

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Attachment F

Assessment Statistics for Trace Metals

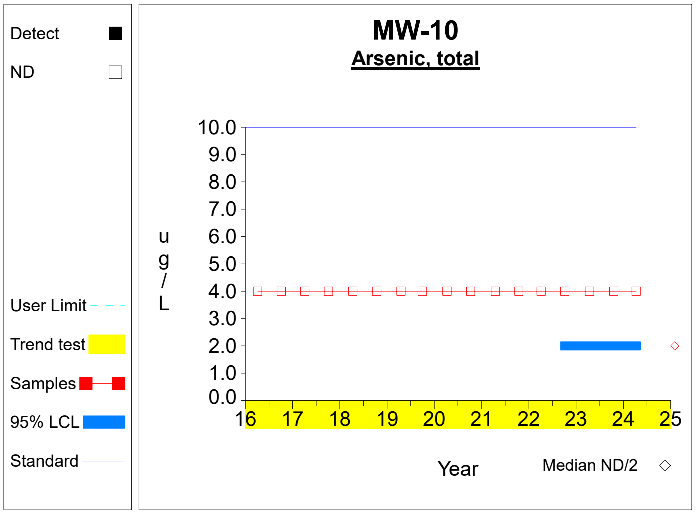
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

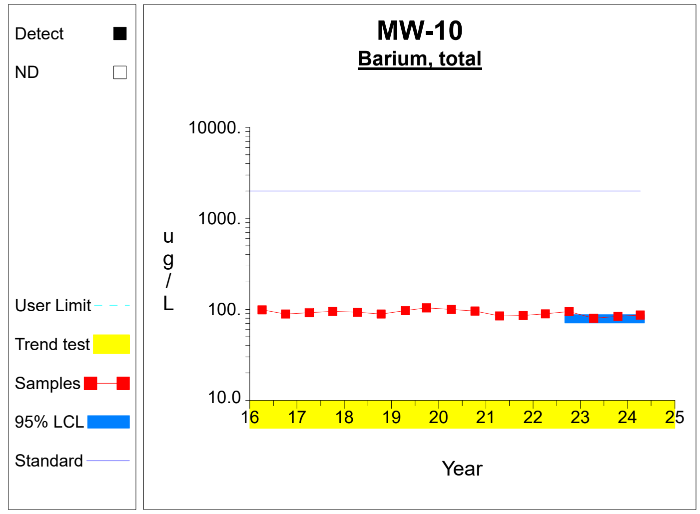
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	
Arsenic, total	ug/L	MW-10	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-10	4	86.225	6.196	1.176	78.936	93.514	2000.000	
Cobalt, total	ug/L	MW-10	4	0.800	0.800	1.176	0.000	1.741	2.100	
Nickel, total	ug/L	MW-10	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-11	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-11	4	94.075	6.062	1.176	86.945	101.205	2000.000	
Cobalt, total	ug/L	MW-11	4	0.675	0.950	1.176	0.000	1.792	2.100	
Nickel, total	ug/L	MW-11	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-12	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-12	4	354.000	37.965	1.176	309.342	398.658	2000.000	
Cobalt, total	ug/L	MW-12	4	1.675	0.818	1.176	0.713	2.637	2.100	
Nickel, total	ug/L	MW-12	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-13	4	13.400	4.663	1.176	7.915	18.885	10.000	
Barium, total	ug/L	MW-13	4	720.500	216.198	1.176	466.189	974.811	2000.000	
Cobalt, total	ug/L	MW-13	4	8.300	2.473	1.176	5.392	11.208	2.100	**
Nickel, total	ug/L	MW-13	4	6.600	1.897	1.176	4.368	8.832	100.000	
Arsenic, total	ug/L	MW-14	4	6.050	5.071	1.176	0.086	12.014	10.000	
Barium, total	ug/L	MW-14	4	834.000	170.178	1.176	633.821	1034.179	2000.000	
Cobalt, total	ug/L	MW-14	4	0.825	1.059	1.176	0.000	2.071	2.100	
Nickel, total	ug/L	MW-14	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-15	4	7.025	5.854	1.176	0.139	13.911	10.000	
Barium, total	ug/L	MW-15	4	282.750	68.883	1.176	201.723	363.777	2000.000	
Cobalt, total	ug/L	MW-15	4	4.800	1.857	1.176	2.616	6.984	2.100	**
Nickel, total	ug/L	MW-15	4	9.375	0.613	1.176	8.654	10.096	100.000	
Arsenic, total	ug/L	MW-17	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-17	4	193.500	6.245	1.176	186.154	200.846	2000.000	
Cobalt, total	ug/L	MW-17	4	1.275	0.810	1.176	0.322	2.228	2.100	
Nickel, total	ug/L	MW-17	4	10.600	7.736	1.176	1.500	19.700	100.000	
Arsenic, total	ug/L	MW-19	4	2.600	1.200	1.176	1.188	4.012	10.000	
Barium, total	ug/L	MW-19	4	895.500	254.796	1.176	595.786	1195.214	2000.000	
Cobalt, total	ug/L	MW-19	4	3.375	1.609	1.176	1.482	5.268	2.100	
Nickel, total	ug/L	MW-19	4	19.075	12.837	1.176	3.975	34.175	100.000	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

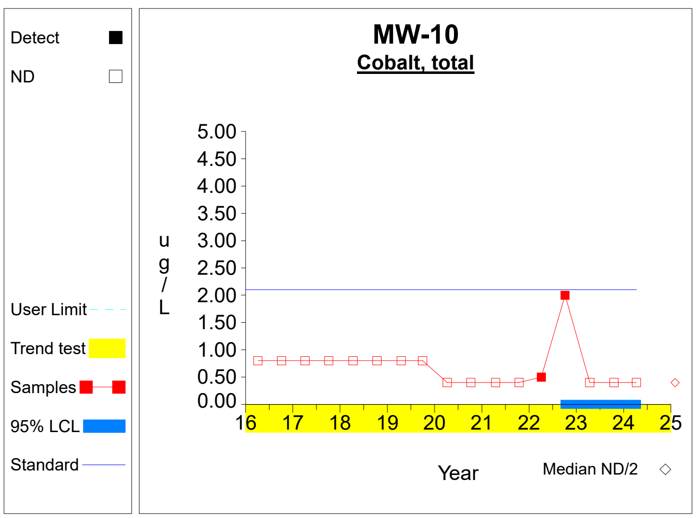
Confidence Limits (Assessment)



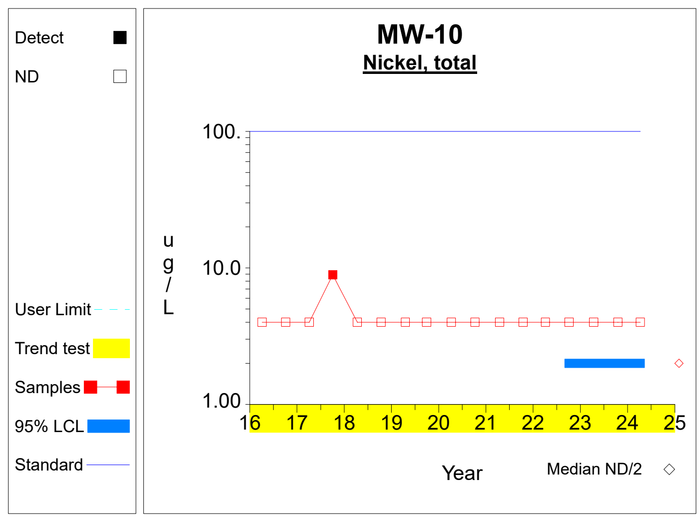
Graph 1



Graph 2

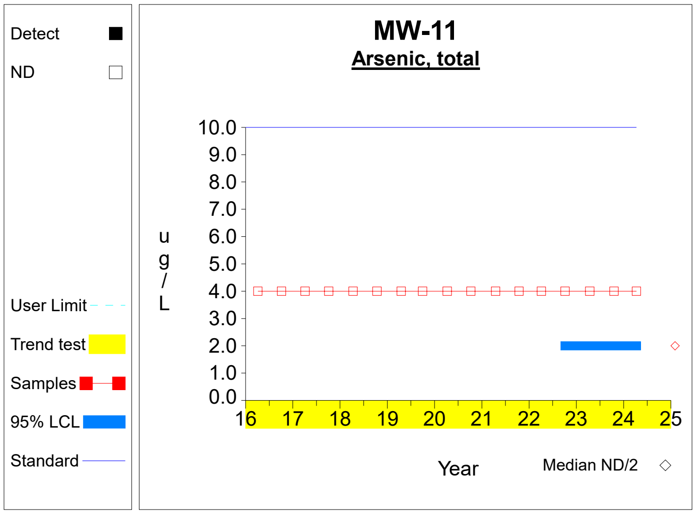


Graph 3

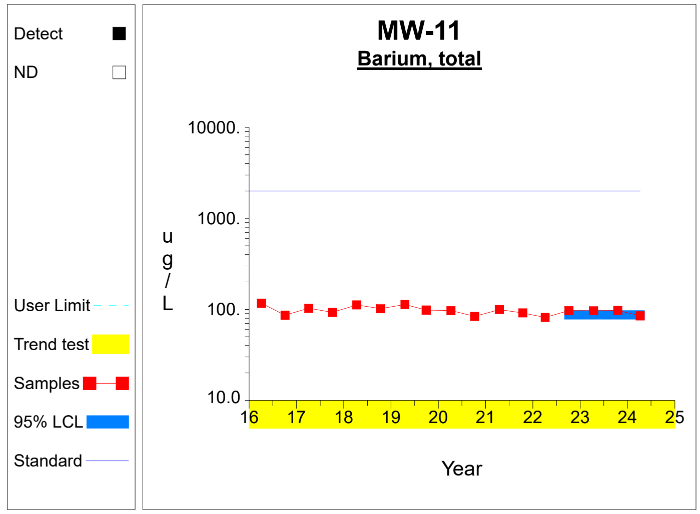


Graph 4

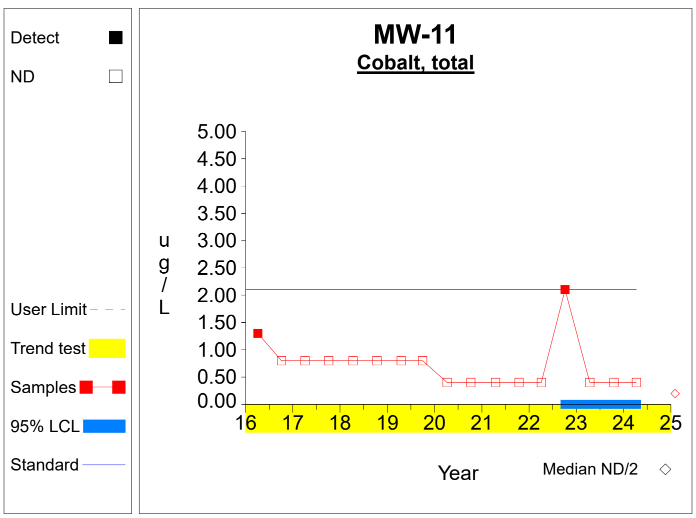
Confidence Limits (Assessment)



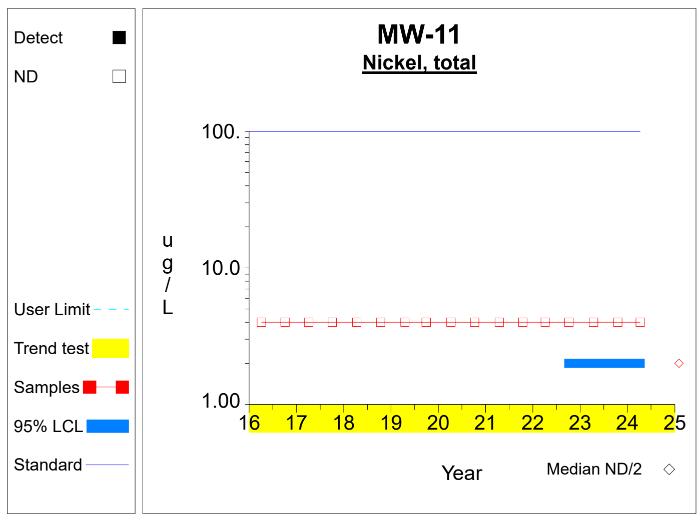
Graph 5



Graph 6

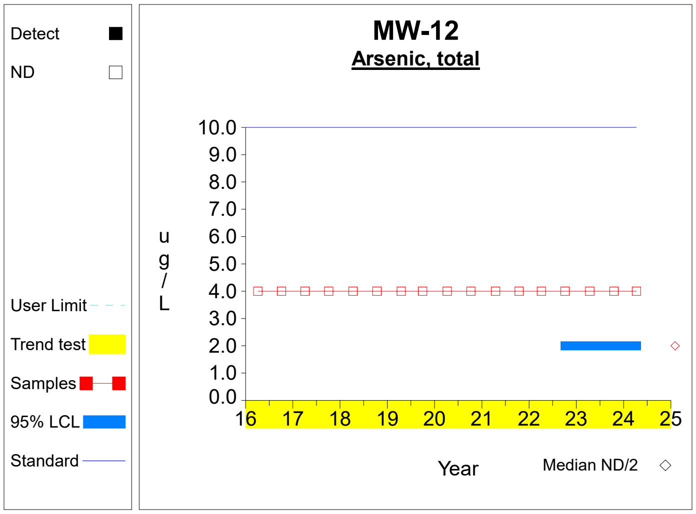


Graph 7

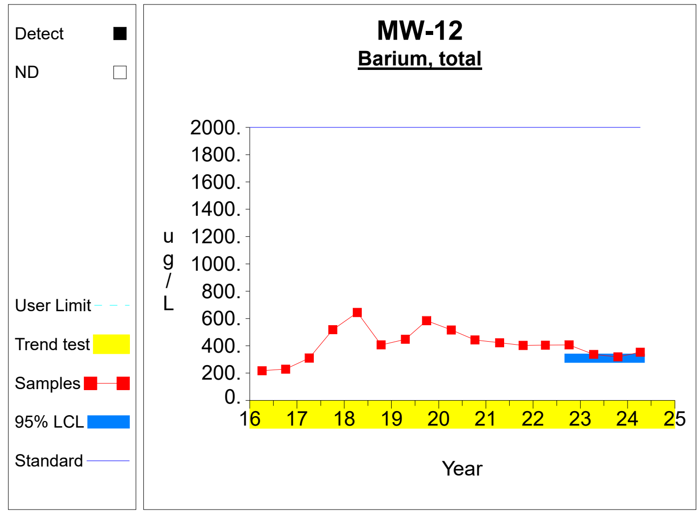


Graph 8

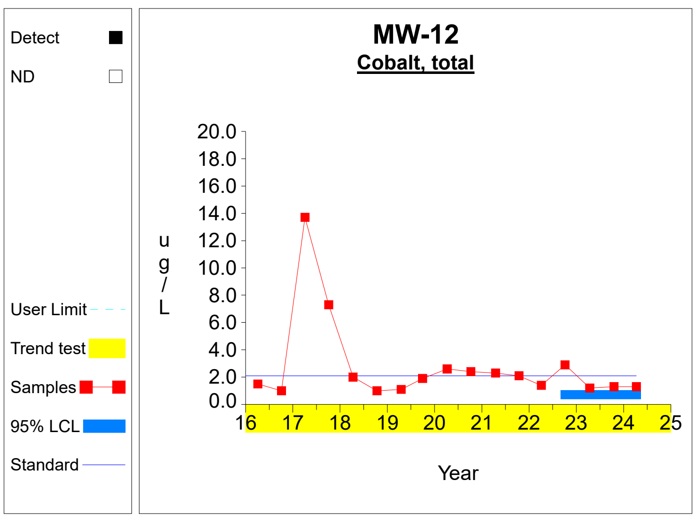
Confidence Limits (Assessment)



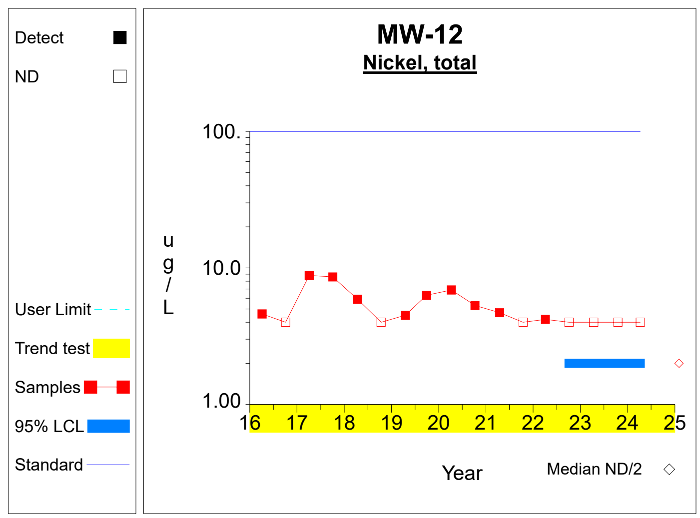
Graph 9



Graph 10

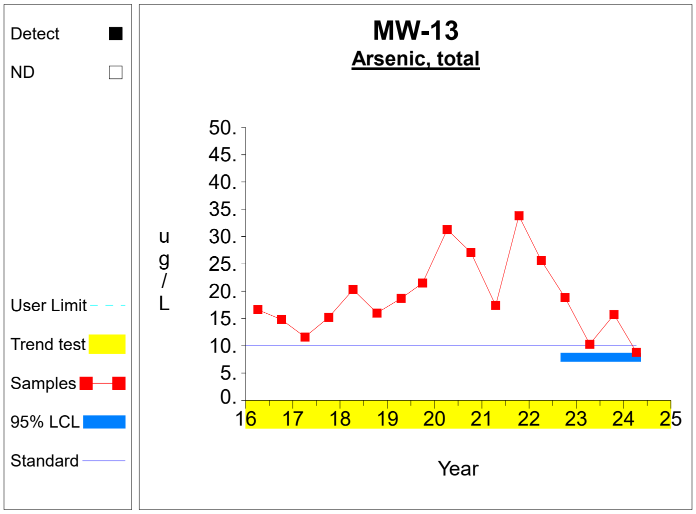


Graph 11

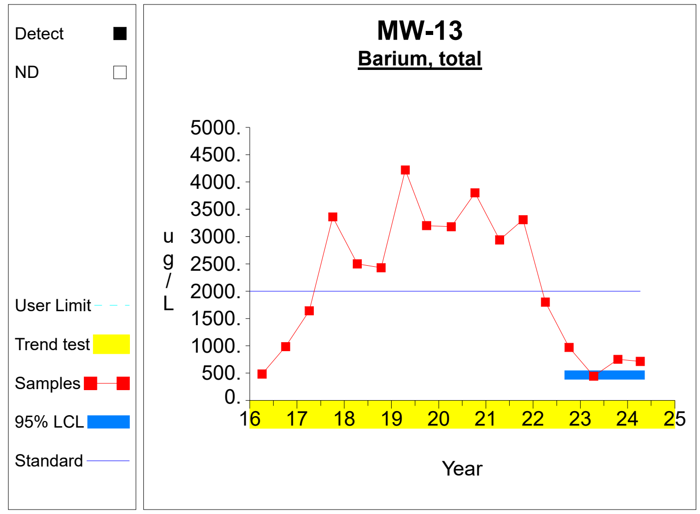


Graph 12

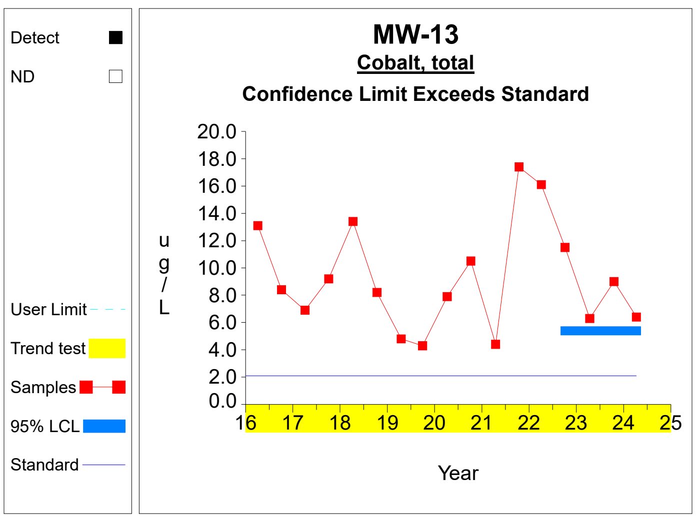
Confidence Limits (Assessment)



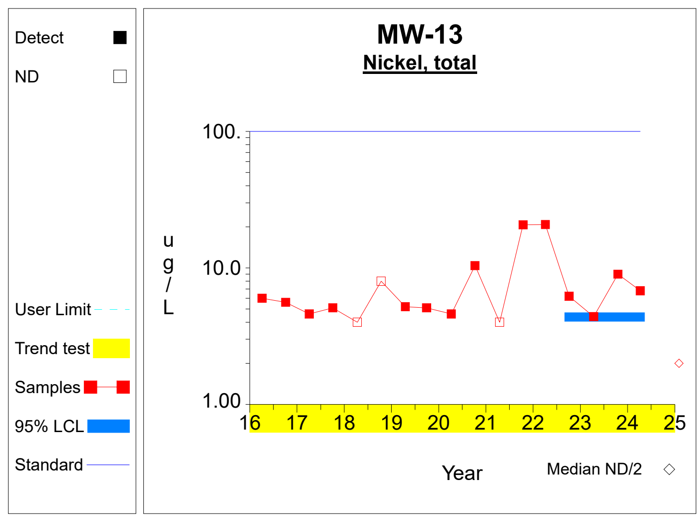
Graph 13



Graph 14

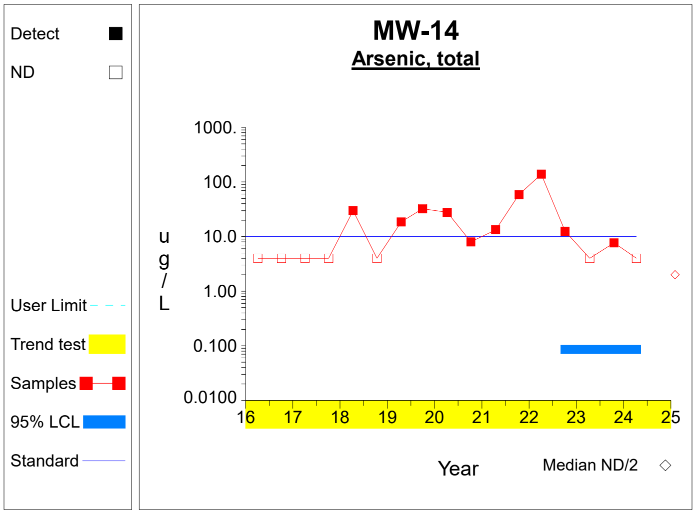


Graph 15

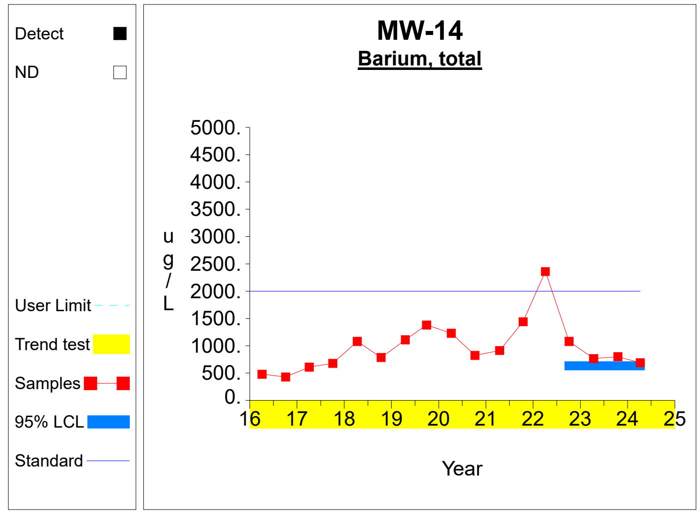


Graph 16

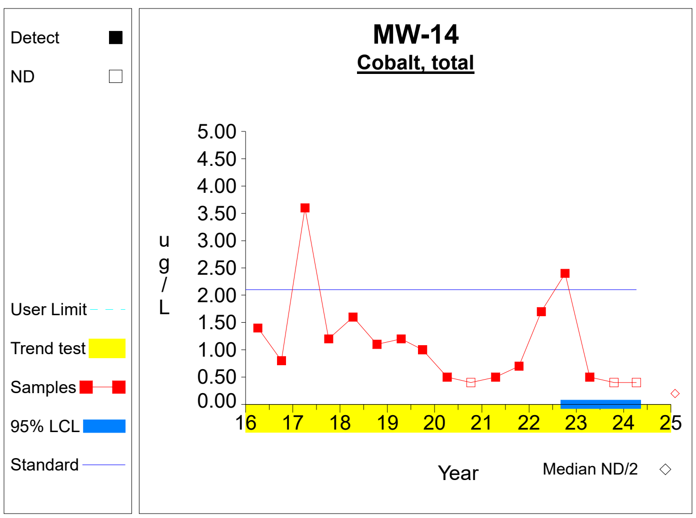
Confidence Limits (Assessment)



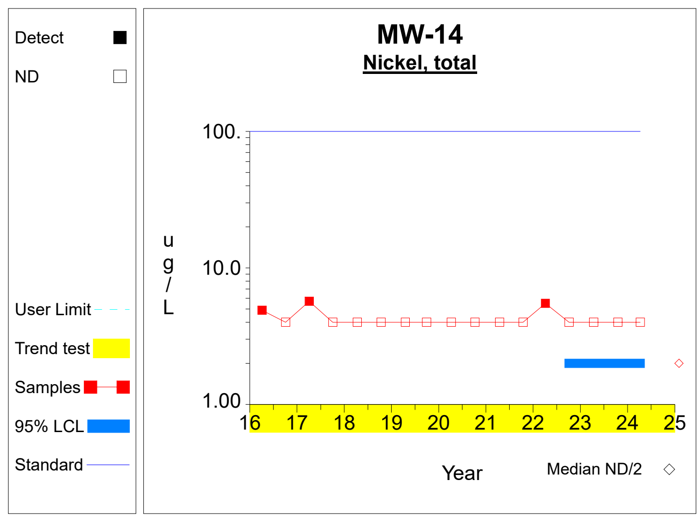
Graph 17



Graph 18

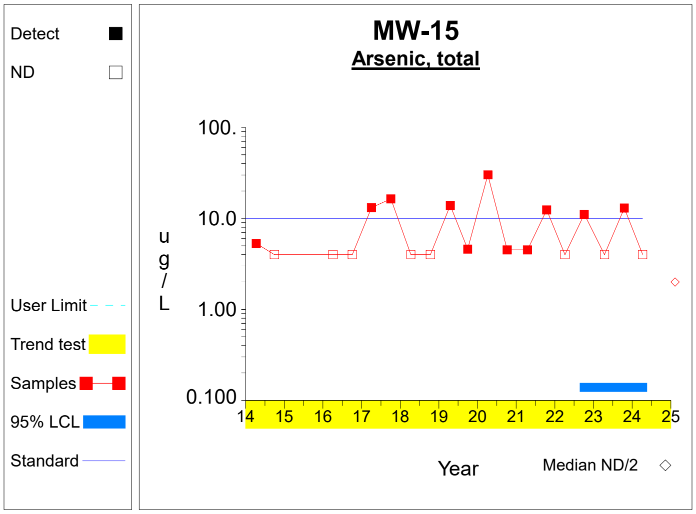


Graph 19

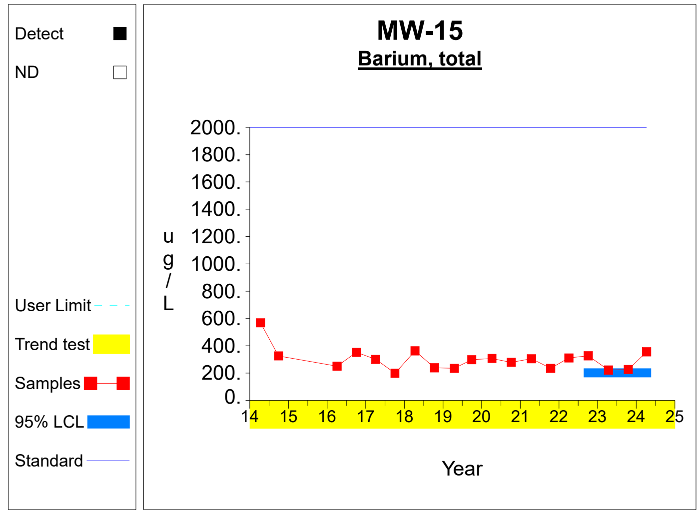


Graph 20

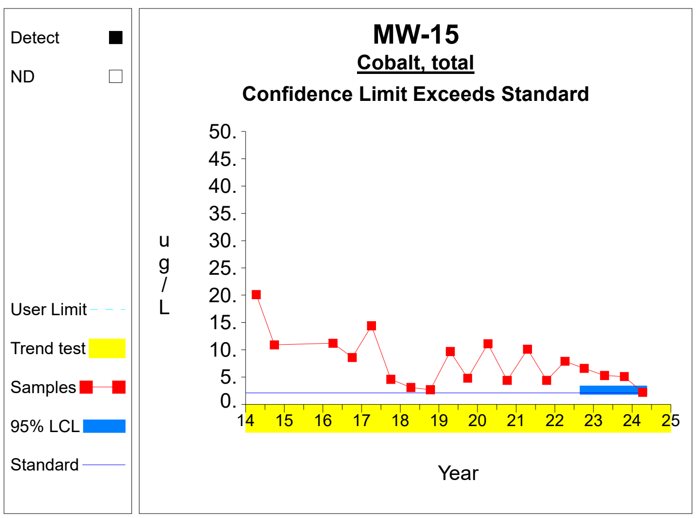
Confidence Limits (Assessment)



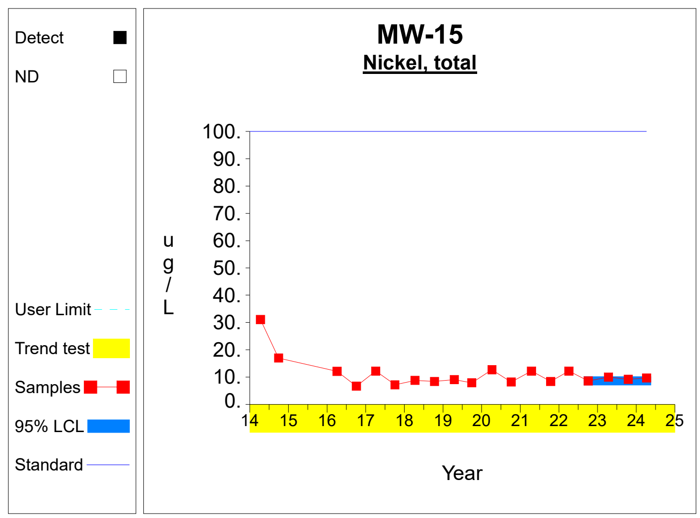
Graph 21



Graph 22

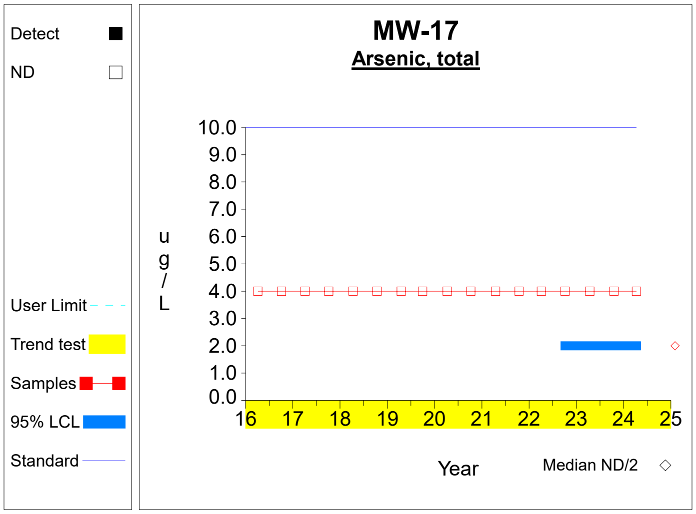


Graph 23

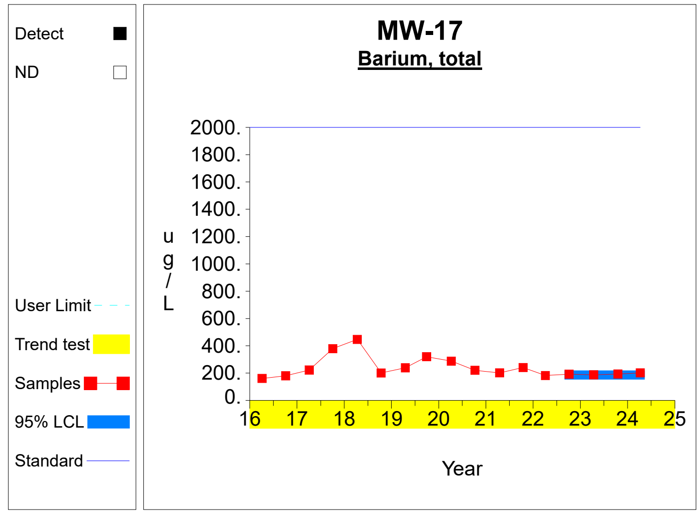


Graph 24

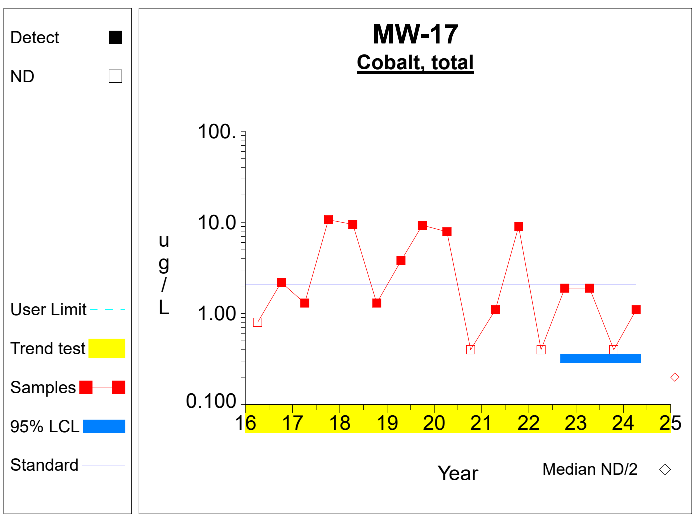
Confidence Limits (Assessment)



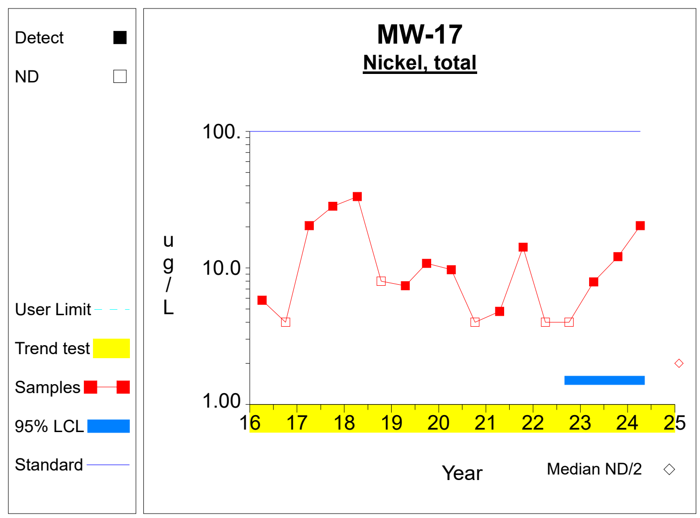
Graph 25



Graph 26

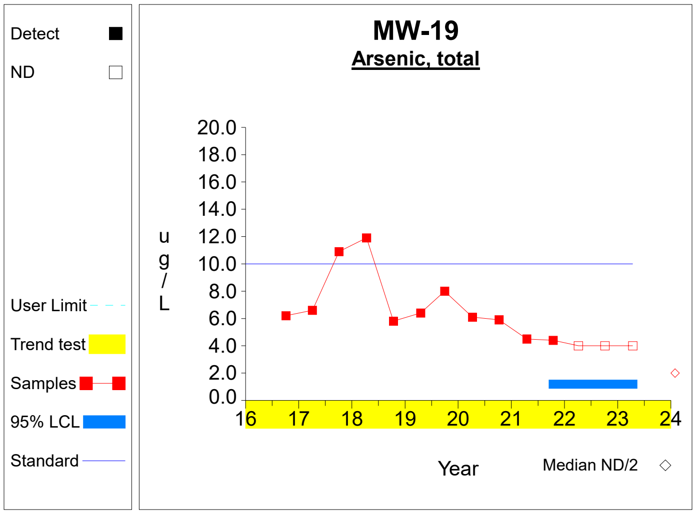


Graph 27

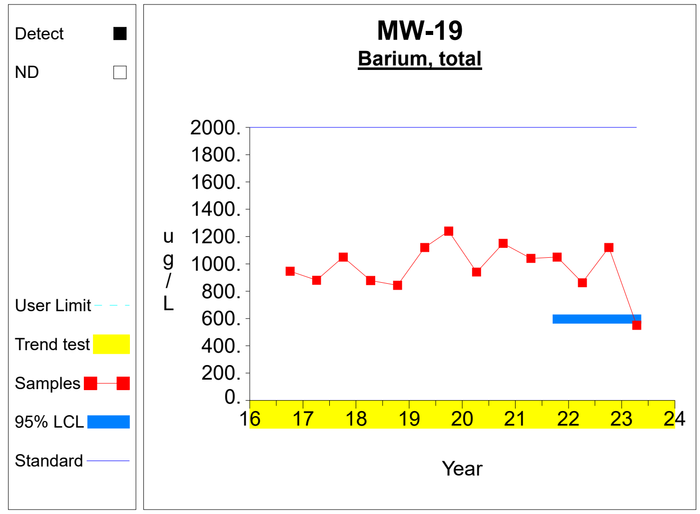


Graph 28

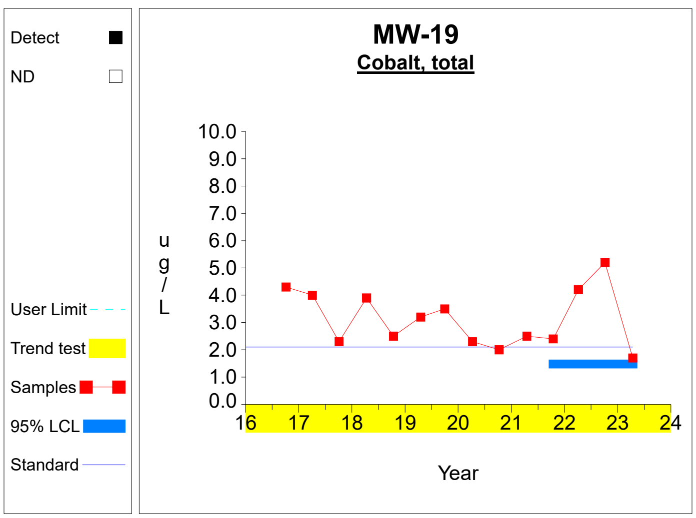
Confidence Limits (Assessment)



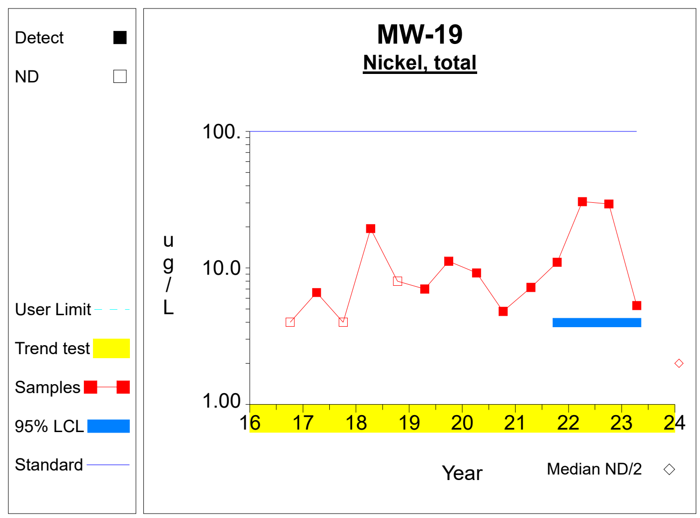
Graph 29



Graph 30



Graph 31



Graph 32

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-10

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{8.0} / \mathbf{4}$	
	$= \mathbf{2.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{½}$	
	$= \mathbf{0.0}$	
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS/N}^{½}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{½}$	
	$= \mathbf{2.0}$	
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS/N}^{½}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{½}$	
	$= \mathbf{2.0}$	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-10

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{344.9} / \mathbf{4}$ $= \mathbf{86.225}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{29854.19} - \mathbf{118956.01/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{6.196}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{X} - tS/N^{1/2}$ $= \mathbf{86.225} - \mathbf{2.353} * \mathbf{6.196/4}^{1/2}$ $= \mathbf{78.936}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{X} + tS/N^{1/2}$ $= \mathbf{86.225} + \mathbf{2.353} * \mathbf{6.196/4}^{1/2}$ $= \mathbf{93.514}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{3.2} / \mathbf{4}$ $= \mathbf{0.8}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{4.48} - \mathbf{10.24/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{0.8}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$ $= \mathbf{0.8} - \mathbf{2.353} * \mathbf{0.8/4}^{1/2}$ $= \mathbf{0.0}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$ $= \mathbf{0.8} + \mathbf{2.353} * \mathbf{0.8/4}^{1/2}$ $= \mathbf{1.741}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{8.0} / \mathbf{4}$	
	$= \mathbf{2.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{½}$	
	$= \mathbf{0.0}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{½}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{½}$	
	$= \mathbf{2.0}$	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{½}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{½}$	
	$= \mathbf{2.0}$	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-11

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **8.0 / 4**	
	= **2.0**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**16.0 - 64.0/4**) / (**4**-1))$^{1/2}$	
	= **0.0**	
3	LCL = **$\bar{X}$ - tS/N$^{1/2}$**	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.0 - 2.353 * 0.0/4$^{1/2}$**	
	= **2.0**	
4	UCL = **$\bar{X}$ + tS/N$^{1/2}$**	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.0 + 2.353 * 0.0/4$^{1/2}$**	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{376.3} / \textbf{4}$ $= \textbf{94.075}$	Compute the mean of the last 4 measurements.
2	$S = ((\textbf{sum[X}^{\textbf{2}}\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{35510.65} - \textbf{141601.69}/\textbf{4}) / (\textbf{4}-1))^{1/2}$ $= \textbf{6.062}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{\textbf{X}} - \textbf{tS}/\textbf{N}^{1/2}$ $= \textbf{94.075} - \textbf{2.353} * \textbf{6.062}/\textbf{4}^{1/2}$ $= \textbf{86.945}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{\textbf{X}} + \textbf{tS}/\textbf{N}^{1/2}$ $= \textbf{94.075} + \textbf{2.353} * \textbf{6.062}/\textbf{4}^{1/2}$ $= \textbf{101.205}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-11

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **2.7 / 4**	
	= **0.675**	
2	S = ((**sum[X²] - sum[X]²/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**4.53 - 7.29/4**) / (**4**-1))$^{1/2}$	
	= **0.95**	
3	LCL = **$\bar{X}$ - tS/N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **0.675 - 2.353 * 0.95/4**$^{1/2}$	
	= **0.0**	
4	UCL = **$\bar{X}$ + tS/N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **0.675 + 2.353 * 0.95/4**$^{1/2}$	
	= **1.792**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-11

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{8.0} / \mathbf{4}$	
	$= \mathbf{2.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{0.0}$	
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	$= \mathbf{2.0}$	
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	$= \mathbf{2.0}$	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-12

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **8.0 / 4**	
	= **2.0**	
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0 - 64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	= **0.0**	
3	$LCL = \mathbf{\overline{X} - tS/N^{1/2}}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0 - 2.353 * 0.0/4^{1/2}}$	
	= **2.0**	
4	$UCL = \mathbf{\overline{X} + tS/N^{1/2}}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0 + 2.353 * 0.0/4^{1/2}}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{1416.0} / \mathbf{4}$	
	$= \mathbf{354.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{505588.0} - \mathbf{2.01}\times\mathbf{10^6}/\mathbf{4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{37.965}$	
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS}/\mathbf{N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{354.0} - \mathbf{2.353} * \mathbf{37.965}/\mathbf{4}^{1/2}$	
	$= \mathbf{309.342}$	
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS}/\mathbf{N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{354.0} + \mathbf{2.353} * \mathbf{37.965}/\mathbf{4}^{1/2}$	
	$= \mathbf{398.658}$	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X} = \text{sum}[X] / N$	Compute the mean of the last 4 measurements.
	$= 6.7 / 4$	
	$= 1.675$	
2	$S = ((\text{sum}[X^2] - \text{sum}[X]^2/N) / (N-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((13.23 - 44.89/4) / (4-1))^{1/2}$	
	$= 0.818$	
3	$LCL = \bar{X} - tS/N^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= 1.675 - 2.353 * 0.818/4^{1/2}$	
	$= 0.713$	
4	$UCL = \bar{X} + tS/N^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= 1.675 + 2.353 * 0.818/4^{1/2}$	
	$= 2.637$	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{8.0} / \mathbf{4}$ $= \mathbf{2.0}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$ $= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{½}$ $= \mathbf{0.0}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{X} - \mathbf{tS/N}^{½}$ $= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{½}$ $= \mathbf{2.0}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{X} + \mathbf{tS/N}^{½}$ $= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{½}$ $= \mathbf{2.0}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{53.6} / \mathbf{4}$	
	$= \mathbf{13.4}$	
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{½}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{783.46 - 2872.96/4}) / (\mathbf{4}-1))^{½}$	
	$= \mathbf{4.663}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{½}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{13.4 - 2.353 * 4.663/4}^{½}$	
	$= \mathbf{7.915}$	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{½}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{13.4 + 2.353 * 4.663/4}^{½}$	
	$= \mathbf{18.885}$	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{2882.0} / \mathbf{4}$ $= \mathbf{720.5}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{2.22}\times\mathbf{10^6} - \mathbf{8.31}\times\mathbf{10^6}/\mathbf{4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{216.198}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{X} - tS/N^{1/2}$ $= \mathbf{720.5} - \mathbf{2.353} * \mathbf{216.198}/\mathbf{4}^{1/2}$ $= \mathbf{466.189}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{X} + tS/N^{1/2}$ $= \mathbf{720.5} + \mathbf{2.353} * \mathbf{216.198}/\mathbf{4}^{1/2}$ $= \mathbf{974.811}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-13

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **33.2** / **4** = **8.3**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½} = ((**293.9 - 1102.24/4**) / (**4**-1))^{½} = **2.473**	Compute sd of the last 4 measurements.
3	LCL = **$\bar{X}$ - tS/N**^{½} = **8.3 - 2.353 * 2.473/4**^{½} = **5.392**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\bar{X}$ + tS/N**^{½} = **8.3 + 2.353 * 2.473/4**^{½} = **11.208**	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-13

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N** = **26.4 / 4** = **6.6**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$ = ((**185.04 - 696.96/4**) / (**4**-1))$^{1/2}$ = **1.897**	Compute sd of the last 4 measurements.
3	LCL = $\bar{X}$ **- tS/N**$^{1/2}$ = **6.6 - 2.353 * 1.897/4**$^{1/2}$ = **4.368**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\bar{X}$ **+ tS/N**$^{1/2}$ = **6.6 + 2.353 * 1.897/4**$^{1/2}$ = **8.832**	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-14

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **24.2** / **4**	
	= **6.05**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**223.54** - **585.64**/**4**) / (**4**-1))$^{1/2}$	
	= **5.071**	
3	LCL = **$\bar{X}$** - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **6.05** - **2.353** * **5.071**/**4**$^{1/2}$	
	= **0.086**	
4	UCL = **$\bar{X}$** + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **6.05** + **2.353** * **5.071**/**4**$^{1/2}$	
	= **12.014**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{3336.0} / \mathbf{4}$	
	$= \mathbf{834.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{2.87}\times\mathbf{10^6} - \mathbf{1.11}\times\mathbf{10^7}/\mathbf{4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{170.178}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{834.0 - 2.353 * 170.178/4}^{1/2}$	
	$= \mathbf{633.821}$	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{834.0 + 2.353 * 170.178/4}^{1/2}$	
	$= \mathbf{1034.179}$	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-14

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **3.3** / **4**	
	= **0.825**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**6.09** - **10.89/4**) / (**4**-1))$^{1/2}$	
	= **1.059**	
3	LCL = **$\bar{X}$ - tS/N$^{1/2}$**	Compute lower confidence limit for the mean of the last 4 measurements.
	= **0.825** - **2.353** * **1.059/4$^{1/2}$**	
	= **0.0**	
4	UCL = **$\bar{X}$ + tS/N$^{1/2}$**	Compute upper confidence limit for the mean of the last 4 measurements.
	= **0.825** + **2.353** * **1.059/4$^{1/2}$**	
	= **2.071**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-14

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{8.0} / \mathbf{4}$	
	$= \mathbf{2.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{0.0}$	
3	$LCL = \bar{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	$= \mathbf{2.0}$	
4	$UCL = \bar{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	$= \mathbf{2.0}$	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N** = **28.1 / 4** = **7.025**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½} = ((**300.21 - 789.61/4**) / (**4**-1))^{½} = **5.854**	Compute sd of the last 4 measurements.
3	LCL = **$\overline{X}$ - tS/N**^{½} = **7.025 - 2.353 * 5.854/4**^{½} = **0.139**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\overline{X}$ + tS/N**^{½} = **7.025 + 2.353 * 5.854/4**^{½} = **13.911**	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{1131.0} / \mathbf{4}$ $= \mathbf{282.75}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{334025.0 - 1.28}\times\mathbf{10^6/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{68.883}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$ $= \mathbf{282.75 - 2.353 * 68.883/4}^{1/2}$ $= \mathbf{201.723}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$ $= \mathbf{282.75 + 2.353 * 68.883/4}^{1/2}$ $= \mathbf{363.777}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-15

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$	Compute the mean of the last 4 measurements.
	$= \textbf{19.2} / \textbf{4}$	
	$= \textbf{4.8}$	
2	$S = ((\textbf{sum[X}^2\textbf{] - sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\textbf{102.5 - 368.64/4}) / (\textbf{4}-1))^{1/2}$	
	$= \textbf{1.857}$	
3	$LCL = \bar{X} - tS/N^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \textbf{4.8 - 2.353 * 1.857/4}^{1/2}$	
	$= \textbf{2.616}$	
4	$UCL = \bar{X} + tS/N^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \textbf{4.8 + 2.353 * 1.857/4}^{1/2}$	
	$= \textbf{6.984}$	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-15

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{37.5} / \textbf{4}$ $= \textbf{9.375}$	Compute the mean of the last 4 measurements.
2	$S = ((\textbf{sum[X}^2\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{352.69} - \textbf{1406.25}/\textbf{4}) / (\textbf{4}-1))^{1/2}$ $= \textbf{0.613}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{X} - tS/N^{1/2}$ $= 9.375 - 2.353 * 0.613/4^{1/2}$ $= \textbf{8.654}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{X} + tS/N^{1/2}$ $= 9.375 + 2.353 * 0.613/4^{1/2}$ $= \textbf{10.096}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**16.0** - **64.0/4**) / (**4**-1))$^{1/2}$	
	= **0.0**	
3	LCL = **$\bar{X}$ - tS/N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.0** - **2.353** * **0.0/4**$^{1/2}$	
	= **2.0**	
4	UCL = **$\bar{X}$** + **tS/N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.0** + **2.353** * **0.0/4**$^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N** = **774.0 / 4** = **193.5**	Compute the mean of the last 4 measurements.
2	$S = ((\mathrm{sum}[X^2] - \mathrm{sum}[X]^2/N) / (N-1))^{1/2}$ $= ((149886.0 - 599076.0/4) / (4-1))^{1/2}$ = **6.245**	Compute sd of the last 4 measurements.
3	$LCL = \bar{X} - tS/N^{1/2}$ $= 193.5 - 2.353 * 6.245/4^{1/2}$ = **186.154**	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{X} + tS/N^{1/2}$ $= 193.5 + 2.353 * 6.245/4^{1/2}$ = **200.846**	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N** = **5.1 / 4** = **1.275**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½} = ((**8.47 - 26.01/4**) / (**4**-1))^{½} = **0.81**	Compute sd of the last 4 measurements.
3	LCL = **$\bar{X}$ - tS/N**^{½} = **1.275 - 2.353 * 0.81/4**^{½} = **0.322**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\bar{X}$ + tS/N**^{½} = **1.275 + 2.353 * 0.81/4**^{½} = **2.228**	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{42.4} / \mathbf{4}$ $= \mathbf{10.6}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{628.98} - \mathbf{1797.76/4}) / (\mathbf{4}-1))^{1/2}$ $= \mathbf{7.736}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$ $= \mathbf{10.6} - \mathbf{2.353} * \mathbf{7.736/4}^{1/2}$ $= \mathbf{1.5}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$ $= \mathbf{10.6} + \mathbf{2.353} * \mathbf{7.736/4}^{1/2}$ $= \mathbf{19.7}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-19

Step	Equation	Description
1	$\overline{X} = \textbf{sum[X]} / \textbf{N}$	Compute the mean of the last 4 measurements.
	$= \textbf{10.4} / \textbf{4}$	
	$= \textbf{2.6}$	
2	$S = ((\textbf{sum[X}^{\textbf{2}}\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\textbf{31.36} - \textbf{108.16}/\textbf{4}) / (\textbf{4}-1))^{1/2}$	
	$= \textbf{1.2}$	
3	$LCL = \overline{\textbf{X}} - \textbf{tS}/\textbf{N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \textbf{2.6} - \textbf{2.353} * \textbf{1.2}/\textbf{4}^{1/2}$	
	$= \textbf{1.188}$	
4	$UCL = \overline{\textbf{X}} + \textbf{tS}/\textbf{N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \textbf{2.6} + \textbf{2.353} * \textbf{1.2}/\textbf{4}^{1/2}$	
	$= \textbf{4.012}$	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-19

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X] / N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{3582.0 / 4}$	
	$= \mathbf{895.5}$	
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{3.40}\times\mathbf{10^6} - \mathbf{1.28}\times\mathbf{10^7/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{254.796}$	
3	$LCL = \bar{X} - tS/N^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{895.5 - 2.353 * 254.796/4^{1/2}}$	
	$= \mathbf{595.786}$	
4	$UCL = \bar{X} + tS/N^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{895.5 + 2.353 * 254.796/4^{1/2}}$	
	$= \mathbf{1195.214}$	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-19

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$	Compute the mean of the last 4 measurements.
	$= \textbf{13.5} / \textbf{4}$	
	$= \textbf{3.375}$	
2	$S = ((\textbf{sum[X}^2\textbf{] - sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\textbf{53.33 - 182.25/4}) / (\textbf{4}-1))^{1/2}$	
	$= \textbf{1.609}$	
3	$LCL = \bar{X} - tS/N^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \textbf{3.375 - 2.353 * 1.609/4}^{1/2}$	
	$= \textbf{1.482}$	
4	$UCL = \bar{X} + tS/N^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \textbf{3.375 + 2.353 * 1.609/4}^{1/2}$	
	$= \textbf{5.268}$	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-19

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **76.3** / **4**	
	= **19.075**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**1949.81** - **5821.69/4**) / (**4**-1))$^{1/2}$	
	= **12.837**	
3	LCL = $\overline{X}$ - **tS/N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **19.075 - 2.353 * 12.837/4**$^{1/2}$	
	= **3.975**	
4	UCL = $\overline{X}$ + **tS/N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **19.075 + 2.353 * 12.837/4**$^{1/2}$	
	= **34.175**	

Results of the Ground Water Statistics

for Jackson County Sanitary Landfill

Second Semi-Annual Monitoring Event in 2024

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INTRODUCTION

This report contains the results of the statistical analyses used to evaluate the ground water data obtained during the second semi-annual monitoring event in 2024 at Jackson County Sanitary Landfill. The ground water at Jackson County Sanitary Landfill is monitored by a network of wells including MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21. Monitoring wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17 were sampled on October 8, 2024 and analyzed for the parameters required by permit. At the request of the Iowa DNR, trend analysis and confidence intervals are computed for wells with historical volatile organic compound (VOC) detections.

