Annual Groundwater Monitoring and Corrective Action Report

Appalachian Power Company

Clinch River Plant

Pond 1 CCR Management Unit

Cleveland, Virginia

January 31, 2026

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Abbreviations:
ASD - Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS - Groundwater protection standards
SSI - Statistically Significant Increase
SSL - Statistically Significant Level

I. Overview

This *Annual Groundwater Monitoring and Corrective Action Report* (Report) has been prepared to report the status of activities for the preceding year for an inactive surface impoundment CCR unit at Appalachian Power Company's, a wholly owned subsidiary of American Electric Power Company (AEP) Clinch River Power Plant. The USEPA's CCR rules require that the first Annual Groundwater Monitoring and Corrective Action Report be posted to the operating record by August 1, 2019 and annually by January 31 thereafter for inactive surface impoundments. This report has been prepared by January 31, 2026 to cover groundwater monitoring activities during this monitoring period.

In general, the following activities were completed:

- At the start of the current annual monitoring period, Pond 1 was operating under the assessment monitoring program.
- At the end of the current annual reporting period, Pond 1 was operating under the assessment monitoring program.
- An assessment monitoring program was established for Pond 1 on July 15, 2019.
- On October 13, 2019, an Assessment of Corrective Measures (ACM) for Pond 1 was initiated. The ACM was completed on December 11, 2019, and a public meeting to discuss the proposed remedies was held on December 19, 2019.
- Two semi-annual progress report on selecting a remedy pursuant to §257.97 were completed on January 18, 2025 and July 18, 2025. A remedy has not yet been selected.
- Data and statistical analysis not available from the previous reporting period indicates that during the October 2024 sampling event:
    - The following Appendix IV parameters exceeded groundwater protection standards:
        - Barium at wells MWs 1603, 1604, 1605, and 1612
        - Cobalt in well MW-1607
        - Lithium at wells MWs 1605, 1606, and 1607
        - Molybdenum at wells MWs 1607
    - The following Appendix III parameters exceeded background concentrations:
        - Calcium at wells MWs 1603, 1604, 1605, and 1612
        - Chloride at wells MWs 1603, 1605, 1606, and 1607
        - Fluoride at well MW-1603

        - Sulfate at wells MWs 1606 and 1607
        - TDS at well MW-1603
- During the April 2025 sampling event
    - The following Appendix IV parameters exceeded established groundwater protection standards:
        - Barium at wells MWs 1603, 1604, 1605, and 1612
        - Cobalt in well MW-1607
        - Lithium at wells MWs 1605, 1606, and 1607
        - Molybdenum at well MW-1607
    - The following Appendix III parameters exceeded background:
        - Calcium in wells MWs 1603, 1604, 1605, and 1612
        - Chloride in wells MWs 1603, 1605, 1606, and 1607
        - Fluoride in well MW-1606
        - pH in wells MWs 1606 and 1607
        - Sulfate in wells MWs 1606 and 1607
- The October 2025 data are still undergoing statistical analysis.

The major components of this annual report, to the extent currently applicable, are presented in sections that follow:

- A map, aerial photograph or a drawing showing the CCR management unit(s), all groundwater monitoring wells and monitoring well identification numbers (Attached as **Appendix 1**);
- All the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of background, detection monitoring, or assessment monitoring programs (Attached as **Appendix 1**);
- Statistical comparison of monitoring data to determine if there has been SSI/SSLs (Attached as **Appendix 2**, where applicable);
- A discussion of whether any alternate source demonstrations were performed, and the conclusions (Attached as **Appendix 3**, where applicable);
- A summary of any transition between monitoring programs, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in

addition to identifying the constituents detected at a SSI/SSL(Notices Attached as **Appendix 4**, where applicable);

- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened (Attached as **Appendix 5**, where applicable); and

- Other information required to be included in the annual report, if applicable.

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

There are three hydrogeological formations monitored at the facility: the Rome, Chattanooga, and Dumps Fault. The following is a list of wells (S = Shallow zone, D = Deep zone):

Rome Formation

Upgradient wells: MW-1609

Downgradient wells: MW-1606 and MW-1607

Nature and Extent wells: W-1906(S, D); W-1907(S, D), W-1913(S, D)

Chattanooga Formation

Upgradient wells: MW-1601; MW1602; and MW-1608

Downgradient wells: MW-1603; MW-1604; MW-1605; and MW-1612

Nature and Extent wells: W-1903(S, D); W-1904(S, D); W-1905(S, D); W-2012(S, D); W-2201(S, D); W-2202(S, D); and W-2203(S, D)

Dumps Fault Formation

Upgradient wells: MW-1611 and W-2204

Downgradient wells: MW-1610

Nature and Extent wells: W-1910S

A figure that depicts the PE-certified groundwater monitoring network, the monitoring well locations and their corresponding identification numbers is provided in **Appendix 1**.

III. Monitoring Wells Installed or Decommissioned

The network design, as summarized in the *Groundwater Monitoring Network Design Report* (2019) and as posted at the CCR website for Clinch River Plant, did not change. That design report discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the

uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

Since the facility entered assessment monitoring and no alternative source was identified, 13 monitoring wells were installed after initiating the assessment of corrective measures in 2019 to define the horizontal and vertical extent of constituents exceeding the groundwater protections standards at statistically significant levels. Six clusters of shallow and deep wells, and one shallow well were installed near Dumps Creek and the Clinch River downgradient of the ash pond. The monitoring wells installed at the end of 2019 and were documented in the 2019 annual report.

In 2020, two additional monitoring wells were installed to help define the extent of the plume. The monitoring well installation reports for those two wells were included in the 2020 annual report.

In 2022, seven additional monitoring wells were installed. Six of the monitoring wells were nature and extent wells installed in the Chattanooga Shale. One monitoring well was installed upgradient in the Dumps Fault. The boring logs and well construction certifications were included in the 2022 annual report.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction Calculations and Discussion

Appendix 1 contains tables showing the groundwater quality data collected during the establishment of background quality, detection, and assessment monitoring. Static water elevation data from each monitoring event also are shown in **Appendix 1**, along with the groundwater velocity calculations, groundwater flow direction and potentiometric maps developed after each sampling event.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis report(s).

- The sampling event conducted in February 2025 satisfies the requirement of 257.95(b).
- Data and statistical analysis not available from the previous reporting period indicates that during the October 2024 sampling event:
    - The following Appendix IV parameters exceeded groundwater protection standards:
        - Barium at wells MWs 1603, 1604, 1605, and 1612
        - Cobalt in well MW-1607
        - Lithium at wells MWs 1605, 1606, and 1607
        - Molybdenum at wells MWs 1607
    - The following Appendix III parameters exceeded background concentrations:

        - Calcium at wells MWs 1603, 1604, 1605, and 1612
        - Chloride at wells MWs 1603, 1605, 1606, and 1607
        - Fluoride at well MW-1603
        - Sulfate at wells MWs 1606 and 1607
        - TDS at well MW-1603
- During the April 2025 sampling event:
    - The following Appendix IV parameters exceeded established groundwater protection standards:
        - Barium at wells MWs 1603, 1604, 1605, and 1612
        - Cobalt in well MW-1607
        - Lithium at wells MWs 1605, 1606, and 1607
        - Molybdenum at well MW-1607
    - The following Appendix III parameters exceeded background:
        - Calcium in wells MWs 1603, 1604, 1605, and 1612
        - Chloride in wells MWs 1603, 1605, 1606, and 1607
        - Sulfate in wells MWs