Ground Water Monitoring Program

The groundwater monitoring network for Jackson County Sanitary Landfill includes MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21. The groundwater monitoring wells is to be sampled and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized below.

Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	*trans*-1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	*cis*-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	*trans*-1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	*cis*-1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	*trans*-1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water data obtained during the second semi-annual monitoring event in 2024 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The intrawell method using combined Shewhart-CUSUM control charts was applied to the Jackson County Landfill trace metals data using the DUMPStat® statistical program. DUMPStat® is a program for the statistical analysis of groundwater monitoring data using methods described in “Statistical Methods for Groundwater Monitoring” by Dr. Robert D. Gibbons. The DUMPStat program is completely consistent with all USEPA regulations and guidance and the ASTM D6312-98 guidance. The wells impacted with VOCs are evaluated with confidence intervals using the DUMPStat statistical program.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring.

VOCs detected in the ground water at Jackson County Sanitary Landfill during the second semi-annual monitoring event in 2024 are summarized below.

VOCs detected during the second semi-annual monitoring period in 2024

Well	VOC Detected	Result, µg/L	Reporting Limit, µg/L	Verified/ Awaiting verification	Water Quality Standard
MW-11	Tetrachloroethene	1.1	1	Awaiting verification	5[a]
MW-12	Trichloroethene	2.2	1	Awaiting verification	5[a]

a - USEPA MCL
b- Iowa Statewide Standard for a protected groundwater source

Tetrachloroethene was previously detected multiple times at MW-11 with the most recent being in October 2023. Trichloroethene was previously detected multiple times at MW-12 with the most recent being in October 2023. Historical VOC detections are summarized in Attachment B.

The verified VOC detections were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009. The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The calculated 95% LCLs for each of the verified VOCs are below the respective GWPS (Attachment C). No increasing trends were detected.

Trace Metals

The historical Appendix I trace metals data obtained from monitoring wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, MW-20, and MW-21 are plotted in Attachment D.

Intrawell statistics

Intrawell statistics are appropriate for facilities where the upgradient wells do not accurately characterize the natural ground water conditions downgradient from the facility. This may be due to different hydrogeological conditions where the wells are screened, having too few upgradient wells to account for the spatial variability, or the site exhibiting no definable hydraulic gradient. Intrawell statistics compare new measurements to the historical data at each ground water monitoring well independently. It is recommended that at least eight background samples be obtained prior to performing the statistics.

The most useful technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure is useful because it will detect releases both in terms of the constituent concentration and cumulative increases. This method is also extremely sensitive to sudden and gradual releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined.

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is extremely robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

It is recommended that at least eight rounds of data be available to provide a reliable estimate of the mean and standard deviation of the parameter concentration, although the control charts will be generated with as few as four data points. Having only four data points may produce greater uncertainty in the mean and standard deviation of the background data, leading to higher control limits, thus having a potentially high false negative rate.

Many groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data should be plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sampling error, analytical error, or simply by chance alone. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat® program screens for outliers using the Dixon test. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established, is indicative of a landfill release.

The background data for each well and constituent is tested for existing trends using Sen's nonparametric estimate of trend. If contamination exists prior to completing the background, the control limits could be potentially high and this control chart method would not be able to detect an increasing trend unless the increase is severe.

<u>Results of the Intrawell Statistics</u>

The Appendix I trace metals data from wells MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17 were evaluated using the combined Shewhart-CUSUM control chart method. The previous background included the data obtained from 2014 through 2019. Even for wells with eight rounds of background, there is insufficient data to determine control limits given the approved resample program. For constituents that are detected less than 25% of the time at a particular well, thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. The background was extended to include data obtained from 2014 through April 2022.

A summary of the intrawell statistics is included in Attachment E, Table 1 "Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts." The control charts or time series graphs follow the summary table. For the parameters compared to background, there were no control limit exceedances detected. Increasing trends were detected in the historical data for arsenic at MW-13 and barium at MW-14.

A control chart factor was selected to provide a balance of the site-wide false positive and false negative rates. A statistical power curve indicates the expected false assessments for the site as a whole. For intrawell analysis, the site-wide false positive rate is 19% and the test becomes sensitive to 4 standard deviation units over background.

The past and current verified trace metal exceedances were evaluated against the GWPS using confidence limits. The 95% LCL for cobalt at MW-13 (5.475 µg/L) exceeds the GWPS of 2.1 µg/L. The 95% LCL for cobalt at MW-15 (2.384 µg/L) exceeds the GWPS of 2.1 µg/L. The calculated 95% LCL for each of the remaining trace metal exceedances are below the respective GWPS (Attachment F).

Attachment A

Ground Water Data obtained during the Second Semi-Annual Monitoring Event in 2024

Table 1

Analytical Data Summary for 10/8/2024

Constituents	Units	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17
1,1,1,2-tetrachloroethane	ug/L		<1	<1				<1
1,1,1-trichloroethane	ug/L		<1	<1				<1
1,1,2,2-tetrachloroethane	ug/L		<1	<1				<1
1,1,2-trichloroethane	ug/L		<1	<1				<1
1,1-dichloroethane	ug/L		<1	<1				<1
1,1-dichloroethene	ug/L		<1	<1				<1
1,2,3-trichloropropane	ug/L		<1	<1				<1
1,2-dibromo-3-chloropropane	ug/L		<5	<5				<5
1,2-dibromoethane	ug/L		<1	<1				<1
1,2-dichlorobenzene	ug/L		<1	<1				<1
1,2-dichloroethane	ug/L		<1	<1				<1
1,2-dichloropropane	ug/L		<1	<1				<1
1,4-dichlorobenzene	ug/L		<1	<1				<1
2-butanone	ug/L		<10	<10				<10
2-hexanone	ug/L		<5	<5				<5
4-methyl-2-pentanone	ug/L		<5	<5				<5
Acetone	ug/L		<10	<10				<10
Acrylonitrile	ug/L		<5	<5				<5
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	<4.0	<4.0	<4.0	9.5	7.6	<4.0	<4.0
Barium, total	ug/L	79.2	85.9	287.0	391.0	740.0	327.0	212.0
Benzene	ug/L		<1	<1				<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L		<1	<1				<1
Bromodichloromethane	ug/L		<1	<1				<1
Bromoform	ug/L		<1	<1				<1
Bromomethane	ug/L		<1	<1				<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Carbon disulfide	ug/L		<1	<1				<1
Carbon tetrachloride	ug/L		<1	<1				<1
Chlorobenzene	ug/L		<1	<1				<1
Chloroethane	ug/L		<1	<1				<1
Chloroform	ug/L		<1	<1				<1
Chloromethane	ug/L		<1	<1				<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethene	ug/L		<1	<1				<1
Cis-1,3-dichloropropene	ug/L		<1	<1				<1
Cobalt, total	ug/L	<.4	<.4	1.1	6.4	.5	7.9	5.4
Copper, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Dibromochloromethane	ug/L		<1	<1				<1
Dibromomethane	ug/L		<1	<1				<1
Ethylbenzene	ug/L		<1	<1				<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Methyl iodide	ug/L		<1	<1				<1
Methylene chloride	ug/L		<5	<5				<5
Nickel, total	ug/L	<4.0	<4.0	<4.0	5.1	<4.0	11.1	23.9
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4
Styrene	ug/L		<1	<1				<1
Tetrachloroethene	ug/L		1.1	<1.0				<1.0
Thallium, total	ug/L	<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L		<1	<1				<1
Trans-1,2-dichloroethene	ug/L		<1	<1				<1
Trans-1,3-dichloropropene	ug/L		<1	<1				<1
Trans-1,4-dichloro-2-butene	ug/L		<5	<5				<5
Trichloroethene	ug/L		<1.0	2.2				<1.0
Trichlorofluoromethane	ug/L		<1	<1				<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L		<5	<5				<5
Vinyl chloride	ug/L		<1	<1				<1
Xylenes, total	ug/L		<2	<2				<2
Zinc, total	ug/L	<20	<20	<20	<20	<20	<20	<20

* - The displayed value is the arithmetic mean of multiple database matches.

Attachment B

Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Tetrachloroethene	MW-11	10/04/2016		1.4	1.0	ug/L
Tetrachloroethene	MW-11	10/03/2017		2.3	1.0	ug/L
Tetrachloroethene	MW-11	10/12/2018		3.1	1.0	ug/L
Tetrachloroethene	MW-11	9/30/2019		2.0	1.0	ug/L
Tetrachloroethene	MW-11	4/16/2021		1.4	1.0	ug/L
Tetrachloroethene	MW-11	10/14/2021		1.4	1.0	ug/L
Tetrachloroethene	MW-11	4/13/2023		2.0	1.0	ug/L
Tetrachloroethene	MW-11	10/18/2023		1.3	1.0	ug/L
Tetrachloroethene	MW-11	10/08/2024		1.1	1.0	ug/L
Acetone	MW-12	10/03/2017		15.4	10.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/04/2016		1.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	10/04/2016		1.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/03/2017		1.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	10/12/2018		2.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	4/17/2019		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-12	9/30/2019		1.1	1.0	ug/L
Tetrachloroethene	MW-12	4/08/2024		1.8	1.0	ug/L
Trichloroethene	MW-12	4/04/2016		5.0	1.0	ug/L
Trichloroethene	MW-12	10/04/2016		3.8	1.0	ug/L
Trichloroethene	MW-12	4/03/2017		4.5	1.0	ug/L
Trichloroethene	MW-12	10/03/2017		5.6	1.0	ug/L
Trichloroethene	MW-12	4/10/2018		4.9	1.0	ug/L
Trichloroethene	MW-12	10/12/2018		5.1	1.0	ug/L
Trichloroethene	MW-12	4/17/2019		3.9	1.0	ug/L
Trichloroethene	MW-12	9/30/2019		2.4	1.0	ug/L
Trichloroethene	MW-12	4/07/2020		3.5	1.0	ug/L
Trichloroethene	MW-12	10/07/2020		2.6	1.0	ug/L
Trichloroethene	MW-12	4/16/2021		2.7	1.0	ug/L
Trichloroethene	MW-12	10/14/2021		2.2	1.0	ug/L
Trichloroethene	MW-12	4/04/2022		2.5	1.0	ug/L
Trichloroethene	MW-12	10/04/2022		3.0	1.0	ug/L
Trichloroethene	MW-12	4/13/2023		2.2	1.0	ug/L
Trichloroethene	MW-12	10/18/2023		2.1	1.0	ug/L
Trichloroethene	MW-12	10/08/2024		2.2	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	10/03/2017		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	10/12/2018		3.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-17	9/30/2019		1.1	1.0	ug/L
Tetrachloroethene	MW-17	4/04/2016		1.1	1.0	ug/L
Tetrachloroethene	MW-17	10/04/2016		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/03/2017		1.6	1.0	ug/L
Tetrachloroethene	MW-17	10/03/2017		1.7	1.0	ug/L
Tetrachloroethene	MW-17	10/12/2018		2.3	1.0	ug/L
Tetrachloroethene	MW-17	4/17/2019		1.2	1.0	ug/L
Tetrachloroethene	MW-17	9/30/2019		1.0	1.0	ug/L
Tetrachloroethene	MW-17	4/07/2020		1.4	1.0	ug/L
Tetrachloroethene	MW-17	4/16/2021		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/04/2022		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/13/2023		1.2	1.0	ug/L
Tetrachloroethene	MW-17	4/08/2024		1.2	1.0	ug/L
1,1-dichloroethane	MW-19	10/04/2016		3.2	1.0	ug/L
1,1-dichloroethane	MW-19	4/03/2017		6.3	1.0	ug/L
1,1-dichloroethane	MW-19	10/03/2017		3.1	1.0	ug/L
1,1-dichloroethane	MW-19	4/10/2018		3.6	1.0	ug/L
1,1-dichloroethane	MW-19	10/12/2018		4.2	1.0	ug/L
1,1-dichloroethane	MW-19	4/17/2019		5.2	1.0	ug/L
1,1-dichloroethane	MW-19	9/30/2019		6.4	1.0	ug/L
1,1-dichloroethane	MW-19	4/07/2020		5.4	1.0	ug/L
1,1-dichloroethane	MW-19	10/07/2020		9.3	1.0	ug/L
1,1-dichloroethane	MW-19	4/16/2021		3.7	1.0	ug/L
1,1-dichloroethane	MW-19	10/14/2021		3.8	1.0	ug/L
1,1-dichloroethane	MW-19	4/04/2022		1.3	1.0	ug/L
1,1-dichloroethane	MW-19	10/04/2022		2.4	1.0	ug/L
Acetone	MW-19	10/04/2016		19.0	10.0	ug/L
Acetone	MW-19	4/03/2017		49.6	10.0	ug/L
Acetone	MW-19	10/12/2018		13.0	10.0	ug/L
Acetone	MW-19	4/04/2022		35.2	10.0	ug/L
Acetone	MW-19	10/04/2022		17.0	10.0	ug/L
Benzene	MW-19	3/17/2009		1.2	1.0	ug/L
Benzene	MW-19	10/04/2016		1.1	1.0	ug/L
Benzene	MW-19	4/17/2019		1.1	1.0	ug/L
Benzene	MW-19	4/07/2020		1.5	1.0	ug/L
Benzene	MW-19	10/07/2020		3.1	1.0	ug/L
Benzene	MW-19	4/16/2021		1.7	1.0	ug/L
Chloroethane	MW-19	10/04/2016		3.2	1.0	ug/L
Chloroethane	MW-19	4/03/2017		2.4	1.0	ug/L
Chloroethane	MW-19	10/03/2017		2.2	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chloroethane	MW-19	4/10/2018		3.5	1.0	ug/L
Chloroethane	MW-19	10/12/2018		2.7	1.0	ug/L
Chloroethane	MW-19	4/17/2019		2.8	1.0	ug/L
Chloroethane	MW-19	9/30/2019		3.2	1.0	ug/L
Chloroethane	MW-19	4/07/2020		2.6	1.0	ug/L
Chloroethane	MW-19	10/07/2020		4.0	1.0	ug/L
Chloroethane	MW-19	4/16/2021		2.1	1.0	ug/L
Chloroethane	MW-19	10/14/2021		2.0	1.0	ug/L
Chloroethane	MW-19	10/04/2022		1.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/04/2016		23.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/03/2017		4.5	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/03/2017		36.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/10/2018		46.2	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/12/2018		34.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/17/2019		43.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	9/30/2019		39.9	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/07/2020		54.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/07/2020		98.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/16/2021		23.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/14/2021		26.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/04/2022		6.6	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	10/04/2022		7.6	1.0	ug/L
Cis-1,2-dichloroethene	MW-19	4/13/2023		1.8	1.0	ug/L
Tetrachloroethene	MW-19	10/04/2016		6.6	1.0	ug/L
Tetrachloroethene	MW-19	4/03/2017		43.2	1.0	ug/L
Tetrachloroethene	MW-19	10/12/2018		2.8	1.0	ug/L
Tetrachloroethene	MW-19	4/17/2019		1.9	1.0	ug/L
Tetrachloroethene	MW-19	10/14/2021		1.0	1.0	ug/L
Trichloroethene	MW-19	3/17/2009		8.5	1.0	ug/L
Trichloroethene	MW-19	10/04/2016		2.8	1.0	ug/L
Trichloroethene	MW-19	4/03/2017		7.9	1.0	ug/L
Trichloroethene	MW-19	10/12/2018		5.1	1.0	ug/L
Trichloroethene	MW-19	4/17/2019		3.9	1.0	ug/L
Trichloroethene	MW-19	9/30/2019		11.8	1.0	ug/L
Trichloroethene	MW-19	4/07/2020		2.2	1.0	ug/L
Trichloroethene	MW-19	10/07/2020		2.0	1.0	ug/L
Trichloroethene	MW-19	4/16/2021		10.6	1.0	ug/L
Trichloroethene	MW-19	10/14/2021		3.6	1.0	ug/L
Trichloroethene	MW-19	4/04/2022		2.1	1.0	ug/L
Trichloroethene	MW-19	10/04/2022		5.1	1.0	ug/L
Trichloroethene	MW-19	4/13/2023		2.3	1.0	ug/L
Vinyl chloride	MW-19	10/07/2020		1.2	1.0	ug/L
Xylenes, total	MW-19	4/17/2019		2.4	2.0	ug/L
Xylenes, total	MW-19	10/07/2020		3.0	2.0	ug/L
Acetone	MW-20	10/04/2016		72.9	10.0	ug/L
Acetone	MW-20	4/03/2017		10.4	10.0	ug/L
Acetone	MW-20	10/03/2017		34.0	10.0	ug/L
Acetone	MW-20	4/10/2018		32.9	10.0	ug/L
Acetone	MW-20	10/12/2018		28.7	10.0	ug/L
Acetone	MW-20	4/17/2019		27.2	10.0	ug/L
Acetone	MW-20	10/14/2021		180.0	10.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/04/2016		1.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/03/2017		1.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/12/2018		6.0	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/17/2019		3.8	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	9/30/2019		3.7	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/07/2020		3.4	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/07/2020		9.1	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	4/16/2021		4.5	1.0	ug/L
Cis-1,2-dichloroethene	MW-20	10/14/2021		3.9	1.0	ug/L
Tetrachloroethene	MW-20	10/03/2017		1.7	1.0	ug/L
Toluene	MW-20	10/04/2016		6.7	1.0	ug/L
Toluene	MW-20	4/03/2017		1.3	1.0	ug/L
Trichloroethene	MW-20	3/17/2009		1.6	1.0	ug/L
Trichloroethene	MW-20	10/03/2017		2.2	1.0	ug/L
Trichloroethene	MW-20	10/12/2018		3.1	1.0	ug/L
Trichloroethene	MW-20	4/17/2019		1.7	1.0	ug/L
Trichloroethene	MW-20	4/07/2020		1.1	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Attachment C

Assessment Statistics for VOCs

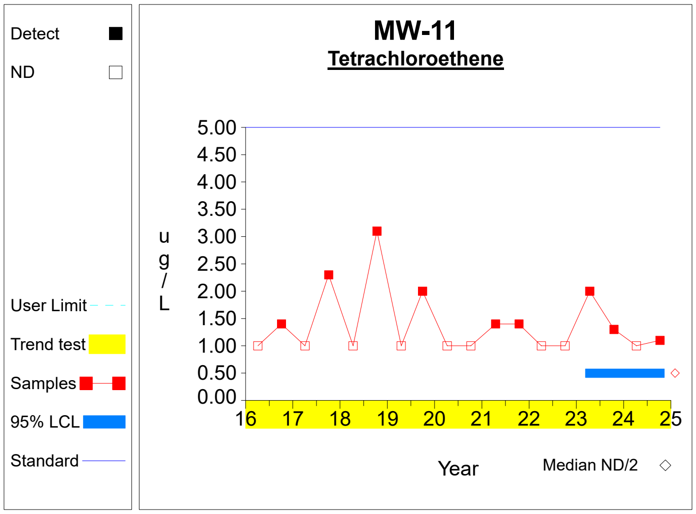
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

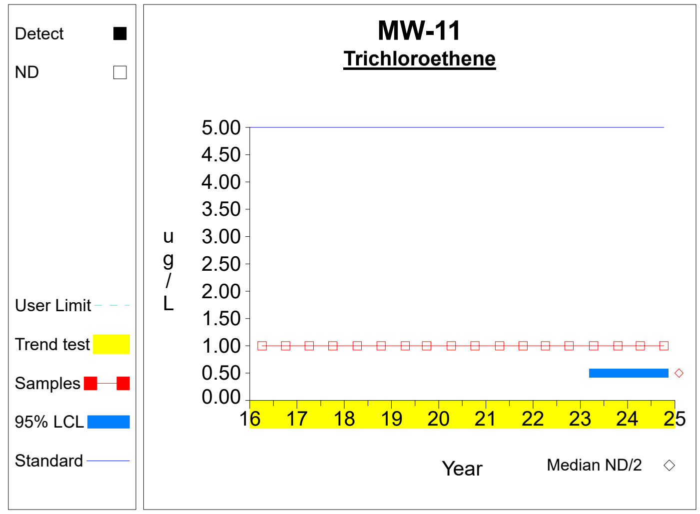
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Tetrachloroethene	ug/L	MW-11	4	1.225	0.618	1.176	0.498	1.952	5.000	
Trichloroethene	ug/L	MW-11	4	0.500	0.000	1.176	0.500	0.500	5.000	
Tetrachloroethene	ug/L	MW-12	4	0.825	0.650	1.176	0.060	1.590	5.000	
Trichloroethene	ug/L	MW-12	4	1.750	0.835	1.176	0.768	2.732	5.000	dec
Tetrachloroethene	ug/L	MW-17	4	0.850	0.404	1.176	0.375	1.325	5.000	
Trichloroethene	ug/L	MW-17	4	0.500	0.000	1.176	0.500	0.500	5.000	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

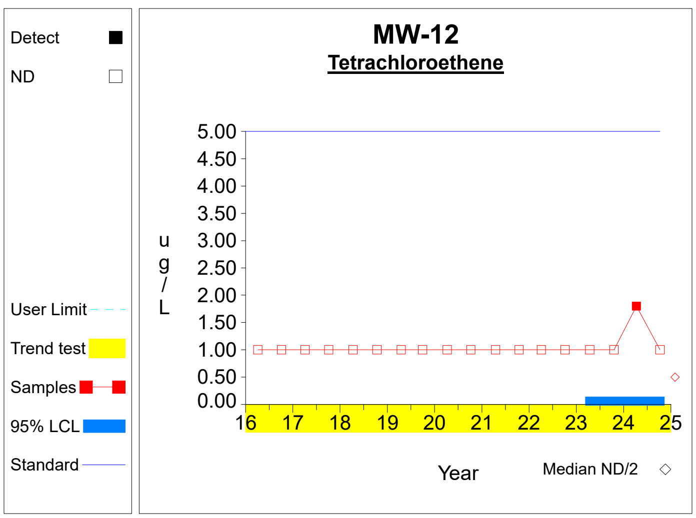
Confidence Limits (Assessment)



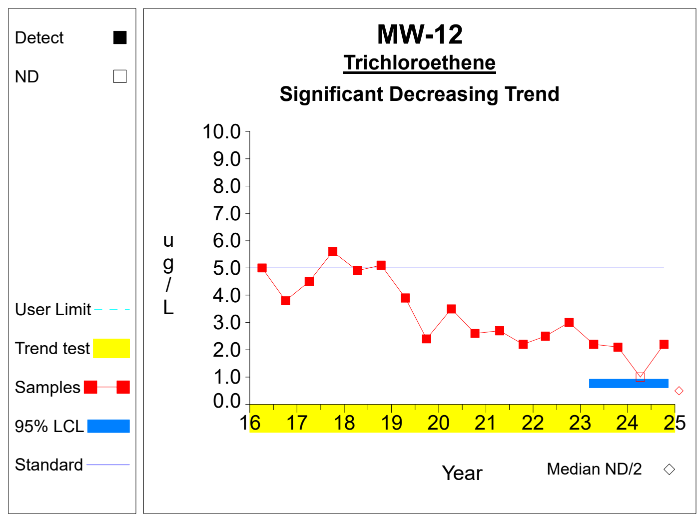
Graph 1



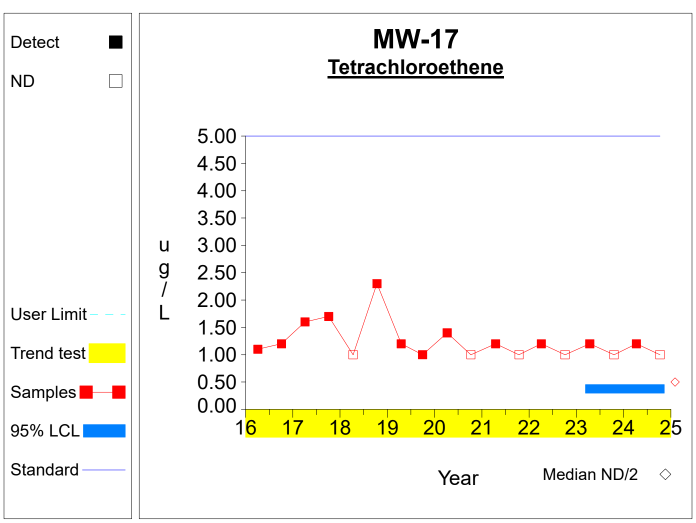
Graph 2



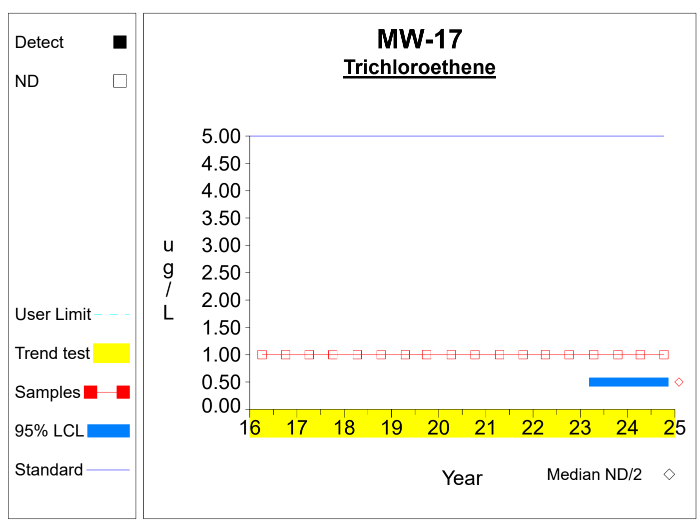
Graph 3



Graph 4



Graph 5



Graph 6

Prepared by: Otter Creek Environmental

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{4.9} / \textbf{4}$ $= \textbf{1.225}$	Compute the mean of the last 4 measurements.
2	$S = ((\textbf{sum[X}^2\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{7.15} - \textbf{24.01/4}) / (\textbf{4}-1))^{1/2}$ $= \textbf{0.618}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{\textbf{X}} - \textbf{tS/N}^{1/2}$ $= \textbf{1.225} - \textbf{2.353} * \textbf{0.618/4}^{1/2}$ $= \textbf{0.498}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{\textbf{X}} + \textbf{tS/N}^{1/2}$ $= \textbf{1.225} + \textbf{2.353} * \textbf{0.618/4}^{1/2}$ $= \textbf{1.952}$	Compute upper confidence limit for the mean of the last 4 measurements.
5	$N' = \textbf{N} * (\textbf{N}-1) / 2$ $= \textbf{18} * (\textbf{18}-1) / 2$ $= \textbf{153}$	Number of sample pairs during trend detection period.
6	$S = \textbf{0.0}$	Sen's estimator of trend.
7	$var(S) = \textbf{600.333}$	Variance estimate for slope.
8	$M(S) = (\textbf{N'} \pm \textbf{Z}_{.995} * \textbf{var(S)}^{1/2}) / 2$ $= (\textbf{153} \pm \textbf{2.576} * \textbf{600.333}^{1/2}) / 2$ $= [\ \textbf{44.942}, \textbf{108.058}\ ]$	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	$CL(S) = [\ \textbf{-0.181}, \textbf{0.145}\ ]$	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-11

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **2.0** / **4** = **0.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))^{½} = ((**1.0** - **4.0**/**4**) / (**4**-1))^{½} = **0.0**	Compute sd of the last 4 measurements.
3	LCL = **$\bar{X}$** - **tS**/**N**^{½} = **0.5** - **2.353** * **0.0**/**4**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\bar{X}$** + **tS**/**N**^{½} = **0.5** + **2.353** * **0.0**/**4**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **18** * (**18**-1) / 2 = **153**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**153** ± **2.576** * **0.0**^{½}) / 2 = [**76.5**, **76.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{3.3} / \textbf{4}$ $= \textbf{0.825}$	Compute the mean of the last 4 measurements.
2	$S = ((\textbf{sum[X}^2\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{3.99} - \textbf{10.89}/\textbf{4}) / (\textbf{4}-1))^{1/2}$ $= \textbf{0.65}$	Compute sd of the last 4 measurements.
3	$LCL = \bar{\textbf{X}} - \textbf{tS}/\textbf{N}^{1/2}$ $= \textbf{0.825} - \textbf{2.353} * \textbf{0.65}/\textbf{4}^{1/2}$ $= \textbf{0.06}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \bar{\textbf{X}} + \textbf{tS}/\textbf{N}^{1/2}$ $= \textbf{0.825} + \textbf{2.353} * \textbf{0.65}/\textbf{4}^{1/2}$ $= \textbf{1.59}$	Compute upper confidence limit for the mean of the last 4 measurements.
5	$N' = \textbf{N} * (\textbf{N}-1) / 2$ $= \textbf{18} * (\textbf{18}-1) / 2$ $= \textbf{153}$	Number of sample pairs during trend detection period.
6	$S = \textbf{0.0}$	Sen's estimator of trend.
7	$var(S) = \textbf{107.667}$	Variance estimate for slope.
8	$M(S) = (\textbf{N'} \pm \textbf{Z}_{.995} * \textbf{var(S)}^{1/2}) / 2$ $= (\textbf{153} \pm \textbf{2.576} * \textbf{107.667}^{1/2}) / 2$ $= [\ \textbf{63.135}, \textbf{89.865}\ ]$	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	$CL(S) = [\ \textbf{0.0}, \textbf{0.0}\ ]$	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-12

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.0** / **4** = **1.75**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**14.34** - **49.0**/**4**) / (**4**-1))^{½} = **0.835**	Compute sd of the last 4 measurements.
3	LCL = $\overline{X}$ - **tS**/**N**^{½} = **1.75** - **2.353** * **0.835**/**4**^{½} = **0.768**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{X}$ + **tS**/**N**^{½} = **1.75** + **2.353** * **0.835**/**4**^{½} = **2.732**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **18** * (**18**-1) / 2 = **153**	Number of sample pairs during trend detection period.
6	S = **-0.416**	Sen's estimator of trend.
7	var(S) = **693.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**153** ± **2.576** * **693.333**^{½}) / 2 = [**42.585**, **110.415**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.684**, **-0.2**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Tetrachloroethene (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.4** / **4** = **0.85**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))$^{1/2}$ = ((**3.38** - **11.56**/**4**) / (**4**-1))$^{1/2}$ = **0.404**	Compute sd of the last 4 measurements.
3	LCL = **$\overline{X}$** - **tS**/**N**$^{1/2}$ = **0.85** - **2.353** * **0.404**/**4**$^{1/2}$ = **0.375**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\overline{X}$** + **tS**/**N**$^{1/2}$ = **0.85** + **2.353** * **0.404**/**4**$^{1/2}$ = **1.325**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **18** * (**18**-1) / 2 = **153**	Number of sample pairs during trend detection period.
6	S = **-0.066**	Sen's estimator of trend.
7	var(S) = **640.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**153** ± **2.576** * **640.333**$^{1/2}$) / 2 = [**43.907**, **109.093**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.2**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

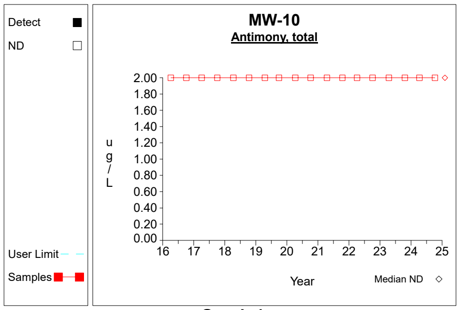
Worksheet 6 - Assessment Monitoring
Trichloroethene (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **2.0** / **4** = **0.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$ = ((**1.0 - 4.0/4**) / (**4**-1))$^{1/2}$ = **0.0**	Compute sd of the last 4 measurements.
3	LCL = **$\bar{X}$ - tS/N$^{1/2}$** = **0.5** - **2.353** * **0.0/4$^{1/2}$** = **0.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = **$\bar{X}$ + tS/N$^{1/2}$** = **0.5** + **2.353** * **0.0/4$^{1/2}$** = **0.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **18** * (**18**-1) / 2 = **153**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **$Z_{.995}$** * **var(S)$^{1/2}$**) / 2 = (**153** ± **2.576** * **0.0$^{1/2}$**) / 2 = [**76.5**, **76.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the M^{th} largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

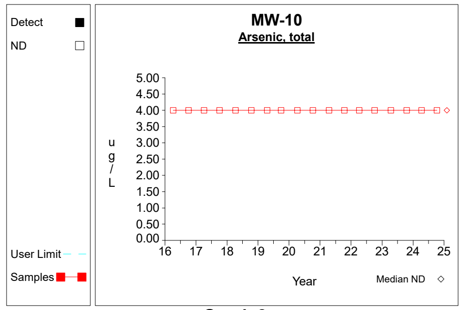
Attachment D

Time Series Plots of Trace Metals Data

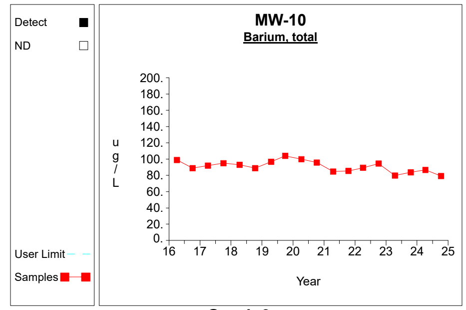
Time Series



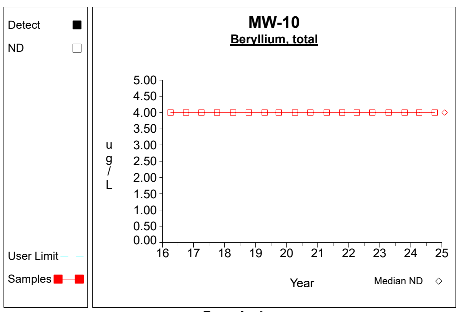
Graph 1



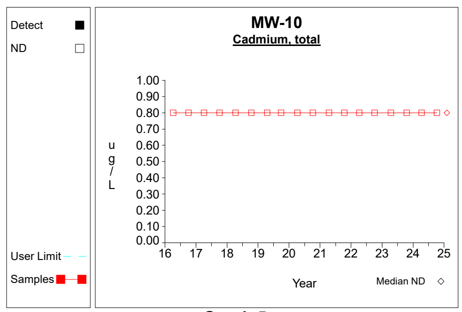
Graph 2



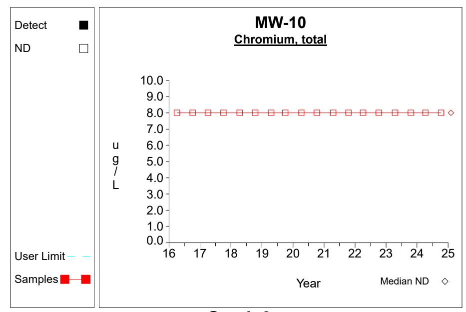
Graph 3



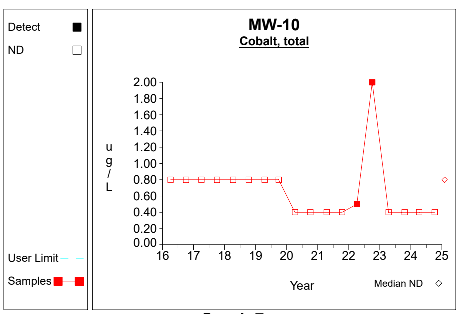
Graph 4



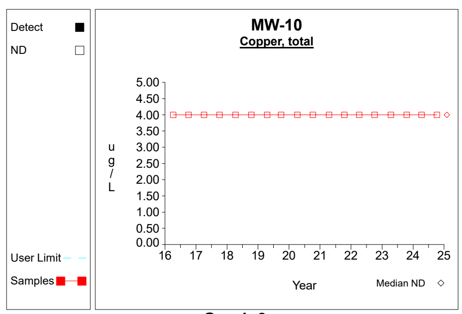
Graph 5



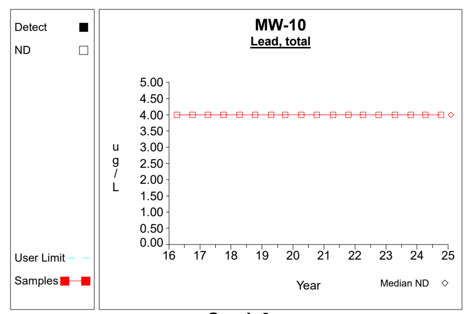
Graph 6



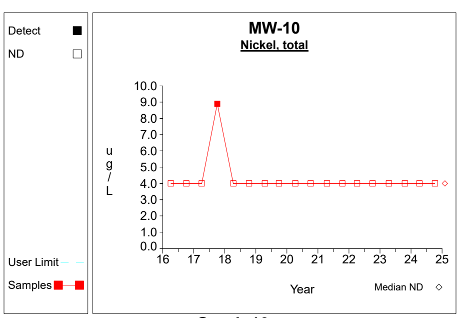
Graph 7



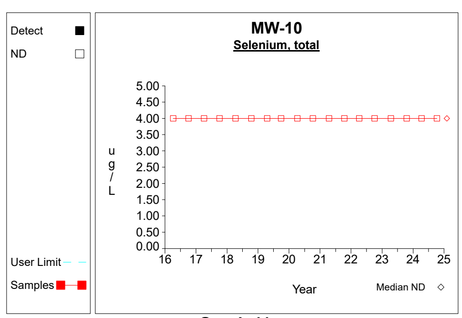
Graph 8



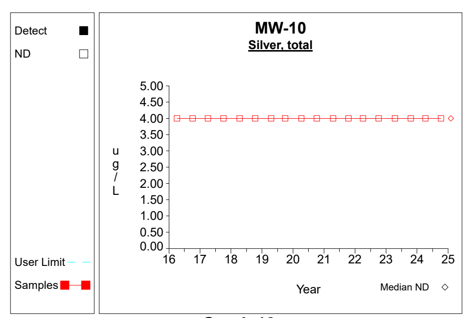
Graph 9



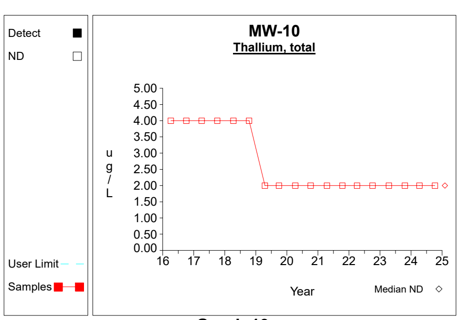
Graph 10



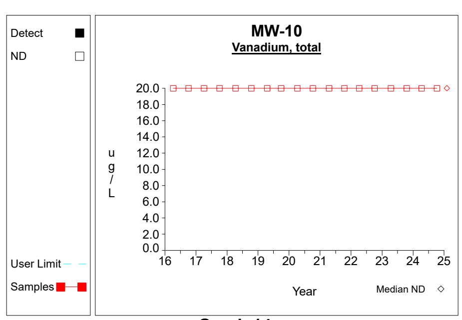
Graph 11



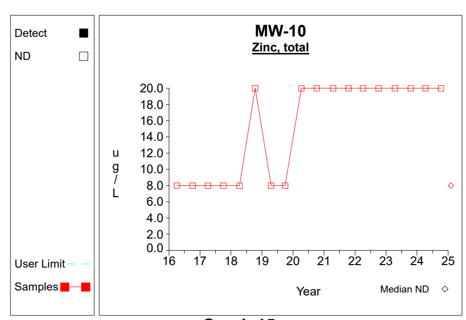
Graph 12



Graph 13

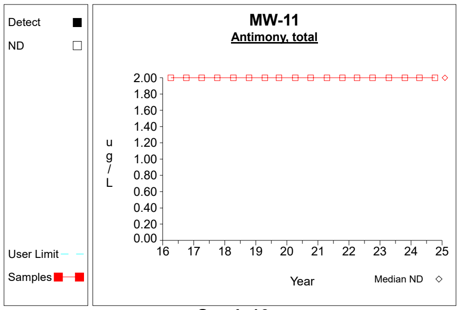


Graph 14

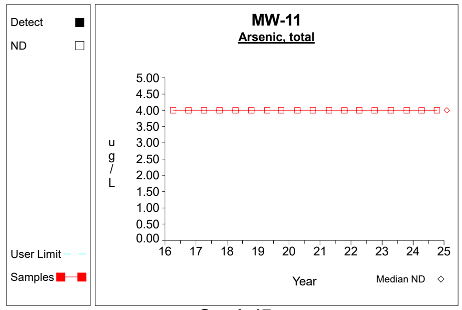


Graph 15

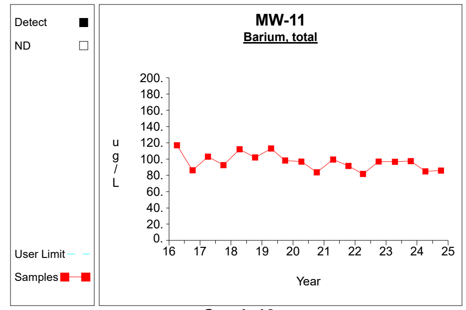
Time Series



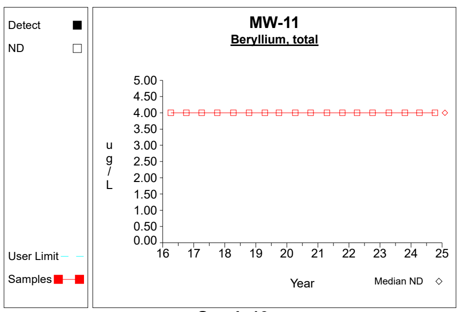
Graph 16



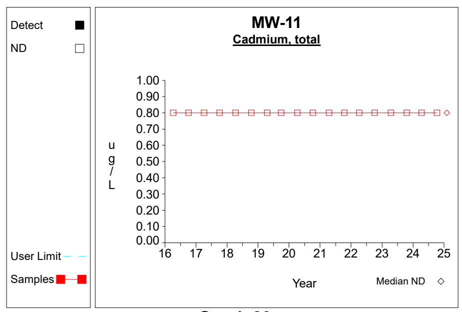
Graph 17



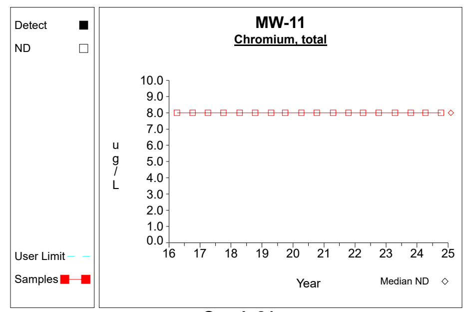
Graph 18



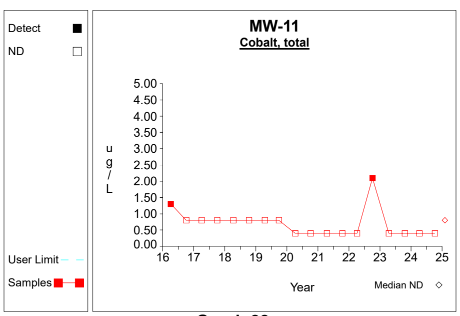
Graph 19



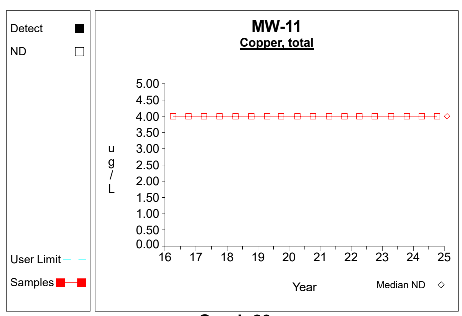
Graph 20



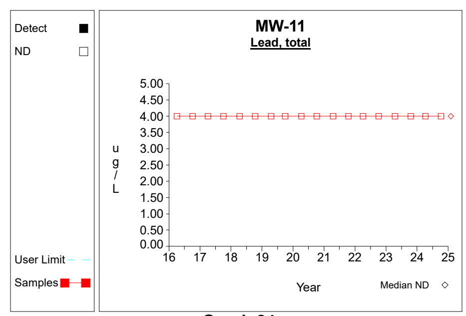
Graph 21



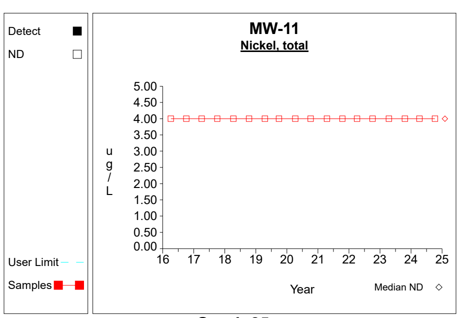
Graph 22



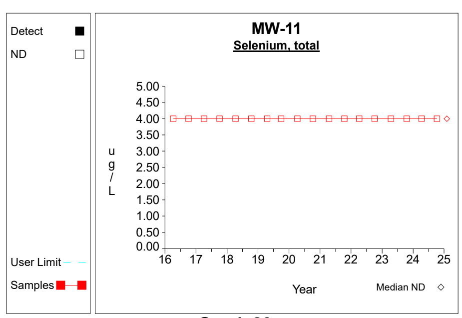
Graph 23



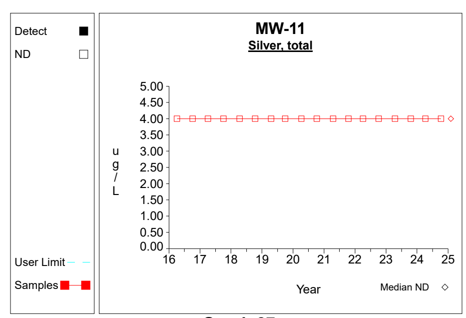
Graph 24



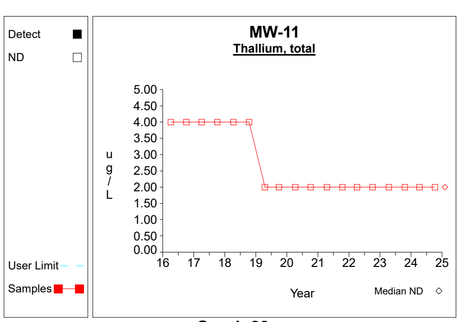
Graph 25



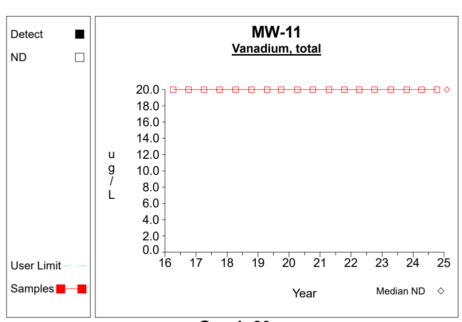
Graph 26



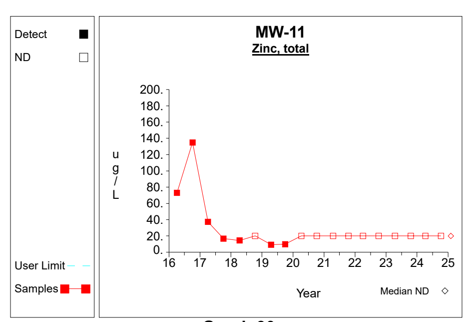
Graph 27



Graph 28

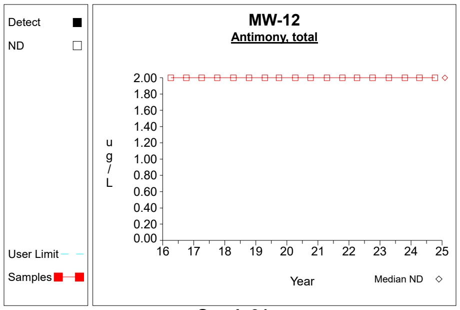


Graph 29

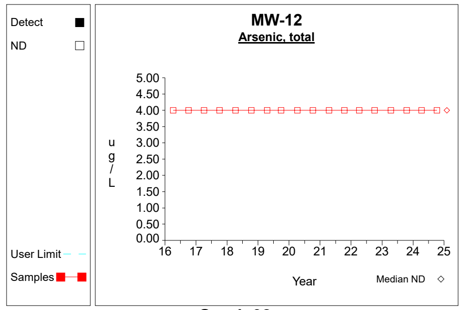


Graph 30

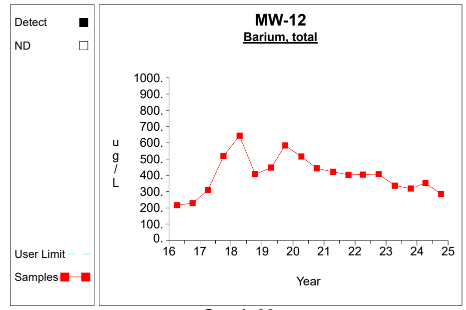
Time Series



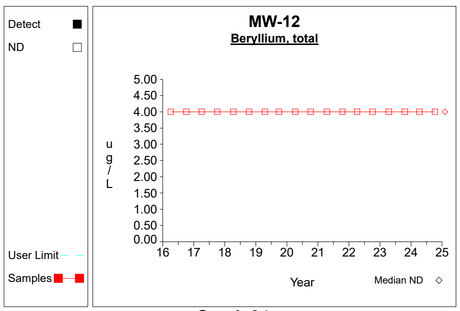
Graph 31



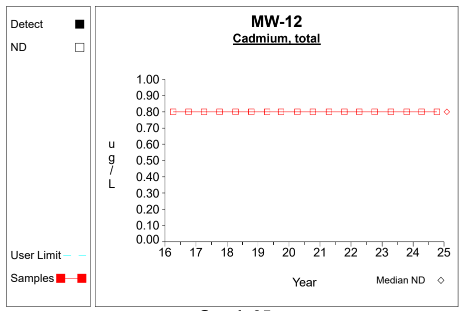
Graph 32



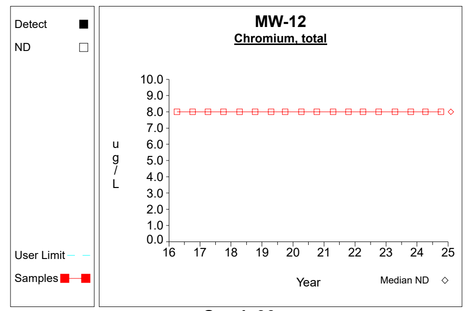
Graph 33



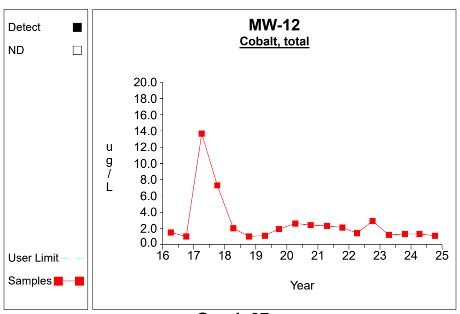
Graph 34



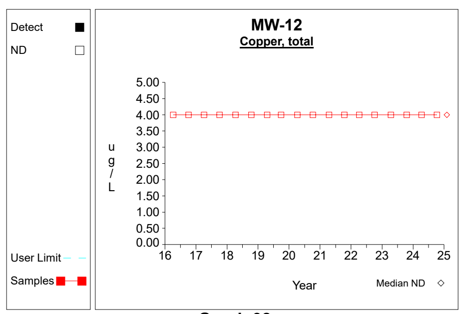
Graph 35



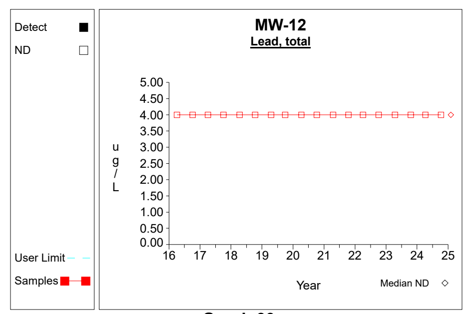
Graph 36



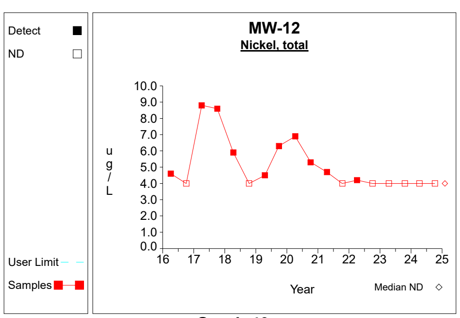
Graph 37



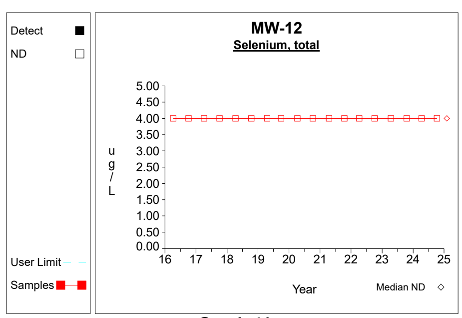
Graph 38



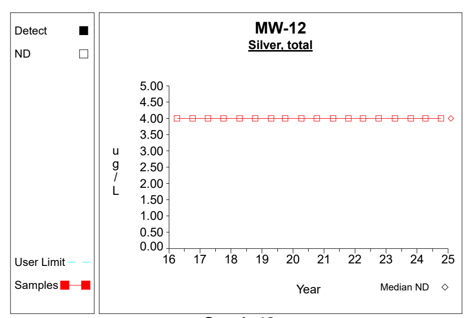
Graph 39



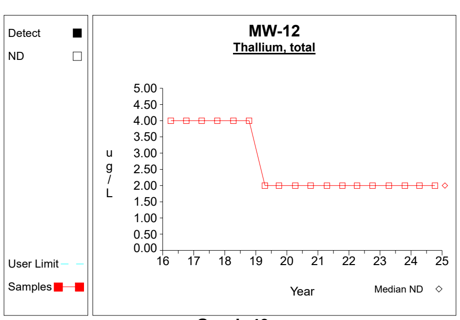
Graph 40



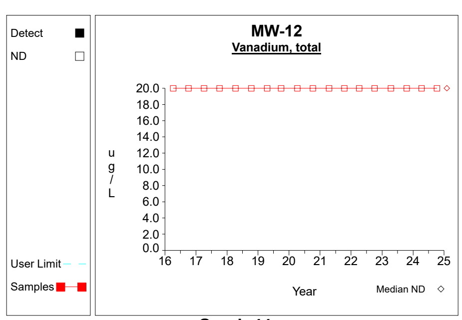
Graph 41



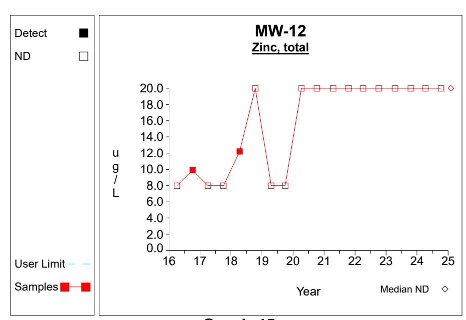
Graph 42



Graph 43

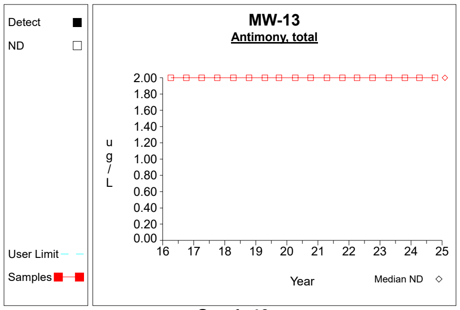


Graph 44

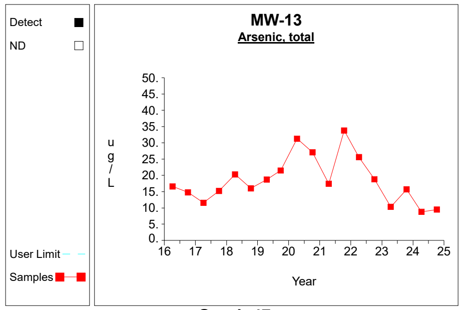


Graph 45

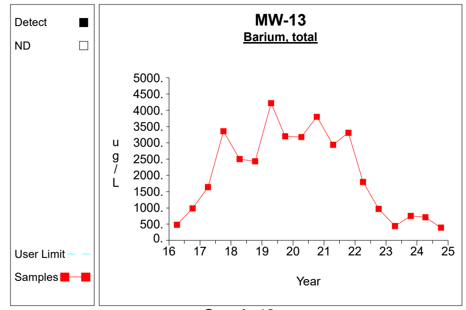
Time Series



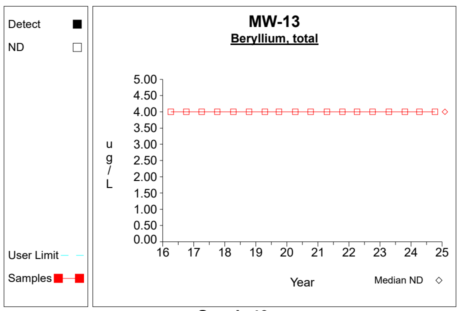
Graph 46



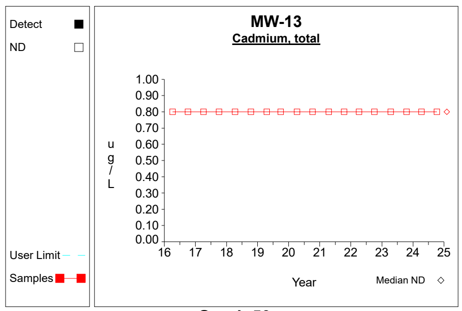
Graph 47



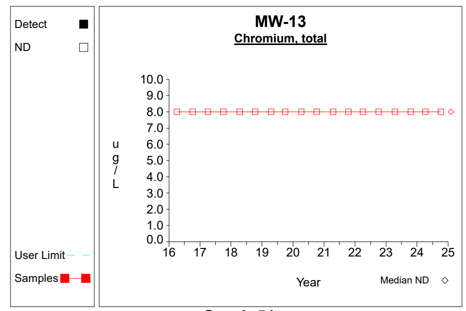
Graph 48



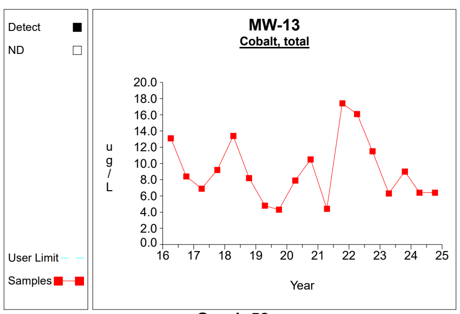
Graph 49



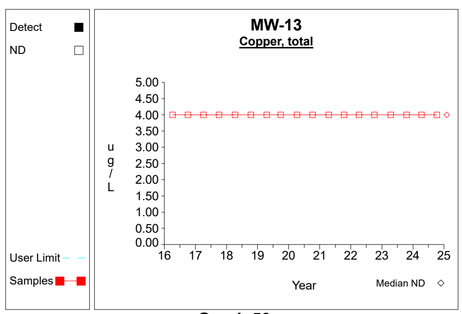
Graph 50



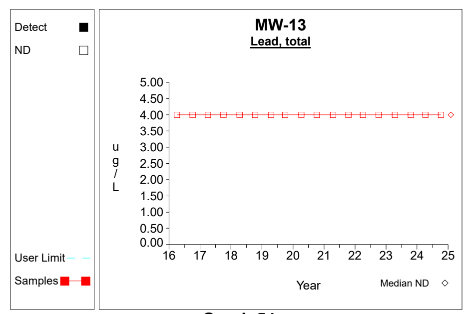
Graph 51



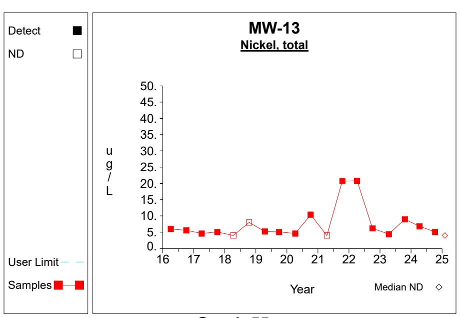
Graph 52



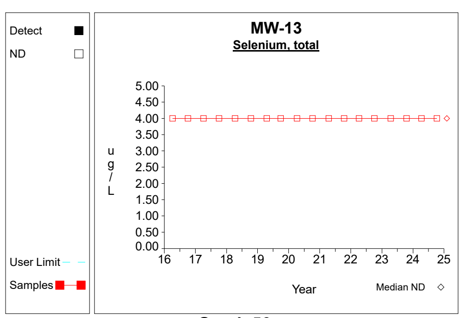
Graph 53



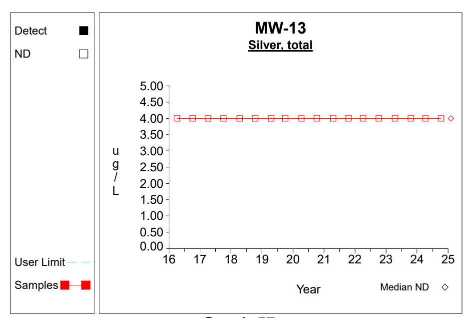
Graph 54



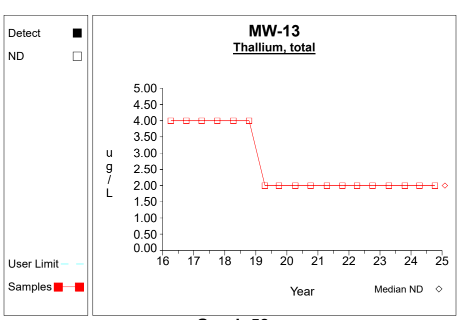
Graph 55



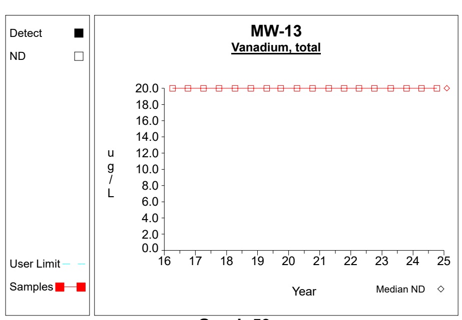
Graph 56



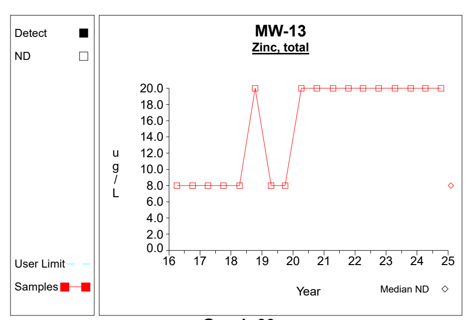
Graph 57



Graph 58

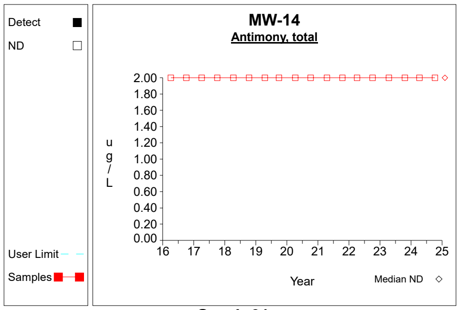


Graph 59

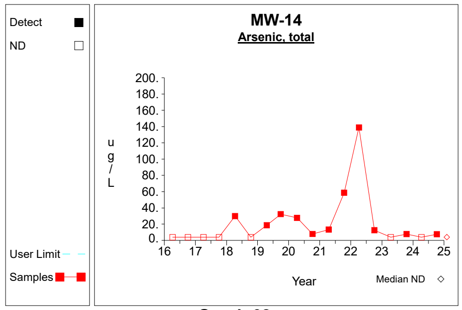


Graph 60

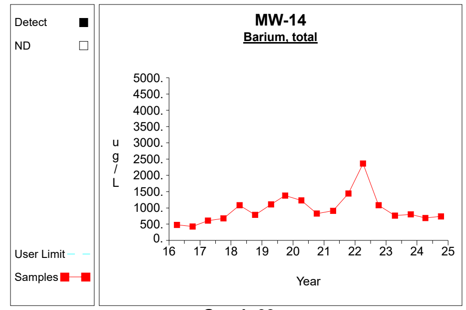
Time Series



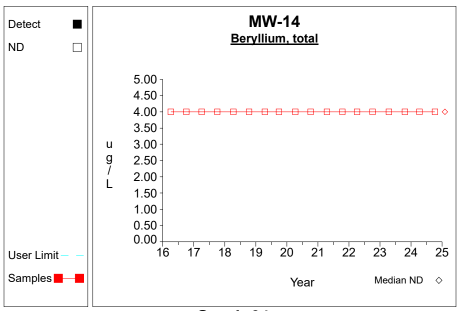
Graph 61



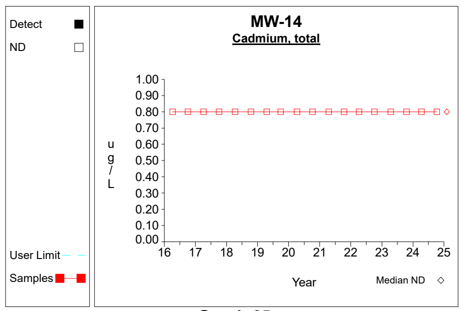
Graph 62



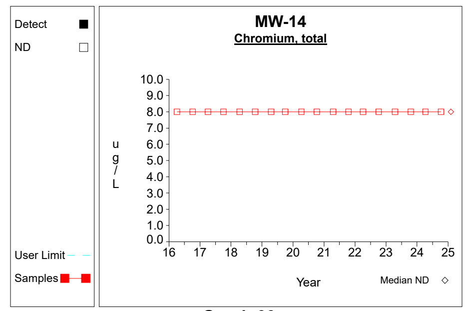
Graph 63



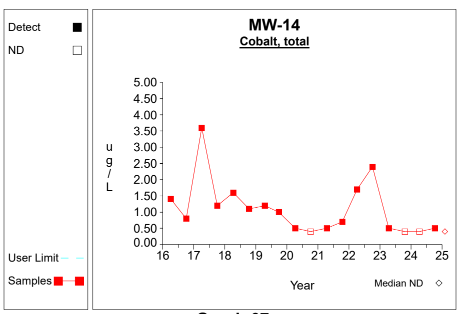
Graph 64



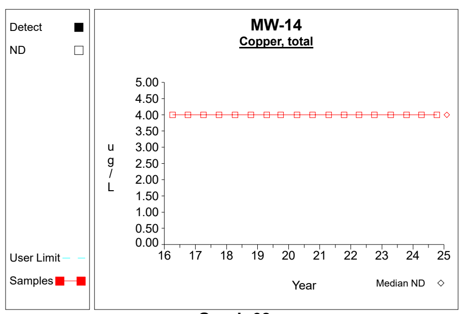
Graph 65



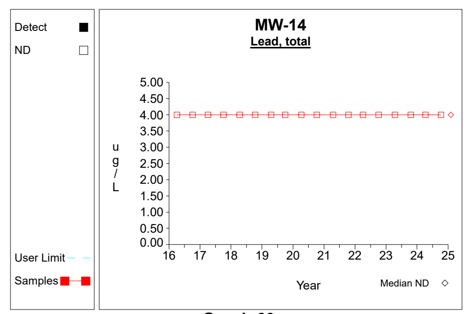
Graph 66



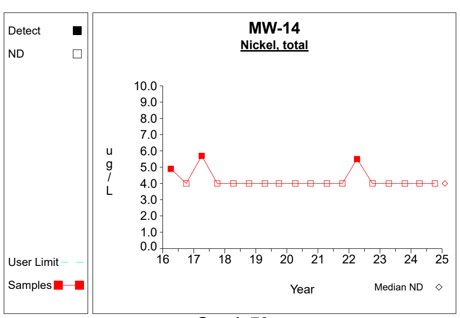
Graph 67



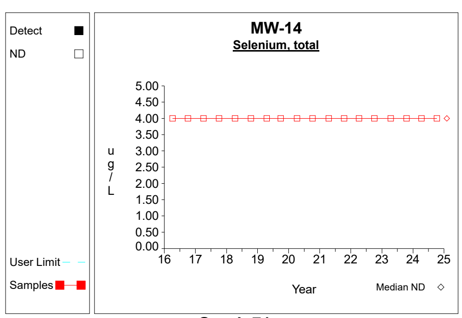
Graph 68



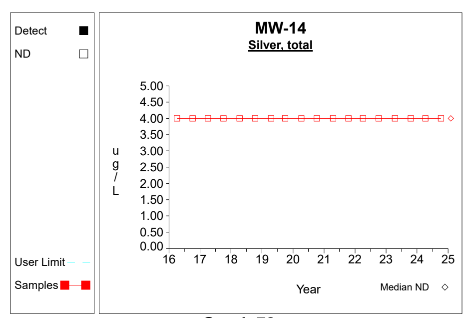
Graph 69



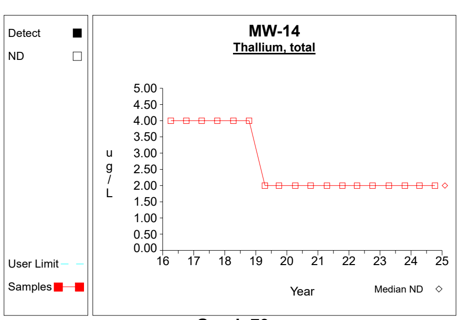
Graph 70



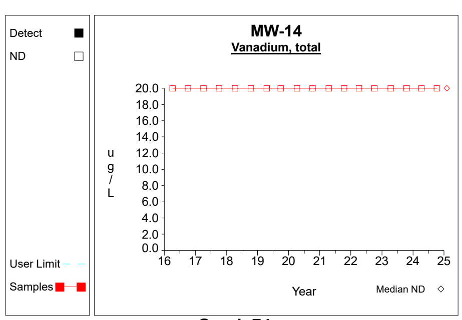
Graph 71



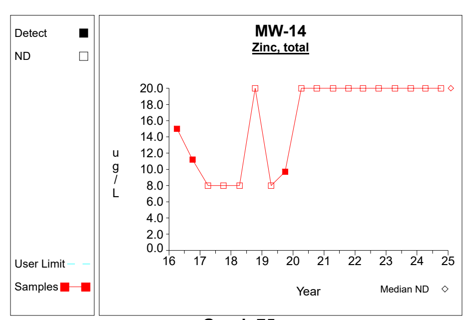
Graph 72



Graph 73

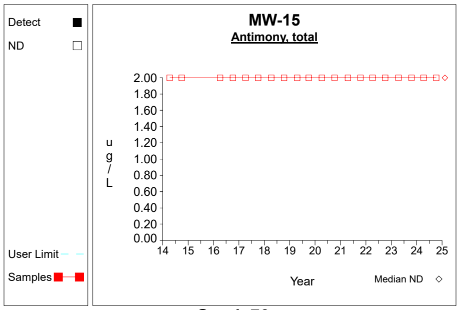


Graph 74

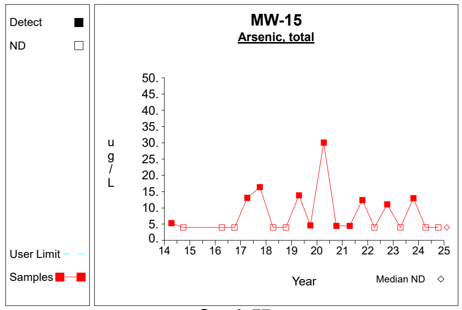


Graph 75

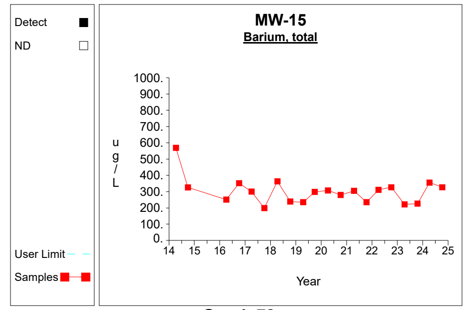
Time Series



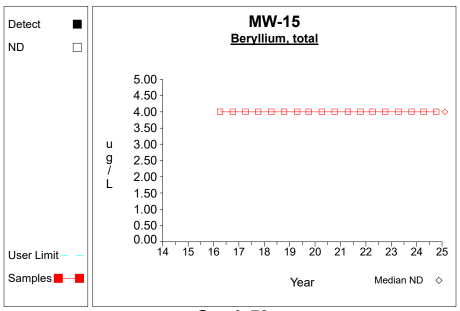
Graph 76



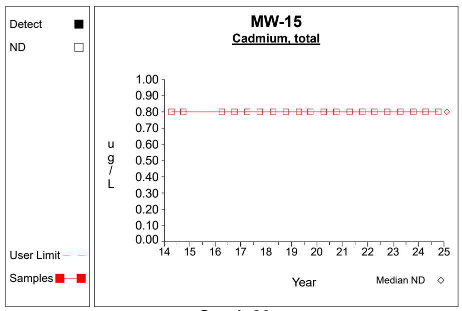
Graph 77



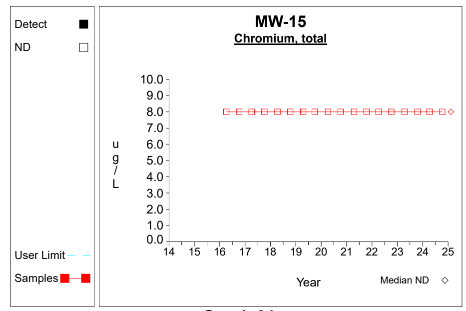
Graph 78



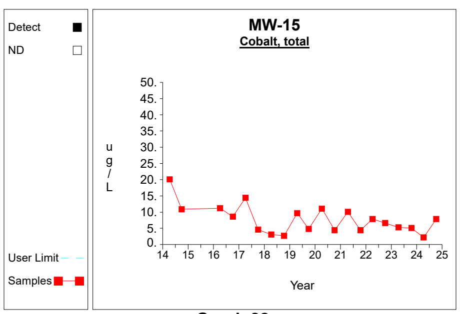
Graph 79



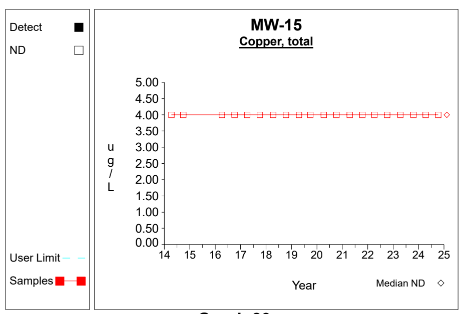
Graph 80



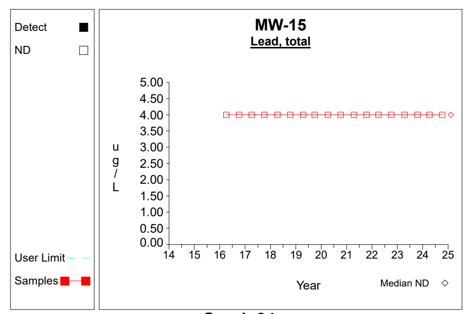
Graph 81



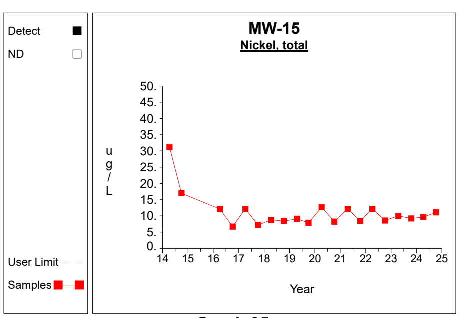
Graph 82



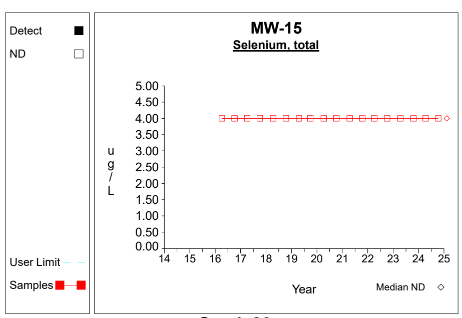
Graph 83



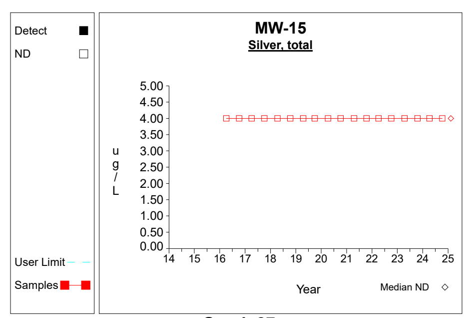
Graph 84



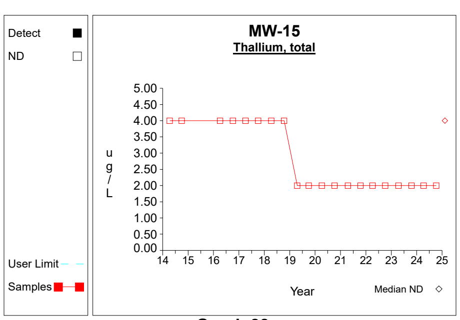
Graph 85



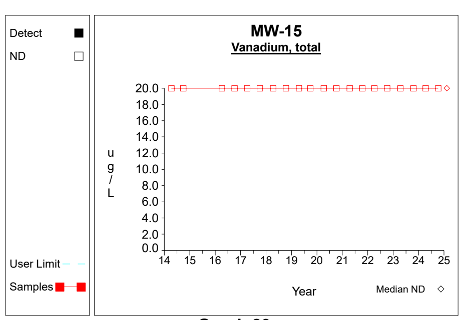
Graph 86



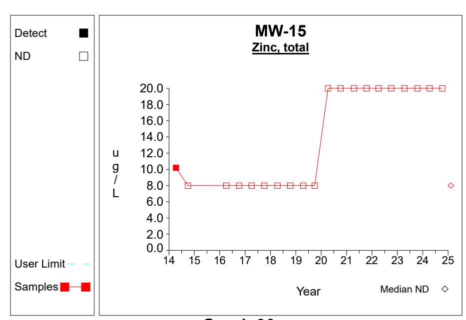
Graph 87



Graph 88

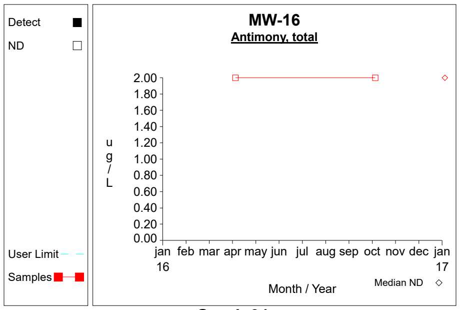


Graph 89

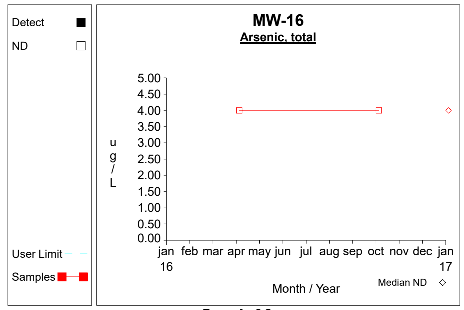


Graph 90

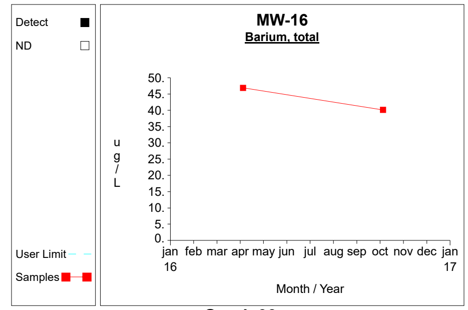
Time Series



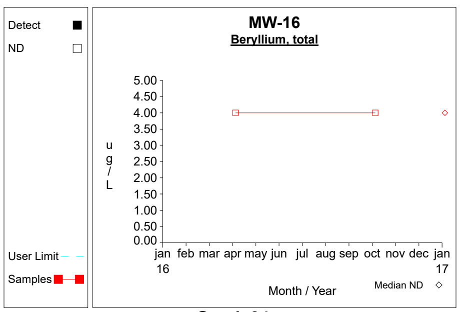
Graph 91



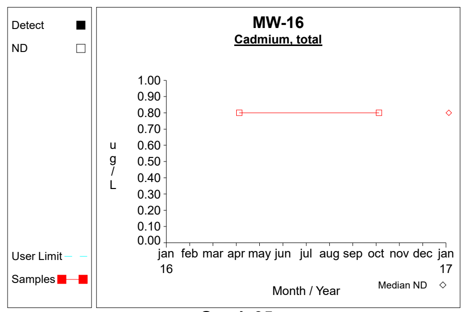
Graph 92



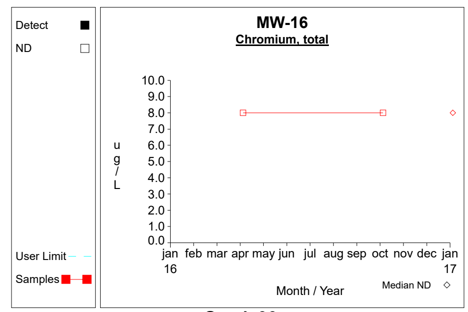
Graph 93



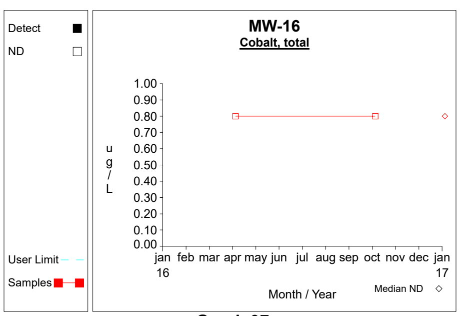
Graph 94



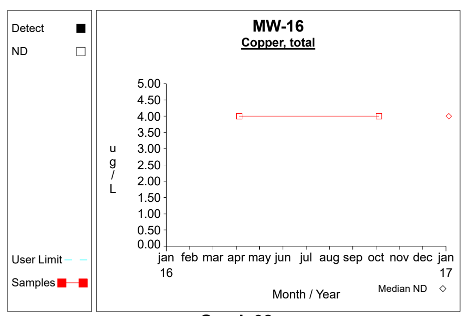
Graph 95



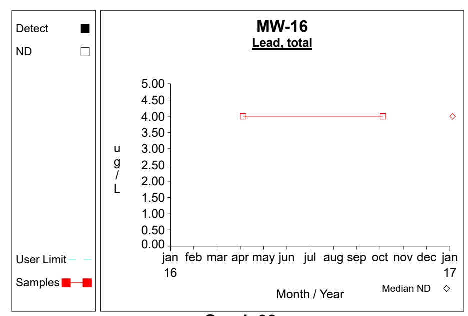
Graph 96



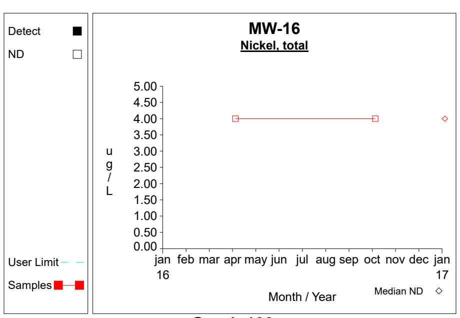
Graph 97



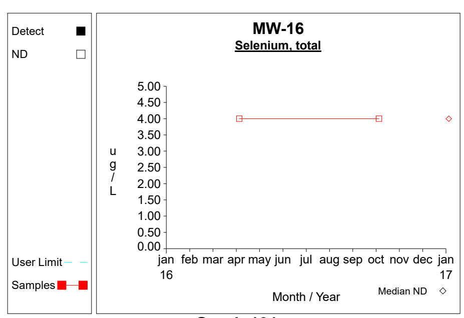
Graph 98



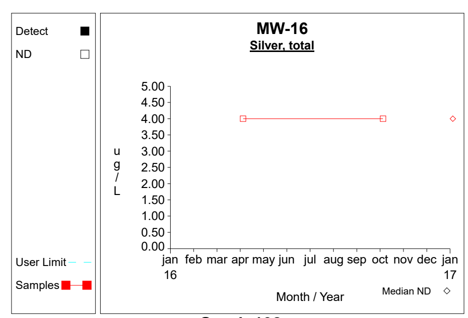
Graph 99



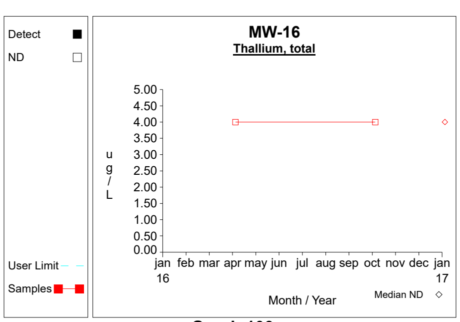
Graph 100



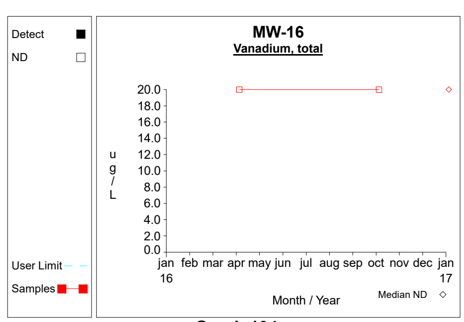
Graph 101



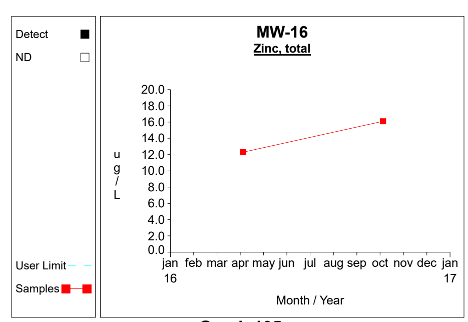
Graph 102



Graph 103

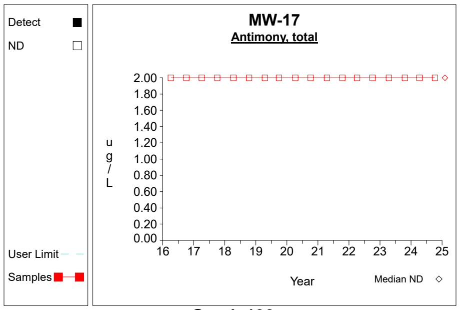


Graph 104

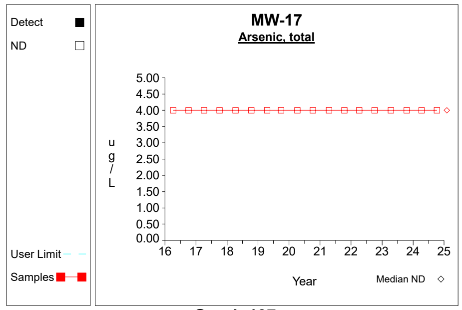


Graph 105

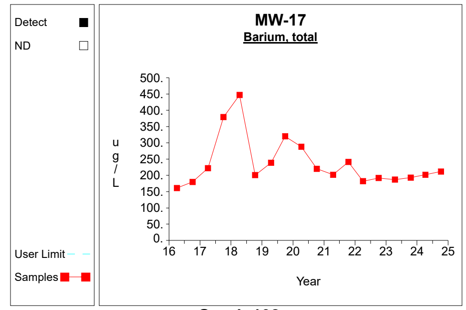
Time Series



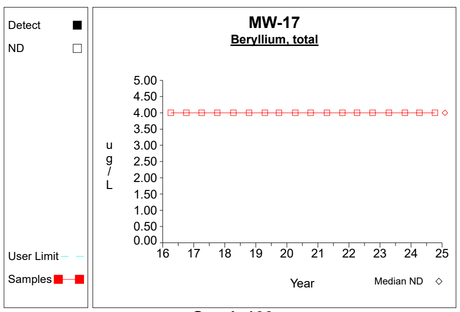
Graph 106



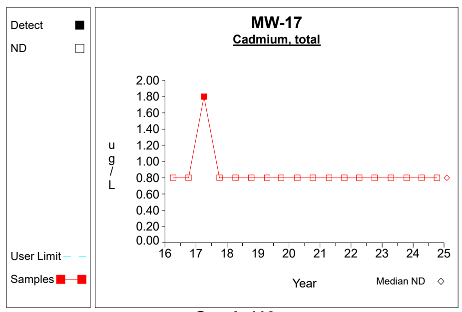
Graph 107



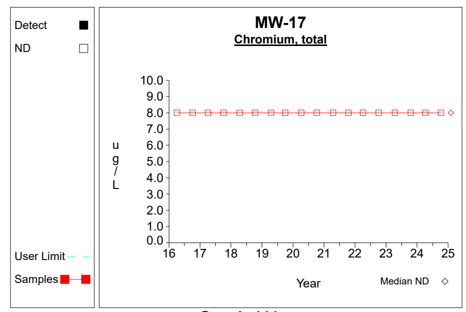
Graph 108



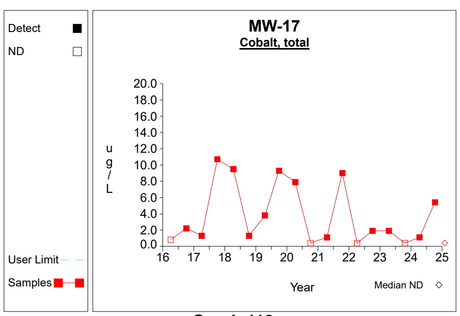
Graph 109



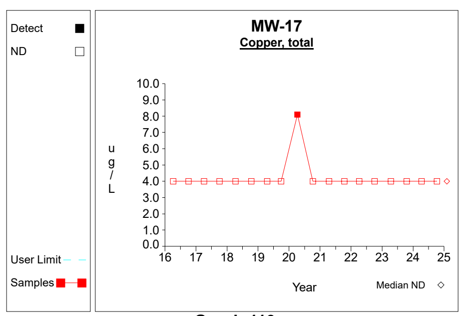
Graph 110



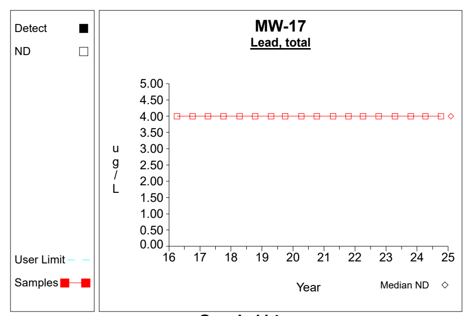
Graph 111



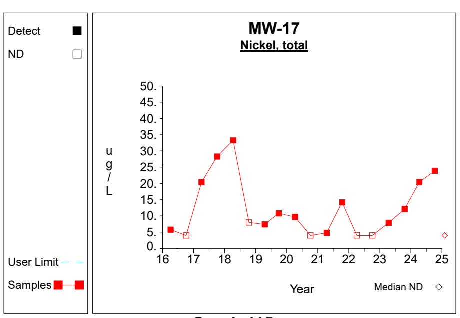
Graph 112



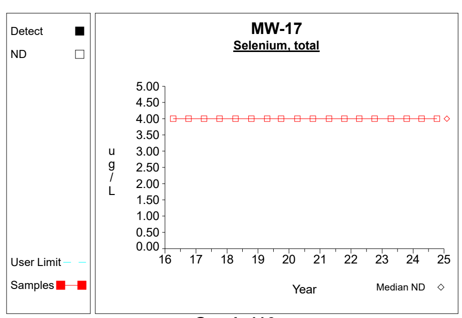
Graph 113



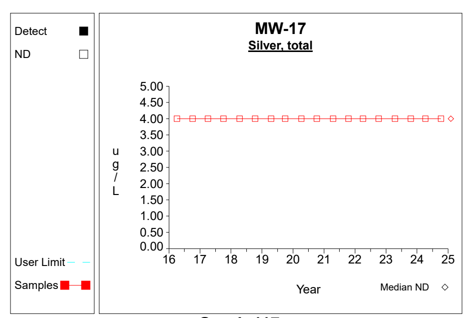
Graph 114



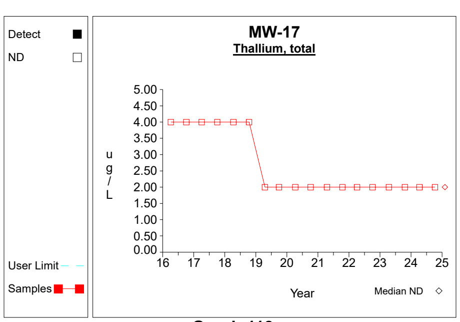
Graph 115



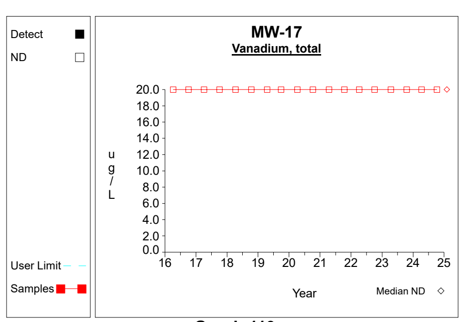
Graph 116



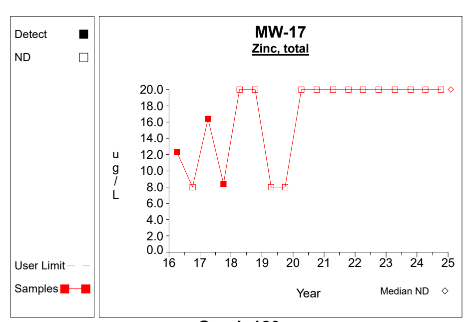
Graph 117



Graph 118

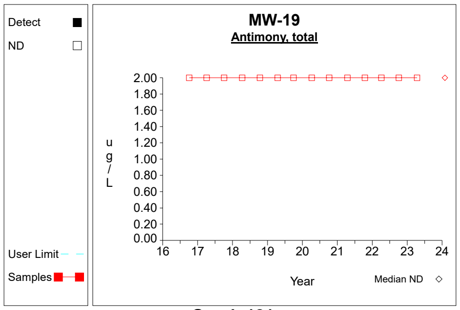


Graph 119

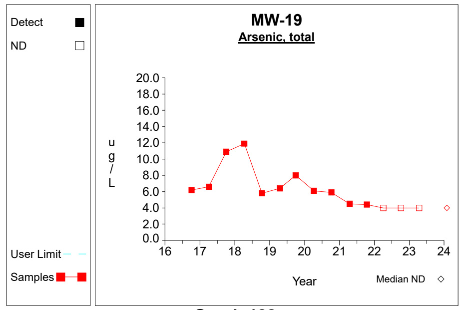


Graph 120

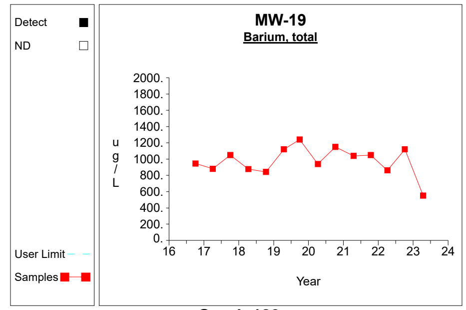
Time Series



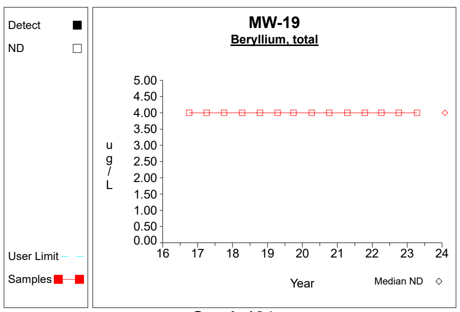
Graph 121



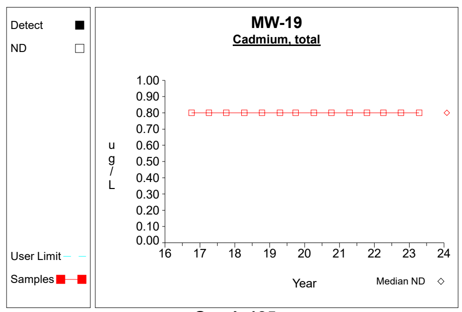
Graph 122



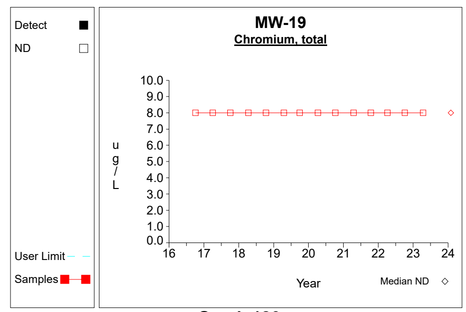
Graph 123



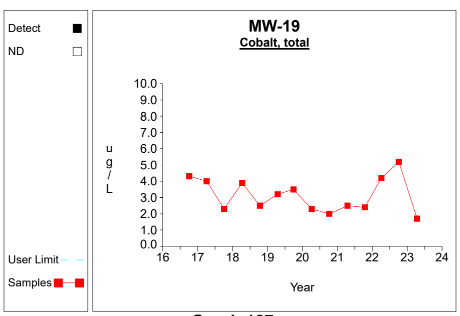
Graph 124



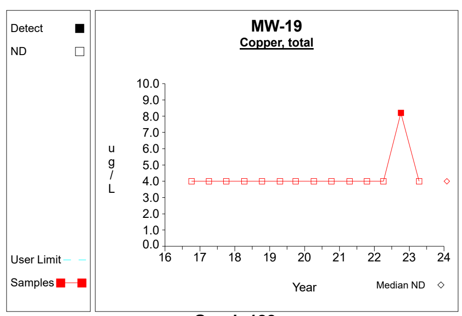
Graph 125



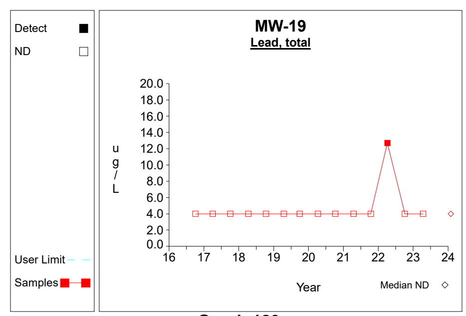
Graph 126



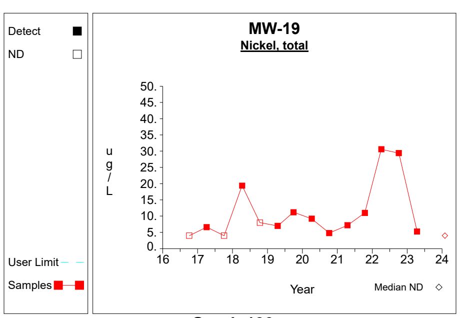
Graph 127



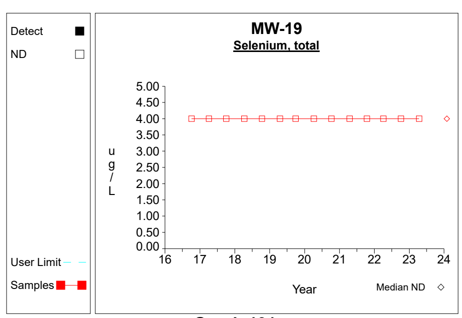
Graph 128



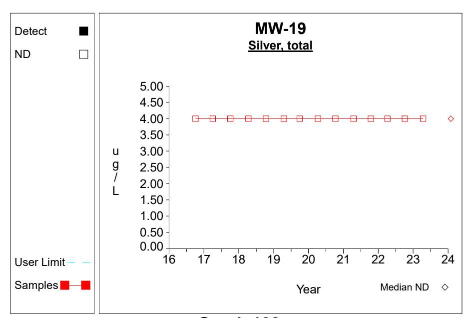
Graph 129



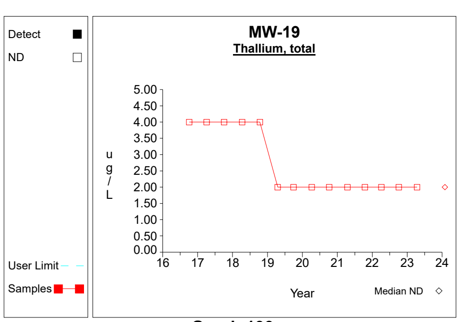
Graph 130



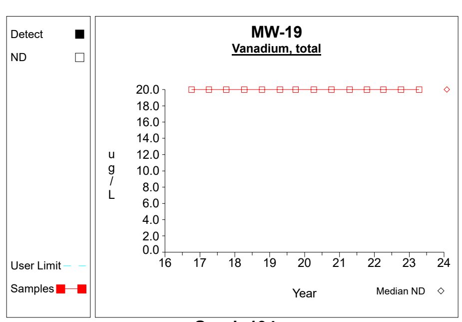
Graph 131



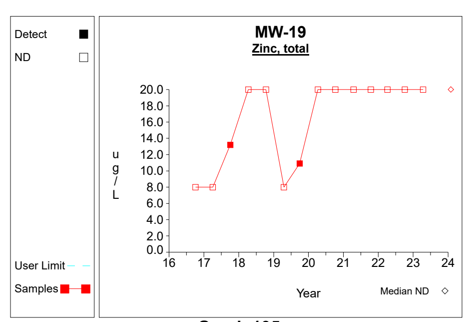
Graph 132



Graph 133

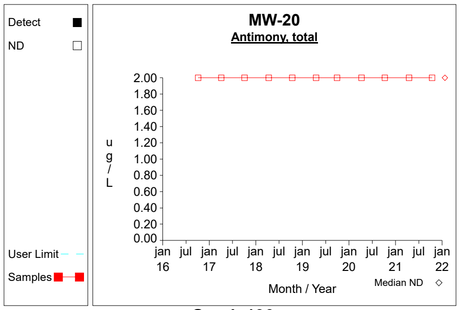


Graph 134

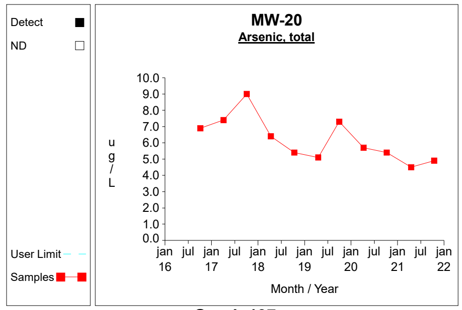


Graph 135

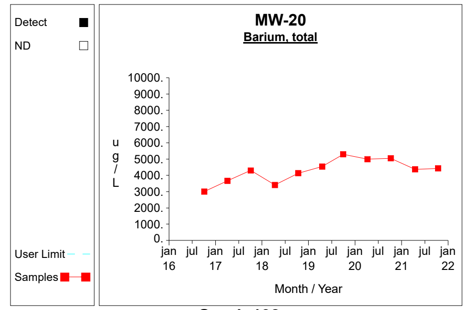
Time Series



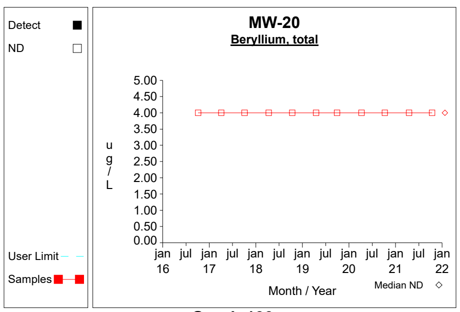
Graph 136



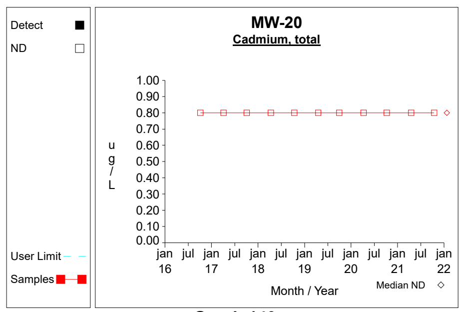
Graph 137



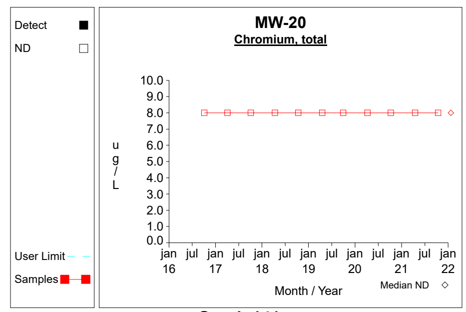
Graph 138



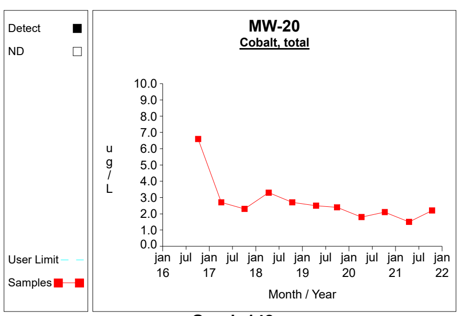
Graph 139



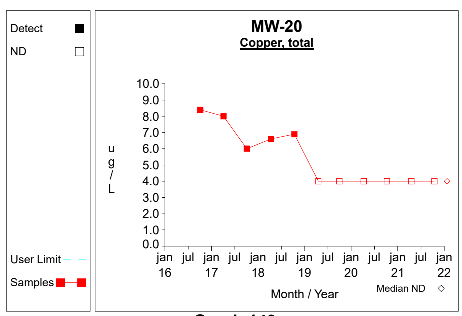
Graph 140



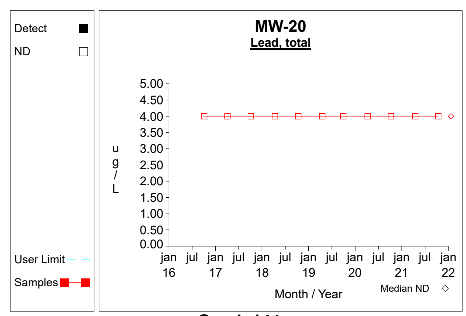
Graph 141



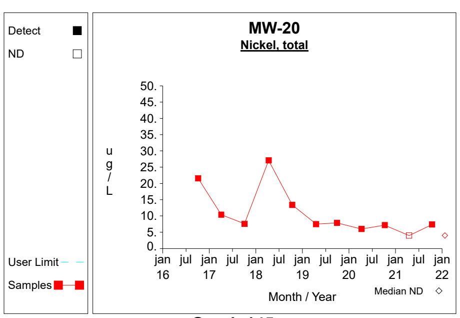
Graph 142



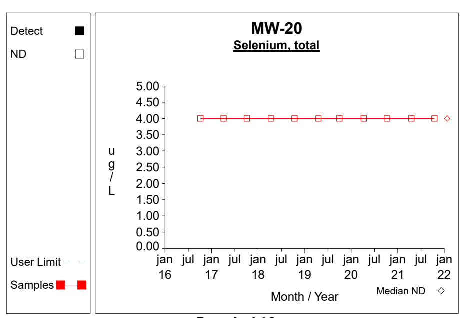
Graph 143



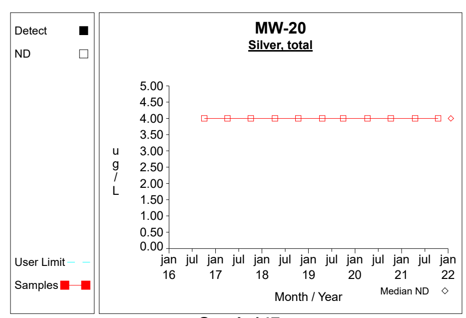
Graph 144



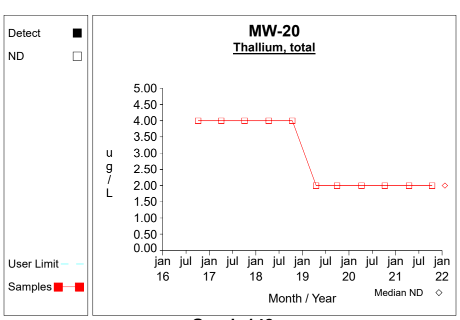
Graph 145



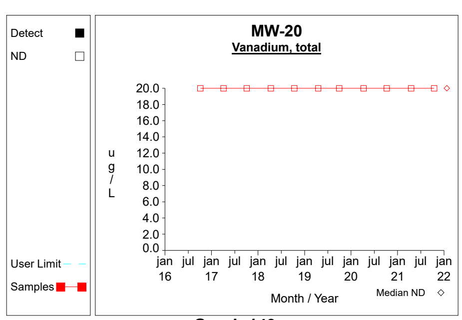
Graph 146



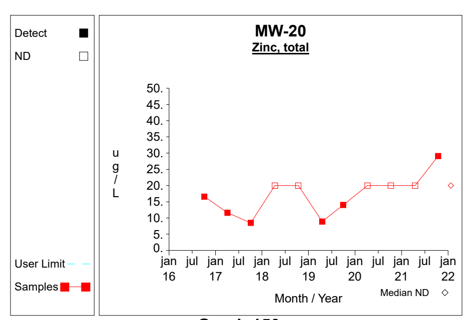
Graph 147



Graph 148

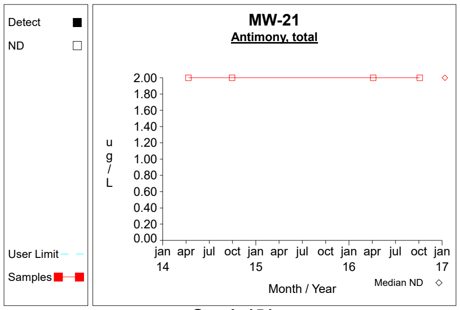


Graph 149

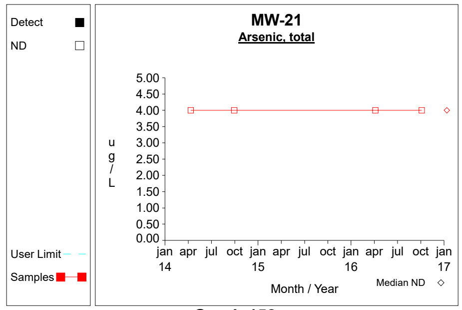


Graph 150

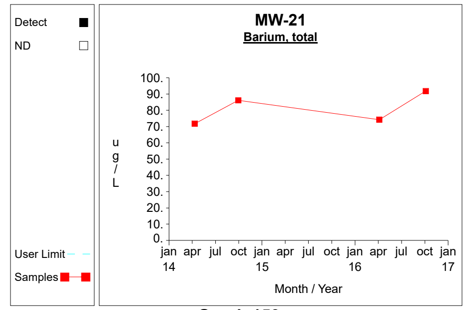
Time Series



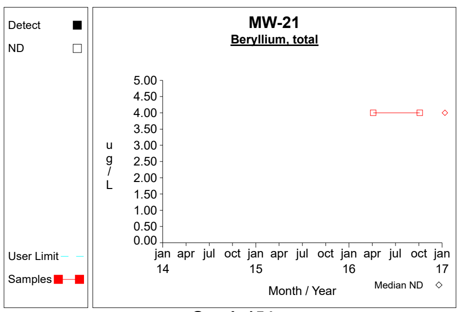
Graph 151



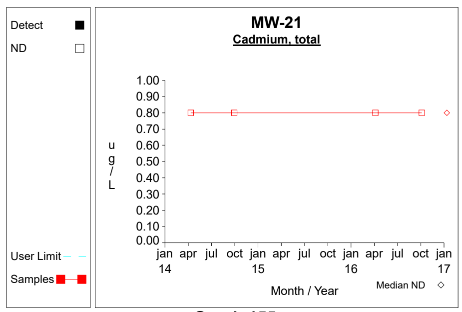
Graph 152



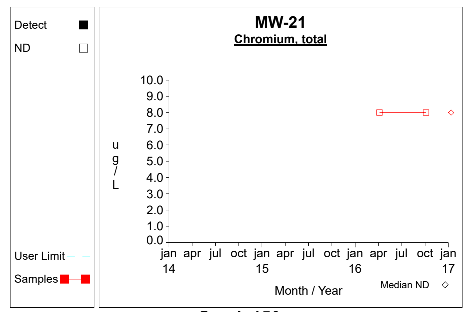
Graph 153



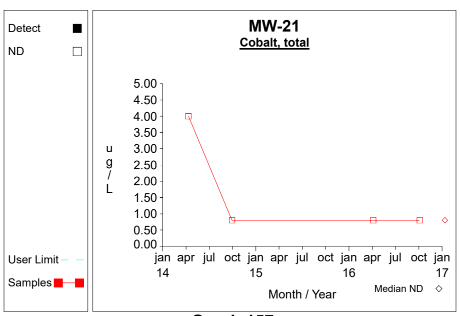
Graph 154



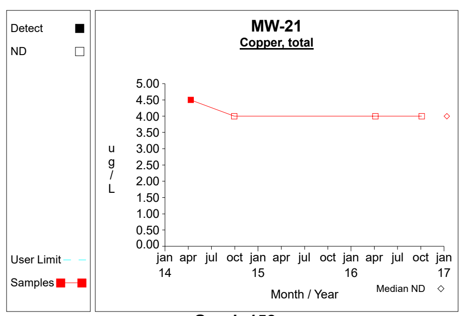
Graph 155



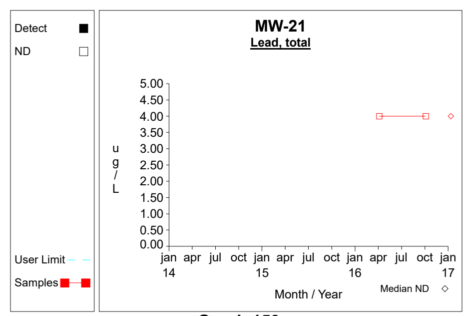
Graph 156



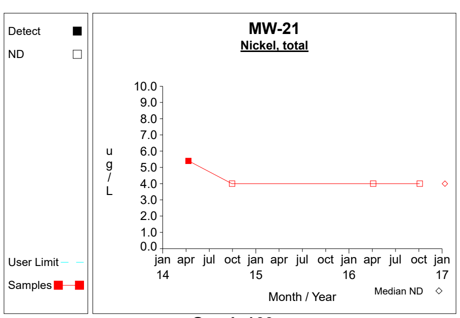
Graph 157



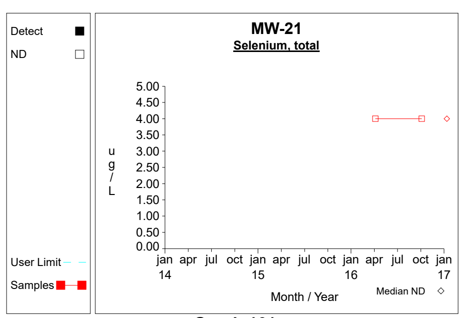
Graph 158



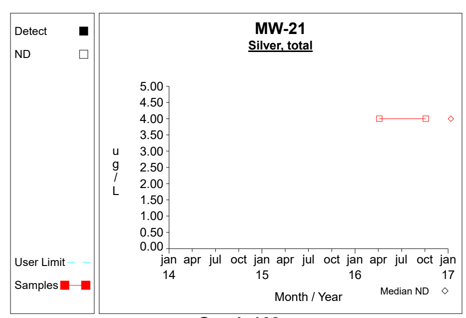
Graph 159



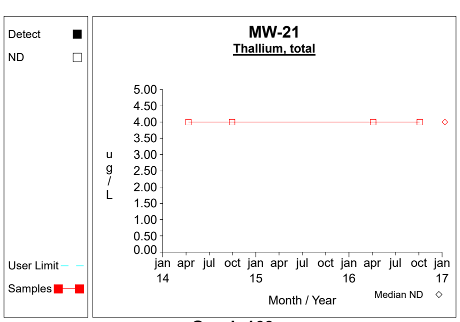
Graph 160



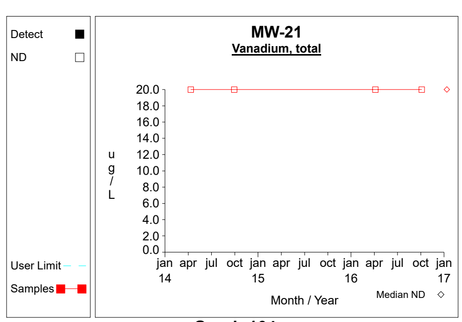
Graph 161



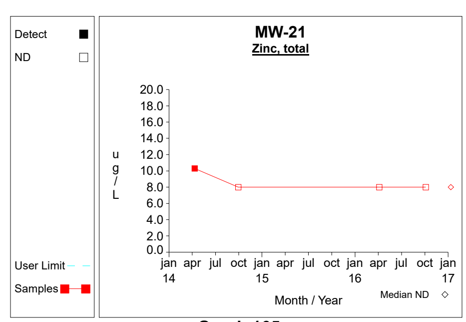
Graph 162



Graph 163



Graph 164



Graph 165

Attachment E

Statistics for Trace Metals

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Antimony, total	ug/L	MW-10	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-10	13	5	18	93.2692	5.7786	86.8000	79.2000	93.2692	93.2692	130.8302	normal		
Beryllium, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-10	13	5	18			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-10	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-10	13	5	18			0.4000	0.4000			0.8000	nonpar	.99	**
Copper, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-10	13	5	18			4.0000	4.0000			8.9000	nonpar	.99	**
Selenium, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-10	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-10	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-10	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-10	13	5	18			20.0000	20.0000			8.0000	nonpar	.99	**
Antimony, total	ug/L	MW-11	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-11	13	5	18	98.2846	11.1807	85.0000	85.9000	98.2846	98.2846	170.9592	normal		
Beryllium, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-11	13	5	18			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-11	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-11	13	5	18			0.4000	0.4000			1.3000	nonpar	.99	**
Copper, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Selenium, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-11	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-11	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-11	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-11	11	5	18	18.8636	7.3984	20.0000	20.0000	18.8636	18.8636	66.9533	normal		
Antimony, total	ug/L	MW-12	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Barium, total	ug/L	MW-12	13	5	18	426.6154	124.8710	353.0000	287.0000	426.6154	426.6154	1238.2766	normal		
Beryllium, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-12	13	5	18			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-12	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-12	12	5	18	2.2167	1.6943	1.3000	1.1000	2.2167	2.2167	13.2295	normal		
Copper, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-12	13	5	18	5.5231	1.6878	4.0000	4.0000	5.5231	5.5231	16.4936	normal		
Selenium, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-12	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-12	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-12	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-12	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Antimony, total	ug/L	MW-13	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Arsenic, total	ug/L	MW-13	13	5	18	20.7615	6.7783	8.8000	9.5000	20.7615	20.7615	64.8208	normal		
Barium, total	ug/L	MW-13	13	5	18	2603.6923	1104.8885	715.0000	391.0000	2603.6923	2603.6923	9785.4675	normal		
Beryllium, total	ug/L	MW-13	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-13	13	5	18			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-13	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-13	13	5	18	9.5846	4.3060	6.4000	6.4000	9.5846	9.5846	37.5734	normal		
Copper, total	ug/L	MW-13	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-13	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-13	13	5	18	7.7000	6.0226	6.8000	5.1000	7.7000	7.7000	46.8469	normal		
Selenium, total	ug/L	MW-13	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-13	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-13	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-13	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-13	13	5	18			20.0000	20.0000			8.0000	nonpar	.99	**
Antimony, total	ug/L	MW-14	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-14	13	5	18	26.7385	37.4715	4.0000	7.6000	26.7385	26.7385	270.3034	normal		
Barium, total	ug/L	MW-14	13	5	18	1024.3077	515.7174	691.0000	740.0000	1024.3077	1024.3077	4376.4705	normal		
Beryllium, total	ug/L	MW-14	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-14	13	5	18			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-14	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-14	13	5	18	1.2077	0.8311	0.4000	0.5000	1.2077	1.2077	6.6100	normal		
Copper, total	ug/L	MW-14	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-14	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-14	13	5	18			4.0000	4.0000			5.7000	nonpar	.99	**
Selenium, total	ug/L	MW-14	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-14	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-14	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-14	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-14	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Antimony, total	ug/L	MW-15	15	5	21			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-15	15	5	21	8.5867	7.4323	4.0000	4.0000	8.5867	8.5867	56.8963	normal		
Barium, total	ug/L	MW-15	15	5	21	304.6000	86.5223	356.0000	327.0000	304.6000	304.6000	866.9952	normal		
Beryllium, total	ug/L	MW-15	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-15	15	5	21			0.8000	0.8000			0.8000	nonpar	.99	**
Chromium, total	ug/L	MW-15	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-15	15	5	21	8.5333	4.7723	2.2000	7.9000	8.5333	8.5333	39.5535	normal		
Copper, total	ug/L	MW-15	15	5	21			4.0000	4.0000			4.0000	nonpar	.99	**
Lead, total	ug/L	MW-15	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-15	14	5	21	10.2214	2.8861	9.7000	11.1000	10.2214	10.2214	28.9810	normal		
Selenium, total	ug/L	MW-15	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-15	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-15	15	5	21			2.0000	2.0000			4.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-15	15	5	21			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-15	15	5	21			20.0000	20.0000			10.2000	nonpar	.99	**
Antimony, total	ug/L	MW-17	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-17	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Barium, total	ug/L	MW-17	13	5	18	252.4615	84.5336	202.0000	212.0000	252.4615	252.4615	801.9302	normal		
Beryllium, total	ug/L	MW-17	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-17	13	5	18			0.8000	0.8000			1.8000	nonpar	.99	**
Chromium, total	ug/L	MW-17	13	5	18			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-17	13	5	18	4.4077	4.1476	1.1000	5.4000	4.4077	4.4077	31.3670	normal		
Copper, total	ug/L	MW-17	13	5	18			4.0000	4.0000			8.1000	nonpar	.99	**
Lead, total	ug/L	MW-17	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Nickel, total	ug/L	MW-17	13	5	18	11.5923	9.8607	20.4000	23.9000	13.0045	17.9167	75.6865	normal		
Selenium, total	ug/L	MW-17	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-17	13	5	18			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-17	13	5	18			2.0000	2.0000			2.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-17	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-17	13	5	18			20.0000	20.0000			20.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

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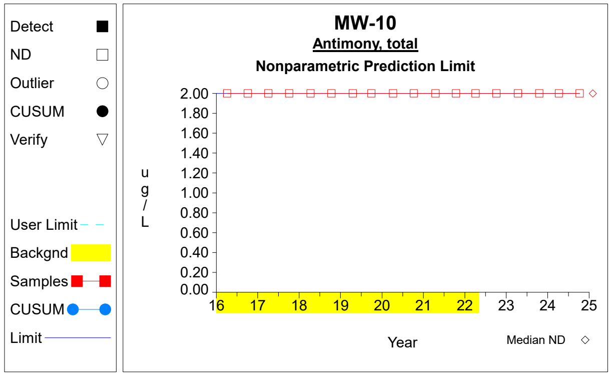
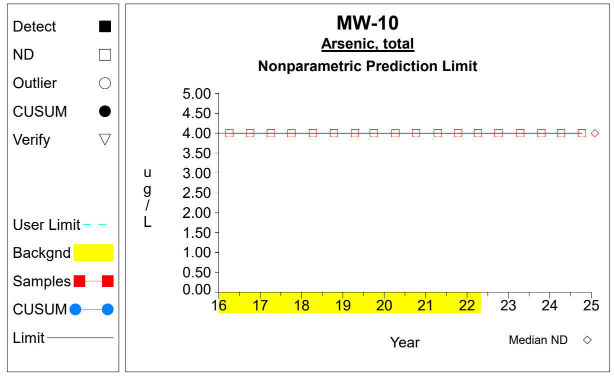
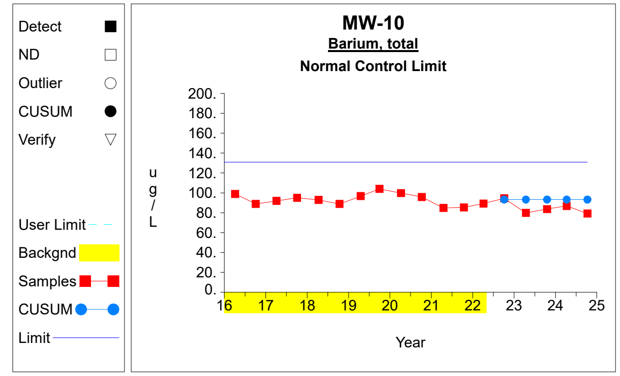
Intra-Well Control Charts / Prediction Limits



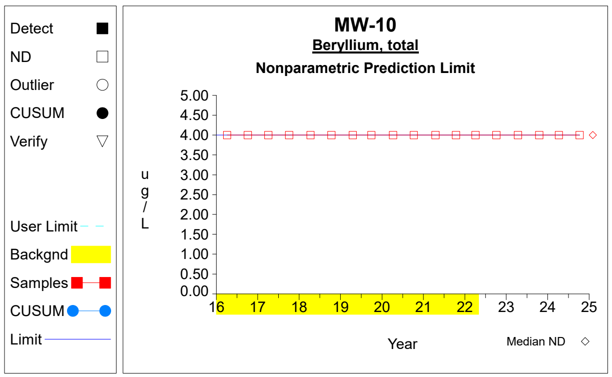
Graph 1



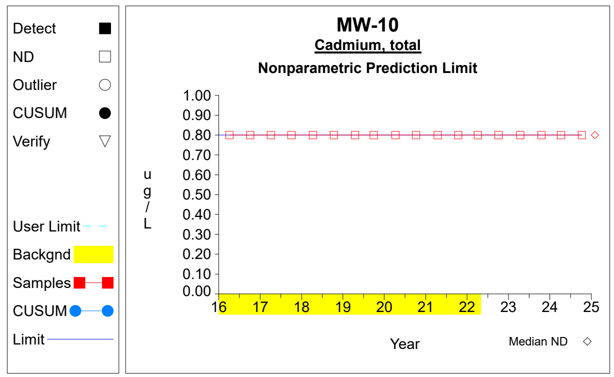
Graph 2



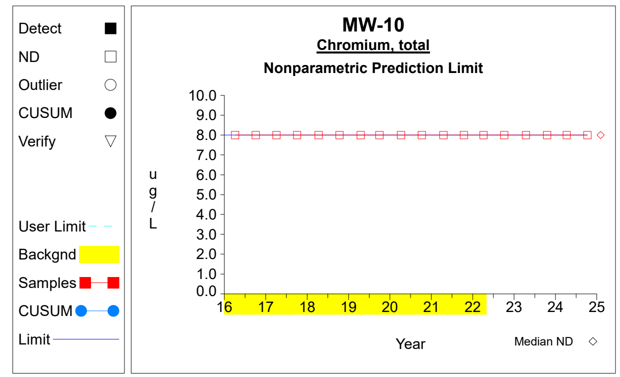
Graph 3



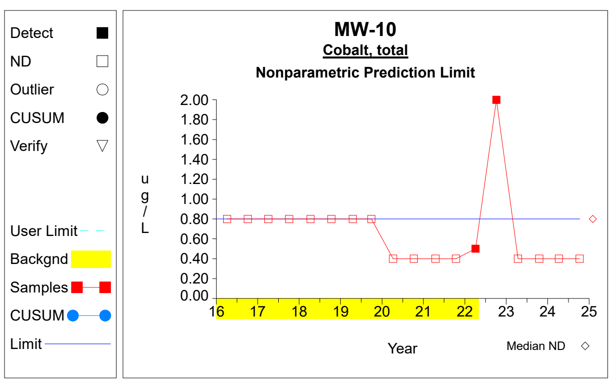
Graph 4



Graph 5



Graph 6



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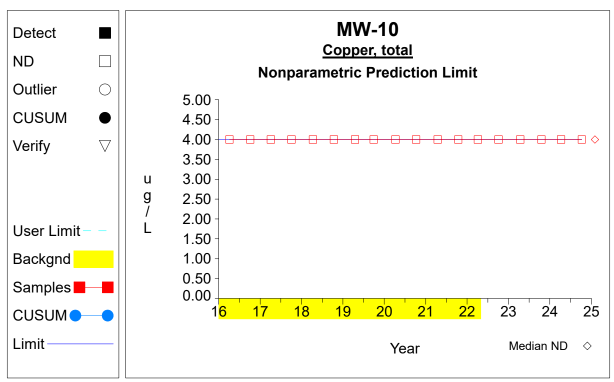
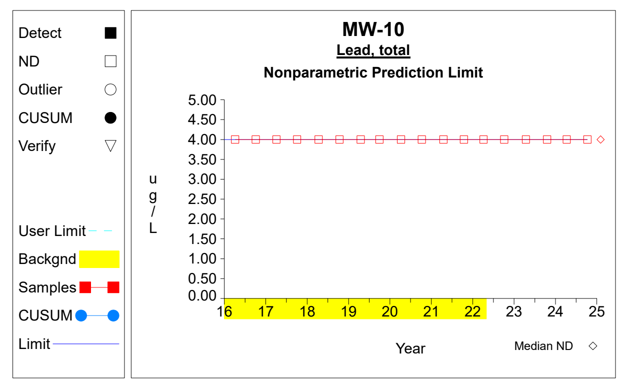


Graph 8



Graph 9

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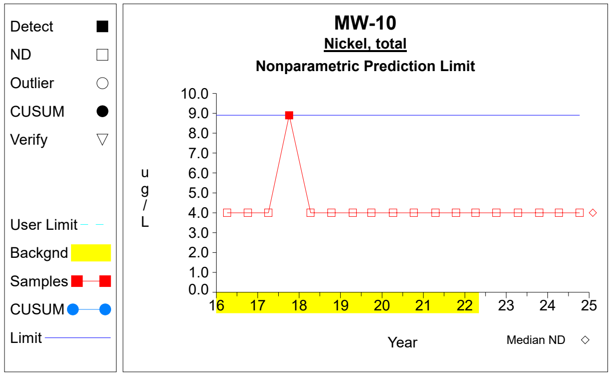
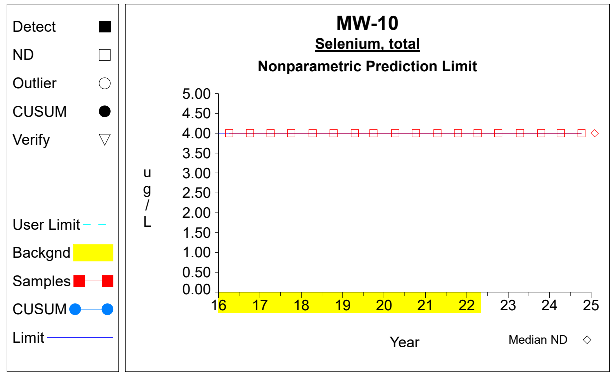
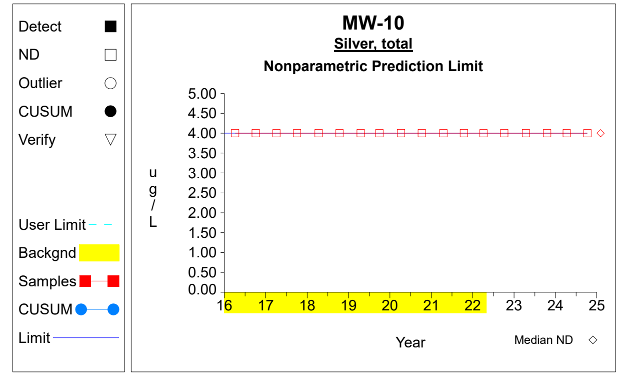
Intra-Well Control Charts / Prediction Limits



Graph 10



Graph 11



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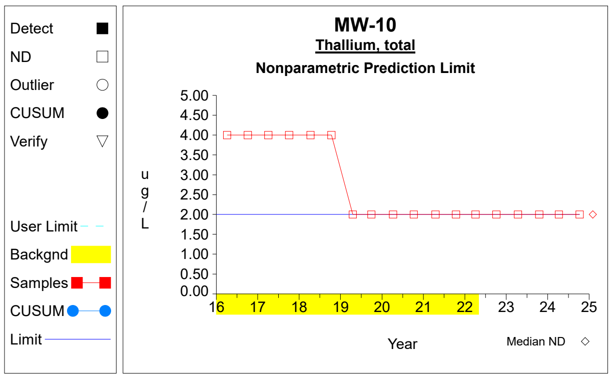

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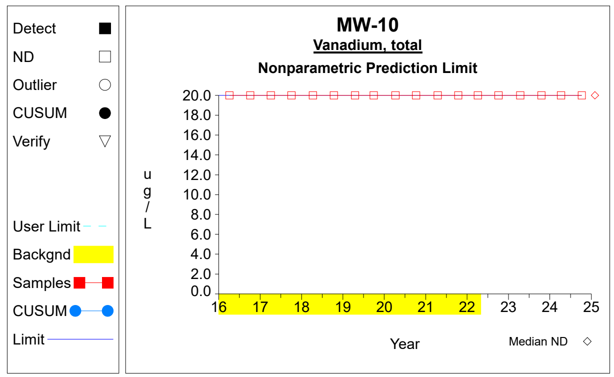

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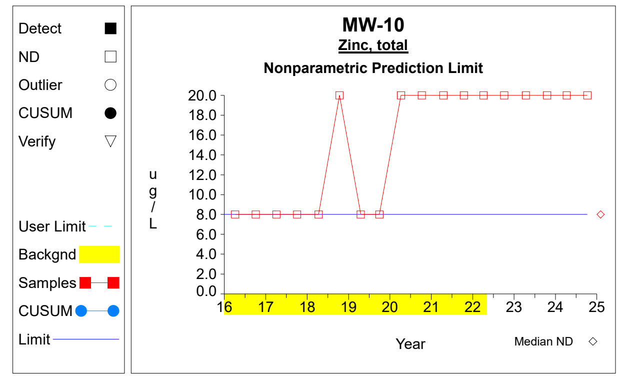

Graph 15

Jackson County [GW]

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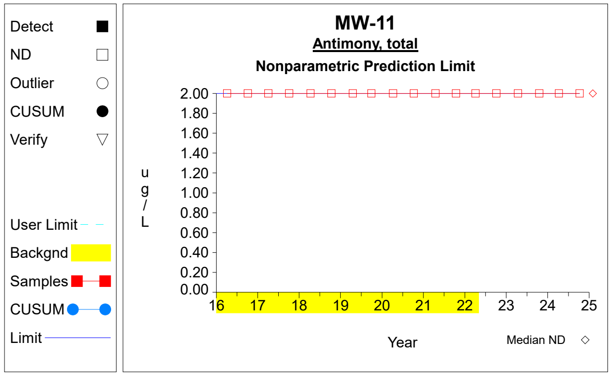
Intra-Well Control Charts / Prediction Limits



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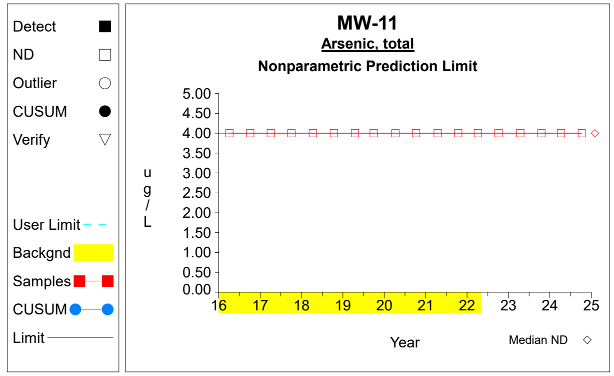

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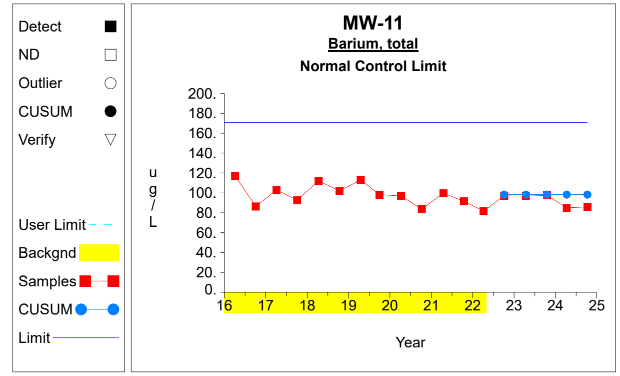
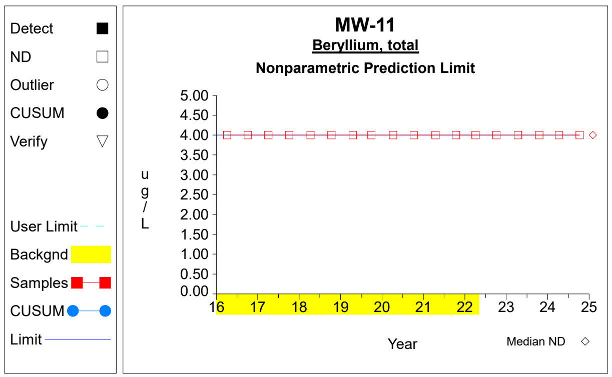
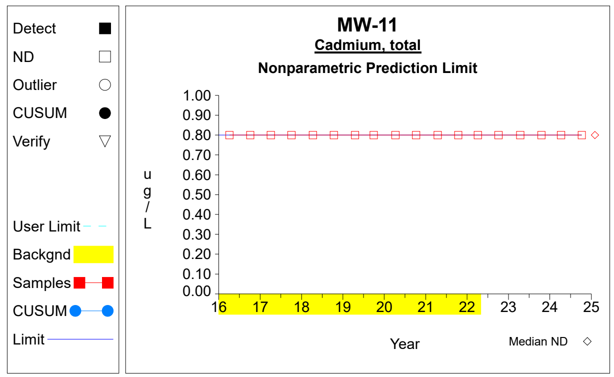


Graph 18



Graph 19



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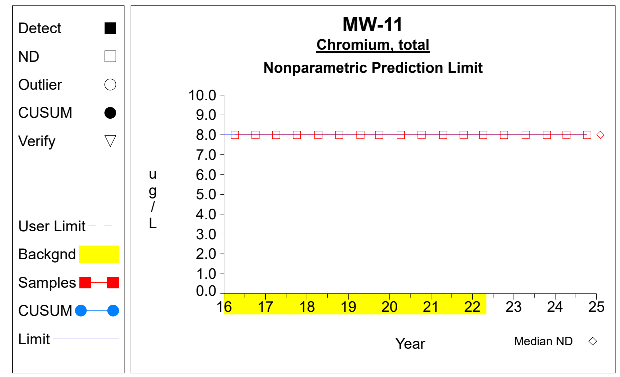

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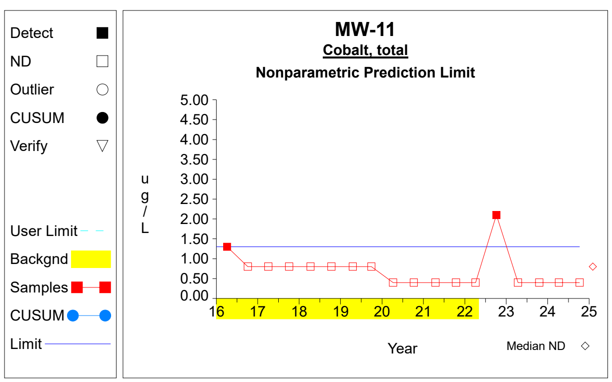

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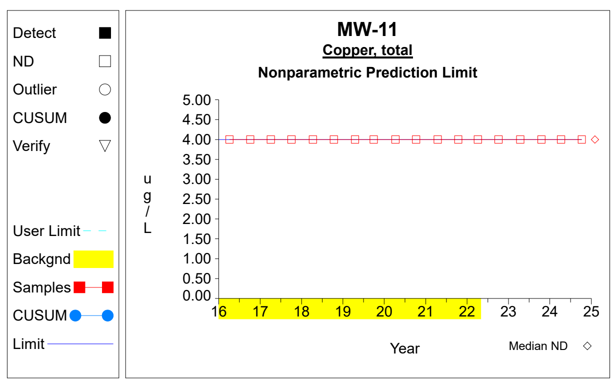

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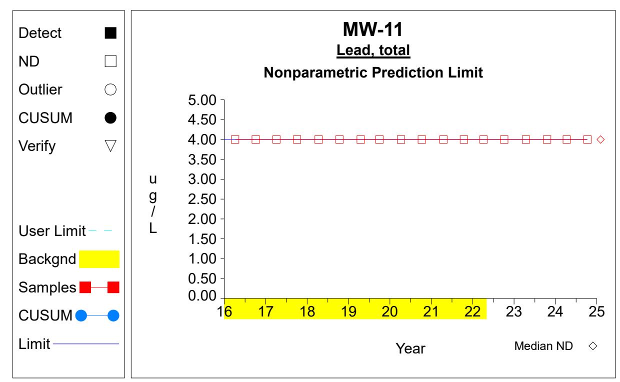

Graph 24

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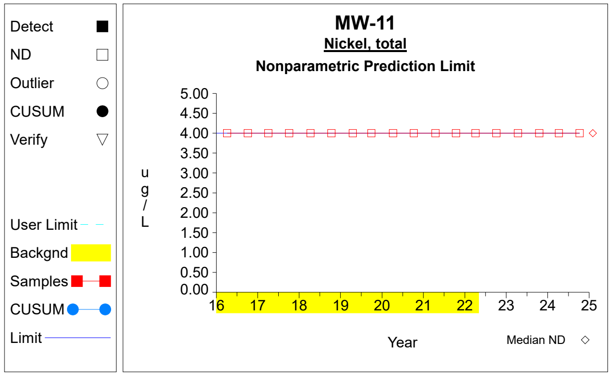
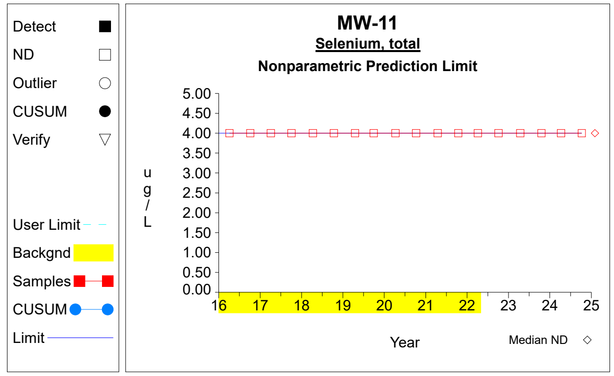
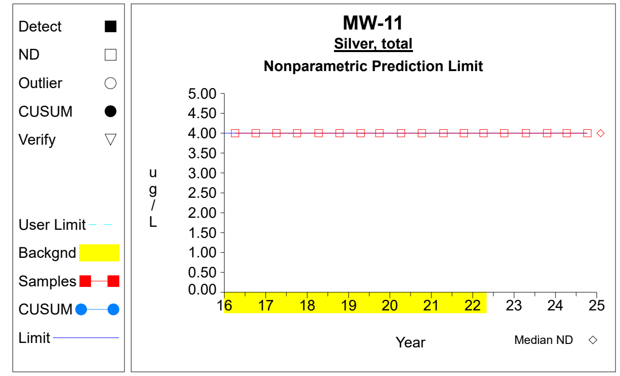
Intra-Well Control Charts / Prediction Limits



Graph 25



Graph 26



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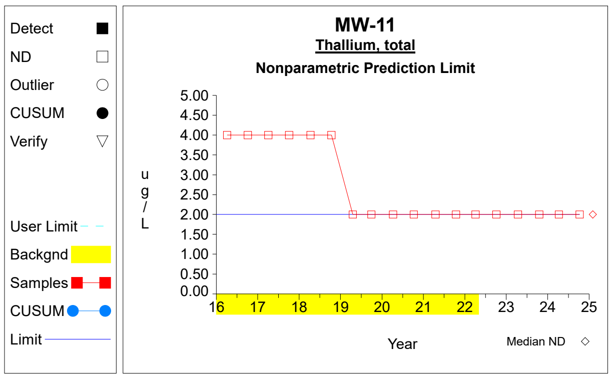

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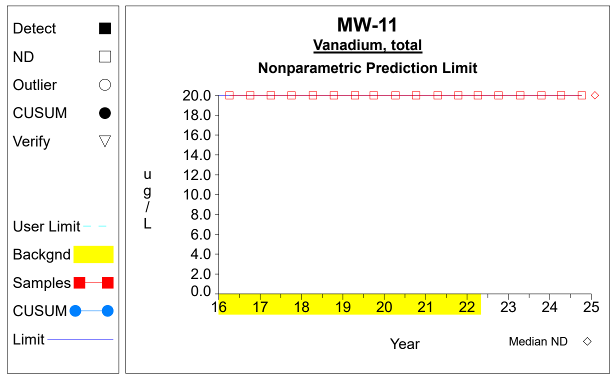

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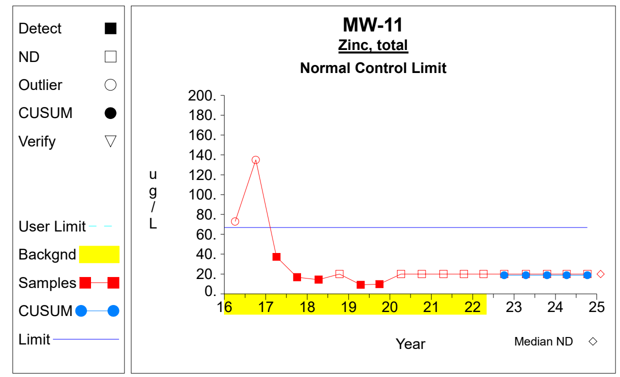
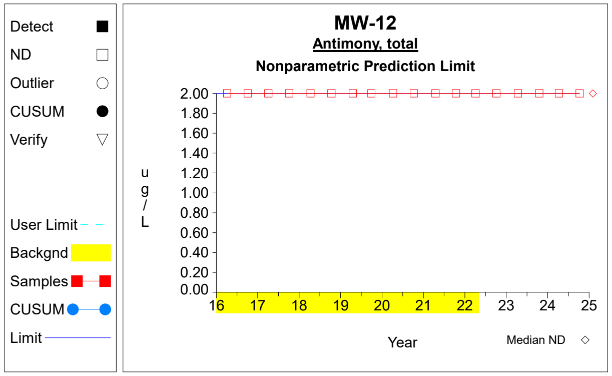


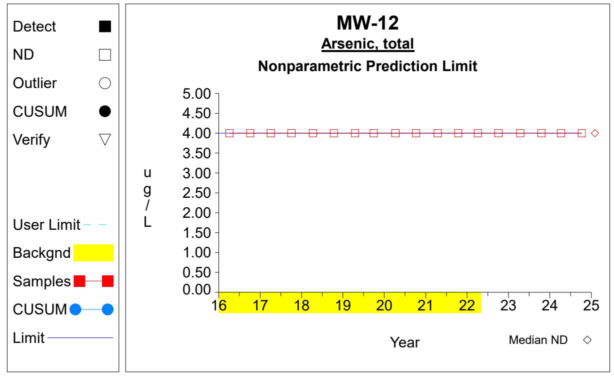
Graph 30

Jackson County [GW] October 2024

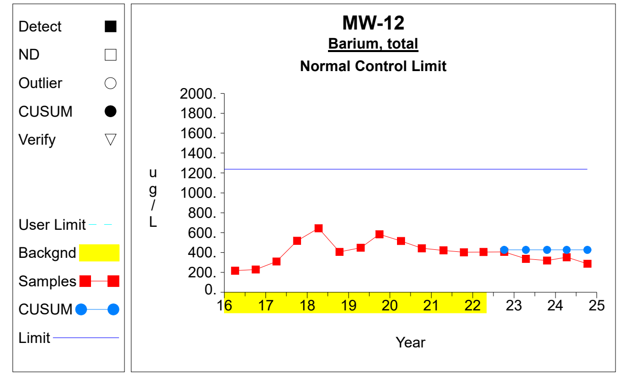
Intra-Well Control Charts / Prediction Limits



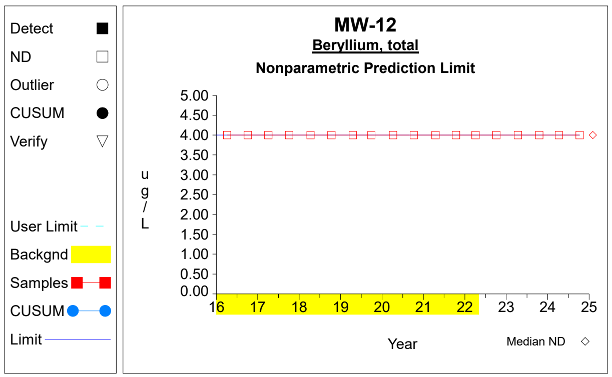
Graph 31



Graph 32



Graph 33



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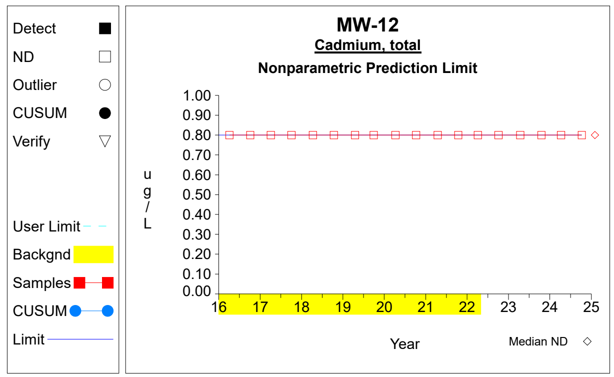
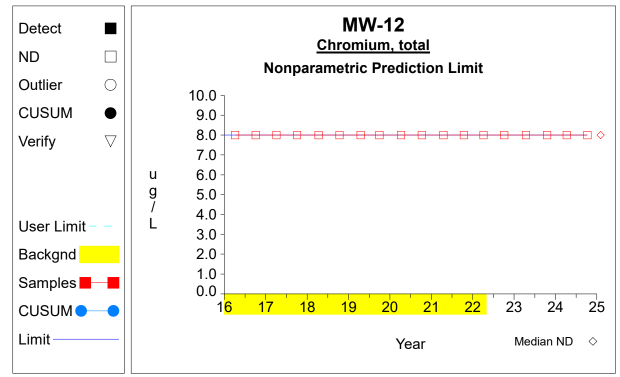
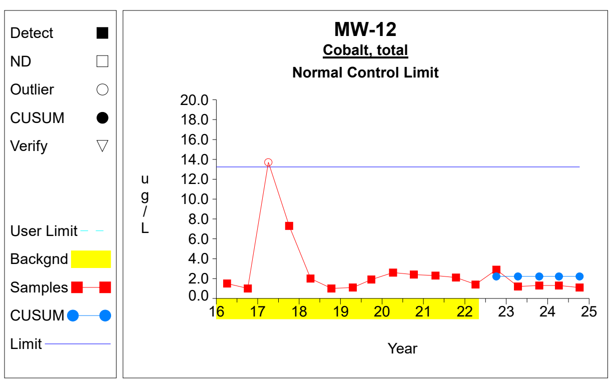


Graph 35



Graph 36



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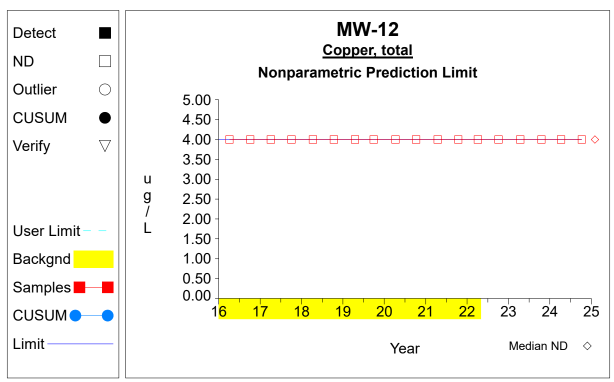
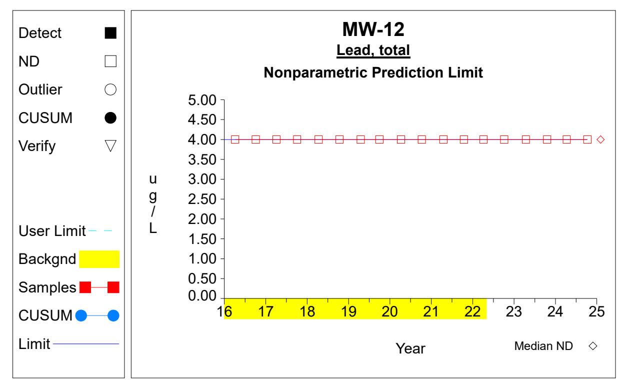


Graph 38



Graph 39

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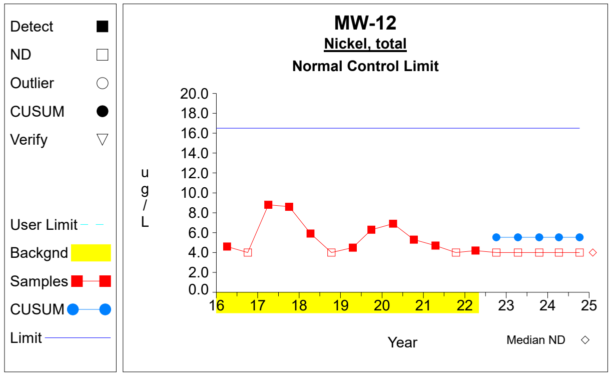
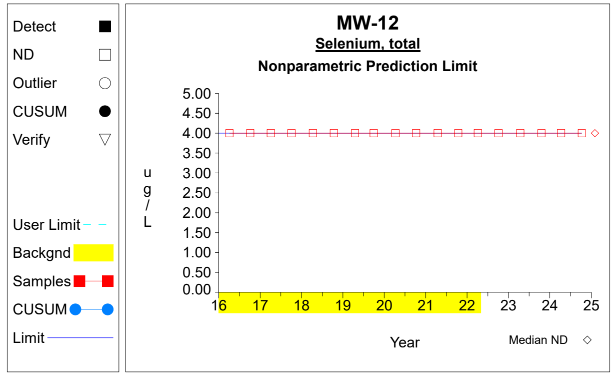
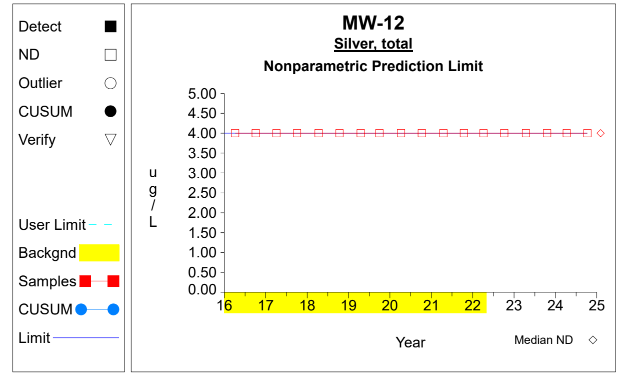
Intra-Well Control Charts / Prediction Limits



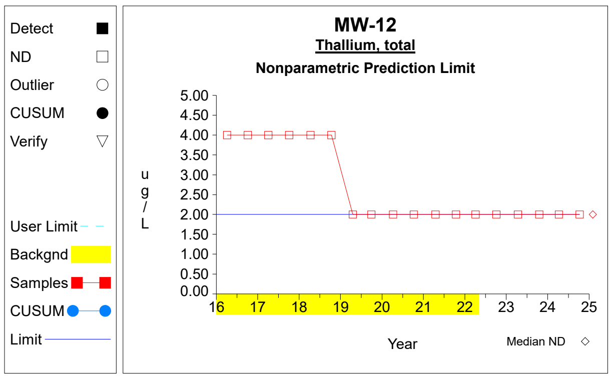
Graph 40



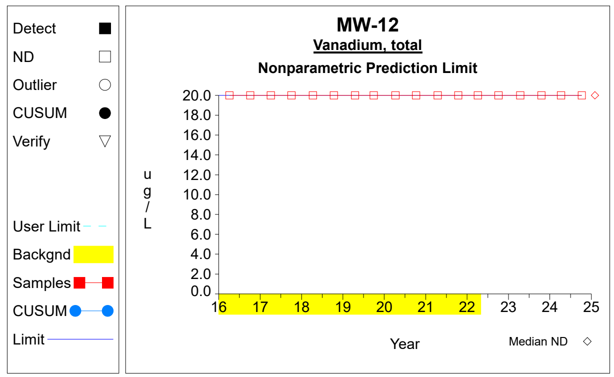
Graph 41



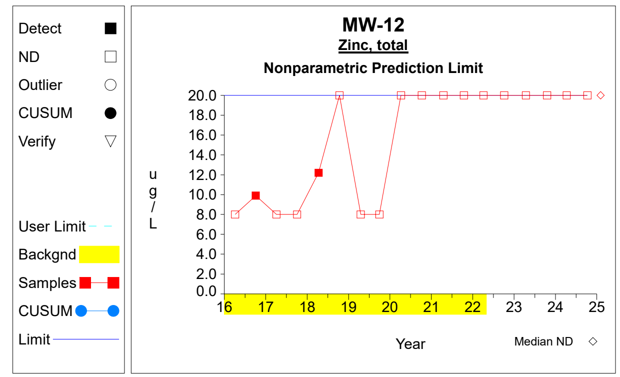
Graph 42



Graph 43

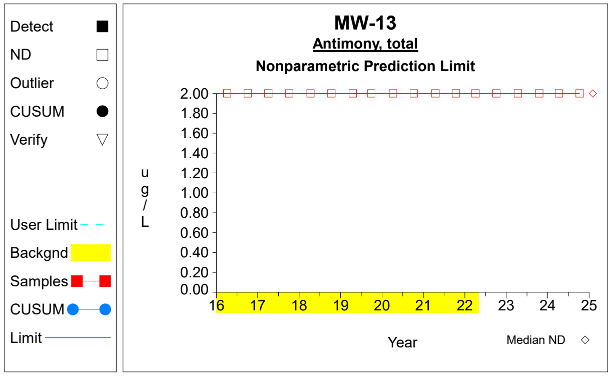


Graph 44

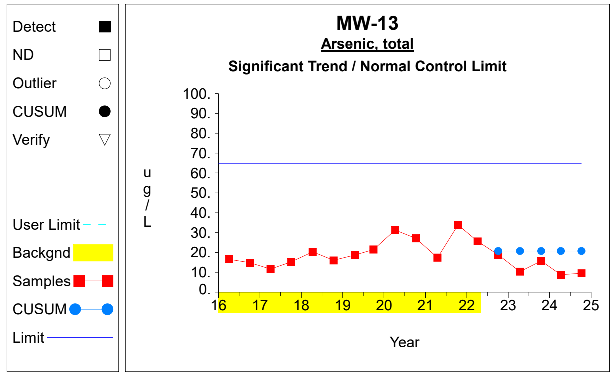


Graph 45

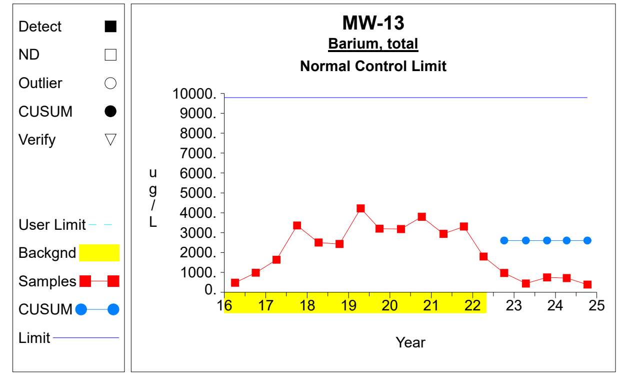
Intra-Well Control Charts / Prediction Limits



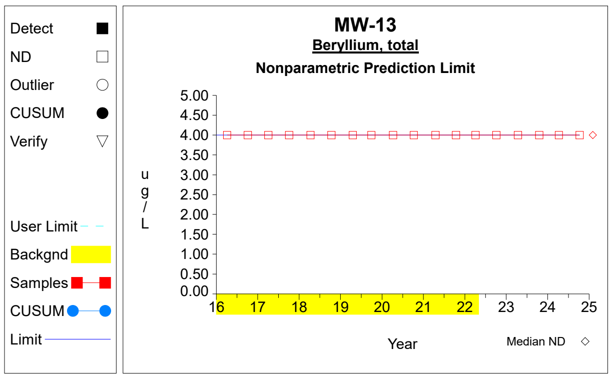
Graph 46



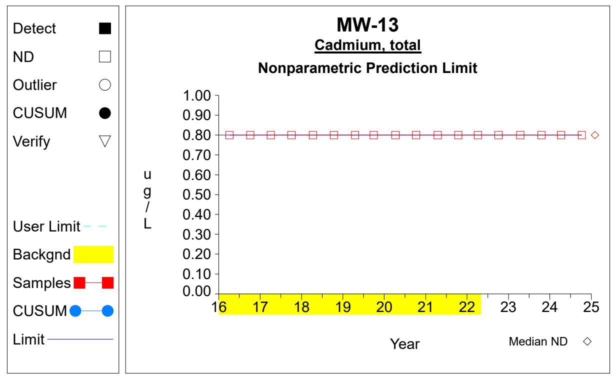
Graph 47



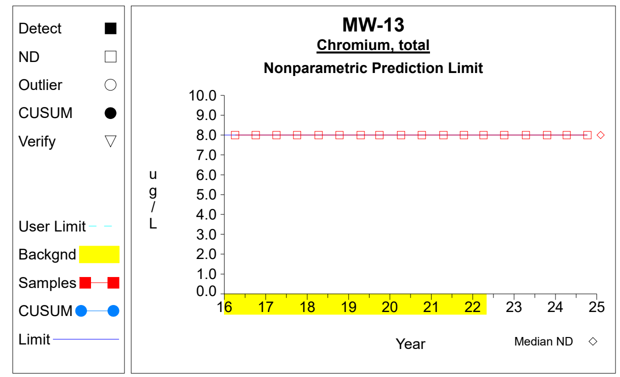
Graph 48



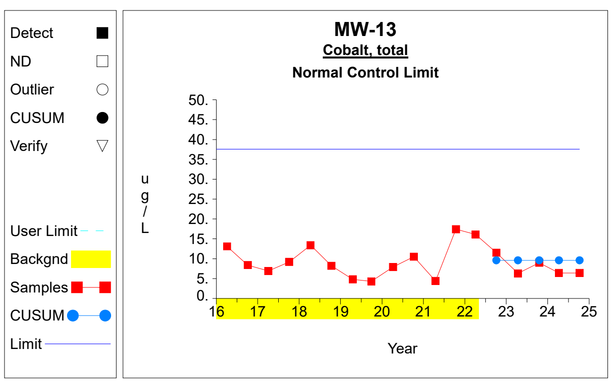
Graph 49



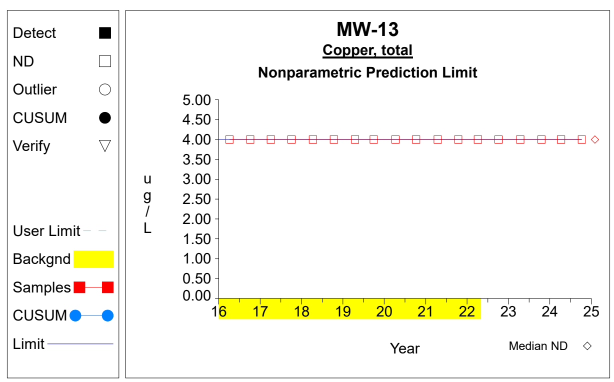
Graph 50



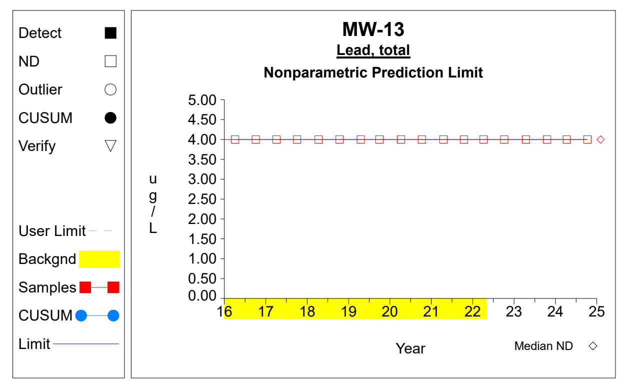
Graph 51



Graph 52

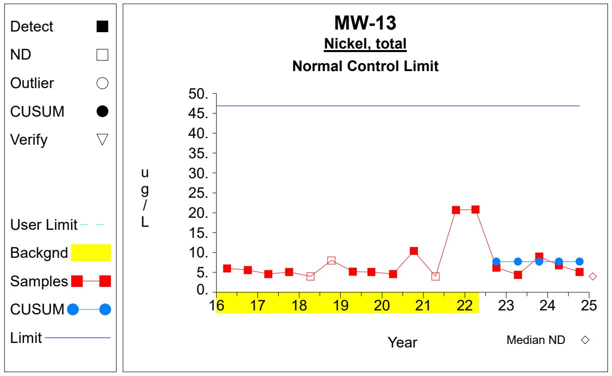


Graph 53

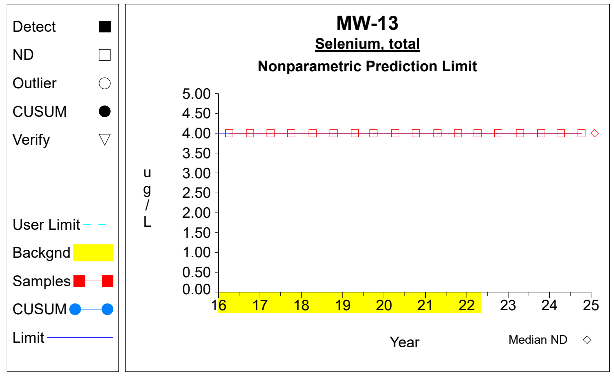


Graph 54

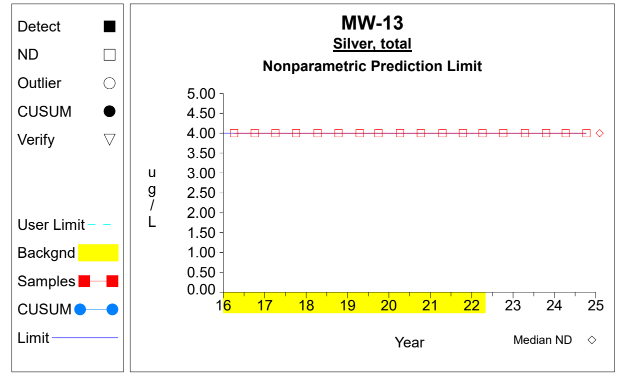
Intra-Well Control Charts / Prediction Limits



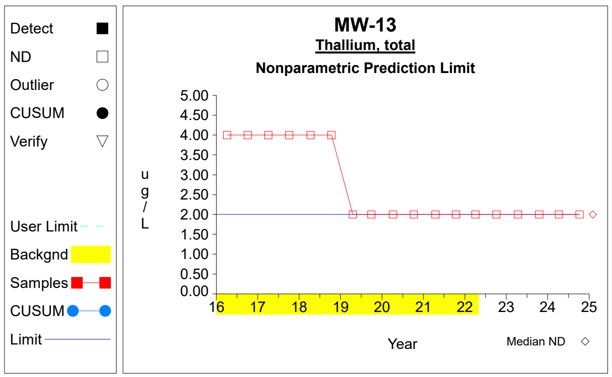
Graph 55



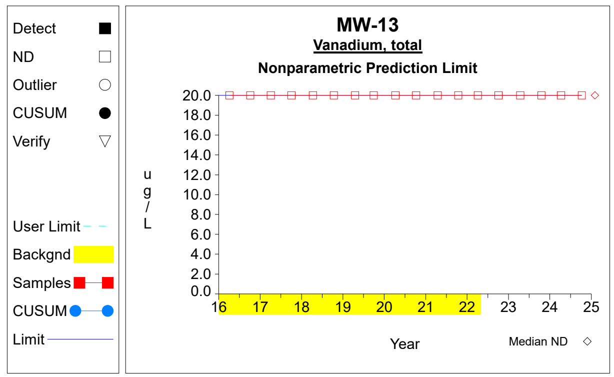
Graph 56



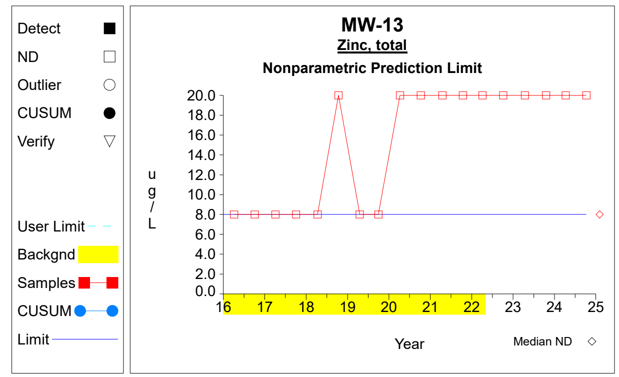
Graph 57



Graph 58

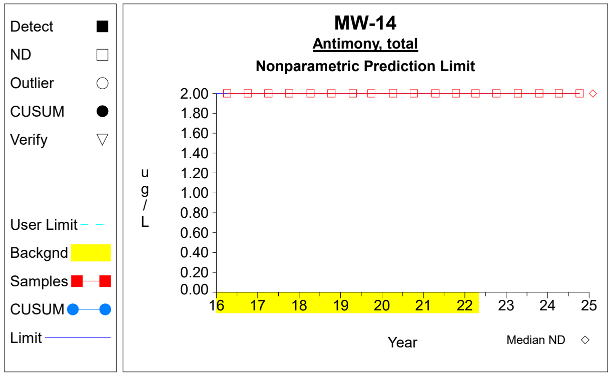


Graph 59

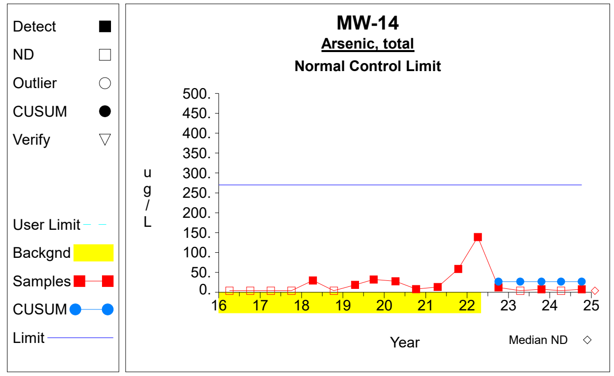


Graph 60

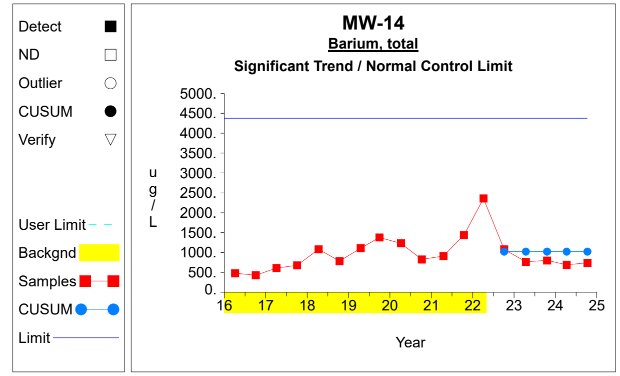
Intra-Well Control Charts / Prediction Limits



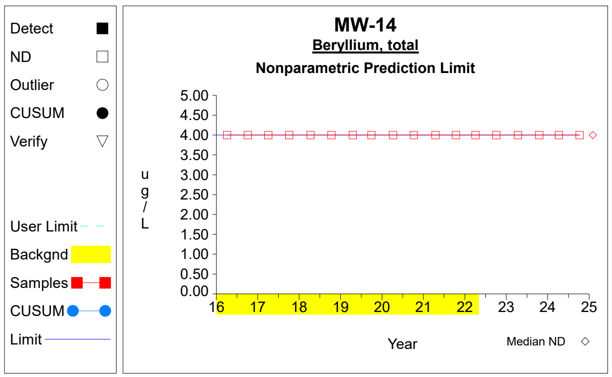
Graph 61



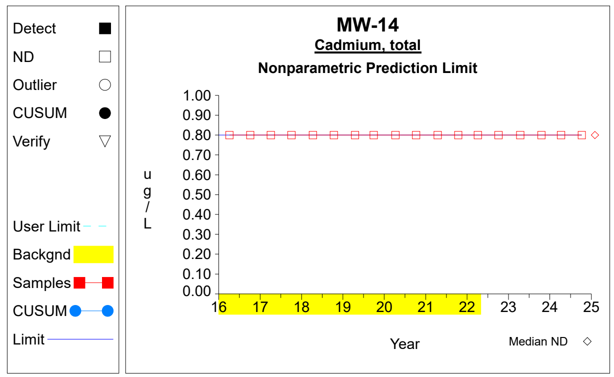
Graph 62



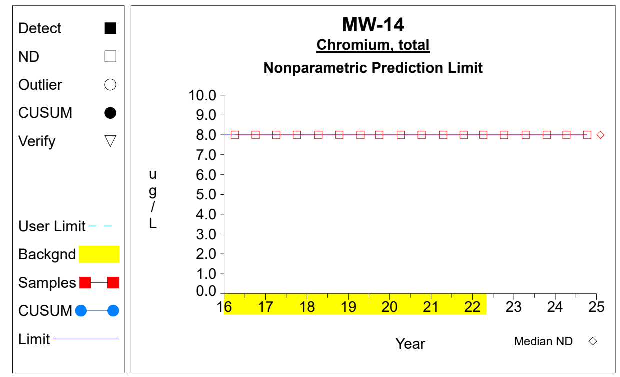
Graph 63



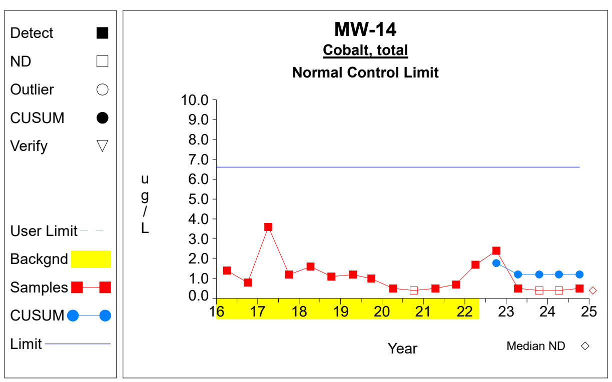
Graph 64



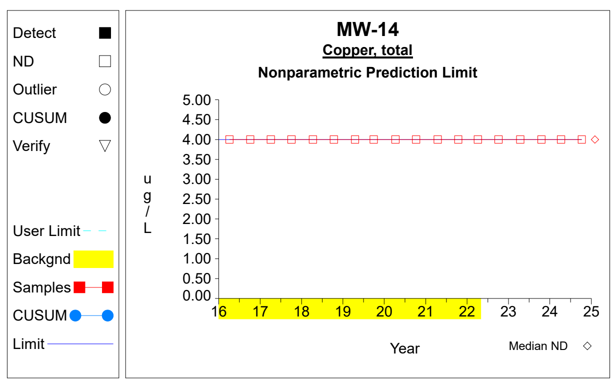
Graph 65



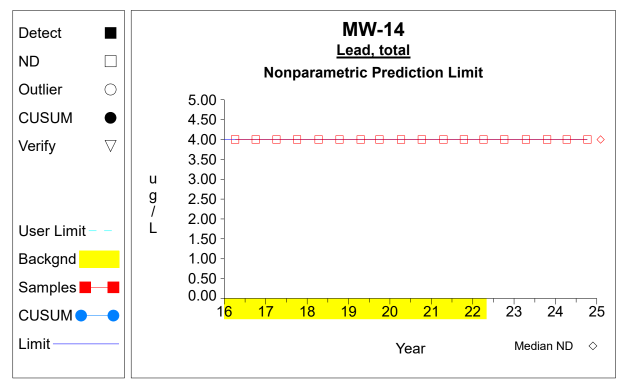
Graph 66



Graph 67



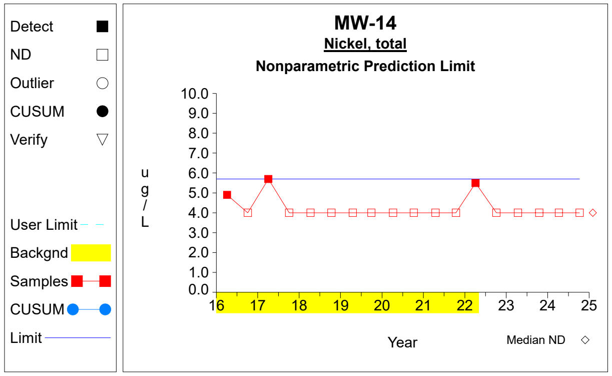
Graph 68



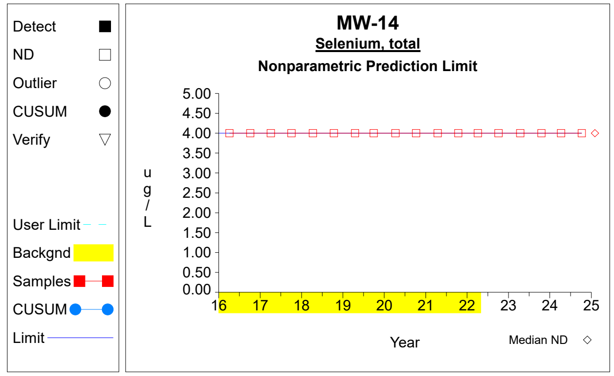
Graph 69

Prepared by: Otter Creek Environmental

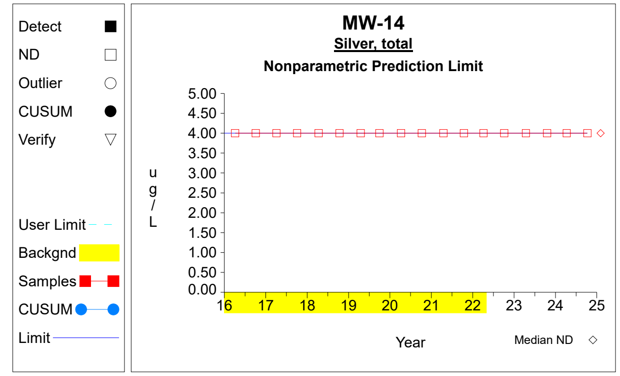
Intra-Well Control Charts / Prediction Limits



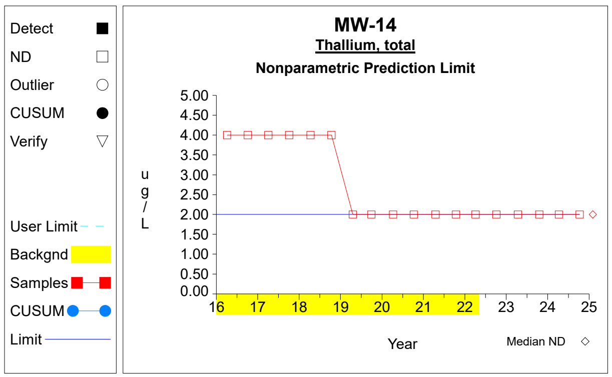
Graph 70



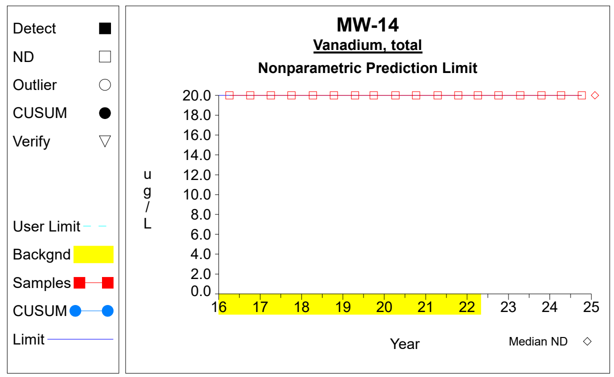
Graph 71



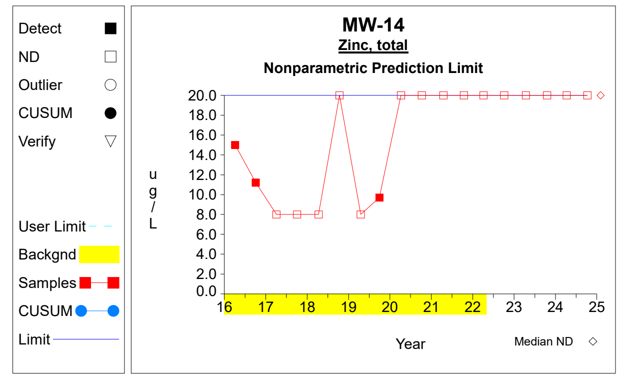
Graph 72



Graph 73

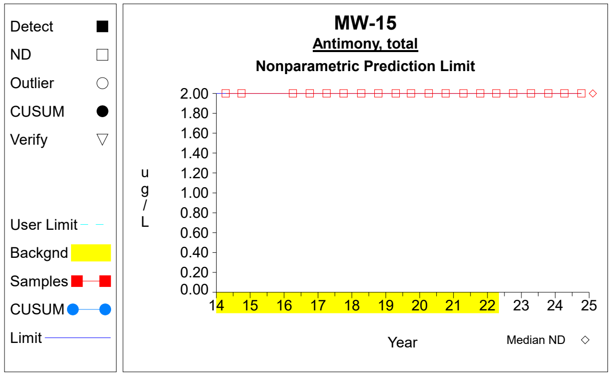


Graph 74

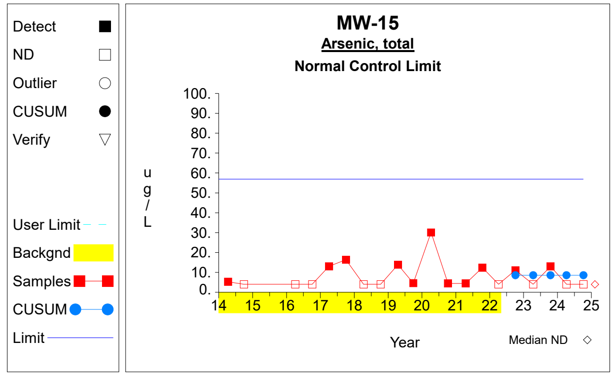


Graph 75

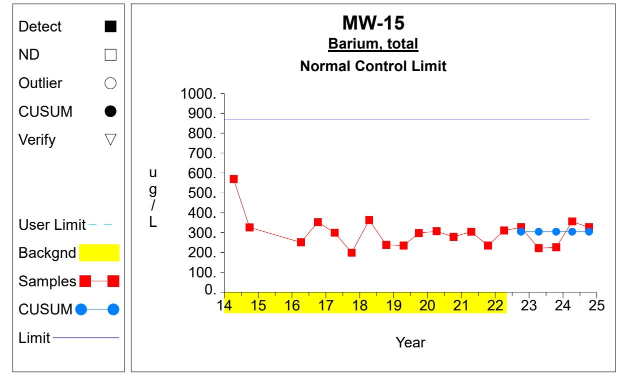
Intra-Well Control Charts / Prediction Limits



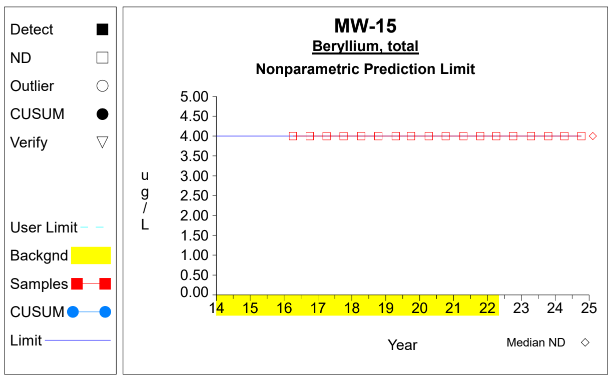
Graph 76



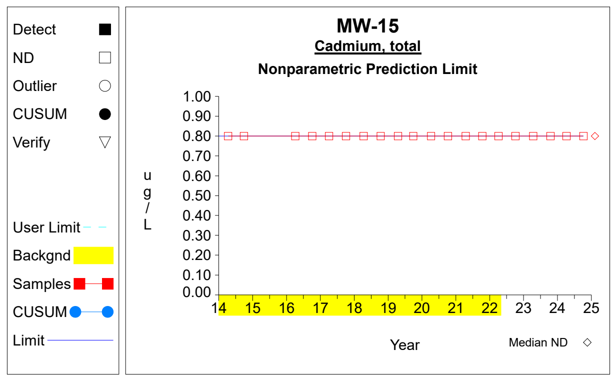
Graph 77



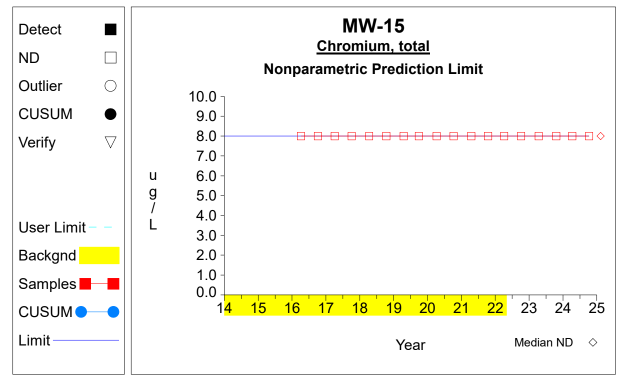
Graph 78



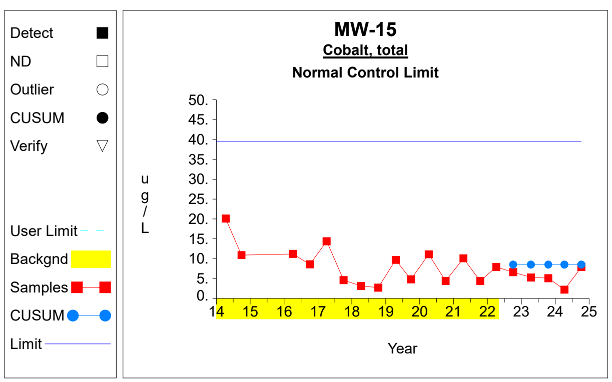
Graph 79



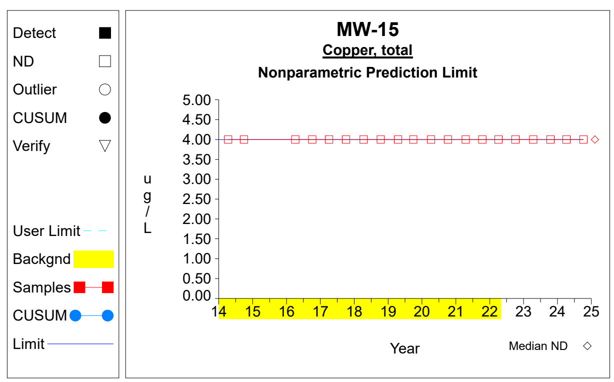
Graph 80



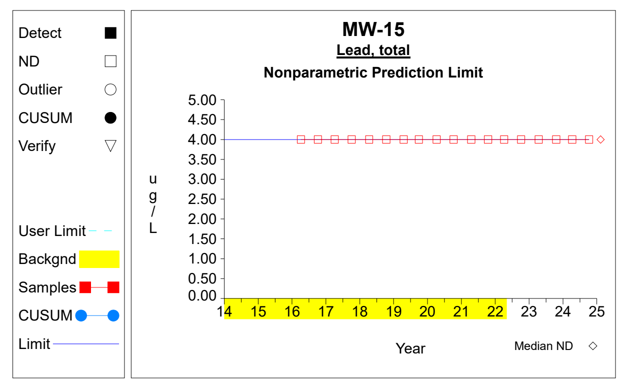
Graph 81



Graph 82

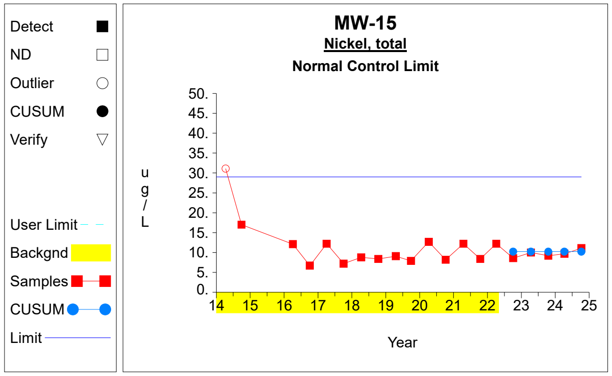


Graph 83

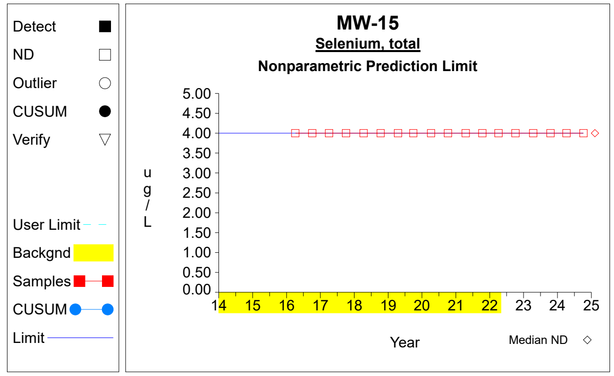


Graph 84

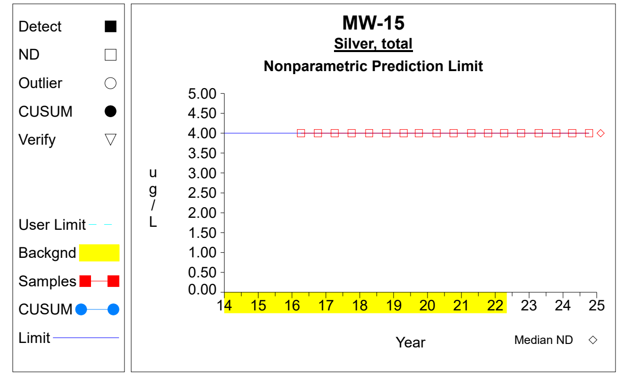
Intra-Well Control Charts / Prediction Limits



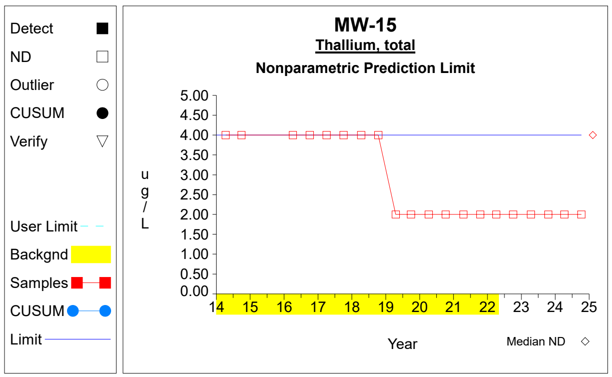
Graph 85



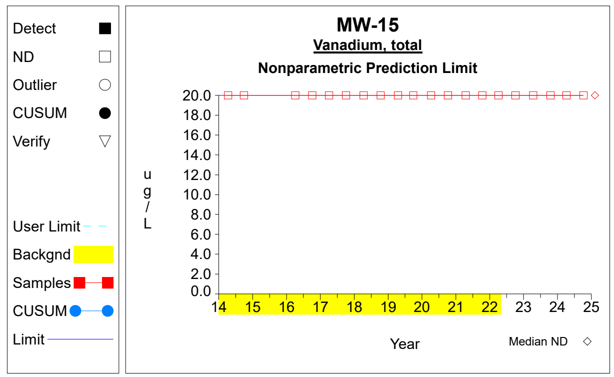
Graph 86



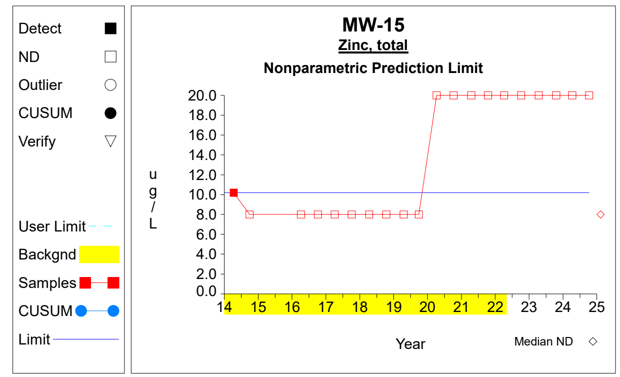
Graph 87



Graph 88



Graph 89

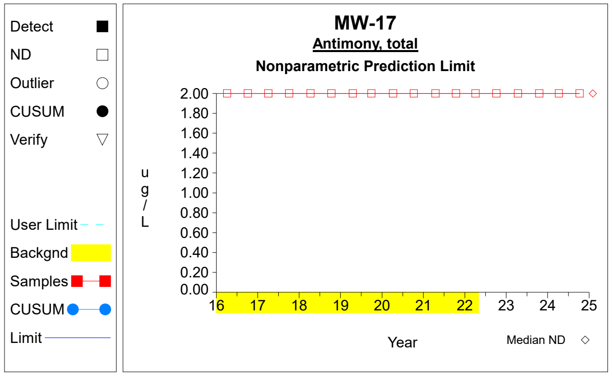


Graph 90

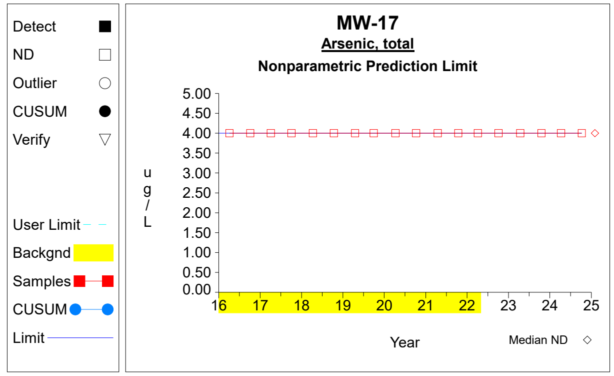
Jackson County [GW]

October 2024

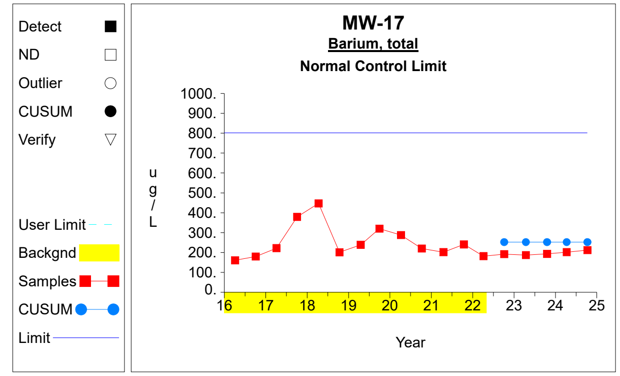
Intra-Well Control Charts / Prediction Limits



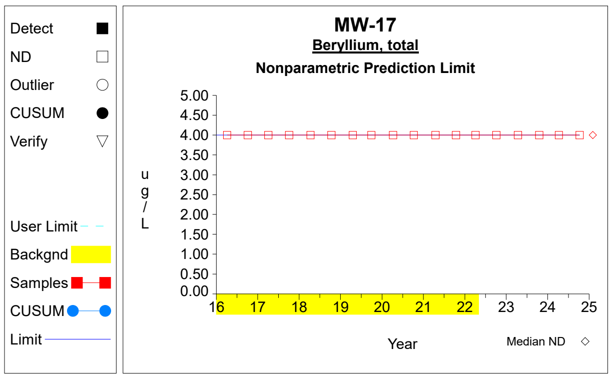
Graph 91



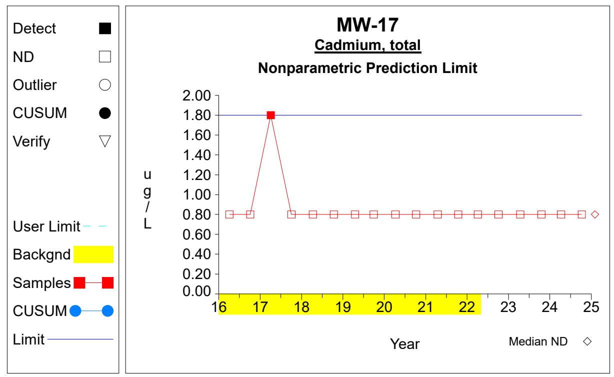
Graph 92



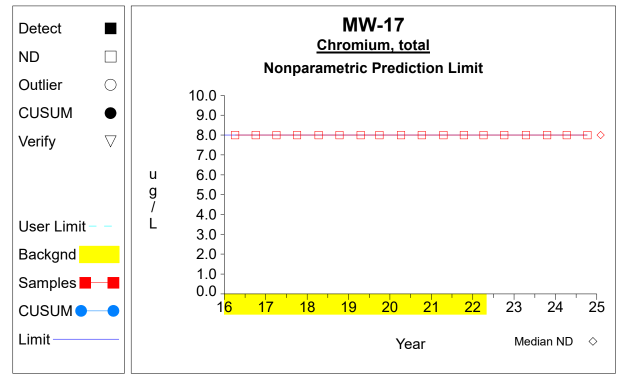
Graph 93



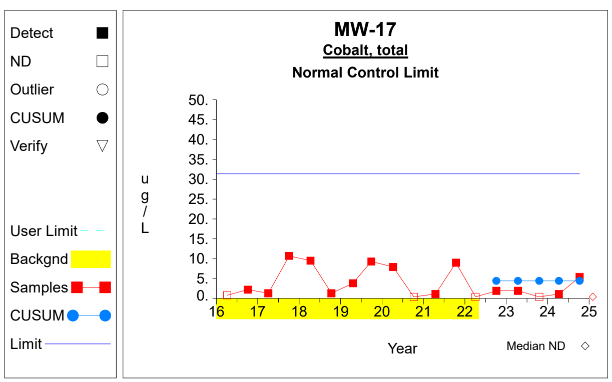
Graph 94



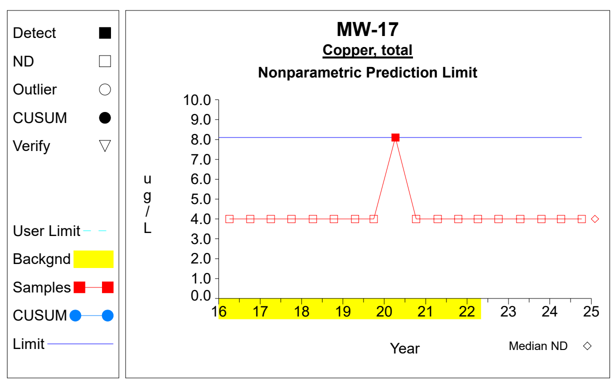
Graph 95



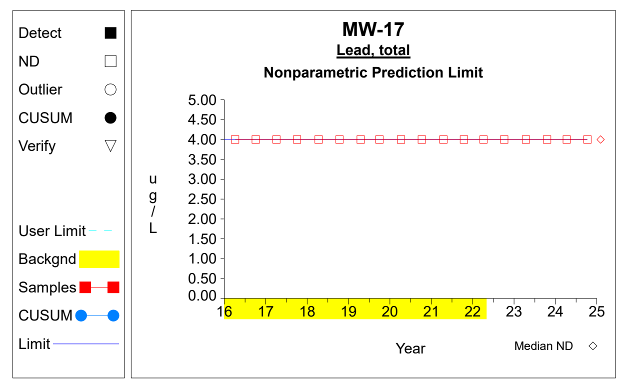
Graph 96



Graph 97



Graph 98



Graph 99

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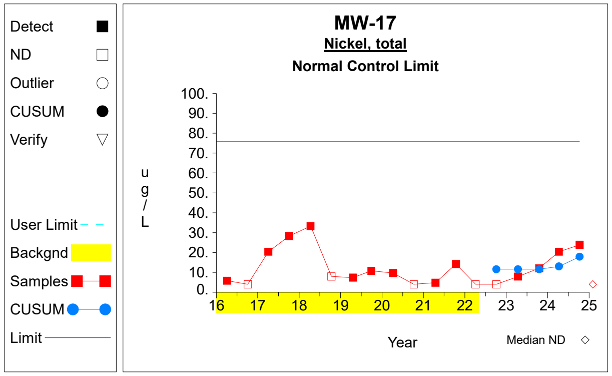
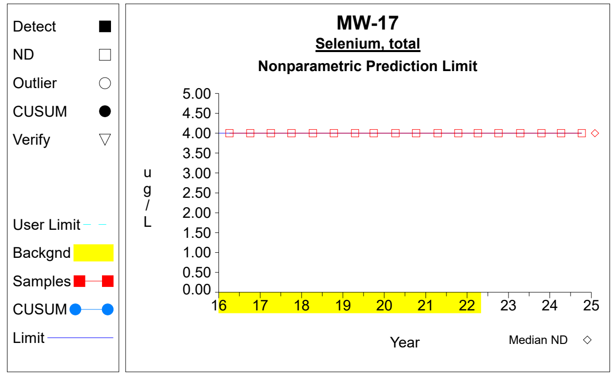
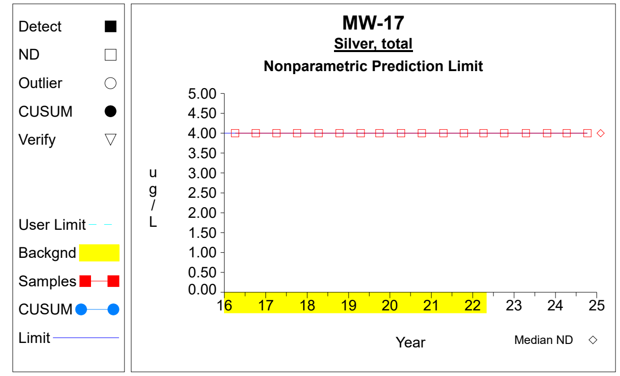
Intra-Well Control Charts / Prediction Limits



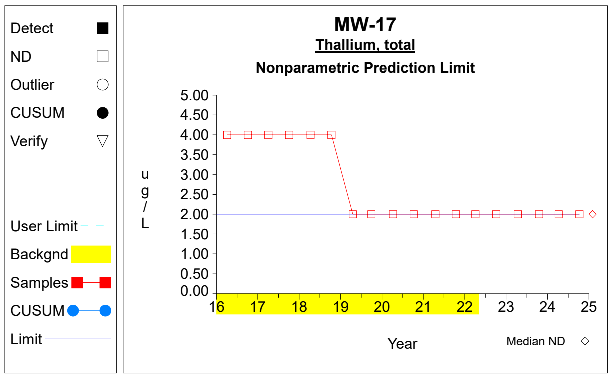
Graph 100



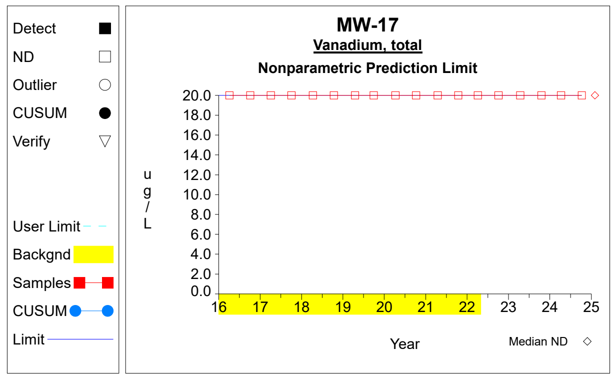
Graph 101



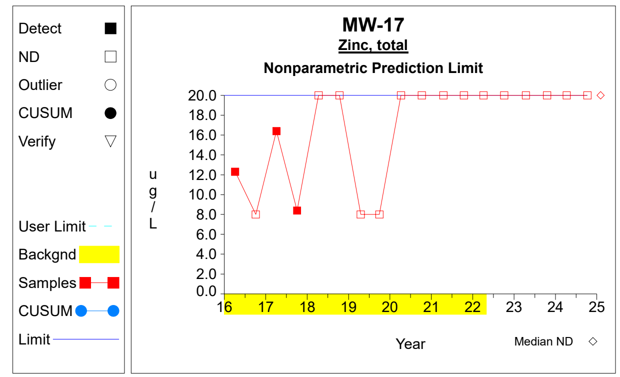
Graph 102



Graph 103



Graph 104



Graph 105

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program

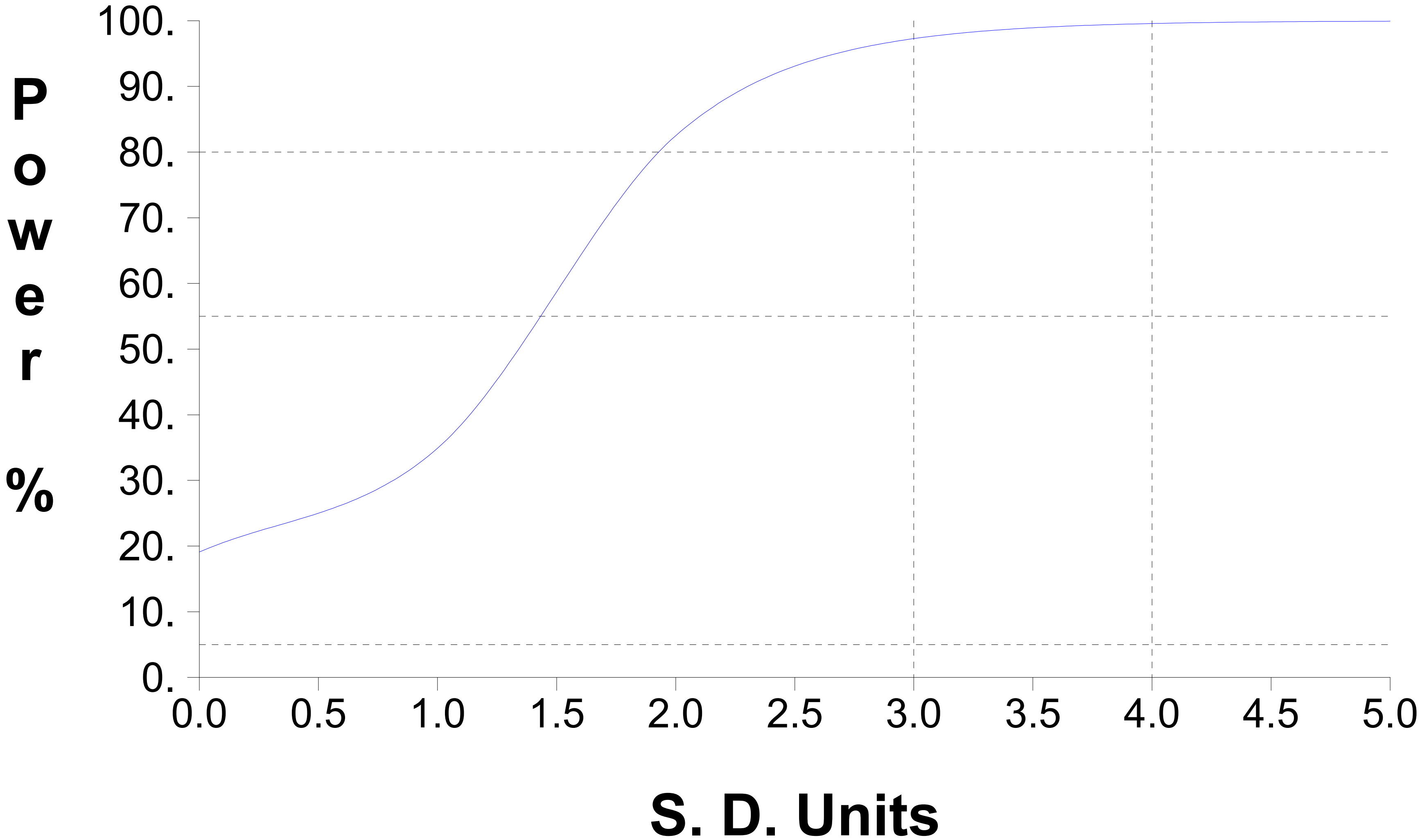


Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-10	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-10	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-10	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-10	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-10	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-10	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Arsenic, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Barium, total	ug/L	MW-10	04/04/2016	yes	98.9000					
Barium, total	ug/L	MW-10	10/04/2016	yes	88.9000					
Barium, total	ug/L	MW-10	04/03/2017	yes	92.0000					
Barium, total	ug/L	MW-10	10/03/2017	yes	95.0000					
Barium, total	ug/L	MW-10	04/10/2018	yes	92.9000					
Barium, total	ug/L	MW-10	10/12/2018	yes	88.9000					
Barium, total	ug/L	MW-10	04/17/2019	yes	96.8000					
Barium, total	ug/L	MW-10	09/30/2019	yes	104.0000					
Barium, total	ug/L	MW-10	04/07/2020	yes	99.8000					
Barium, total	ug/L	MW-10	10/07/2020	yes	95.8000					
Barium, total	ug/L	MW-10	04/16/2021	yes	84.8000					
Barium, total	ug/L	MW-10	10/14/2021	yes	85.4000					
Barium, total	ug/L	MW-10	04/04/2022	yes	89.3000					
Barium, total	ug/L	MW-10	10/04/2022		94.5000			93.2692		

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-10	04/13/2023		79.9000			93.2692		
Barium, total	ug/L	MW-10	10/18/2023		83.7000			93.2692		
Barium, total	ug/L	MW-10	04/08/2024		86.8000			93.2692		
Barium, total	ug/L	MW-10	10/08/2024		79.2000			93.2692		
Beryllium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-10	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-10	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-10	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-10	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-10	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-10	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-10	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/07/2020	yes	8.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-10	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-10	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-10	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-10	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-10	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-10	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-10	04/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/10/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	10/12/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/17/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	09/30/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-10	04/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	10/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	04/16/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	10/14/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-10	04/04/2022	yes	0.5000					
Cobalt, total	ug/L	MW-10	10/04/2022		2.0000					**
Cobalt, total	ug/L	MW-10	04/13/2023		0.4000	ND				
Cobalt, total	ug/L	MW-10	10/18/2023		0.4000	ND				
Cobalt, total	ug/L	MW-10	04/08/2024		0.4000	ND				
Cobalt, total	ug/L	MW-10	10/08/2024		0.4000	ND				
Copper, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/03/2017	yes	8.9000					
Nickel, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-10	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-10	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-10	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-10	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-10	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-10	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-10	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-10	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-10	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-10	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-10	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-10	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-10	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-10	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-10	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-10	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-10	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-10	10/18/2023		20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Vanadium, total	ug/L	MW-10	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-10	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-10	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	10/12/2018	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-10	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/14/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-10	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-10	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-10	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-10	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-10	10/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-11	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-11	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-11	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-11	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-11	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-11	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Arsenic, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Barium, total	ug/L	MW-11	04/04/2016	yes	117.0000					
Barium, total	ug/L	MW-11	10/04/2016	yes	86.3000					
Barium, total	ug/L	MW-11	04/03/2017	yes	103.0000					
Barium, total	ug/L	MW-11	10/03/2017	yes	92.6000					
Barium, total	ug/L	MW-11	04/10/2018	yes	112.0000					
Barium, total	ug/L	MW-11	10/12/2018	yes	102.0000					
Barium, total	ug/L	MW-11	04/17/2019	yes	113.0000					
Barium, total	ug/L	MW-11	09/30/2019	yes	98.2000					
Barium, total	ug/L	MW-11	04/07/2020	yes	96.9000					
Barium, total	ug/L	MW-11	10/07/2020	yes	83.8000					
Barium, total	ug/L	MW-11	04/16/2021	yes	99.6000					
Barium, total	ug/L	MW-11	10/14/2021	yes	91.6000					
Barium, total	ug/L	MW-11	04/04/2022	yes	81.7000					
Barium, total	ug/L	MW-11	10/04/2022		97.0000			98.2846		
Barium, total	ug/L	MW-11	04/13/2023		96.7000			98.2846		
Barium, total	ug/L	MW-11	10/18/2023		97.6000			98.2846		
Barium, total	ug/L	MW-11	04/08/2024		85.0000			98.2846		
Barium, total	ug/L	MW-11	10/08/2024		85.9000			98.2846		
Beryllium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-11	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	09/30/2019	yes	0.8000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cadmium, total	ug/L	MW-11	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-11	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-11	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-11	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-11	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-11	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-11	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-11	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-11	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-11	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-11	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-11	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-11	04/04/2016	yes	1.3000					
Cobalt, total	ug/L	MW-11	10/04/2016	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	10/03/2017	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/10/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	10/12/2018	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/17/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	09/30/2019	yes	0.8000	ND				
Cobalt, total	ug/L	MW-11	04/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/07/2020	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	04/16/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/14/2021	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	04/04/2022	yes	0.4000	ND			0.8000	***
Cobalt, total	ug/L	MW-11	10/04/2022		2.1000					**
Cobalt, total	ug/L	MW-11	04/13/2023		0.4000	ND				
Cobalt, total	ug/L	MW-11	10/18/2023		0.4000	ND				
Cobalt, total	ug/L	MW-11	04/08/2024		0.4000	ND				
Cobalt, total	ug/L	MW-11	10/08/2024		0.4000	ND				
Copper, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Copper, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-11	10/08/2024		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Selenium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-11	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-11	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-11	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-11	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-11	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-11	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-11	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-11	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-11	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-11	10/04/2022		2.0000	ND				

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Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Thallium, total	ug/L	MW-11	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-11	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-11	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-11	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-11	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-11	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-11	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-11	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-11	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-11	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-11	04/04/2016	yes	73.0000		yes			*
Zinc, total	ug/L	MW-11	10/04/2016	yes	135.0000		yes			*
Zinc, total	ug/L	MW-11	04/03/2017	yes	37.3000					
Zinc, total	ug/L	MW-11	10/03/2017	yes	16.8000					
Zinc, total	ug/L	MW-11	04/10/2018	yes	14.4000					
Zinc, total	ug/L	MW-11	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/17/2019	yes	9.2000					
Zinc, total	ug/L	MW-11	09/30/2019	yes	9.8000					
Zinc, total	ug/L	MW-11	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-11	10/04/2022		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	04/13/2023		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	10/18/2023		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	04/08/2024		20.0000	ND		18.8636		
Zinc, total	ug/L	MW-11	10/08/2024		20.0000	ND		18.8636		
Antimony, total	ug/L	MW-12	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/07/2020	yes	2.0000	ND				

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Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-12	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-12	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-12	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-12	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-12	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-12	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Arsenic, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Barium, total	ug/L	MW-12	04/04/2016	yes	217.0000					
Barium, total	ug/L	MW-12	10/04/2016	yes	229.0000					
Barium, total	ug/L	MW-12	04/03/2017	yes	310.0000					
Barium, total	ug/L	MW-12	10/03/2017	yes	518.0000					
Barium, total	ug/L	MW-12	04/10/2018	yes	644.0000					
Barium, total	ug/L	MW-12	10/12/2018	yes	407.0000					
Barium, total	ug/L	MW-12	04/17/2019	yes	448.0000					
Barium, total	ug/L	MW-12	09/30/2019	yes	584.0000					
Barium, total	ug/L	MW-12	04/07/2020	yes	516.0000					
Barium, total	ug/L	MW-12	10/07/2020	yes	443.0000					
Barium, total	ug/L	MW-12	04/16/2021	yes	422.0000					
Barium, total	ug/L	MW-12	10/14/2021	yes	403.0000					
Barium, total	ug/L	MW-12	04/04/2022	yes	405.0000					
Barium, total	ug/L	MW-12	10/04/2022		407.0000			426.6154		
Barium, total	ug/L	MW-12	04/13/2023		337.0000			426.6154		
Barium, total	ug/L	MW-12	10/18/2023		319.0000			426.6154		
Barium, total	ug/L	MW-12	04/08/2024		353.0000			426.6154		
Barium, total	ug/L	MW-12	10/08/2024		287.0000			426.6154		
Beryllium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Beryllium, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-12	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-12	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-12	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-12	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-12	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-12	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-12	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-12	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-12	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-12	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-12	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-12	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-12	04/04/2016	yes	1.5000					
Cobalt, total	ug/L	MW-12	10/04/2016	yes	1.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cobalt, total	ug/L	MW-12	04/03/2017	yes	13.7000		yes			*
Cobalt, total	ug/L	MW-12	10/03/2017	yes	7.3000					
Cobalt, total	ug/L	MW-12	04/10/2018	yes	2.0000					
Cobalt, total	ug/L	MW-12	10/12/2018	yes	1.0000					
Cobalt, total	ug/L	MW-12	04/17/2019	yes	1.1000					
Cobalt, total	ug/L	MW-12	09/30/2019	yes	1.9000					
Cobalt, total	ug/L	MW-12	04/07/2020	yes	2.6000					
Cobalt, total	ug/L	MW-12	10/07/2020	yes	2.4000					
Cobalt, total	ug/L	MW-12	04/16/2021	yes	2.3000					
Cobalt, total	ug/L	MW-12	10/14/2021	yes	2.1000					
Cobalt, total	ug/L	MW-12	04/04/2022	yes	1.4000					
Cobalt, total	ug/L	MW-12	10/04/2022		2.9000			2.2167		
Cobalt, total	ug/L	MW-12	04/13/2023		1.2000			2.2167		
Cobalt, total	ug/L	MW-12	10/18/2023		1.3000			2.2167		
Cobalt, total	ug/L	MW-12	04/08/2024		1.3000			2.2167		
Cobalt, total	ug/L	MW-12	10/08/2024		1.1000			2.2167		
Copper, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-12	10/18/2023		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-12	04/04/2016	yes	4.6000					
Nickel, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/03/2017	yes	8.8000					
Nickel, total	ug/L	MW-12	10/03/2017	yes	8.6000					
Nickel, total	ug/L	MW-12	04/10/2018	yes	5.9000					
Nickel, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/17/2019	yes	4.5000					
Nickel, total	ug/L	MW-12	09/30/2019	yes	6.3000					
Nickel, total	ug/L	MW-12	04/07/2020	yes	6.9000					
Nickel, total	ug/L	MW-12	10/07/2020	yes	5.3000					
Nickel, total	ug/L	MW-12	04/16/2021	yes	4.7000					
Nickel, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-12	04/04/2022	yes	4.2000					
Nickel, total	ug/L	MW-12	10/04/2022		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	04/13/2023		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	10/18/2023		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	04/08/2024		4.0000	ND		5.5231		
Nickel, total	ug/L	MW-12	10/08/2024		4.0000	ND		5.5231		
Selenium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-12	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-12	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/14/2021	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-12	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-12	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-12	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-12	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-12	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-12	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-12	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-12	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-12	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-12	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-12	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-12	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-12	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-12	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-12	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-12	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-12	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-12	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-12	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-12	04/04/2016	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	10/04/2016	yes	9.9000					
Zinc, total	ug/L	MW-12	04/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	10/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	04/10/2018	yes	12.2000					
Zinc, total	ug/L	MW-12	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-12	09/30/2019	yes	8.0000	ND			20.0000	***

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-12	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-12	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-12	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-12	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-12	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-12	10/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-13	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-13	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-13	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-13	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-13	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-13	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-13	04/04/2016	yes	16.6000					
Arsenic, total	ug/L	MW-13	10/04/2016	yes	14.8000					
Arsenic, total	ug/L	MW-13	04/03/2017	yes	11.6000					
Arsenic, total	ug/L	MW-13	10/03/2017	yes	15.2000					
Arsenic, total	ug/L	MW-13	04/10/2018	yes	20.3000					
Arsenic, total	ug/L	MW-13	10/12/2018	yes	16.0000					
Arsenic, total	ug/L	MW-13	04/17/2019	yes	18.7000					
Arsenic, total	ug/L	MW-13	09/30/2019	yes	21.5000					
Arsenic, total	ug/L	MW-13	04/07/2020	yes	31.3000					
Arsenic, total	ug/L	MW-13	10/07/2020	yes	27.1000					
Arsenic, total	ug/L	MW-13	04/16/2021	yes	17.4000					
Arsenic, total	ug/L	MW-13	10/14/2021	yes	33.8000					
Arsenic, total	ug/L	MW-13	04/04/2022	yes	25.6000					
Arsenic, total	ug/L	MW-13	10/04/2022		18.8000			20.7615		
Arsenic, total	ug/L	MW-13	04/13/2023		10.3000			20.7615		
Arsenic, total	ug/L	MW-13	10/18/2023		15.7000			20.7615		
Arsenic, total	ug/L	MW-13	04/08/2024		8.8000			20.7615		
Arsenic, total	ug/L	MW-13	10/08/2024		9.5000			20.7615		
Barium, total	ug/L	MW-13	04/04/2016	yes	482.0000					
Barium, total	ug/L	MW-13	10/04/2016	yes	986.0000					
Barium, total	ug/L	MW-13	04/03/2017	yes	1640.0000					
Barium, total	ug/L	MW-13	10/03/2017	yes	3360.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-13	04/10/2018	yes	2500.0000					
Barium, total	ug/L	MW-13	10/12/2018	yes	2430.0000					
Barium, total	ug/L	MW-13	04/17/2019	yes	4220.0000					
Barium, total	ug/L	MW-13	09/30/2019	yes	3200.0000					
Barium, total	ug/L	MW-13	04/07/2020	yes	3180.0000					
Barium, total	ug/L	MW-13	10/07/2020	yes	3800.0000					
Barium, total	ug/L	MW-13	04/16/2021	yes	2940.0000					
Barium, total	ug/L	MW-13	10/14/2021	yes	3310.0000					
Barium, total	ug/L	MW-13	04/04/2022	yes	1800.0000					
Barium, total	ug/L	MW-13	10/04/2022		971.0000			2603.6923		
Barium, total	ug/L	MW-13	04/13/2023		444.0000			2603.6923		
Barium, total	ug/L	MW-13	10/18/2023		752.0000			2603.6923		
Barium, total	ug/L	MW-13	04/08/2024		715.0000			2603.6923		
Barium, total	ug/L	MW-13	10/08/2024		391.0000			2603.6923		
Beryllium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-13	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-13	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-13	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-13	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-13	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-13	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-13	10/08/2024		0.8000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-13	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-13	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-13	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-13	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-13	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-13	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-13	04/04/2016	yes	13.1000					
Cobalt, total	ug/L	MW-13	10/04/2016	yes	8.4000					
Cobalt, total	ug/L	MW-13	04/03/2017	yes	6.9000					
Cobalt, total	ug/L	MW-13	10/03/2017	yes	9.2000					
Cobalt, total	ug/L	MW-13	04/10/2018	yes	13.4000					
Cobalt, total	ug/L	MW-13	10/12/2018	yes	8.2000					
Cobalt, total	ug/L	MW-13	04/17/2019	yes	4.8000					
Cobalt, total	ug/L	MW-13	09/30/2019	yes	4.3000					
Cobalt, total	ug/L	MW-13	04/07/2020	yes	7.9000					
Cobalt, total	ug/L	MW-13	10/07/2020	yes	10.5000					
Cobalt, total	ug/L	MW-13	04/16/2021	yes	4.4000					
Cobalt, total	ug/L	MW-13	10/14/2021	yes	17.4000					
Cobalt, total	ug/L	MW-13	04/04/2022	yes	16.1000					
Cobalt, total	ug/L	MW-13	10/04/2022		11.5000			9.5846		
Cobalt, total	ug/L	MW-13	04/13/2023		6.3000			9.5846		
Cobalt, total	ug/L	MW-13	10/18/2023		9.0000			9.5846		
Cobalt, total	ug/L	MW-13	04/08/2024		6.4000			9.5846		
Cobalt, total	ug/L	MW-13	10/08/2024		6.4000			9.5846		
Copper, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-13	10/04/2022		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Copper, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-13	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-13	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-13	04/04/2016	yes	6.0000					
Nickel, total	ug/L	MW-13	10/04/2016	yes	5.6000					
Nickel, total	ug/L	MW-13	04/03/2017	yes	4.6000					
Nickel, total	ug/L	MW-13	10/03/2017	yes	5.1000					
Nickel, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-13	10/12/2018	yes	8.0000	ND			4.0000	***
Nickel, total	ug/L	MW-13	04/17/2019	yes	5.2000					
Nickel, total	ug/L	MW-13	09/30/2019	yes	5.1000					
Nickel, total	ug/L	MW-13	04/07/2020	yes	4.6000					
Nickel, total	ug/L	MW-13	10/07/2020	yes	10.4000					
Nickel, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-13	10/14/2021	yes	20.7000					
Nickel, total	ug/L	MW-13	04/04/2022	yes	20.8000					
Nickel, total	ug/L	MW-13	10/04/2022		6.2000			7.7000		
Nickel, total	ug/L	MW-13	04/13/2023		4.4000			7.7000		
Nickel, total	ug/L	MW-13	10/18/2023		9.0000			7.7000		
Nickel, total	ug/L	MW-13	04/08/2024		6.8000			7.7000		
Nickel, total	ug/L	MW-13	10/08/2024		5.1000			7.7000		
Selenium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Selenium, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-13	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-13	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-13	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-13	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-13	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-13	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-13	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-13	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-13	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-13	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-13	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-13	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-13	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-13	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-13	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-13	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/12/2018	yes	20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Vanadium, total	ug/L	MW-13	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-13	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-13	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-13	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-13	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-13	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-13	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	10/12/2018	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-13	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/14/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-13	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-13	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-13	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-13	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-13	10/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-14	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-14	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-14	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-14	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-14	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-14	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	04/10/2018	yes	29.9000					
Arsenic, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-14	04/17/2019	yes	18.6000					
Arsenic, total	ug/L	MW-14	09/30/2019	yes	32.3000					
Arsenic, total	ug/L	MW-14	04/07/2020	yes	27.8000					
Arsenic, total	ug/L	MW-14	10/07/2020	yes	8.0000					
Arsenic, total	ug/L	MW-14	04/16/2021	yes	13.3000					
Arsenic, total	ug/L	MW-14	10/14/2021	yes	58.7000					
Arsenic, total	ug/L	MW-14	04/04/2022	yes	139.0000					
Arsenic, total	ug/L	MW-14	10/04/2022		12.5000			26.7385		
Arsenic, total	ug/L	MW-14	04/13/2023		4.0000	ND		26.7385		
Arsenic, total	ug/L	MW-14	10/18/2023		7.7000			26.7385		
Arsenic, total	ug/L	MW-14	04/08/2024		4.0000	ND		26.7385		
Arsenic, total	ug/L	MW-14	10/08/2024		7.6000			26.7385		
Barium, total	ug/L	MW-14	04/04/2016	yes	479.0000					
Barium, total	ug/L	MW-14	10/04/2016	yes	428.0000					
Barium, total	ug/L	MW-14	04/03/2017	yes	609.0000					
Barium, total	ug/L	MW-14	10/03/2017	yes	677.0000					
Barium, total	ug/L	MW-14	04/10/2018	yes	1080.0000					
Barium, total	ug/L	MW-14	10/12/2018	yes	785.0000					
Barium, total	ug/L	MW-14	04/17/2019	yes	1110.0000					
Barium, total	ug/L	MW-14	09/30/2019	yes	1380.0000					
Barium, total	ug/L	MW-14	04/07/2020	yes	1230.0000					
Barium, total	ug/L	MW-14	10/07/2020	yes	825.0000					
Barium, total	ug/L	MW-14	04/16/2021	yes	913.0000					
Barium, total	ug/L	MW-14	10/14/2021	yes	1440.0000					
Barium, total	ug/L	MW-14	04/04/2022	yes	2360.0000					
Barium, total	ug/L	MW-14	10/04/2022		1080.0000			1024.3077		
Barium, total	ug/L	MW-14	04/13/2023		765.0000			1024.3077		
Barium, total	ug/L	MW-14	10/18/2023		800.0000			1024.3077		
Barium, total	ug/L	MW-14	04/08/2024		691.0000			1024.3077		
Barium, total	ug/L	MW-14	10/08/2024		740.0000			1024.3077		
Beryllium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-14	10/18/2023		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Beryllium, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-14	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-14	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-14	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-14	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-14	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-14	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-14	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-14	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-14	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-14	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-14	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-14	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-14	04/04/2016	yes	1.4000					
Cobalt, total	ug/L	MW-14	10/04/2016	yes	0.8000					
Cobalt, total	ug/L	MW-14	04/03/2017	yes	3.6000					
Cobalt, total	ug/L	MW-14	10/03/2017	yes	1.2000					
Cobalt, total	ug/L	MW-14	04/10/2018	yes	1.6000					
Cobalt, total	ug/L	MW-14	10/12/2018	yes	1.1000					
Cobalt, total	ug/L	MW-14	04/17/2019	yes	1.2000					
Cobalt, total	ug/L	MW-14	09/30/2019	yes	1.0000					
Cobalt, total	ug/L	MW-14	04/07/2020	yes	0.5000					
Cobalt, total	ug/L	MW-14	10/07/2020	yes	0.4000	ND				
Cobalt, total	ug/L	MW-14	04/16/2021	yes	0.5000					
Cobalt, total	ug/L	MW-14	10/14/2021	yes	0.7000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cobalt, total	ug/L	MW-14	04/04/2022	yes	1.7000					
Cobalt, total	ug/L	MW-14	10/04/2022		2.4000			1.7767		
Cobalt, total	ug/L	MW-14	04/13/2023		0.5000			1.2077		
Cobalt, total	ug/L	MW-14	10/18/2023		0.4000	ND		1.2077		
Cobalt, total	ug/L	MW-14	04/08/2024		0.4000	ND		1.2077		
Cobalt, total	ug/L	MW-14	10/08/2024		0.5000			1.2077		
Copper, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-14	04/04/2016	yes	4.9000					
Nickel, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/03/2017	yes	5.7000					
Nickel, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Nickel, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Nickel, total	ug/L	MW-14	04/04/2022	yes	5.5000					
Nickel, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Nickel, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Nickel, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Nickel, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-14	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-14	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-14	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-14	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-14	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-14	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-14	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-14	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/03/2017	yes	4.0000	ND			2.0000	***

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Thallium, total	ug/L	MW-14	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-14	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-14	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-14	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-14	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-14	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-14	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-14	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-14	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-14	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-14	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-14	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-14	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-14	04/04/2016	yes	15.0000					
Zinc, total	ug/L	MW-14	10/04/2016	yes	11.2000					
Zinc, total	ug/L	MW-14	04/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	10/03/2017	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	04/10/2018	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-14	09/30/2019	yes	9.7000					
Zinc, total	ug/L	MW-14	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-14	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-14	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-14	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-14	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-14	10/08/2024		20.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-15	04/10/2014	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	09/30/2014	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-15	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-15	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-15	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-15	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-15	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-15	04/10/2014	yes	5.3000					
Arsenic, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/03/2017	yes	13.1000					
Arsenic, total	ug/L	MW-15	10/03/2017	yes	16.4000					
Arsenic, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	04/17/2019	yes	13.9000					
Arsenic, total	ug/L	MW-15	09/30/2019	yes	4.6000					
Arsenic, total	ug/L	MW-15	04/07/2020	yes	30.1000					
Arsenic, total	ug/L	MW-15	10/07/2020	yes	4.5000					
Arsenic, total	ug/L	MW-15	04/16/2021	yes	4.5000					
Arsenic, total	ug/L	MW-15	10/14/2021	yes	12.4000					
Arsenic, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-15	10/04/2022		11.1000			8.5867		
Arsenic, total	ug/L	MW-15	04/13/2023		4.0000	ND		8.5867		
Arsenic, total	ug/L	MW-15	10/18/2023		13.0000			8.5867		
Arsenic, total	ug/L	MW-15	04/08/2024		4.0000	ND		8.5867		
Arsenic, total	ug/L	MW-15	10/08/2024		4.0000	ND		8.5867		
Barium, total	ug/L	MW-15	04/10/2014	yes	569.0000					
Barium, total	ug/L	MW-15	09/30/2014	yes	326.0000					
Barium, total	ug/L	MW-15	04/04/2016	yes	251.0000					
Barium, total	ug/L	MW-15	10/04/2016	yes	352.0000					
Barium, total	ug/L	MW-15	04/03/2017	yes	300.0000					
Barium, total	ug/L	MW-15	10/03/2017	yes	199.0000					
Barium, total	ug/L	MW-15	04/10/2018	yes	363.0000					
Barium, total	ug/L	MW-15	10/12/2018	yes	239.0000					
Barium, total	ug/L	MW-15	04/17/2019	yes	235.0000					
Barium, total	ug/L	MW-15	09/30/2019	yes	298.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Barium, total	ug/L	MW-15	04/07/2020	yes	307.0000					
Barium, total	ug/L	MW-15	10/07/2020	yes	279.0000					
Barium, total	ug/L	MW-15	04/16/2021	yes	305.0000					
Barium, total	ug/L	MW-15	10/14/2021	yes	235.0000					
Barium, total	ug/L	MW-15	04/04/2022	yes	311.0000					
Barium, total	ug/L	MW-15	10/04/2022		327.0000			304.6000		
Barium, total	ug/L	MW-15	04/13/2023		222.0000			304.6000		
Barium, total	ug/L	MW-15	10/18/2023		226.0000			304.6000		
Barium, total	ug/L	MW-15	04/08/2024		356.0000			304.6000		
Barium, total	ug/L	MW-15	10/08/2024		327.0000			304.6000		
Beryllium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-15	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-15	04/10/2014	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	09/30/2014	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-15	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-15	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-15	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-15	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-15	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-15	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/04/2016	yes	8.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chromium, total	ug/L	MW-15	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-15	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-15	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-15	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-15	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-15	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-15	04/10/2014	yes	20.1000					
Cobalt, total	ug/L	MW-15	09/30/2014	yes	10.9000					
Cobalt, total	ug/L	MW-15	04/04/2016	yes	11.2000					
Cobalt, total	ug/L	MW-15	10/04/2016	yes	8.6000					
Cobalt, total	ug/L	MW-15	04/03/2017	yes	14.4000					
Cobalt, total	ug/L	MW-15	10/03/2017	yes	4.6000					
Cobalt, total	ug/L	MW-15	04/10/2018	yes	3.1000					
Cobalt, total	ug/L	MW-15	10/12/2018	yes	2.7000					
Cobalt, total	ug/L	MW-15	04/17/2019	yes	9.7000					
Cobalt, total	ug/L	MW-15	09/30/2019	yes	4.8000					
Cobalt, total	ug/L	MW-15	04/07/2020	yes	11.1000					
Cobalt, total	ug/L	MW-15	10/07/2020	yes	4.4000					
Cobalt, total	ug/L	MW-15	04/16/2021	yes	10.1000					
Cobalt, total	ug/L	MW-15	10/14/2021	yes	4.4000					
Cobalt, total	ug/L	MW-15	04/04/2022	yes	7.9000					
Cobalt, total	ug/L	MW-15	10/04/2022		6.6000			8.5333		
Cobalt, total	ug/L	MW-15	04/13/2023		5.3000			8.5333		
Cobalt, total	ug/L	MW-15	10/18/2023		5.1000			8.5333		
Cobalt, total	ug/L	MW-15	04/08/2024		2.2000			8.5333		
Cobalt, total	ug/L	MW-15	10/08/2024		7.9000			8.5333		
Copper, total	ug/L	MW-15	04/10/2014	yes	4.0000	ND				
Copper, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Copper, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-15	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Lead, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-15	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-15	04/10/2014	yes	31.1000		yes			*
Nickel, total	ug/L	MW-15	09/30/2014	yes	17.0000					
Nickel, total	ug/L	MW-15	04/04/2016	yes	12.1000					
Nickel, total	ug/L	MW-15	10/04/2016	yes	6.7000					
Nickel, total	ug/L	MW-15	04/03/2017	yes	12.2000					
Nickel, total	ug/L	MW-15	10/03/2017	yes	7.2000					
Nickel, total	ug/L	MW-15	04/10/2018	yes	8.8000					
Nickel, total	ug/L	MW-15	10/12/2018	yes	8.4000					
Nickel, total	ug/L	MW-15	04/17/2019	yes	9.1000					
Nickel, total	ug/L	MW-15	09/30/2019	yes	7.9000					
Nickel, total	ug/L	MW-15	04/07/2020	yes	12.7000					
Nickel, total	ug/L	MW-15	10/07/2020	yes	8.2000					
Nickel, total	ug/L	MW-15	04/16/2021	yes	12.2000					
Nickel, total	ug/L	MW-15	10/14/2021	yes	8.4000					
Nickel, total	ug/L	MW-15	04/04/2022	yes	12.2000					
Nickel, total	ug/L	MW-15	10/04/2022		8.6000			10.2214		
Nickel, total	ug/L	MW-15	04/13/2023		10.0000			10.2214		
Nickel, total	ug/L	MW-15	10/18/2023		9.2000			10.2214		
Nickel, total	ug/L	MW-15	04/08/2024		9.7000			10.2214		
Nickel, total	ug/L	MW-15	10/08/2024		11.1000			10.2214		
Selenium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Selenium, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-15	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-15	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/14/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-15	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-15	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-15	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-15	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-15	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-15	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-15	04/10/2014	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	09/30/2014	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/04/2016	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	10/04/2016	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/03/2017	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	10/03/2017	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/10/2018	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	10/12/2018	yes	4.0000	ND				
Thallium, total	ug/L	MW-15	04/17/2019	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	09/30/2019	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/07/2020	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/07/2020	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/16/2021	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/14/2021	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	04/04/2022	yes	2.0000	ND			4.0000	***
Thallium, total	ug/L	MW-15	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-15	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-15	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-15	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-15	10/08/2024		2.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Vanadium, total	ug/L	MW-15	04/10/2014	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	09/30/2014	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-15	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-15	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-15	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-15	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-15	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-15	04/10/2014	yes	10.2000					
Zinc, total	ug/L	MW-15	09/30/2014	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/04/2016	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/03/2017	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/10/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	10/12/2018	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/17/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	09/30/2019	yes	8.0000	ND				
Zinc, total	ug/L	MW-15	04/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/07/2020	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	04/16/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/14/2021	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	04/04/2022	yes	20.0000	ND			8.0000	***
Zinc, total	ug/L	MW-15	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-15	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-15	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-15	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-15	10/08/2024		20.0000	ND				
Antimony, total	ug/L	MW-17	04/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/04/2016	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/03/2017	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/10/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/12/2018	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/17/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	09/30/2019	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/07/2020	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/07/2020	yes	2.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Antimony, total	ug/L	MW-17	04/16/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/14/2021	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	04/04/2022	yes	2.0000	ND				
Antimony, total	ug/L	MW-17	10/04/2022		2.0000	ND				
Antimony, total	ug/L	MW-17	04/13/2023		2.0000	ND				
Antimony, total	ug/L	MW-17	10/18/2023		2.0000	ND				
Antimony, total	ug/L	MW-17	04/08/2024		2.0000	ND				
Antimony, total	ug/L	MW-17	10/08/2024		2.0000	ND				
Arsenic, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Arsenic, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Arsenic, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Arsenic, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Arsenic, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Arsenic, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Barium, total	ug/L	MW-17	04/04/2016	yes	161.0000					
Barium, total	ug/L	MW-17	10/04/2016	yes	180.0000					
Barium, total	ug/L	MW-17	04/03/2017	yes	222.0000					
Barium, total	ug/L	MW-17	10/03/2017	yes	379.0000					
Barium, total	ug/L	MW-17	04/10/2018	yes	447.0000					
Barium, total	ug/L	MW-17	10/12/2018	yes	201.0000					
Barium, total	ug/L	MW-17	04/17/2019	yes	239.0000					
Barium, total	ug/L	MW-17	09/30/2019	yes	320.0000					
Barium, total	ug/L	MW-17	04/07/2020	yes	288.0000					
Barium, total	ug/L	MW-17	10/07/2020	yes	220.0000					
Barium, total	ug/L	MW-17	04/16/2021	yes	202.0000					
Barium, total	ug/L	MW-17	10/14/2021	yes	241.0000					
Barium, total	ug/L	MW-17	04/04/2022	yes	182.0000					
Barium, total	ug/L	MW-17	10/04/2022		192.0000			252.4615		
Barium, total	ug/L	MW-17	04/13/2023		187.0000			252.4615		
Barium, total	ug/L	MW-17	10/18/2023		193.0000			252.4615		
Barium, total	ug/L	MW-17	04/08/2024		202.0000			252.4615		
Barium, total	ug/L	MW-17	10/08/2024		212.0000			252.4615		
Beryllium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Beryllium, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Beryllium, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Beryllium, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Beryllium, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Beryllium, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Beryllium, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Cadmium, total	ug/L	MW-17	04/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/04/2016	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/03/2017	yes	1.8000					
Cadmium, total	ug/L	MW-17	10/03/2017	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/10/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/12/2018	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/17/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	09/30/2019	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/07/2020	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/16/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/14/2021	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	04/04/2022	yes	0.8000	ND				
Cadmium, total	ug/L	MW-17	10/04/2022		0.8000	ND				
Cadmium, total	ug/L	MW-17	04/13/2023		0.8000	ND				
Cadmium, total	ug/L	MW-17	10/18/2023		0.8000	ND				
Cadmium, total	ug/L	MW-17	04/08/2024		0.8000	ND				
Cadmium, total	ug/L	MW-17	10/08/2024		0.8000	ND				
Chromium, total	ug/L	MW-17	04/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/04/2016	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/03/2017	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/10/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/12/2018	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/17/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	09/30/2019	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/07/2020	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/16/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/14/2021	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	04/04/2022	yes	8.0000	ND				
Chromium, total	ug/L	MW-17	10/04/2022		8.0000	ND				
Chromium, total	ug/L	MW-17	04/13/2023		8.0000	ND				
Chromium, total	ug/L	MW-17	10/18/2023		8.0000	ND				
Chromium, total	ug/L	MW-17	04/08/2024		8.0000	ND				
Chromium, total	ug/L	MW-17	10/08/2024		8.0000	ND				
Cobalt, total	ug/L	MW-17	04/04/2016	yes	0.8000	ND			0.4000	***
Cobalt, total	ug/L	MW-17	10/04/2016	yes	2.2000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Cobalt, total	ug/L	MW-17	04/03/2017	yes	1.3000					
Cobalt, total	ug/L	MW-17	10/03/2017	yes	10.7000					
Cobalt, total	ug/L	MW-17	04/10/2018	yes	9.5000					
Cobalt, total	ug/L	MW-17	10/12/2018	yes	1.3000					
Cobalt, total	ug/L	MW-17	04/17/2019	yes	3.8000					
Cobalt, total	ug/L	MW-17	09/30/2019	yes	9.3000					
Cobalt, total	ug/L	MW-17	04/07/2020	yes	7.9000					
Cobalt, total	ug/L	MW-17	10/07/2020	yes	0.4000	ND				
Cobalt, total	ug/L	MW-17	04/16/2021	yes	1.1000					
Cobalt, total	ug/L	MW-17	10/14/2021	yes	9.0000					
Cobalt, total	ug/L	MW-17	04/04/2022	yes	0.4000	ND				
Cobalt, total	ug/L	MW-17	10/04/2022		1.9000			4.4077		
Cobalt, total	ug/L	MW-17	04/13/2023		1.9000			4.4077		
Cobalt, total	ug/L	MW-17	10/18/2023		0.4000	ND		4.4077		
Cobalt, total	ug/L	MW-17	04/08/2024		1.1000			4.4077		
Cobalt, total	ug/L	MW-17	10/08/2024		5.4000			4.4077		
Copper, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/07/2020	yes	8.1000					
Copper, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Copper, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Copper, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Copper, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Copper, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Copper, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Copper, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Lead, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Lead, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Lead, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Lead, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Lead, total	ug/L	MW-17	10/18/2023		4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Lead, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Lead, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Nickel, total	ug/L	MW-17	04/04/2016	yes	5.8000					
Nickel, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	04/03/2017	yes	20.4000					
Nickel, total	ug/L	MW-17	10/03/2017	yes	28.3000					
Nickel, total	ug/L	MW-17	04/10/2018	yes	33.3000					
Nickel, total	ug/L	MW-17	10/12/2018	yes	8.0000	ND			4.0000	***
Nickel, total	ug/L	MW-17	04/17/2019	yes	7.4000					
Nickel, total	ug/L	MW-17	09/30/2019	yes	10.8000					
Nickel, total	ug/L	MW-17	04/07/2020	yes	9.7000					
Nickel, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	04/16/2021	yes	4.8000					
Nickel, total	ug/L	MW-17	10/14/2021	yes	14.2000					
Nickel, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Nickel, total	ug/L	MW-17	10/04/2022		4.0000	ND		11.5923		
Nickel, total	ug/L	MW-17	04/13/2023		7.9000			11.5923		
Nickel, total	ug/L	MW-17	10/18/2023		12.1000			11.5923		
Nickel, total	ug/L	MW-17	04/08/2024		20.4000			13.0045		
Nickel, total	ug/L	MW-17	10/08/2024		23.9000			17.9167		
Selenium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Selenium, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Selenium, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Selenium, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Selenium, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Selenium, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Silver, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/17/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-17	09/30/2019	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/07/2020	yes	4.0000	ND				
Silver, total	ug/L	MW-17	04/16/2021	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/14/2021	yes	4.0000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Silver, total	ug/L	MW-17	04/04/2022	yes	4.0000	ND				
Silver, total	ug/L	MW-17	10/04/2022		4.0000	ND				
Silver, total	ug/L	MW-17	04/13/2023		4.0000	ND				
Silver, total	ug/L	MW-17	10/18/2023		4.0000	ND				
Silver, total	ug/L	MW-17	04/08/2024		4.0000	ND				
Silver, total	ug/L	MW-17	10/08/2024		4.0000	ND				
Thallium, total	ug/L	MW-17	04/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/04/2016	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/03/2017	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/10/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	10/12/2018	yes	4.0000	ND			2.0000	***
Thallium, total	ug/L	MW-17	04/17/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	09/30/2019	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/07/2020	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/16/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/14/2021	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	04/04/2022	yes	2.0000	ND				
Thallium, total	ug/L	MW-17	10/04/2022		2.0000	ND				
Thallium, total	ug/L	MW-17	04/13/2023		2.0000	ND				
Thallium, total	ug/L	MW-17	10/18/2023		2.0000	ND				
Thallium, total	ug/L	MW-17	04/08/2024		2.0000	ND				
Thallium, total	ug/L	MW-17	10/08/2024		2.0000	ND				
Vanadium, total	ug/L	MW-17	04/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/04/2016	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/03/2017	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/10/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/12/2018	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/17/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	09/30/2019	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/07/2020	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/16/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/14/2021	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	04/04/2022	yes	20.0000	ND				
Vanadium, total	ug/L	MW-17	10/04/2022		20.0000	ND				
Vanadium, total	ug/L	MW-17	04/13/2023		20.0000	ND				
Vanadium, total	ug/L	MW-17	10/18/2023		20.0000	ND				
Vanadium, total	ug/L	MW-17	04/08/2024		20.0000	ND				
Vanadium, total	ug/L	MW-17	10/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-17	04/04/2016	yes	12.3000					
Zinc, total	ug/L	MW-17	10/04/2016	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-17	04/03/2017	yes	16.4000					
Zinc, total	ug/L	MW-17	10/03/2017	yes	8.4000					
Zinc, total	ug/L	MW-17	04/10/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/12/2018	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	04/17/2019	yes	8.0000	ND			20.0000	***
Zinc, total	ug/L	MW-17	09/30/2019	yes	8.0000	ND			20.0000	***

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Zinc, total	ug/L	MW-17	04/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/07/2020	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	04/16/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/14/2021	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	04/04/2022	yes	20.0000	ND				
Zinc, total	ug/L	MW-17	10/04/2022		20.0000	ND				
Zinc, total	ug/L	MW-17	04/13/2023		20.0000	ND				
Zinc, total	ug/L	MW-17	10/18/2023		20.0000	ND				
Zinc, total	ug/L	MW-17	04/08/2024		20.0000	ND				
Zinc, total	ug/L	MW-17	10/08/2024		20.0000	ND				

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 4

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Zinc, total	ug/L	MW-11	04/04/2016	73.0000		04/04/2016-04/04/2022	13	0.6425
Zinc, total	ug/L	MW-11	10/04/2016	135.0000		04/04/2016-04/04/2022	13	0.6425
Cobalt, total	ug/L	MW-12	04/03/2017	13.7000		04/04/2016-04/04/2022	13	0.6174
Nickel, total	ug/L	MW-15	04/10/2014	31.1000		04/10/2014-04/04/2022	15	0.6177

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X)	Compute nonparametric prediction limit as median reporting limit in background.
	= **2.0**	
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X)	Compute nonparametric prediction limit as median reporting limit in background.
	= **4.0**	
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-10
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{1212.5} / \mathbf{13}$ $= \mathbf{93.269}$	Compute background mean.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$ $= ((\mathbf{113489.65} - \mathbf{1.47 \times 10^6}/\mathbf{13}) / (\mathbf{13}-1))^{½}$ $= \mathbf{5.779}$	Compute background sd.
3	$SCL = \bar{\mathbf{X}} + \mathbf{F} * \mathbf{S}$ $= \mathbf{93.269} + \mathbf{6.5} * \mathbf{5.779}$ $= \mathbf{130.83}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{13} * (\mathbf{13}-1) / 2$ $= \mathbf{78}$	Number of sample pairs during trend detection period.
5	$S = \mathbf{-0.694}$	Sen's estimator of trend.
6	$var(S) = \mathbf{267.667}$	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{½}) / 2$ $= (\mathbf{78} - \mathbf{2.326} * \mathbf{267.667}^{½}) / 2$ $= \mathbf{19.973}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \mathbf{-3.969}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.8**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **8.9**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-10
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-11
Normal Control Limit

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{1277.7} / \mathbf{13}$ $= \mathbf{98.285}$	Compute background mean.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$ $= ((\mathbf{127078.35} - \mathbf{1.63}\text{x}\mathbf{10^6}/\mathbf{13}) / (\mathbf{13}-1))^{½}$ $= \mathbf{11.181}$	Compute background sd.
3	$SCL = \overline{\mathbf{X}} + \mathbf{F} * \mathbf{S}$ $= \mathbf{98.285} + \mathbf{6.5} * \mathbf{11.181}$ $= \mathbf{170.959}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{13} * (\mathbf{13}-1) / 2$ $= \mathbf{78}$	Number of sample pairs during trend detection period.
5	$S = \mathbf{-3.334}$	Sen's estimator of trend.
6	$var(S) = \mathbf{268.667}$	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{½}) / 2$ $= (\mathbf{78} - \mathbf{2.326} * \mathbf{268.667}^{½}) / 2$ $= \mathbf{19.937}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1 th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \mathbf{-7.608}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.3**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-11
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-11
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **207.5** / **11** = **18.864**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))^{½} = ((**4461.57** - **43056.25**/**11**) / (**11**-1))^{½} = **7.398**	Compute background sd.
3	SCL = $\bar{X}$ + **F** * **S** = **18.864** + **6.5** * **7.398** = **66.953**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
5	S = **0.0**	Sen's estimator of trend.
6	var(S) = **136.667**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z$_{.99}$** * **var(S)**^{½}) / 2 = (**55** - **2.326** * **136.667**^{½}) / 2 = **13.904**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-3.863**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X)	Compute nonparametric prediction limit as median reporting limit in background.
	= **4.0**	
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-12
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute background mean.
	= **5546.0** / **13**	
	= **426.615**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$	Compute background sd.
	$= ((\mathbf{2.55}\text{x}\mathbf{10^6} - \mathbf{3.08}\text{x}\mathbf{10^7}/\mathbf{13}) / (\mathbf{13}-1))^{½}$	
	= **124.871**	
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S**	Compute combined Shewhart-CUSUM normal control limit.
	= **426.615** + **6.5** * **124.871**	
	= **1238.277**	
4	N' = **N** * (**N**-1) / 2	Number of sample pairs during trend detection period.
	= **13** * (**13**-1) / 2	
	= **78**	
5	S = **19.756**	Sen's estimator of trend.
6	var(S) = **268.667**	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{½}) / 2$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1 th largest slope estimate. When M_1 is not an integer, interpolation is used.
	$= (\mathbf{78} - \mathbf{2.326} * \mathbf{268.667}^{½}) / 2$	
	= **19.937**	
8	LCL(S) = **-40.213**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-12
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{26.6} / \textbf{12}$ $= \textbf{2.217}$	Compute background mean.
2	$S = ((\textbf{sum[X}^{\textbf{2}}\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{½}$ $= ((\textbf{90.54} - \textbf{707.56}/\textbf{12}) / (\textbf{12}-1))^{½}$ $= \textbf{1.694}$	Compute background sd.
3	$SCL = \bar{\textbf{X}} + \textbf{F} * \textbf{S}$ $= \textbf{2.217} + \textbf{6.5} * \textbf{1.694}$ $= \textbf{13.23}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \textbf{N} * (\textbf{N}-1) / 2$ $= \textbf{12} * (\textbf{12}-1) / 2$ $= \textbf{66}$	Number of sample pairs during trend detection period.
5	$S = \textbf{0.099}$	Sen's estimator of trend.
6	$var(S) = \textbf{211.667}$	Variance estimate for slope.
7	$M_1(S) = (\textbf{N'} - \textbf{Z}_{.99} * \textbf{var(S)}^{½}) / 2$ $= (\textbf{66} - \textbf{2.326} * \textbf{211.667}^{½}) / 2$ $= \textbf{16.08}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \textbf{-0.587}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-12
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **71.8** / **13** = **5.523**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**430.74** - **5155.24**/**13**) / (**13**-1))$^{1/2}$ = **1.688**	Compute background sd.
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S** = **5.523** + **6.5** * **1.688** = **16.494**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **-0.239**	Sen's estimator of trend.
6	var(S) = **265.0**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**$^{1/2}$) / 2 = (**78** - **2.326** * **265.0**$^{1/2}$) / 2 = **20.068**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-1.103**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-12
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-13
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **269.9** / **13** = **20.762**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))^{½} = ((**6154.89** - **72846.01**/**13**) / (**13**-1))^{½} = **6.778**	Compute background sd.
3	SCL = $\bar{X}$ + **F** * **S** = **20.762** + **6.5** * **6.778** = **64.821**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **2.528**	Sen's estimator of trend.
6	var(S) = **268.667**	Variance estimate for slope.
7	M_1(S) = (**N'** - **$Z_{.99}$** * **var(S)**^{½}) / 2 = (**78** - **2.326** * **268.667**^{½}) / 2 = **19.937**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **0.573**	One-sided lower confidence limit for slope.
9	LCL(S) > 0	**Significant increasing trend.**

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-13
Normal Control Limit

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{33848.0} / \mathbf{13}$ $= \mathbf{2603.692}$	Compute background mean.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{1.03 \times 10^8} - \mathbf{1.15 \times 10^9}/\mathbf{13}) / (\mathbf{13}-1))^{1/2}$ $= \mathbf{1104.888}$	Compute background sd.
3	$SCL = \overline{\mathbf{X}} + \mathbf{F} * \mathbf{S}$ $= \mathbf{2603.692} + \mathbf{6.5} * \mathbf{1104.888}$ $= \mathbf{9785.467}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{13} * (\mathbf{13}-1) / 2$ $= \mathbf{78}$	Number of sample pairs during trend detection period.
5	$S = \mathbf{399.899}$	Sen's estimator of trend.
6	$var(S) = \mathbf{268.667}$	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{1/2}) / 2$ $= (\mathbf{78} - \mathbf{2.326} * \mathbf{268.667}^{1/2}) / 2$ $= \mathbf{19.937}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \mathbf{-169.011}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-13
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{124.6} / \mathbf{13}$ $= \mathbf{9.585}$	Compute background mean.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{1416.74} - \mathbf{15525.16}/\mathbf{13}) / (\mathbf{13}-1))^{1/2}$ $= \mathbf{4.306}$	Compute background sd.
3	$SCL = \bar{\mathbf{X}} + \mathbf{F} * \mathbf{S}$ $= \mathbf{9.585} + \mathbf{6.5} * \mathbf{4.306}$ $= \mathbf{37.573}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{13} * (\mathbf{13}-1) / 2$ $= \mathbf{78}$	Number of sample pairs during trend detection period.
5	$S = \mathbf{0.107}$	Sen's estimator of trend.
6	$var(S) = \mathbf{268.667}$	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{1/2}) / 2$ $= (\mathbf{78} - \mathbf{2.326} * \mathbf{268.667}^{1/2}) / 2$ $= \mathbf{19.937}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1^{th} largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \mathbf{-1.743}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-13
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **100.1** / **13** = **7.7**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1206.03** - **10020.01**/**13**) / (**13**-1))^{½} = **6.023**	Compute background sd.
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S** = **7.7** + **6.5** * **6.023** = **46.847**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **0.253**	Sen's estimator of trend.
6	var(S) = **263.0**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**^{½}) / 2 = (**78** - **2.326** * **263.0**^{½}) / 2 = **20.139**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-0.388**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-13
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-14
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{347.6} / \textbf{13}$ $= \textbf{26.738}$	Compute background mean.
2	$S = ((\textbf{sum[X}^{\textbf{2}}\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{26143.68} - \textbf{120825.76}/\textbf{13}) / (\textbf{13}-1))^{1/2}$ $= \textbf{37.472}$	Compute background sd.
3	$SCL = \bar{\textbf{X}} + \textbf{F} * \textbf{S}$ $= \textbf{26.738} + \textbf{6.5} * \textbf{37.472}$ $= \textbf{270.303}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \textbf{N} * (\textbf{N}-1) / 2$ $= \textbf{13} * (\textbf{13}-1) / 2$ $= \textbf{78}$	Number of sample pairs during trend detection period.
5	$S = \textbf{8.006}$	Sen's estimator of trend.
6	$var(S) = \textbf{252.0}$	Variance estimate for slope.
7	$M_1(S) = (\textbf{N'} - \textbf{Z}_{.99} * \textbf{var(S)}^{1/2}) / 2$ $= (\textbf{78} - \textbf{2.326} * \textbf{252.0}^{1/2}) / 2$ $= \textbf{20.538}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \textbf{0.0}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-14
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **13316.0** / **13** = **1024.308**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.68**x**10^7** - **1.77**x**10^8**/**13**) / (**13**-1))^{½} = **515.717**	Compute background sd.
3	SCL = $\bar{\mathbf{X}}$ + **F** * **S** = **1024.308** + **6.5** * **515.717** = **4376.471**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **188.345**	Sen's estimator of trend.
6	var(S) = **268.667**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**^{½}) / 2 = (**78** - **2.326** * **268.667**^{½}) / 2 = **19.937**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **75.323**	One-sided lower confidence limit for slope.
9	LCL(S) > 0	**Significant increasing trend.**

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-14
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{15.7} / \mathbf{13}$ $= \mathbf{1.208}$	Compute background mean.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{27.25} - \mathbf{246.49}/\mathbf{13}) / (\mathbf{13}-1))^{1/2}$ $= \mathbf{0.831}$	Compute background sd.
3	$SCL = \bar{\mathbf{X}} + \mathbf{F} * \mathbf{S}$ $= \mathbf{1.208} + \mathbf{6.5} * \mathbf{0.831}$ $= \mathbf{6.61}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \mathbf{N} * (\mathbf{N}-1) / 2$ $= \mathbf{13} * (\mathbf{13}-1) / 2$ $= \mathbf{78}$	Number of sample pairs during trend detection period.
5	$S = \mathbf{-0.13}$	Sen's estimator of trend.
6	$var(S) = \mathbf{266.667}$	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{1/2}) / 2$ $= (\mathbf{78} - \mathbf{2.326} * \mathbf{266.667}^{1/2}) / 2$ $= \mathbf{20.008}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \mathbf{-0.403}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **5.7**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-14
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-15
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute background mean.
	= **128.8** / **15**	
	= **8.587**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½}	Compute background sd.
	= ((**1879.3** - **16589.44/15**) / (**15**-1))^{½}	
	= **7.432**	
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S**	Compute combined Shewhart-CUSUM normal control limit.
	= **8.587** + **6.5** * **7.432**	
	= **56.896**	
4	N' = **N** * (**N**-1) / 2	Number of sample pairs during trend detection period.
	= **15** * (**15**-1) / 2	
	= **105**	
5	S = **0.0**	Sen's estimator of trend.
6	var(S) = **379.0**	Variance estimate for slope.
7	M_1(S) = (**N' - $Z_{.99}$** * **var(S)**^{½}) / 2	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
	= (**105** - **2.326** * **379.0**^{½}) / 2	
	= **29.859**	
8	LCL(S) = **-0.326**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-15
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **4569.0** / **15** = **304.6**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.50x10^6** - **2.09x10^7**/**15**) / (**15**-1))^{½} = **86.522**	Compute background sd.
3	SCL = $\bar{X}$ + **F** * **S** = **304.6** + **6.5** * **86.522** = **866.995**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
5	S = **-5.6**	Sen's estimator of trend.
6	var(S) = **407.333**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**^{½}) / 2 = (**105** - **2.326** * **407.333**^{½}) / 2 = **29.028**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1^{th} largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-36.396**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.8**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-15
Normal Control Limit

Step	Equation	Description
1	$\bar{X} = \textbf{sum[X]} / \textbf{N}$ $= \textbf{128.0} / \textbf{15}$ $= \textbf{8.533}$	Compute background mean.
2	$S = ((\textbf{sum[X}^{\textbf{2}}\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{1/2}$ $= ((\textbf{1411.12} - \textbf{16384.0/15}) / (\textbf{15}-1))^{1/2}$ $= \textbf{4.772}$	Compute background sd.
3	$SCL = \bar{\textbf{X}} + \textbf{F} * \textbf{S}$ $= \textbf{8.533} + \textbf{6.5} * \textbf{4.772}$ $= \textbf{39.554}$	Compute combined Shewhart-CUSUM normal control limit.
4	$N' = \textbf{N} * (\textbf{N}-1) / 2$ $= \textbf{15} * (\textbf{15}-1) / 2$ $= \textbf{105}$	Number of sample pairs during trend detection period.
5	$S = \textbf{-0.978}$	Sen's estimator of trend.
6	$var(S) = \textbf{407.333}$	Variance estimate for slope.
7	$M_1(S) = (\textbf{N'} - \textbf{Z}_{.99} * \textbf{var(S)}^{1/2}) / 2$ $= (\textbf{105} - \textbf{2.326} * \textbf{407.333}^{1/2}) / 2$ $= \textbf{29.028}$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	$LCL(S) = \textbf{-2.212}$	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X)	Compute nonparametric prediction limit as median reporting limit in background.
	= **4.0**	
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-15
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute background mean.
	= **143.1** / **14**	
	= **10.221**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute background sd.
	$= ((\mathbf{1570.97} - \mathbf{20477.61}/\mathbf{14}) / (\mathbf{14}-1))^{1/2}$	
	= **2.886**	
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S**	Compute combined Shewhart-CUSUM normal control limit.
	= **10.221** + **6.5** * **2.886**	
	= **28.981**	
4	N' = **N** * (**N**-1) / 2	Number of sample pairs during trend detection period.
	= **14** * (**14**-1) / 2	
	= **91**	
5	S = **0.0**	Sen's estimator of trend.
6	var(S) = **329.0**	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{1/2}) / 2$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
	$= (\mathbf{91} - \mathbf{2.326} * \mathbf{329.0}^{1/2}) / 2$	
	= **24.405**	
8	LCL(S) = **-1.178**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-15
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **10.2**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Antimony, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Arsenic, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Barium, total (ug/L) at MW-17
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **3282.0** / **13** = **252.462**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**914330.0** - **1.08**x**10^7**/**13**) / (**13**-1))^{½} = **84.534**	Compute background sd.
3	SCL = $\bar{X}$ + **F** * **S** = **252.462** + **6.5** * **84.534** = **801.93**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **0.6**	Sen's estimator of trend.
6	var(S) = **268.667**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**^{½}) / 2 = (**78** - **2.326** * **268.667**^{½}) / 2 = **19.937**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-50.252**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Beryllium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cadmium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.8**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Chromium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **8.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Cobalt, total (ug/L) at MW-17
Normal Control Limit

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **57.3** / **13** = **4.408**	Compute background mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**458.99** - **3283.29**/**13**) / (**13**-1))$^{1/2}$ = **4.148**	Compute background sd.
3	SCL = $\bar{\mathbf{X}}$ + **F** * **S** = **4.408** + **6.5** * **4.148** = **31.367**	Compute combined Shewhart-CUSUM normal control limit.
4	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
5	S = **-0.108**	Sen's estimator of trend.
6	var(S) = **264.0**	Variance estimate for slope.
7	M_1(S) = (**N'** - **Z**$_{.99}$ * **var(S)**$^{1/2}$) / 2 = (**78** - **2.326** * **264.0**$^{1/2}$) / 2 = **20.103**	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1th largest slope estimate. When M_1 is not an integer, interpolation is used.
8	LCL(S) = **-2.236**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Copper, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **8.1**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Lead, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X)	Compute nonparametric prediction limit as median reporting limit in background.
	= **4.0**	
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Nickel, total (ug/L) at MW-17
Normal Control Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute background mean.
	= **150.7** / **13**	
	= **11.592**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$	Compute background sd.
	$= ((\mathbf{2913.75} - \mathbf{22710.49}/\mathbf{13}) / (\mathbf{13}-1))^{½}$	
	= **9.861**	
3	SCL = $\overline{\mathbf{X}}$ + **F** * **S**	Compute combined Shewhart-CUSUM normal control limit.
	= **11.592** + **6.5** * **9.861**	
	= **75.687**	
4	N' = **N** * (**N**-1) / 2	Number of sample pairs during trend detection period.
	= **13** * (**13**-1) / 2	
	= **78**	
5	S = **-0.35**	Sen's estimator of trend.
6	var(S) = **260.0**	Variance estimate for slope.
7	$M_1(S) = (\mathbf{N'} - \mathbf{Z}_{.99} * \mathbf{var(S)}^{½}) / 2$	Ordinal position for one-sided lower confidence limit for slope. The LCL is the M_1 th largest slope estimate. When M_1 is not an integer, interpolation is used.
	$= (\mathbf{78} - \mathbf{2.326} * \mathbf{260.0}^{½}) / 2$	
	= **20.247**	
8	LCL(S) = **-5.248**	One-sided lower confidence limit for slope.

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Selenium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Silver, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **4.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Thallium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **2.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Vanadium, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **20.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 2 - Intra-Well Control Charts / Prediction Limits
Zinc, total (ug/L) at MW-17
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Attachment F

Assessment Statistics for Trace Metals

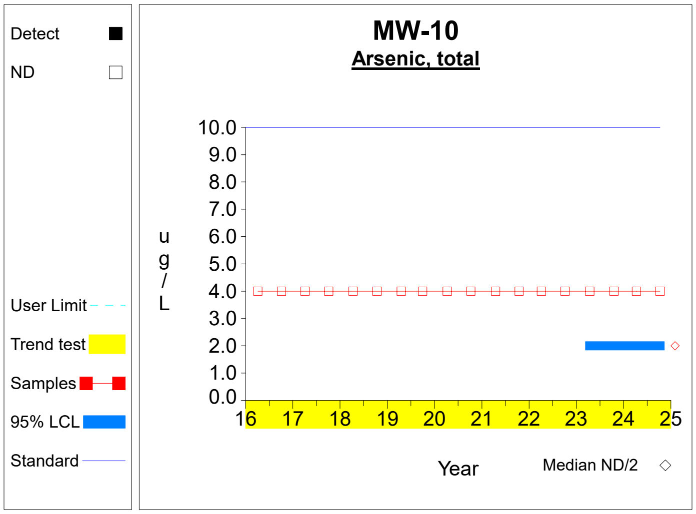
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

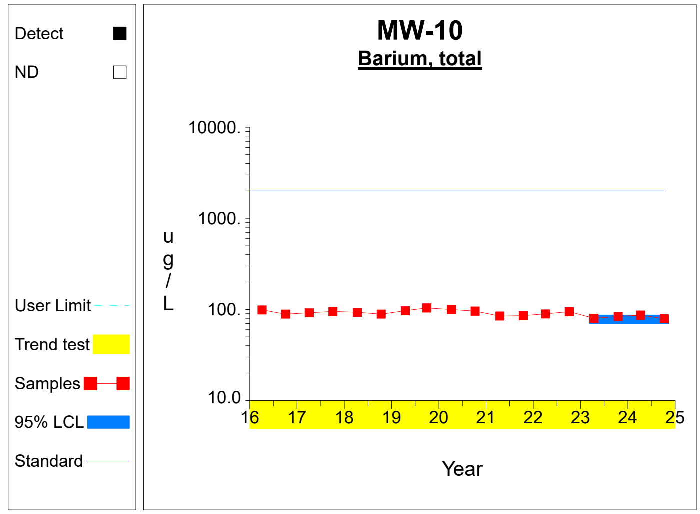
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	
Arsenic, total	ug/L	MW-10	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-10	4	82.400	3.537	1.176	78.239	86.561	2000.000	
Cobalt, total	ug/L	MW-10	4	0.200	0.000	1.176	0.200	0.200	2.100	
Nickel, total	ug/L	MW-10	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-11	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-11	4	91.300	6.775	1.176	83.331	99.269	2000.000	
Cobalt, total	ug/L	MW-11	4	0.200	0.000	1.176	0.200	0.200	2.100	
Nickel, total	ug/L	MW-11	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-12	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-12	4	324.000	28.308	1.176	290.702	357.298	2000.000	
Cobalt, total	ug/L	MW-12	4	1.225	0.096	1.176	1.112	1.338	2.100	
Nickel, total	ug/L	MW-12	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-13	4	11.075	3.144	1.176	7.377	14.773	10.000	
Barium, total	ug/L	MW-13	4	575.500	184.341	1.176	358.662	792.338	2000.000	
Cobalt, total	ug/L	MW-13	4	7.025	1.318	1.176	5.475	8.575	2.100	**
Nickel, total	ug/L	MW-13	4	6.325	2.048	1.176	3.916	8.734	100.000	
Arsenic, total	ug/L	MW-14	4	4.825	3.262	1.176	0.988	8.662	10.000	
Barium, total	ug/L	MW-14	4	749.000	45.833	1.176	695.087	802.913	2000.000	
Cobalt, total	ug/L	MW-14	4	0.350	0.173	1.176	0.146	0.554	2.100	
Nickel, total	ug/L	MW-14	4	2.000	0.000	1.176	2.000	2.000	100.000	
Arsenic, total	ug/L	MW-15	4	4.750	5.500	1.176	0.000	11.220	10.000	
Barium, total	ug/L	MW-15	4	282.750	68.883	1.176	201.723	363.777	2000.000	
Cobalt, total	ug/L	MW-15	4	5.125	2.330	1.176	2.384	7.866	2.100	**
Nickel, total	ug/L	MW-15	4	10.000	0.804	1.176	9.054	10.946	100.000	
Arsenic, total	ug/L	MW-17	4	2.000	0.000	1.176	2.000	2.000	10.000	
Barium, total	ug/L	MW-17	4	198.500	10.909	1.176	185.668	211.332	2000.000	
Cobalt, total	ug/L	MW-17	4	2.150	2.275	1.176	0.000	4.826	2.100	
Nickel, total	ug/L	MW-17	4	16.075	7.361	1.176	7.416	24.734	100.000	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

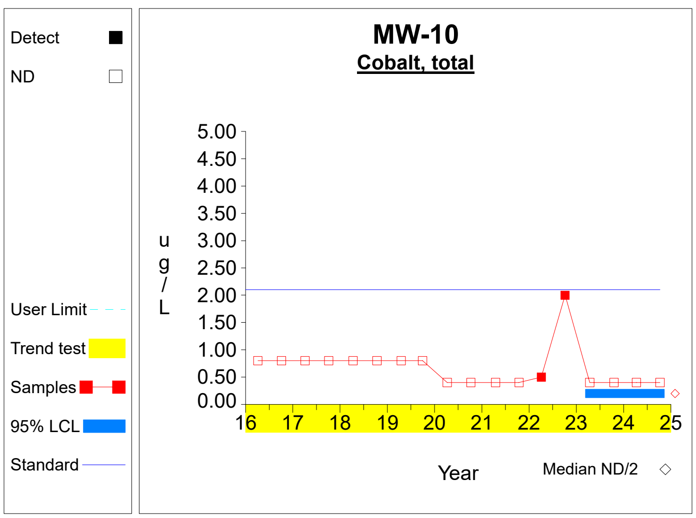
Confidence Limits (Assessment)



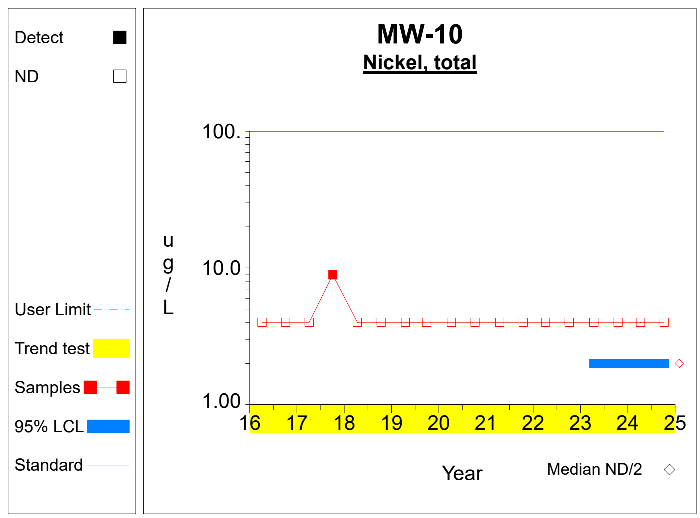
Graph 1



Graph 2

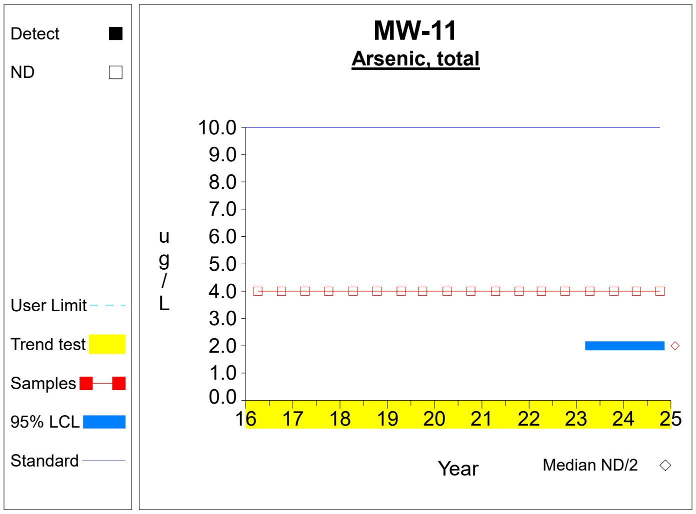


Graph 3

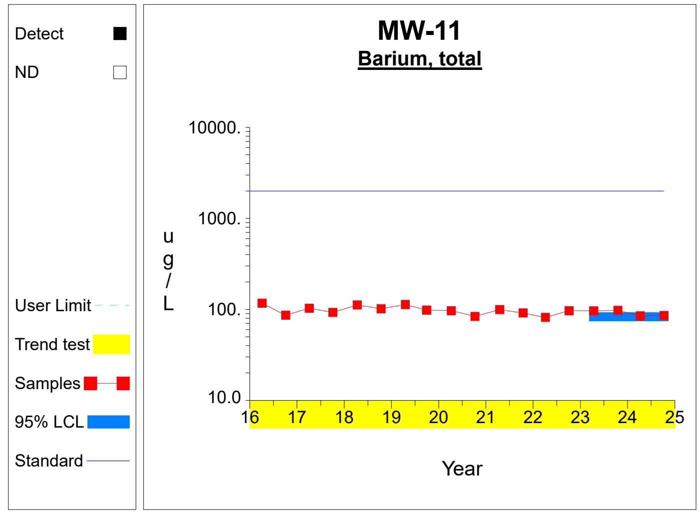


Graph 4

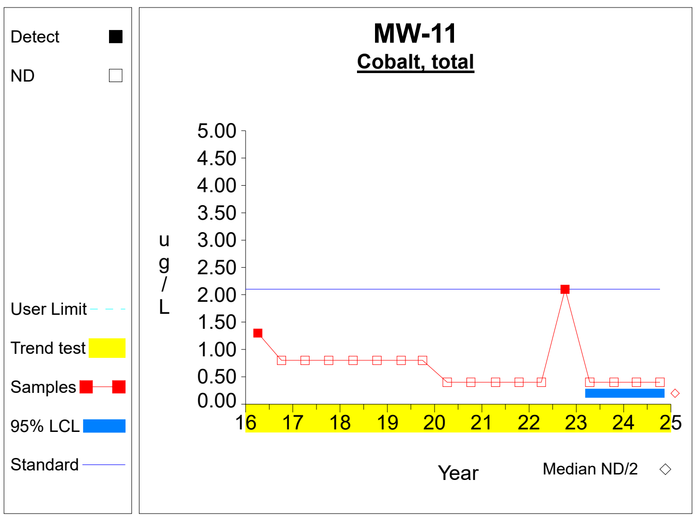
Confidence Limits (Assessment)



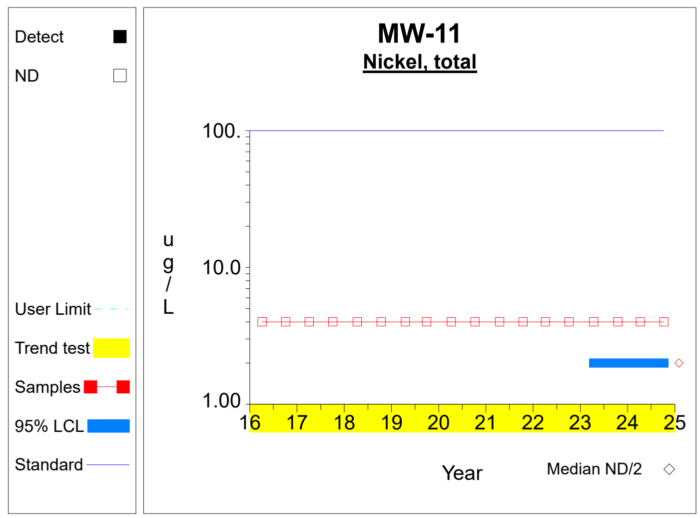
Graph 5



Graph 6

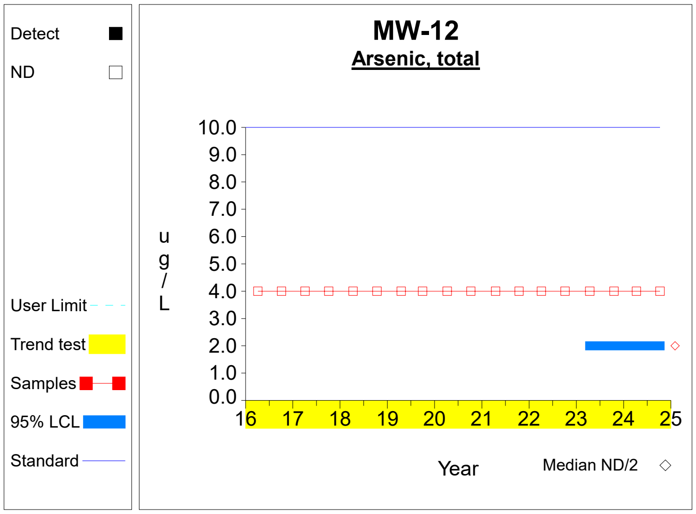


Graph 7

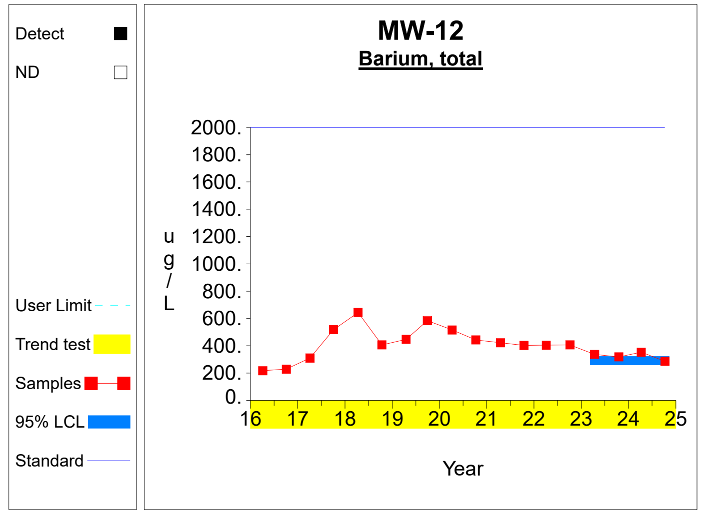


Graph 8

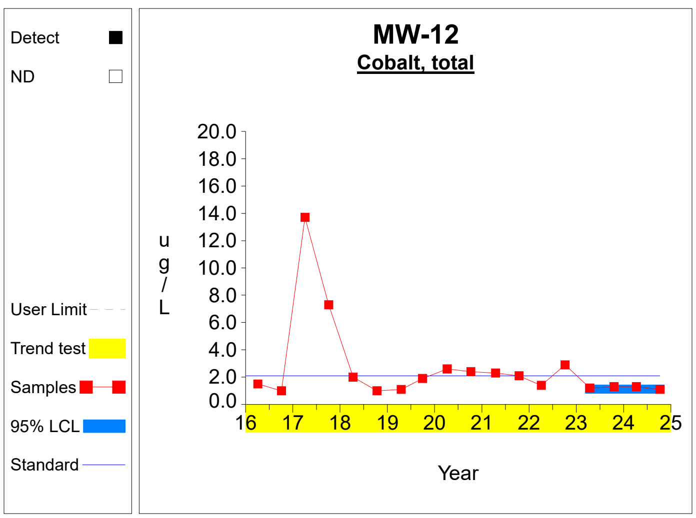
Confidence Limits (Assessment)



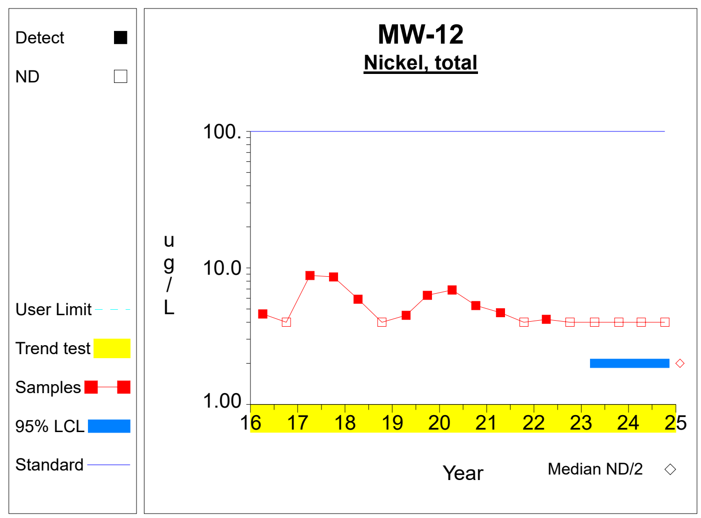
Graph 9



Graph 10

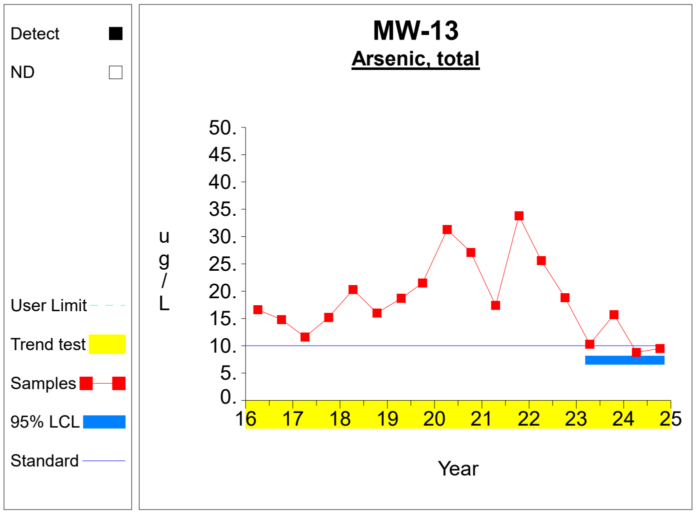


Graph 11

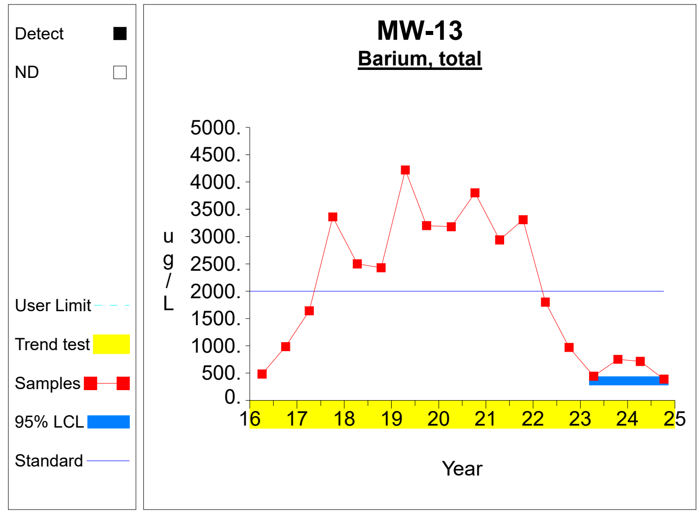


Graph 12

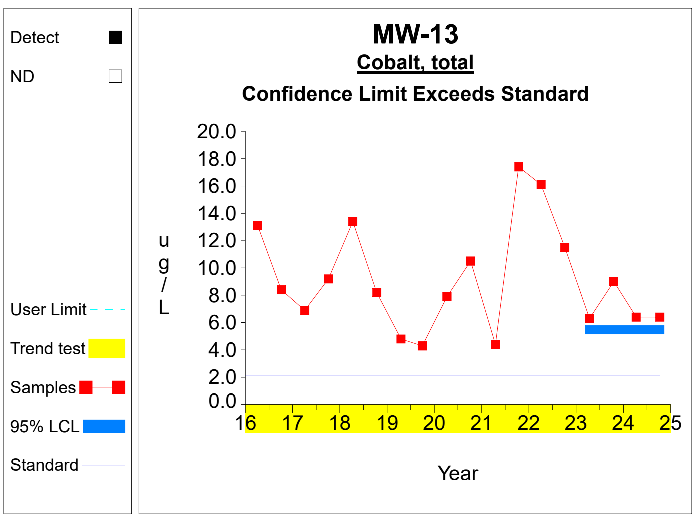
Confidence Limits (Assessment)



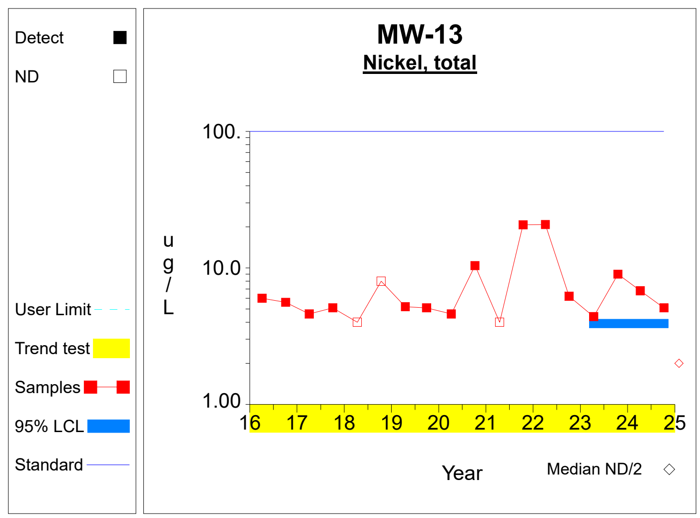
Graph 13



Graph 14

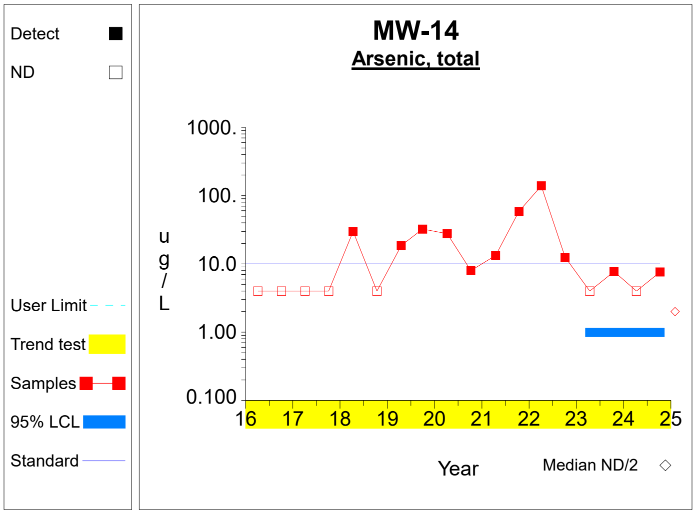


Graph 15

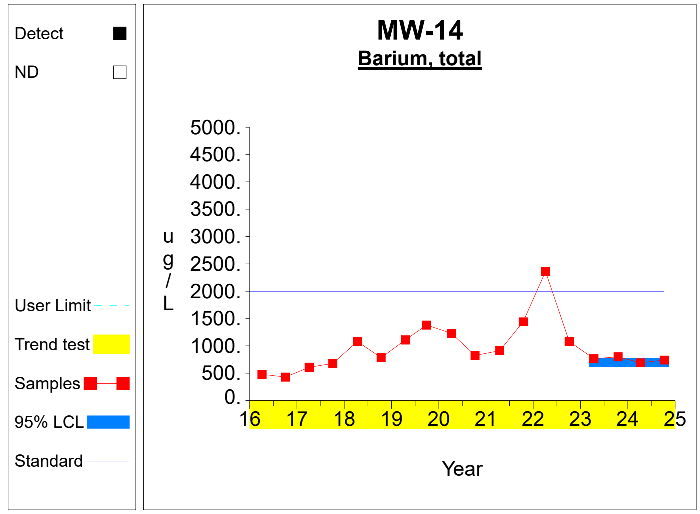


Graph 16

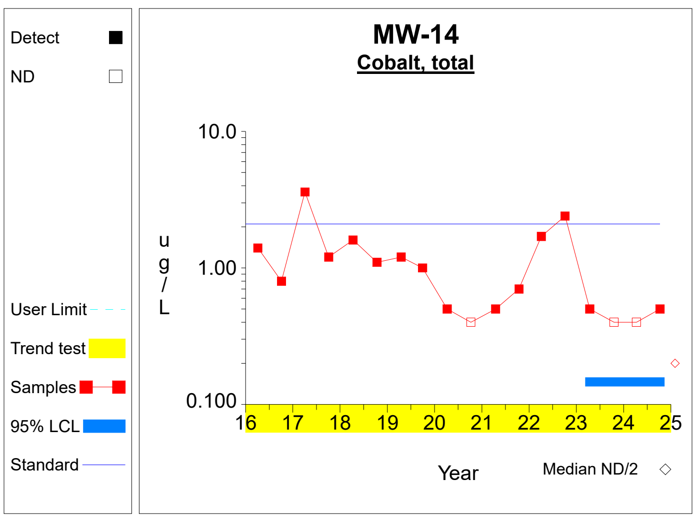
Confidence Limits (Assessment)



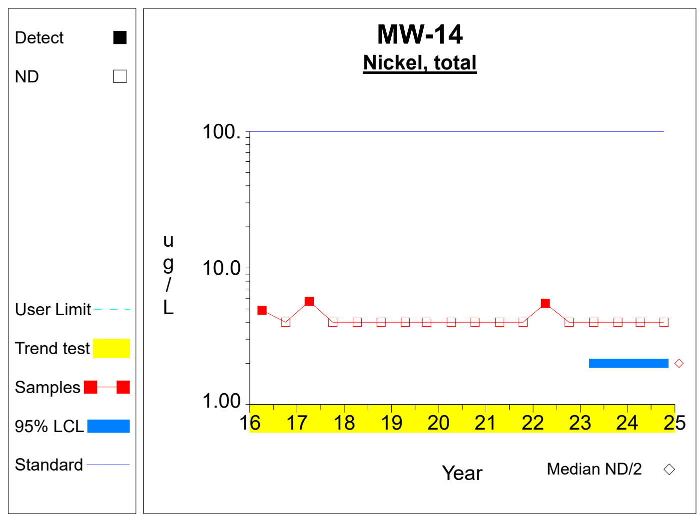
Graph 17



Graph 18

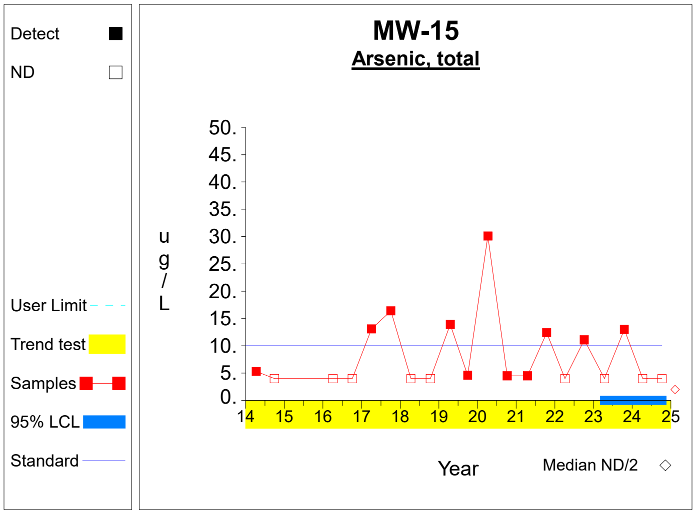


Graph 19

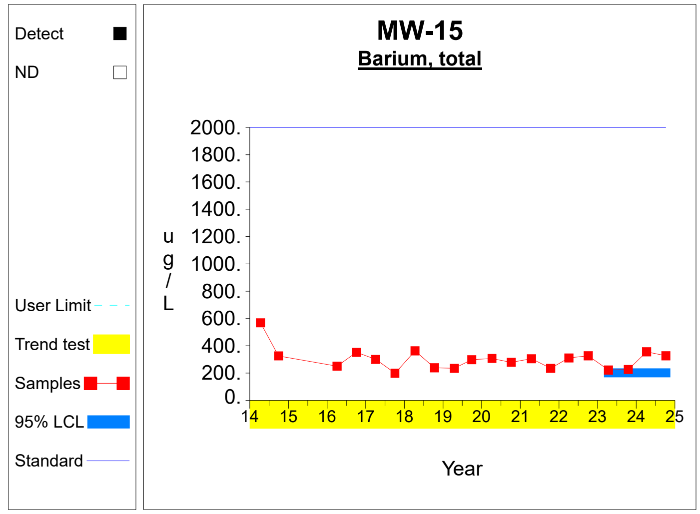


Graph 20

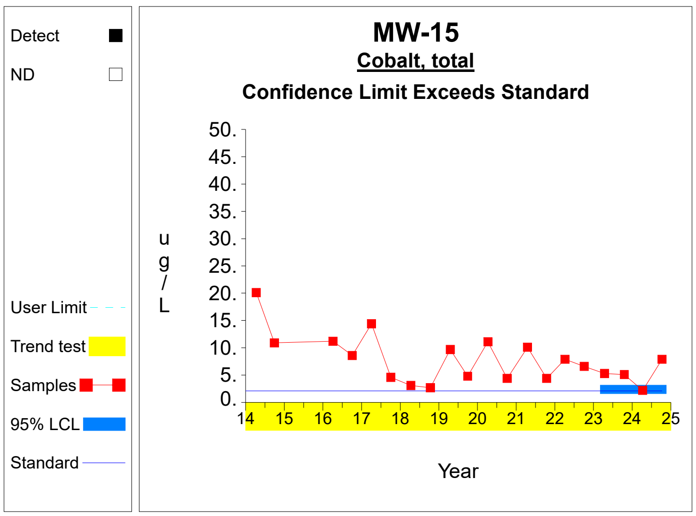
Confidence Limits (Assessment)



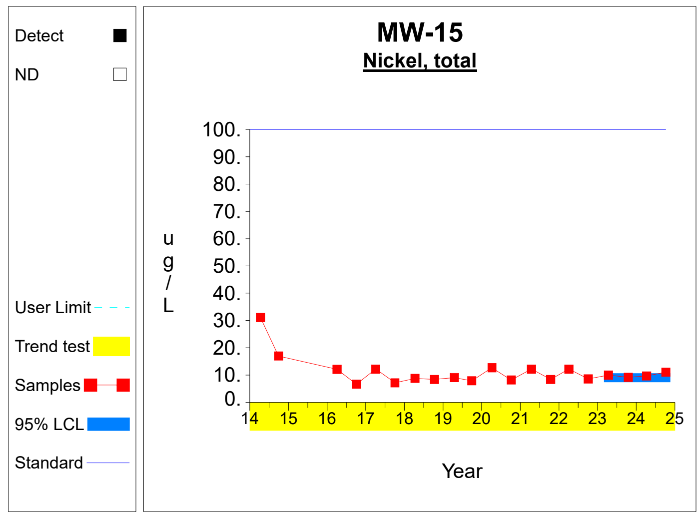
Graph 21



Graph 22

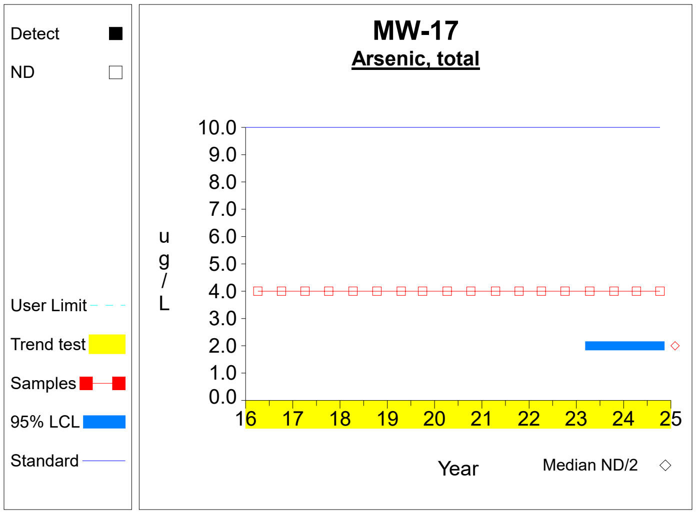


Graph 23

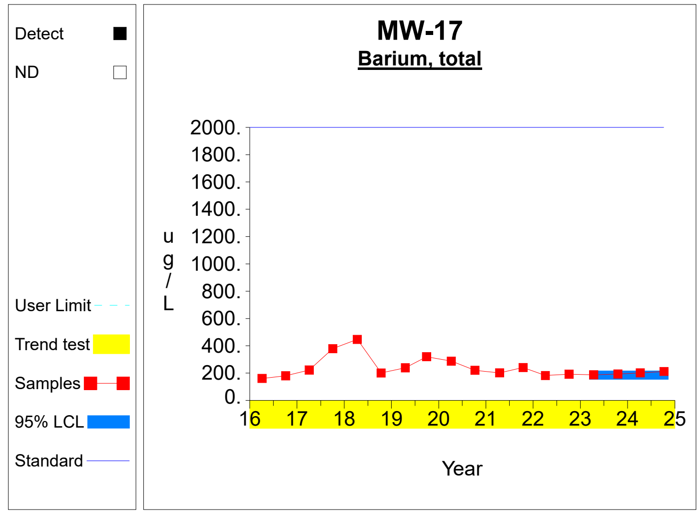


Graph 24

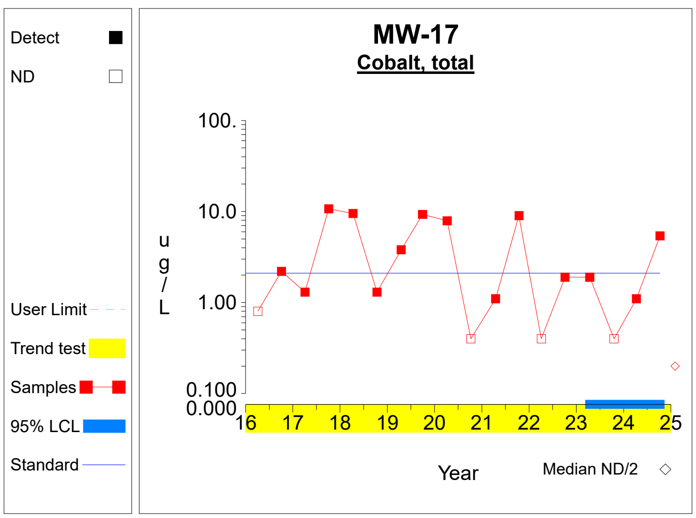
Confidence Limits (Assessment)



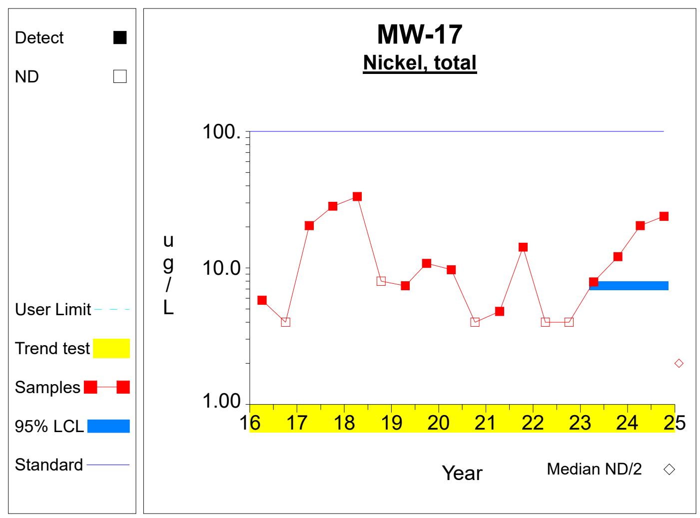
Graph 25



Graph 26



Graph 27



Graph 28

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	= **0.0**	
3	$LCL = \mathbf{\overline{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	
4	$UCL = \mathbf{\overline{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **329.6** / **4**	
	= **82.4**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{27196.58} - \mathbf{108636.16/4}) / (\mathbf{4}-1))^{1/2}$	
	= **3.537**	
3	$LCL = \mathbf{\overline{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{82.4} - \mathbf{2.353} * \mathbf{3.537/4}^{1/2}$	
	= **78.239**	
4	$UCL = \mathbf{\overline{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{82.4} + \mathbf{2.353} * \mathbf{3.537/4}^{1/2}$	
	= **86.561**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **0.8 / 4**	
	= **0.2**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{0.16} - \mathbf{0.64/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{2.11 \times 10^{-9}}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{0.2} - \mathbf{2.353} * \mathbf{2.11 \times 10^{-9}/4}^{1/2}$	
	= **0.2**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{0.2} + \mathbf{2.353} * \mathbf{2.11 \times 10^{-9}/4}^{1/2}$	
	= **0.2**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-10

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **8.0 / 4**	
	= **2.0**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	= **0.0**	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0} - \mathbf{64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	= **0.0**	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} - \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0} + \mathbf{2.353} * \mathbf{0.0/4}^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **365.2** / **4**	
	= **91.3**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{33480.46} - \mathbf{133371.04/4}) / (\mathbf{4}-1))^{1/2}$	
	= **6.775**	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{91.3} - \mathbf{2.353} * \mathbf{6.775/4}^{1/2}$	
	= **83.331**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{91.3} + \mathbf{2.353} * \mathbf{6.775/4}^{1/2}$	
	= **99.269**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **0.8** / **4**	
	= **0.2**	
2	S = ((**sum[X^2] - sum[X]^2**/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**0.16** - **0.64**/**4**) / (**4**-1))$^{1/2}$	
	= **2.11x10^{-9}**	
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **0.2** - **2.353** * **2.11x10^{-9}**/**4**$^{1/2}$	
	= **0.2**	
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **0.2** + **2.353** * **2.11x10^{-9}**/**4**$^{1/2}$	
	= **0.2**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	S = ((**sum[X^2] - sum[X]^2**/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**16.0** - **64.0**/**4**) / (**4**-1))$^{1/2}$	
	= **0.0**	
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.0** - **2.353** * **0.0**/**4**$^{1/2}$	
	= **2.0**	
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.0** + **2.353** * **0.0**/**4**$^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **8.0 / 4**	
	= **2.0**	
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{16.0 - 64.0/4}) / (\mathbf{4}-1))^{1/2}$	
	= **0.0**	
3	$LCL = \mathbf{\bar{X} - tS/N^{1/2}}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0 - 2.353 * 0.0/4^{1/2}}$	
	= **2.0**	
4	$UCL = \mathbf{\bar{X} + tS/N^{1/2}}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{2.0 + 2.353 * 0.0/4^{1/2}}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-12

Step	Equation	Description
1	$\bar{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **1296.0 / 4**	
	= **324.0**	
2	$S = ((\mathbf{sum[X^2] - sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{422308.0 - 1.68x10^6/4}) / (\mathbf{4}-1))^{1/2}$	
	= **28.308**	
3	$LCL = \mathbf{\bar{X} - tS/N^{1/2}}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{324.0 - 2.353 * 28.308/4^{1/2}}$	
	= **290.702**	
4	$UCL = \mathbf{\bar{X} + tS/N^{1/2}}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{324.0 + 2.353 * 28.308/4^{1/2}}$	
	= **357.298**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-12

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **4.9** / **4**	
	= **1.225**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½}	Compute sd of the last 4 measurements.
	= ((**6.03 - 24.01/4**) / (**4**-1))^{½}	
	= **0.096**	
3	LCL = $\overline{X}$ **- tS/N**^{½}	Compute lower confidence limit for the mean of the last 4 measurements.
	= **1.225 - 2.353 * 0.096/4**^{½}	
	= **1.112**	
4	UCL = $\overline{X}$ **+ tS/N**^{½}	Compute upper confidence limit for the mean of the last 4 measurements.
	= **1.225 + 2.353 * 0.096/4**^{½}	
	= **1.338**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-12

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½}	Compute sd of the last 4 measurements.
	= ((**16.0 - 64.0/4**) / (**4**-1))^{½}	
	= **0.0**	
3	LCL = $\overline{X}$ **- tS/N**^{½}	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.0 - 2.353 * 0.0/4**^{½}	
	= **2.0**	
4	UCL = $\overline{X}$ **+ tS/N**^{½}	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.0 + 2.353 * 0.0/4**^{½}	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **44.3 / 4**	
	= **11.075**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{520.27} - \mathbf{1962.49/4}) / (\mathbf{4}-1))^{1/2}$	
	= **3.144**	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{11.075 - 2.353 * 3.144/4}^{1/2}$	
	= **7.377**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{11.075 + 2.353 * 3.144/4}^{1/2}$	
	= **14.773**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N**	Compute the mean of the last 4 measurements.
	= **2302.0 / 4**	
	= **575.5**	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]^2/N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{1.43}\times\mathbf{10^6} - \mathbf{5.30}\times\mathbf{10^6/4}) / (\mathbf{4}-1))^{1/2}$	
	= **184.341**	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{575.5 - 2.353 * 184.341/4}^{1/2}$	
	= **358.662**	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{575.5 + 2.353 * 184.341/4}^{1/2}$	
	= **792.338**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **28.1** / **4**	
	= **7.025**	
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**202.61** - **789.61**/**4**) / (**4**-1))$^{1/2}$	
	= **1.318**	
3	LCL = $\overline{X}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **7.025** - **2.353** * **1.318**/**4**$^{1/2}$	
	= **5.475**	
4	UCL = $\overline{X}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **7.025** + **2.353** * **1.318**/**4**$^{1/2}$	
	= **8.575**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-13

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **25.3** / **4**	
	= **6.325**	
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**172.61** - **640.09**/**4**) / (**4**-1))$^{1/2}$	
	= **2.048**	
3	LCL = $\overline{X}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **6.325** - **2.353** * **2.048**/**4**$^{1/2}$	
	= **3.916**	
4	UCL = $\overline{X}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **6.325** + **2.353** * **2.048**/**4**$^{1/2}$	
	= **8.734**	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{19.3} / \mathbf{4}$	
	$= \mathbf{4.825}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{125.05} - \mathbf{372.49/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{3.262}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{4.825 - 2.353 * 3.262/4}^{1/2}$	
	$= \mathbf{0.988}$	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{4.825 + 2.353 * 3.262/4}^{1/2}$	
	$= \mathbf{8.662}$	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$	Compute the mean of the last 4 measurements.
	$= \mathbf{2996.0} / \mathbf{4}$	
	$= \mathbf{749.0}$	
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$	Compute sd of the last 4 measurements.
	$= ((\mathbf{2.25}\times\mathbf{10^6} - \mathbf{8.98}\times\mathbf{10^6/4}) / (\mathbf{4}-1))^{1/2}$	
	$= \mathbf{45.833}$	
3	$LCL = \overline{\mathbf{X}} - \mathbf{tS/N}^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \mathbf{749.0 - 2.353 * 45.833/4}^{1/2}$	
	$= \mathbf{695.087}$	
4	$UCL = \overline{\mathbf{X}} + \mathbf{tS/N}^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \mathbf{749.0 + 2.353 * 45.833/4}^{1/2}$	
	$= \mathbf{802.913}$	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X} = \textbf{sum[X]} / \textbf{N}$	Compute the mean of the last 4 measurements.
	$= \textbf{1.4} / \textbf{4}$	
	$= \textbf{0.35}$	
2	$S = ((\textbf{sum[X}^2\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{½}$	Compute sd of the last 4 measurements.
	$= ((\textbf{0.58} - \textbf{1.96/4}) / (\textbf{4}-1))^{½}$	
	$= \textbf{0.173}$	
3	$LCL = \overline{\textbf{X}} - \textbf{tS/N}^{½}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \textbf{0.35 - 2.353 * 0.173/4}^{½}$	
	$= \textbf{0.146}$	
4	$UCL = \overline{\textbf{X}} + \textbf{tS/N}^{½}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \textbf{0.35 + 2.353 * 0.173/4}^{½}$	
	$= \textbf{0.554}$	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X} = \textbf{sum[X]} / \textbf{N}$	Compute the mean of the last 4 measurements.
	$= \textbf{8.0} / \textbf{4}$	
	$= \textbf{2.0}$	
2	$S = ((\textbf{sum[X}^2\textbf{]} - \textbf{sum[X]}^2/\textbf{N}) / (\textbf{N}-1))^{½}$	Compute sd of the last 4 measurements.
	$= ((\textbf{16.0} - \textbf{64.0/4}) / (\textbf{4}-1))^{½}$	
	$= \textbf{0.0}$	
3	$LCL = \overline{\textbf{X}} - \textbf{tS/N}^{½}$	Compute lower confidence limit for the mean of the last 4 measurements.
	$= \textbf{2.0 - 2.353 * 0.0/4}^{½}$	
	$= \textbf{2.0}$	
4	$UCL = \overline{\textbf{X}} + \textbf{tS/N}^{½}$	Compute upper confidence limit for the mean of the last 4 measurements.
	$= \textbf{2.0 + 2.353 * 0.0/4}^{½}$	
	$= \textbf{2.0}$	

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **19.0** / **4**	
	= **4.75**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**181.0 - 361.0/4**) / (**4**-1))$^{1/2}$	
	= **5.5**	
3	LCL = **$\overline{X}$ - tS/N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **4.75 - 2.353 * 5.5/4**$^{1/2}$	
	= **0.0**	
4	UCL = **$\overline{X}$ + tS/N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **4.75 + 2.353 * 5.5/4**$^{1/2}$	
	= **11.22**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **1131.0** / **4**	
	= **282.75**	
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**334025.0 - 1.28x10^6/4**) / (**4**-1))$^{1/2}$	
	= **68.883**	
3	LCL = **$\overline{X}$ - tS/N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **282.75 - 2.353 * 68.883/4**$^{1/2}$	
	= **201.723**	
4	UCL = **$\overline{X}$ + tS/N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **282.75 + 2.353 * 68.883/4**$^{1/2}$	
	= **363.777**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{20.5} / \mathbf{4}$ $= \mathbf{5.125}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$ $= ((\mathbf{121.35} - \mathbf{420.25/4}) / (\mathbf{4}-1))^{½}$ $= \mathbf{2.33}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{X} - tS/N^{½}$ $= \mathbf{5.125 - 2.353 * 2.33/4}^{½}$ $= \mathbf{2.384}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{X} + tS/N^{½}$ $= \mathbf{5.125 + 2.353 * 2.33/4}^{½}$ $= \mathbf{7.866}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-15

Step	Equation	Description
1	$\overline{X} = \mathbf{sum[X]} / \mathbf{N}$ $= \mathbf{40.0} / \mathbf{4}$ $= \mathbf{10.0}$	Compute the mean of the last 4 measurements.
2	$S = ((\mathbf{sum[X^2]} - \mathbf{sum[X]}^2/\mathbf{N}) / (\mathbf{N}-1))^{½}$ $= ((\mathbf{401.94} - \mathbf{1600.0/4}) / (\mathbf{4}-1))^{½}$ $= \mathbf{0.804}$	Compute sd of the last 4 measurements.
3	$LCL = \overline{X} - tS/N^{½}$ $= \mathbf{10.0 - 2.353 * 0.804/4}^{½}$ $= \mathbf{9.054}$	Compute lower confidence limit for the mean of the last 4 measurements.
4	$UCL = \overline{X} + tS/N^{½}$ $= \mathbf{10.0 + 2.353 * 0.804/4}^{½}$ $= \mathbf{10.946}$	Compute upper confidence limit for the mean of the last 4 measurements.

Worksheet 6 - Assessment Monitoring
Arsenic, total (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.0** / **4**	
	= **2.0**	
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**16.0** - **64.0**/**4**) / (**4**-1))$^{1/2}$	
	= **0.0**	
3	LCL = $\bar{X}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.0** - **2.353** * **0.0**/**4**$^{1/2}$	
	= **2.0**	
4	UCL = $\bar{X}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.0** + **2.353** * **0.0**/**4**$^{1/2}$	
	= **2.0**	

Worksheet 6 - Assessment Monitoring
Barium, total (ug/L) at MW-17

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **794.0** / **4**	
	= **198.5**	
2	S = ((**sum[X^2]** - **sum[X]^2**/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**157966.0** - **630436.0**/**4**) / (**4**-1))$^{1/2}$	
	= **10.909**	
3	LCL = $\bar{X}$ - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **198.5** - **2.353** * **10.909**/**4**$^{1/2}$	
	= **185.668**	
4	UCL = $\bar{X}$ + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **198.5** + **2.353** * **10.909**/**4**$^{1/2}$	
	= **211.332**	

Worksheet 6 - Assessment Monitoring
Cobalt, total (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **8.6** / **4**	
	= **2.15**	
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**34.02** - **73.96**/**4**) / (**4**-1))$^{1/2}$	
	= **2.275**	
3	LCL = **$\overline{X}$** - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **2.15** - **2.353** * **2.275**/**4**$^{1/2}$	
	= **0.0**	
4	UCL = **$\overline{X}$** + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **2.15** + **2.353** * **2.275**/**4**$^{1/2}$	
	= **4.826**	

Worksheet 6 - Assessment Monitoring
Nickel, total (ug/L) at MW-17

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N**	Compute the mean of the last 4 measurements.
	= **64.3** / **4**	
	= **16.075**	
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$	Compute sd of the last 4 measurements.
	= ((**1196.19** - **4134.49**/**4**) / (**4**-1))$^{1/2}$	
	= **7.361**	
3	LCL = **$\overline{X}$** - **tS**/**N**$^{1/2}$	Compute lower confidence limit for the mean of the last 4 measurements.
	= **16.075** - **2.353** * **7.361**/**4**$^{1/2}$	
	= **7.416**	
4	UCL = **$\overline{X}$** + **tS**/**N**$^{1/2}$	Compute upper confidence limit for the mean of the last 4 measurements.
	= **16.075** + **2.353** * **7.361**/**4**$^{1/2}$	
	= **24.734**	

ATTACHMENT D

Ongoing Confidence Limit Evaluation versus GWPS

Well	Date	Compound	Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS (ug/L)
MW-11	10/5/2015	PCE	NT	1.0	---	---	5.0
MW-11	4/4/2016	PCE	<1.0	1.0	---	---	5.0
MW-11	10/4/2016	PCE	**1.4**	1.0	---	---	5.0
MW-11	4/3/2017	PCE	<1.0	1.0	---	---	5.0
MW-11	10/3/2017	PCE	**2.3**	1.0	---	---	5.0
MW-11	4/10/2018	PCE	<1.0	1.0	---	---	5.0
MW-11	10/12/2018	PCE	**3.1**	1.0	0.057	3.143	5.0
MW-11	4/17/2019	PCE	<1.0	1.0	0.057	3.143	5.0
MW-11	9/30/2019	PCE	**2.0**	1.0	0.036	3.014	5.0
MW-11	4/7/2020	PCE	<1.0	1.0	0.036	3.014	5.0
MW-11	10/7/2020	PCE	<1.0	1.0	0.000	1.757	5.0
MW-11	4/16/2021	PCE	**1.4**	1.0	0.236	1.964	5.0
MW-11	10/14/2021	PCE	**1.4**	1.0	0.339	1.561	5.0
MW-11	4/4/2022	PCE	<1.0	1.0	0.339	1.561	5.0
MW-11	10/4/2022	PCE	<1.0	1.0	0.339	1.561	5.0
MW-11	4/13/2023	PCE	**2.0**	1.0	0.236	1.964	5.0
MW-11	10/18/2023	PCE	**1.3**	1.0	0.225	1.925	5.0
MW-11	4/8/2024	PCE	<1.0	1.0	0.225	1.925	5.0
MW-11	10/8/2024	PCE	**1.1**	1.0	0.498	1.952	5.0

Well	Date	Compound	Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS (ug/L)
MW-12	10/5/2015	cis-1,2-dichloroethene	**1.2**	1.0	---	---	70.0
MW-12	4/4/2016	cis-1,2-dichloroethene	**1.4**	1.0	---	---	70.0
MW-12	10/4/2016	cis-1,2-dichloroethene	**1.1**	1.0	---	---	70.0
MW-12	4/3/2017	cis-1,2-dichloroethene	**1.8**	1.0	---	---	70.0
MW-12	10/3/2017	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-12	4/10/2018	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-12	10/12/2018	cis-1,2-dichloroethene	**2.8**	1.0	0.087	2.713	70.0
MW-12	4/17/2019	cis-1,2-dichloroethene	**1.0**	1.0	0.000	2.485	70.0
MW-12	9/30/2019	cis-1,2-dichloroethene	**1.1**	1.0	0.172	2.528	70.0
MW-12	4/7/2020	cis-1,2-dichloroethene	<1.0	1.0	0.172	2.528	70.0
MW-12	10/7/2020	cis-1,2-dichloroethene	<1.0	1.0	0.398	1.152	70.0
MW-12	4/16/2021	cis-1,2-dichloroethene	<1.0	1.0	0.297	1.003	70.0
MW-12	10/14/2021	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	4/4/2022	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	10/4/2022	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	4/13/2023	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	10/18/2023	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	4/8/2024	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	10/8/2024	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-12	10/5/2015	TCE	**3.3**	1.0	---	---	5.0
MW-12	4/4/2016	TCE	**5.0**	1.0	---	---	5.0
MW-12	10/4/2016	TCE	**3.8**	1.0	---	---	5.0
MW-12	4/3/2017	TCE	**4.5**	1.0	---	---	5.0
MW-12	10/3/2017	TCE	**5.6**	1.0	---	---	5.0
MW-12	4/10/2018	TCE	**4.9**	1.0	---	---	5.0
MW-12	10/12/2018	TCE	**5.1**	1.0	4.487	5.563	5.0
MW-12	4/17/2019	TCE	**3.9**	1.0	4.036	5.714	5.0
MW-12	9/30/2019	TCE	**2.4**	1.0	2.264	5.526	5.0
MW-12	4/7/2020	TCE	**3.5**	1.0	2.414	5.036	5.0
MW-12	10/7/2020	TCE	**2.6**	1.0	2.257	3.943	5.0
MW-12	4/16/2021	TCE	**2.7**	1.0	2.232	3.368	5.0
MW-12	10/14/2021	TCE	**2.2**	1.0	2.109	3.391	5.0
MW-12	4/4/2022	TCE	**2.5**	1.0	2.246	2.754	5.0
MW-12	10/4/2022	TCE	**3.0**	1.0	2.204	2.996	5.0
MW-12	4/13/2023	TCE	**2.2**	1.0	2.031	2.919	5.0
MW-12	10/18/2023	TCE	**2.1**	1.0	1.975	2.925	5.0
MW-12	4/8/2024	TCE	<1.0	1.0	0.718	3.182	5.0
MW-12	10/8/2024	TCE	**2.2**	1.0	0.768	2.732	5.0
MW-12	10/5/2015	PCE	<1.0	1.0	---	---	5.0
MW-12	4/4/2016	PCE	<1.0	1.0	---	---	5.0
MW-12	10/4/2016	PCE	<1.0	1.0	---	---	5.0

MW-12	4/3/2017	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/3/2017	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/10/2018	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/12/2018	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/17/2019	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	9/30/2019	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/7/2020	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/7/2020	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/16/2021	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/14/2021	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/4/2022	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/4/2022	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/13/2023	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	10/18/2023	PCE	<1.0	1.0	0.500	0.500	5.0
MW-12	4/8/2024	PCE	**1.8**	1.0	0.060	1.590	5.0
MW-12	10/8/2024	PCE	<1.0	1.0	0.060	1.590	5.0

Well	Date	Compound	Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS (ug/L)
MW-17	10/5/2015	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-17	4/4/2016	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-17	10/4/2016	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-17	4/3/2017	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-17	10/3/2017	cis-1,2-dichloroethene	**1.0**	1.0	---	---	70.0
MW-17	4/10/2018	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-17	10/12/2018	cis-1,2-dichloroethene	**3.1**	1.0	0.000	2.733	70.0
MW-17	4/17/2019	cis-1,2-dichloroethene	<1.0	1.0	0.000	2.733	70.0
MW-17	9/30/2019	cis-1,2-dichloroethene	**1.1**	1.0	0.000	2.750	70.0
MW-17	4/7/2020	cis-1,2-dichloroethene	<1.0	1.0	0.000	2.750	70.0
MW-17	10/7/2020	cis-1,2-dichloroethene	<1.0	1.0	0.297	1.003	70.0
MW-17	4/16/2021	cis-1,2-dichloroethene	<1.0	1.0	0.297	1.003	70.0
MW-17	10/14/2021	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	4/4/2022	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	10/4/2022	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	4/13/2023	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	10/18/2023	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	4/8/2024	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	10/8/2024	cis-1,2-dichloroethene	<1.0	1.0	0.500	0.500	70.0
MW-17	10/5/2015	PCE	**1.7**	1.0	---	---	5.0
MW-17	4/4/2016	PCE	**1.1**	1.0	---	---	5.0
MW-17	10/4/2016	PCE	**1.2**	1.0	---	---	5.0
MW-17	4/3/2017	PCE	**1.6**	1.0	---	---	5.0
MW-17	10/3/2017	PCE	**1.7**	1.0	---	---	5.0
MW-17	4/10/2018	PCE	<1.0	1.0	---	---	5.0
MW-17	10/12/2018	PCE	**2.3**	1.0	0.643	2.407	5.0
MW-17	4/17/2019	PCE	**1.2**	1.0	0.527	2.323	5.0
MW-17	9/30/2019	PCE	**1.0**	1.0	0.357	2.143	5.0
MW-17	4/7/2020	PCE	**1.4**	1.0	0.800	2.150	5.0
MW-17	10/7/2020	PCE	<1.0	1.0	0.571	1.479	5.0
MW-17	4/16/2021	PCE	**1.2**	1.0	0.571	1.479	5.0
MW-17	10/14/2021	PCE	<1.0	1.0	0.348	1.452	5.0
MW-17	4/4/2022	PCE	**1.2**	1.0	0.375	1.325	5.0
MW-17	10/4/2022	PCE	<1.0	1.0	0.375	1.325	5.0
MW-17	4/13/2023	PCE	**1.2**	1.0	0.375	1.325	5.0
MW-17	10/18/2023	PCE	<1.0	1.0	0.375	1.325	5.0
MW-17	4/8/2024	PCE	**1.2**	1.0	0.375	1.325	5.0
MW-17	10/8/2024	PCE	<1.0	1.0	0.375	1.325	5.0

Well	Date	Compound	Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS (ug/L)
MW-19	10/5/2015	chloroethane	dry	1.0	---	---	2,800
MW-19	4/4/2016	chloroethane	dry	1.0	---	---	2,800
MW-19	10/4/2016	chloroethane	**3.2**	1.0	---	---	2,800
MW-19	4/3/2017	chloroethane	**2.4**	1.0	---	---	2,800
MW-19	10/3/2017	chloroethane	**2.2**	1.0	---	---	2,800
MW-19	4/10/2018	chloroethane	**3.5**	1.0	---	---	2,800
MW-19	10/12/2018	chloroethane	**2.7**	1.0	2.028	3.372	2,800
MW-19	4/17/2019	chloroethane	**2.8**	1.0	2.170	3.430	2,800
MW-19	9/30/2019	chloroethane	**3.2**	1.0	2.615	3.485	2,800
MW-19	4/7/2020	chloroethane	**2.6**	1.0	2.516	3.134	2,800
MW-19	10/7/2020	chloroethane	**4.0**	1.0	2.422	3.878	2,800
MW-19	4/16/2021	chloroethane	**2.1**	1.0	2.013	3.937	2,800
MW-19	10/14/2021	chloroethane	**2.0**	1.0	1.591	3.759	2,800
MW-19	4/4/2022	chloroethane	<1.0	1.0	0.463	3.837	2,800
MW-19	10/4/2022	chloroethane	**1.7**	1.0	0.709	2.441	2,800
MW-19	4/13/2023	chloroethane	<1.0	1.0	0.247	2.103	2,800
MW-19	10/18/2023	chloroethane	dry	1.0	0.247	2.103	2,800
MW-19	4/8/2024	chloroethane	dry	1.0	0.247	2.103	2,800
MW-19	10/8/2024	chloroethane	dry	1.0	0.247	2.103	2,800
MW-19	10/5/2015	acetone	dry	10.0	---	---	6,300
MW-19	4/4/2016	acetone	dry	10.0	---	---	6,300
MW-19	10/4/2016	acetone	**19.0**	10.0	---	---	6,300
MW-19	4/3/2017	acetone	**49.6**	10.0	---	---	6,300
MW-19	10/3/2017	acetone	<10.0	10.0	---	---	6,300
MW-19	4/10/2018	acetone	<10.0	10.0	---	---	6,300
MW-19	10/12/2018	acetone	**13.0**	10.0	0.000	43.209	6,300
MW-19	4/17/2019	acetone	<10.0	10.0	2.295	11.705	6,300
MW-19	9/30/2019	acetone	<10.0	10.0	2.295	11.705	6,300
MW-19	4/7/2020	acetone	<10.0	10.0	2.295	11.705	6,300
MW-19	10/7/2020	acetone	<10.0	10.0	5.000	5.000	6,300
MW-19	4/16/2021	acetone	<10.0	10.0	5.000	5.000	6,300
MW-19	10/14/2021	acetone	<10.0	10.0	5.000	5.000	6,300
MW-19	4/4/2022	acetone	**35.2**	10.0	0.000	30.312	6,300
MW-19	10/4/2022	acetone	**17.0**	10.0	3.193	27.907	6,300
MW-19	4/13/2023	acetone	<10.0	10.0	0.000	32.335	6,300
MW-19	10/18/2023	acetone	dry	10.0	0.000	32.335	6,300
MW-19	4/8/2024	acetone	dry	10.0	0.000	32.335	6,300
MW-19	10/8/2024	acetone	dry	10.0	0.000	32.335	6,300
MW-19	10/5/2015	1,1--dichloroethane	dry	1.0	---	---	140.0
MW-19	4/4/2016	1,1--dichloroethane	dry	1.0	---	---	140.0
MW-19	10/4/2016	1,1--dichloroethane	**3.2**	1.0	---	---	140.0

MW-19	4/3/2017	1,1--dichloroethane	**6.3**	1.0	---	---	140.0
MW-19	10/3/2017	1,1--dichloroethane	**3.1**	1.0	---	---	140.0
MW-19	4/10/2018	1,1--dichloroethane	**3.6**	1.0	---	---	140.0
MW-19	10/12/2018	1,1--dichloroethane	**4.2**	1.0	2.645	5.955	140.0
MW-19	4/17/2019	1,1--dichloroethane	**5.2**	1.0	2.963	5.087	140.0
MW-19	9/30/2019	1,1--dichloroethane	**6.4**	1.0	3.408	6.292	140.0
MW-19	4/7/2020	1,1--dichloroethane	**5.4**	1.0	4.239	6.361	140.0
MW-19	10/7/2020	1,1--dichloroethane	**9.3**	1.0	4.351	8.799	140.0
MW-19	4/16/2021	1,1--dichloroethane	**3.7**	1.0	3.438	8.962	140.0
MW-19	10/14/2021	1,1--dichloroethane	**3.8**	1.0	2.470	8.630	140.0
MW-19	4/4/2022	1,1--dichloroethane	**1.3**	1.0	0.541	8.509	140.0
MW-19	10/4/2022	1,1--dichloroethane	**2.4**	1.0	1.405	4.195	140.0
MW-19	4/13/2023	1,1--dichloroethane	<1.0	1.0	0.317	3.683	140.0
MW-19	10/18/2023	1,1--dichloroethane	dry	1.0	0.317	3.683	140.0
MW-19	4/8/2024	1,1--dichloroethane	dry	1.0	0.317	3.683	140.0
MW-19	10/8/2024	1,1--dichloroethane	dry	1.0	0.317	3.683	140.0
MW-19	10/5/2015	cis-1,2-dichloroethene	dry	1.0	---	---	70.0
MW-19	4/4/2016	cis-1,2-dichloroethene	dry	1.0	---	---	70.0
MW-19	10/4/2016	cis-1,2-dichloroethene	**23.4**	1.0	---	---	70.0
MW-19	4/3/2017	cis-1,2-dichloroethene	**4.5**	1.0	---	---	70.0
MW-19	10/3/2017	cis-1,2-dichloroethene	**36.0**	1.0	---	---	70.0
MW-19	4/10/2018	cis-1,2-dichloroethene	**46.2**	1.0	---	---	70.0
MW-19	10/12/2018	cis-1,2-dichloroethene	**34.7**	1.0	9.195	51.505	70.0
MW-19	4/17/2019	cis-1,2-dichloroethene	**43.1**	1.0	33.481	46.519	70.0
MW-19	9/30/2019	cis-1,2-dichloroethene	**39.9**	1.0	35.198	46.752	70.0
MW-19	4/7/2020	cis-1,2-dichloroethene	**54.4**	1.0	33.219	52.831	70.0
MW-19	10/7/2020	cis-1,2-dichloroethene	**98.0**	1.0	27.289	90.411	70.0
MW-19	4/16/2021	cis-1,2-dichloroethene	**23.4**	1.0	16.288	91.562	70.0
MW-19	10/14/2021	cis-1,2-dichloroethene	**26.8**	1.0	10.087	91.213	70.0
MW-19	4/4/2022	cis-1,2-dichloroethene	**6.6**	1.0	0.000	86.349	70.0
MW-19	10/4/2022	cis-1,2-dichloroethene	**7.6**	1.0	3.758	28.442	70.0
MW-19	4/13/2023	cis-1,2-dichloroethene	**1.8**	1.0	0.000	23.672	70.0
MW-19	10/18/2023	cis-1,2-dichloroethene	dry	1.0	0.000	23.672	70.0
MW-19	4/8/2024	cis-1,2-dichloroethene	dry	1.0	0.000	23.672	70.0
MW-19	10/8/2024	cis-1,2-dichloroethene	dry	1.0	0.000	23.672	70.0
MW-19	10/5/2015	benzene	dry	1.0	---	---	5.0
MW-19	4/4/2016	benzene	dry	1.0	---	---	5.0
MW-19	10/4/2016	benzene	**1.1**	1.0	---	---	5.0
MW-19	4/3/2017	benzene	<1.0	1.0	---	---	5.0
MW-19	10/3/2017	benzene	<1.0	1.0	---	---	5.0
MW-19	4/10/2018	benzene	<1.0	1.0	---	---	5.0
MW-19	10/12/2018	benzene	<1.0	1.0	0.500	0.500	5.0
MW-19	4/17/2019	benzene	**1.1**	1.0	0.297	1.003	5.0
MW-19	9/30/2019	benzene	<1.0	1.0	0.297	1.003	5.0

MW-19	4/7/2020	benzene	**1.5**	1.0	0.324	1.476	5.0
MW-19	10/7/2020	benzene	**3.1**	1.0	0.242	2.858	5.0
MW-19	4/16/2021	benzene	**1.7**	1.0	0.440	2.960	5.0
MW-19	10/14/2021	benzene	<1.0	1.0	0.440	2.960	5.0
MW-19	4/4/2022	benzene	<1.0	1.0	0.000	2.905	5.0
MW-19	10/4/2022	benzene	<1.0	1.0	0.094	1.506	5.0
MW-19	4/13/2023	benzene	<1.0	1.0	0.500	.500	5.0
MW-19	10/18/2023	benzene	dry	1.0	0.500	.500	5.0
MW-19	4/8/2024	benzene	dry	1.0	0.500	.500	5.0
MW-19	10/8/2024	benzene	dry	1.0	0.500	.500	5.0
MW-19	10/5/2015	TCE	dry	1.0	---	---	5.0
MW-19	4/4/2016	TCE	dry	1.0	---	---	5.0
MW-19	10/4/2016	TCE	**2.8**	1.0	---	---	5.0
MW-19	4/3/2017	TCE	**7.9**	1.0	---	---	5.0
MW-19	10/3/2017	TCE	<1.0	1.0	---	---	5.0
MW-19	4/10/2018	TCE	<1.0	1.0	---	---	5.0
MW-19	10/12/2018	TCE	**5.1**	1.0	0.000	7.791	5.0
MW-19	4/17/2019	TCE	**3.9**	1.0	0.000	5.277	5.0
MW-19	9/30/2019	TCE	**11.8**	1.0	0.000	10.896	5.0
MW-19	4/7/2020	TCE	**2.2**	1.0	0.804	10.696	5.0
MW-19	10/7/2020	TCE	**2.0**	1.0	0.000	10.420	5.0
MW-19	4/16/2021	TCE	**10.6**	1.0	0.442	12.858	5.0
MW-19	10/14/2021	TCE	**3.6**	1.0	0.000	9.379	5.0
MW-19	4/4/2022	TCE	**2.1**	1.0	0.000	9.378	5.0
MW-19	10/4/2022	TCE	**5.1**	1.0	0.988	9.712	5.0
MW-19	4/13/2023	TCE	**2.3**	1.0	1.644	4.906	5.0
MW-19	10/18/2023	TCE	dry	1.0	1.644	4.906	5.0
MW-19	4/8/2024	TCE	dry	1.0	1.644	4.906	5.0
MW-19	10/8/2024	TCE	dry	1.0	1.644	4.906	5.0
MW-19	10/5/2015	PCE	dry	1.0	---	---	5.0
MW-19	4/4/2016	PCE	dry	1.0	---	---	5.0
MW-19	10/4/2016	PCE	**6.6**	1.0	---	---	5.0
MW-19	4/3/2017	PCE	**43.2**	1.0	---	---	5.0
MW-19	10/3/2017	PCE	<1.0	1.0	---	---	5.0
MW-19	4/10/2018	PCE	<1.0	1.0	---	---	5.0
MW-19	10/12/2018	PCE	**2.8**	1.0	0.000	36.446	5.0
MW-19	4/17/2019	PCE	**1.9**	1.0	0.096	2.754	5.0
MW-19	9/30/2019	PCE	<1.0	1.0	0.096	2.754	5.0
MW-19	4/7/2020	PCE	<1.0	1.0	0.096	2.754	5.0
MW-19	10/7/2020	PCE	<1.0	1.0	0.027	1.673	5.0
MW-19	4/16/2021	PCE	<1.0	1.0	0.500	0.500	5.0
MW-19	10/14/2021	PCE	**1.0**	1.0	0.331	0.919	5.0
MW-19	4/4/2022	PCE	<1.0	1.0	0.331	0.919	5.0
MW-19	10/4/2022	PCE	<1.0	1.0	0.331	0.919	5.0

MW-19	4/13/2023	PCE	<1.0	1.0	0.331	0.919	5.0
MW-19	10/18/2023	PCE	dry	1.0	0.331	0.919	5.0
MW-19	4/8/2024	PCE	dry	1.0	0.331	0.919	5.0
MW-19	10/8/2024	PCE	dry	1.0	0.331	0.919	5.0

Well	Date	Compound	Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS (ug/L)
MW-20	10/5/2015	acetone	dry	10.0	---	---	6,300
MW-20	4/4/2016	acetone	dry	10.0	---	---	6,300
MW-20	10/4/2016	acetone	**72.9**	10.0	---	---	6,300
MW-20	4/3/2017	acetone	**10.4**	10.0	---	---	6,300
MW-20	10/3/2017	acetone	**34.0**	10.0	---	---	6,300
MW-20	4/10/2018	acetone	**32.9**	10.0	---	---	6,300
MW-20	10/12/2018	acetone	**28.7**	10.0	13.592	39.408	6,300
MW-20	4/17/2019	acetone	**27.2**	10.0	26.859	34.541	6,300
MW-20	9/30/2019	acetone	<10.0	10.0	8.706	38.194	6,300
MW-20	4/7/2020	acetone	<10.0	10.0	0.872	32.078	6,300
MW-20	10/7/2020	acetone	<10.0	10.0	0.000	23.607	6,300
MW-20	4/16/2021	acetone	<10.0	10.0	5.000	5.000	6,300
MW-20	10/14/2021	acetone	**180.0**	10.0	0.000	151.675	6,300
MW-20	4/4/2022	acetone	dry	10.0	0.000	151.675	6,300
MW-20	10/4/2022	acetone	dry	10.0	0.000	151.675	6,300
MW-20	4/13/2023	acetone	dry	10.0	0.000	151.675	6,300
MW-20	10/18/2023	acetone	dry	10.0	0.000	151.675	6,300
MW-20	4/8/2024	acetone	dry	10.0	0.000	151.675	6,300
MW-20	10/8/2024	acetone	dry	10.0	0.000	151.675	6,300
MW-20	10/5/2015	cis-1,2-dichloroethene	dry	1.0	---	---	70.0
MW-20	4/4/2016	cis-1,2-dichloroethene	dry	1.0	---	---	70.0
MW-20	10/4/2016	cis-1,2-dichloroethene	**1.0**	1.0	---	---	70.0
MW-20	4/3/2017	cis-1,2-dichloroethene	**1.1**	1.0	---	---	70.0
MW-20	10/3/2017	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-20	4/10/2018	cis-1,2-dichloroethene	<1.0	1.0	---	---	70.0
MW-20	10/12/2018	cis-1,2-dichloroethene	**6.0**	1.0	0.000	5.160	70.0
MW-20	4/17/2019	cis-1,2-dichloroethene	**3.8**	1.0	0.000	5.869	70.0
MW-20	9/30/2019	cis-1,2-dichloroethene	**3.7**	1.0	0.837	6.163	70.0
MW-20	4/7/2020	cis-1,2-dichloroethene	**3.4**	1.0	2.819	5.631	70.0
MW-20	10/7/2020	cis-1,2-dichloroethene	**9.1**	1.0	1.779	8.221	70.0
MW-20	4/16/2021	cis-1,2-dichloroethene	**4.5**	1.0	2.049	8.301	70.0
MW-20	10/14/2021	cis-1,2-dichloroethene	**3.9**	1.0	2.141	8.309	70.0
MW-20	4/4/2022	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	10/4/2022	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	4/13/2023	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	10/18/2023	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	4/8/2024	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	10/8/2024	cis-1,2-dichloroethene	dry	1.0	2.141	8.309	70.0
MW-20	10/5/2015	TCE	dry	1.0	---	---	5.0
MW-20	4/4/2016	TCE	dry	1.0	---	---	5.0
MW-20	10/4/2016	TCE	<1.0	1.0	---	---	5.0
MW-20	4/3/2017	TCE	<1.0	1.0	---	---	5.0

MW-20	10/3/2017	TCE	**2.2**	1.0	---	---	5.0
MW-20	4/10/2018	TCE	<1.0	1.0	---	---	5.0
MW-20	10/12/2018	TCE	**1.7**	1.0	0.052	3.098	5.0
MW-20	4/17/2019	TCE	**3.1**	1.0	0.599	3.151	5.0
MW-20	9/30/2019	TCE	<1.0	1.0	0.000	2.905	5.0
MW-20	4/7/2020	TCE	**1.1**	1.0	0.290	2.910	5.0
MW-20	10/7/2020	TCE	<1.0	1.0	0.274	1.626	5.0
MW-20	4/16/2021	TCE	<1.0	1.0	0.297	1.003	5.0
MW-20	10/14/2021	TCE	<1.0	1.0	0.297	1.003	5.0
MW-20	4/4/2022	TCE	dry	1.0	0.297	1.003	5.0
MW-20	10/4/2022	TCE	dry	1.0	0.297	1.003	5.0
MW-20	4/13/2023	TCE	dry	1.0	0.297	1.003	5.0
MW-20	10/18/2023	TCE	dry	1.0	0.297	1.003	5.0
MW-20	4/8/2024	TCE	dry	1.0	0.297	1.003	5.0
MW-20	10/8/2024	TCE	dry	1.0	0.297	1.003	5.0
MW-20	10/5/2015	toluene	dry	1.0	---	---	1,000.
MW-20	4/4/2016	toluene	dry	1.0	---	---	1,000.
MW-20	10/4/2016	toluene	**6.7**	1.0	---	---	1,000.
MW-20	4/3/2017	toluene	**1.3**	1.0	---	---	1,000.
MW-20	10/3/2017	toluene	<1.0	1.0	---	---	1,000.
MW-20	4/10/2018	toluene	<1.0	1.0	---	---	1,000.
MW-20	10/12/2018	toluene	<1.0	1.0	0.229	1.171	1,000.
MW-20	4/17/2019	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	9/30/2019	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	4/7/2020	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	10/7/2020	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	4/16/2021	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	10/14/2021	toluene	<1.0	1.0	0.500	0.500	1,000.
MW-20	4/4/2022	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	10/4/2022	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	4/13/2023	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	10/18/2023	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	4/8/2024	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	10/8/2024	toluene	dry	1.0	0.500	0.500	1,000.
MW-20	10/5/2015	PCE	dry	1.0	---	---	5.0
MW-20	4/4/2016	PCE	dry	1.0	---	---	5.0
MW-20	10/4/2016	PCE	<1.0	1.0	---	---	5.0
MW-20	4/3/2017	PCE	<1.0	1.0	---	---	5.0
MW-20	10/3/2017	PCE	**1.7**	1.0	---	---	5.0
MW-20	4/10/2018	PCE	<1.0	1.0	---	---	5.0
MW-20	10/12/2018	PCE	<1.0	1.0	0.094	1.506	5.0
MW-20	4/17/2019	PCE	<1.0	1.0	0.094	1.506	5.0
MW-20	9/30/2019	PCE	<1.0	1.0	0.500	0.500	5.0
MW-20	4/7/2020	PCE	<1.0	1.0	0.500	0.500	5.0

MW-20	10/7/2020	PCE	<1.0	1.0	0.500	0.500	5.0
MW-20	4/16/2021	PCE	<1.0	1.0	0.500	0.500	5.0
MW-20	10/14/2021	PCE	<1.0	1.0	0.500	0.500	5.0
MW-20	4/4/2022	PCE	dry	1.0	0.500	0.500	5.0
MW-20	4/4/2022	PCE	dry	1.0	0.500	0.500	5.0
MW-20	4/13/2023	PCE	dry	1.0	0.500	0.500	5.0
MW-20	10/18/2023	PCE	dry	1.0	0.500	0.500	5.0
MW-20	4/8/2024	PCE	dry	1.0	0.500	0.500	5.0
MW-20	10/8/2024	PCE	dry	1.0	0.500	0.500	5.0

ATTACHMENT E

Water Elevation Data

Table 8.--- Water-level data, Jackson County Sanitary Landfill. TOC, top of casing.

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	9/29/94	12/27/94	4/6/95	7/28/95	4/17/96	10/14/96	4/22/97	9/25/97
90MW-10	104.7	814.5	**Depth (ft)**	89.67	91.59	93.27	91.40	94.30	93.00	94.10	94.0
919.16	114.7	804.5	**Elev. (ft)**	829.49	827.57	825.89	827.76	824.86	826.16	825.06	825.16
90MW-12	104.9	793.3	**Depth (ft)**	89.86	91.01	92.40	92.67	93.80	93.50	93.40	94.10
898.17	109.9	788.3	**Elev. (ft)**	808.31	807.16	805.77	805.50	804.37	804.67	804.77	804.07
90MW-13	37.1	844.9	**Depth (ft)**	36.27	36.62	36.96	35.93	36.75	35.90	36.00	35.75
882.02	47.1	834.9	**Elev. (ft)**	845.75	845.40	845.06	846.09	845.27	846.12	846.02	846.27
90MW-14	49.2	800.0	**Depth (ft)**	42.39	44.13	45.38	43.56	46.80	45.30	46.20	45.80
849.18	69.2	780.0	**Elev. (ft)**	806.79	805.05	803.80	805.62	802.38	803.88	802.98	803.38
90MW-15	11.1	838.8	**Depth (ft)**	10.08	5.92	4.54	9.05	8.20	11.20	4.10	8.40
849.91	21.1	828.8	**Elev. (ft)**	839.83	843.99	845.37	840.86	841.71	838.71	845.81	841.51
90MW-16	79.3	800.5	**Depth (ft)**	66.17	67.89	69.35	66.97	70.90	69.10	69.60	69.40
879.76	89.3	790.5	**Elev. (ft)**	813.59	811.87	810.41	812.79	808.86	810.66	810.16	810.4
90MW-17	34.8	844.3	**Depth (ft)**	30.02	30.40	30.66	28.19	30.38	29.15	30.30	29.65
879.05	44.8	834.3	**Elev. (ft)**	849.03	848.65	848.39	850.86	848.67	849.90	848.75	849.4
90MW-19	69.00	826.98	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
895.98	79.00	816.98	**Elev. (ft)**	---	---	---	---	---	---	---	---
90MW-20	69.47	812.39	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
881.86	79.47	802.39	**Elev. (ft)**	---	---	---	---	---	---	---	---
05MW-21	10.0	839.0	**Depth (ft)**								
849.01	15.0	834.0	**Elev. (ft)**								

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	4/17/98	9/22/98	4/1/99	9/24/99	4/13/00	9/28/00	4/5/01	9/28/01
90MW-10	104.7	814.5	**Depth (ft)**	92.82	88.79	84.47	84.41	89.03	89.63	87.88	90.75
919.16	114.7	804.5	**Elev. (ft)**	826.34	830.37	834.69	834.75	830.13	829.53	831.28	828.41
90MW-12	104.9	793.3	**Depth (ft)**	95.12	92.53	88.76	87.75	90.50	91.48	92.08	91.81
898.17	109.9	788.3	**Elev. (ft)**	803.05	805.64	809.41	810.42	807.67	806.69	806.09	806.36
90MW-13	37.1	844.9	**Depth (ft)**	36.05	34.87	34.52	34.76	35.54	35.83	35.60	35.55
882.02	47.1	834.9	**Elev. (ft)**	845.97	847.15	847.50	847.26	846.48	846.19	846.42	846.47
90MW-14	49.2	800.0	**Depth (ft)**	45.30	42.40	39.03	39.26	43.59	43.73	42.64	44.25
849.18	69.2	780.0	**Elev. (ft)**	803.88	806.78	810.15	809.92	805.59	805.45	806.54	804.93
90MW-15	11.1	838.8	**Depth (ft)**	3.44	6.75	7.39	11.86	11.06	9.88	4.95	9.11
849.91	21.1	828.8	**Elev. (ft)**	846.47	843.16	842.52	838.05	838.85	840.03	844.96	840.80
90MW-16	79.3	800.5	**Depth (ft)**	65.03	83.63	62.31	63.07	66.96	66.79	63.44	67.54
879.76	89.3	790.5	**Elev. (ft)**	814.73	796.13	817.45	816.69	812.80	812.97	816.32	812.22
90MW-17	34.8	844.3	**Depth (ft)**	27.26	27.18	27.85	28.61	30.25	29.74	30.65	30.15
879.05	44.8	834.3	**Elev. (ft)**	851.79	851.87	851.20	850.44	848.80	849.31	848.40	848.90
90MW-19	69.00	826.98	**Depth (ft)**	DRY	DRY	75.75	75.15	DRY	DRY	DRY	DRY
895.98	79.00	816.98	**Elev. (ft)**	---	---	820.23	820.83	---	---	---	---
90MW-20	69.47	812.39	**Depth (ft)**	DRY	DRY	77.60	76.92	DRY	DRY	DRY	DRY
881.86	79.47	802.39	**Elev. (ft)**	---	---	804.26	804.94	---	---	---	---
05MW-21	10.0	839.0	**Depth (ft)**								
849.01	15.0	834.0	**Elev. (ft)**								

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	4/18/02	9/24/02	4/10/03	9/11/03	4/6/04	9/22/04	4/8/05	9/19/05
90MW-10	104.7	814.5	**Depth (ft)**	92.68	91.71	93.09	93.92	93.51	91.98	92.59	94.95
919.16	114.7	804.5	**Elev. (ft)**	826.48	827.45	826.07	825.24	825.65	827.18	826.57	824.21
90MW-12	104.9	793.3	**Depth (ft)**	93.31	93.14	93.06	93.85	94.55	92.90	93.14	93.82
898.17	109.9	788.3	**Elev. (ft)**	804.86	805.03	805.11	804.32	803.62	805.27	805.03	804.35
90MW-13	37.1	844.9	**Depth (ft)**	35.61	35.21	35.41	35.51	35.36	34.90	35.08	35.41
882.02	47.1	834.9	**Elev. (ft)**	846.41	846.81	846.61	846.51	846.66	847.12	846.94	846.61
90MW-14	49.2	800.0	**Depth (ft)**	45.27	44.94	45.76	46.20	45.21	44.38	44.61	46.07
849.18	69.2	780.0	**Elev. (ft)**	803.91	804.24	803.42	802.98	803.97	804.80	804.57	803.11
90MW-15	11.1	838.8	**Depth (ft)**	3.97	10.28	7.71	11.72	4.16	11.94	5.70	13.09
849.91	21.1	828.8	**Elev. (ft)**	845.94	839.63	842.20	838.19	845.75	837.97	844.21	836.82
90MW-16	79.3	800.5	**Depth (ft)**	67.55	68.16	69.63	69.87	66.41	67.73	67.88	70.19
879.76	89.3	790.5	**Elev. (ft)**	812.21	811.60	810.13	809.89	813.35	812.03	811.88	809.57
90MW-17	34.8	844.3	**Depth (ft)**	29.97	28.94	30.08	29.45	28.89	28.79	29.94	30.35
879.05	44.8	834.3	**Elev. (ft)**	849.08	850.11	848.97	849.60	850.16	850.26	849.11	848.70
90MW-19	69.00	826.98	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
895.98	79.00	816.98	**Elev. (ft)**	---	---	---	---	---	---	---	---
90MW-20	69.47	812.39	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
881.86	79.47	802.39	**Elev. (ft)**	---	---	---	---	---	---	---	---
05MW-21	10.0	839.0	**Depth (ft)**								14.20
849.01	15.0	834.0	**Elev. (ft)**								834.81

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 4/11/06	9/20/06	3/29/07	9/29/07	4/5/08	10/2/08	3/17/09	9/28/09
90MW-10	104.7	814.5	**Depth (ft)**	97.67	99.09	97.24	92.64	86.73	80.03	79.91	78.19
919.16	114.7	804.5	**Elev. (ft)**	821.49	820.07	821.92	826.52	832.43	839.13	839.25	840.97
90MW-12	104.9	793.3	**Depth (ft)**	95.35	96.35	96.57	93.19	91.43	83.35	84.79	82.93
898.17	109.9	788.3	**Elev. (ft)**	802.82	801.82	801.60	804.98	806.74	814.82	813.38	815.24
90MW-13	37.1	844.9	**Depth (ft)**	35.98	35.92	35.61	34.80	34.51	33.88	34.38	34.09
882.02	47.1	834.9	**Elev. (ft)**	846.04	846.10	846.41	847.22	847.51	848.14	847.64	847.93
90MW-14	49.2	800.0	**Depth (ft)**	47.58	47.79	46.62	43.51	39.73	34.49	34.81	33.70
849.18	69.2	780.0	**Elev. (ft)**	801.60	801.39	802.56	805.67	809.45	814.69	814.37	815.48
90MW-15	11.1	838.8	**Depth (ft)**	5.40	7.16	4.18	9.85	2.84	9.13	3.84	9.62
849.91	21.1	828.8	**Elev. (ft)**	844.51	842.75	845.73	840.06	847.07	840.78	846.07	840.29
90MW-16	79.3	800.5	**Depth (ft)**	71.95	72.26	68.66	66.62	59.29	56.91	54.77	55.72
879.76	89.3	790.5	**Elev. (ft)**	807.81	807.50	811.10	813.14	820.47	822.85	824.99	824.04
90MW-17	34.8	844.3	**Depth (ft)**	30.88	30.21	29.58	28.87	28.80	28.06	29.60	27.75
879.05	44.8	834.3	**Elev. (ft)**	848.17	848.84	849.47	850.18	850.25	850.99	849.45	851.30
90MW-19	69.00	826.98	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	---	71.65	69.71
895.98	79.00	816.98	**Elev. (ft)**	---	---	---	---	---	---	824.33	826.27
90MW-20	69.47	812.39	**Depth (ft)**	DRY	DRY	DRY	DRY	DRY	---	74.00	70.09
881.86	79.47	802.39	**Elev. (ft)**	---	---	---	---	---	---	807.86	811.77
05MW-21	10.0	839.0	**Depth (ft)**	8.31	8.81	7.69	11.78	6.08	10.59	7.55	11.02
849.01	15.0	834.0	**Elev. (ft)**	840.70	840.20	841.32	837.23	842.93	838.42	841.46	837.99

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	4/5/10	9/20/10	3/17/11	9/20/11	4/17/12	9/15/12	4/5/13	9/16/13
90MW-10	104.7	814.5	**Depth (ft)**	---	73.49	75.04	75.85	80.38	84.08	87.78	88.68
919.16	114.7	804.5	**Elev. (ft)**	---	845.67	844.12	843.31	838.78	835.08	831.38	830.48
90MW-12	104.9	793.3	**Depth (ft)**	81.45	80.07	82.73	82.18	85.78	87.54	90.50	90.31
898.17	109.9	788.3	**Elev. (ft)**	816.72	818.10	815.44	815.99	812.39	810.63	807.67	807.86
90MW-13	37.1	844.9	**Depth (ft)**	34.02	33.83	34.38	34.21	34.84	35.10	35.77	35.45
882.02	47.1	834.9	**Elev. (ft)**	848.00	848.19	847.64	847.81	847.18	846.92	846.25	846.57
90MW-14	49.2	800.0	**Depth (ft)**	32.74	32.05	33.25	34.02	36.89	39.88	42.40	42.15
849.18	69.2	780.0	**Elev. (ft)**	816.44	817.13	815.93	815.16	812.29	809.30	806.78	807.03
90MW-15	11.1	838.8	**Depth (ft)**	5.26	10.08	3.63	9.72	5.85	13.02	6.14	11.63
849.91	21.1	828.8	**Elev. (ft)**	844.65	839.83	846.28	840.19	844.06	836.89	843.77	838.28
90MW-16	79.3	800.5	**Depth (ft)**	54.46	54.25	54.12	56.05	59.06	63.30	64.38	65.32
879.76	89.3	790.5	**Elev. (ft)**	825.30	825.51	825.64	823.71	820.70	816.46	815.38	814.44
90MW-17	34.8	844.3	**Depth (ft)**	28.59	27.97	29.41	28.76	29.38	29.77	30.54	30.04
879.05	44.8	834.3	**Elev. (ft)**	850.46	851.08	849.64	850.29	849.67	849.28	848.51	849.01
90MW-19	69.00	826.98	**Depth (ft)**	67.59	62.83	67.34	67.86	71.69	74.91	77.90	77.45
895.98	79.00	816.98	**Elev. (ft)**	828.39	833.15	828.64	828.12	824.29	821.07	818.08	818.53
90MW-20	69.47	812.39	**Depth (ft)**	70.79	69.74	72.07	71.79	74.95	---	---	---
881.86	79.47	802.39	**Elev. (ft)**	811.07	812.12	809.79	810.07	806.91	DRY	DRY	DRY
05MW-21	10.0	839.0	**Depth (ft)**	8.26	11.38	5.94	11.64	9.10	---	9.21	13.60
849.01	15.0	834.0	**Elev. (ft)**	840.75	837.63	843.07	837.37	839.91	DRY	839.80	835.41

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 4/10/14	9/30/14	7/9/15	10/5/15	4/4/16	10/4/16	4/3/17	10/3/17
90MW-10	104.7	814.5	**Depth (ft)**	89.99	88.30	89.89	91.12	86.94	82.75	80.74	79.09
919.16	114.7	804.5	**Elev. (ft)**	829.17	830.86	829.27	828.04	832.22	836.41	838.42	840.07
90MW-12	104.9	793.3	**Depth (ft)**	91.83	89.65	92.25	91.73	90.36	86.68	85.00	83.65
898.17	109.9	788.3	**Elev. (ft)**	806.34	808.52	805.92	806.44	807.81	811.49	813.17	814.52
90MW-13	37.1	844.9	**Depth (ft)**	35.76	34.92	35.36	35.15	34.80	34.15	34.10	34.11
882.02	47.1	834.9	**Elev. (ft)**	846.26	847.10	846.66	846.87	847.22	847.87	847.92	847.91
90MW-14	49.2	800.0	**Depth (ft)**	43.14	40.87	42.25	43.24	39.44	36.40	34.75	34.75
849.18	69.2	780.0	**Elev. (ft)**	806.04	808.31	806.93	805.94	809.74	812.78	814.43	814.43
90MW-15	11.1	838.8	**Depth (ft)**	6.35	10.73	5.17	8.42	3.55	6.83	2.60	10.72
849.91	21.1	828.8	**Elev. (ft)**	843.56	839.18	844.74	841.49	846.36	843.08	847.31	839.19
90MW-16	79.3	800.5	**Depth (ft)**	64.79	64.18	63.80	66.96	60.96	58.91	62.76	57.73
879.76	89.3	790.5	**Elev. (ft)**	814.97	815.58	815.96	812.80	818.80	820.85	817.00	822.03
90MW-17	34.8	844.3	**Depth (ft)**	30.64	29.38	30.25	29.86	28.98	28.26	27.94	28.49
879.05	44.8	834.3	**Elev. (ft)**	848.41	849.67	848.80	849.19	850.07	850.79	851.11	850.56
90MW-19	69.42	826.98	**Depth (ft)**	---	---	---	---	77.97	74.30	71.92	70.80
896.40	79.42	816.98	**Elev. (ft)**	DRY	DRY	DRY	DRY	818.01	821.68	824.06	825.18
90MW-20	69.47	812.39	**Depth (ft)**	---	---	---	---	79.20	75.66	74.50	72.96
881.86	79.47	802.39	**Elev. (ft)**	DRY	DRY	DRY	DRY	802.66	806.20	807.36	808.90
05MW-21	10.0	839.0	**Depth (ft)**	9.14	12.81	8.60	10.60	8.03	9.45	6.61	12.13
849.01	15.0	834.0	**Elev. (ft)**	839.87	836.20	840.41	838.41	840.98	839.56	842.40	836.88

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Screened Interval Elev. (ft)	Water Level	Date 4/10/18	10/12/18	4/17/19	9/30/19	4/7/20	10/7/20	4/16/21	10/14/21
90MW-10	104.7	814.86	**Depth (ft)**	83.53	80.86	77.38	77.45	76.25	78.48	78.89	81.82
919.16	114.7	804.5	**Elev. (ft)**	835.63	838.30	841.78	841.71	842.91	840.68	840.27	837.34
90MW-12	104.9	793.27	**Depth (ft)**	87.20	87.46	83.60	83.41	83.97	84.31	85.18	86.56
898.17	109.9	788.3	**Elev. (ft)**	810.97	810.71	814.57	814.76	814.20	813.86	812.99	811.61
90MW-13	37.1	844.32	**Depth (ft)**	34.81	34.53	33.94	34.12	34.23	34.39	34.38	35.58
882.02	47.1	834.9	**Elev. (ft)**	847.21	847.49	848.08	847.90	847.79	847.63	847.64	846.44
90MW-14	49.2	799.51	**Depth (ft)**	38.47	35.82	33.11	33.76	32.34	34.53	33.58	36.89
849.18	69.2	780.0	**Elev. (ft)**	810.71	813.36	816.07	815.42	816.84	814.65	815.60	812.29
90MW-15	11.1	840.16	**Depth (ft)**	5.60	2.35	3.63	3.80	3.51	9.23	3.37	12.03
849.91	21.1	828.8	**Elev. (ft)**	844.31	847.56	846.28	846.11	846.40	840.68	846.54	837.88
90MW-16	79.3	800.47	**Depth (ft)**	61.95	55.85	55.51	56.02	54.03	57.48	54.81	60.63
879.76	89.3	790.5	**Elev. (ft)**	817.81	823.91	824.25	823.74	825.73	822.28	824.95	819.13
90MW-17	34.8	843.90	**Depth (ft)**	29.94	29.01	28.46	28.75	27.83	28.88	28.25	29.41
879.05	44.8	834.3	**Elev. (ft)**	849.11	850.04	850.59	850.30	851.22	850.17	850.80	849.64
90MW-19	69.42	826.98	**Depth (ft)**	74.88	74.09	70.05	69.75	69.12	70.71	71.58	73.46
896.40	79.42	816.98	**Elev. (ft)**	821.10	821.89	825.93	826.23	826.86	825.27	824.40	822.52
90MW-20	69.47	812.39	**Depth (ft)**	76.77	68.52	72.65	71.65	72.80	73.45	67.72	75.80
881.86	79.47	802.39	**Elev. (ft)**	805.09	813.34	809.21	810.21	809.06	808.41	814.14	806.06
05MW-21	10.0	839.01	**Depth (ft)**	8.85	6.03	8.26	6.64	7.98	10.68	7.31	13.21
849.01	15.0	834.0	**Elev. (ft)**	840.16	842.98	840.75	842.37	841.03	838.33	841.70	835.80

Table 8 Con't

Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 4/4/22	10/4/22	4/13/23	10/18/23	4/8/24	10/8/24
90MW-10	104.7	814.86	**Depth (ft)**	85.71	86.41	85.05	87.53	90.91	88.30
919.16	114.7	804.5	**Elev. (ft)**	833.45	832.75	834.11	831.63	828.25	830.86
90MW-12	104.9	793.27	**Depth (ft)**	88.76	89.04	88.88	89.72	91.40	89.55
898.17	109.9	788.3	**Elev. (ft)**	809.41	809.13	809.29	808.45	806.77	808.62
90MW-13	37.1	844.32	**Depth (ft)**	36.14	34.95	34.60	34.85	35.41	34.68
882.02	47.1	834.9	**Elev. (ft)**	845.88	847.07	847.42	847.17	846.61	847.34
90MW-14	49.2	799.51	**Depth (ft)**	39.19	39.45	37.50	41.07	42.55	39.75
849.18	69.2	780.0	**Elev. (ft)**	809.99	809.73	811.68	808.11	806.63	809.43
90MW-15	11.1	840.16	**Depth (ft)**	3.53	11.02	4.53	12.95	3.51	11.04
849.91	21.1	828.8	**Elev. (ft)**	846.38	838.89	845.38	836.96	846.40	838.87
90MW-16	79.3	800.47	**Depth (ft)**	62.21	79.65	60.31	65.35	64.80	63.85
879.76	89.3	790.5	**Elev. (ft)**	817.55	800.11	819.45	814.41	814.96	815.91
90MW-17	34.8	843.90	**Depth (ft)**	29.82	29.90	29.02	29.74	30.19	29.55
879.05	44.8	834.3	**Elev. (ft)**	849.23	849.15	850.03	849.31	848.86	849.50
90MW-19	69.42	826.98	**Depth (ft)**	76.48	76.95	76.24	78.10	80.10	78.20
896.40	79.42	816.98	**Elev. (ft)**	819.50	819.03	819.74	817.88	815.88	817.78
90MW-20	69.47	812.39	**Depth (ft)**	78.20	78.18	77.80	79.40	79.65	78.55
881.86	79.47	802.39	**Elev. (ft)**	803.66	803.68	804.06	802.46	802.21	803.31
05MW-21	10.0	839.01	**Depth (ft)**	4.72	12.34	8.67	13.88	6.25	12.33
849.01	15.0	834.0	**Elev. (ft)**	844.29	836.67	840.34	835.13	842.76	836.68

ATTACHMENT F

Explosive Gas Monitoring Results

Annual Methane Gas Evaluation Report
Jackson County Sanitary Landfill
2024

Amendment #17 - dated May 14, 2024 (Doc #110053)

Date	Quarterly monitoring not required until May 14, 2024					
Quarter	**Jan 1 - March 30**					
Location/Date	**%LEL**	**Depth to Top Screen (ft)**	**Depth to Bottom (ft)**	**Depth to SWL (ft)**	**Available Screen (ft)**	**Screen Open to Vadose (ft)**
Building	---	---	---	---	---	---
GP-1	---	---	---	---	---	---
GP-2	---	---	---	---	---	---
GP-3	---	---	---	---	---	---
GP-4	---	---	---	---	---	---
GP-5	---	---	---	---	---	---
GP-6	---	---	---	---	---	---

Date	8-Apr-24					
Quarter	**Apr 1 - Jun 30**					
Location/Date	**%LEL**	**Depth to Top Screen (ft)**	**Depth to Bottom (ft)**	**Depth to SWL (ft)**	**Available Screen (ft)**	**Screen Open to Vadose (ft)**
Building	0	---	---	---	---	---
GP-1	0	---	---	---	---	---
GP-2	0	---	---	---	---	---
GP-3	**87.7**	---	---	---	---	---
GP-4	0	---	---	---	---	---
GP-5	0	---	---	---	---	---
GP-6	0	---	---	---	---	---

Date	25-Jul-24					
Quarter	**Jul 1 - Sep 30**					
Location/Date	**%LEL**	**Depth to Top Screen (ft)**	**Depth to Bottom (ft)**	**Depth to SWL (ft)**	**Available Screen (ft)**	**Screen Open to Vadose (ft)**
Building	---	---	---	---	---	---
GP-1	---	---	---	---	---	---
GP-2	---	---	---	---	---	---
GP-3	0	5.00	14.00	14.00	9	9
GP-4	---	---	---	---	---	---
GP-5	---	---	---	---	---	---
GP-6	---	---	---	---	---	---

Date	8-Oct-24					
Quarter	**Oct 1 - Dec 31**					
Location/Date	**%LEL**	**Depth to Top Screen (ft)**	**Depth to Bottom (ft)**	**Depth to SWL (ft)**	**Available Screen (ft)**	**Screen Open to Vadose (ft)**
Building	0	---	---	---	---	---
GP-1	0	8.55	18.55	18.55	10	10
GP-2	0	5.45	9.95	9.95	4.5	4.5
GP-3	**86.6**	5.00	14.00	14.00	9	9
GP-4	0	5.00	16.00	14.45	11	9.45
GP-5	0	5.25	9.00	9.00	3.75	3.75
GP-6	**67.5**	10.00	40.00	38.50	30.00	28.50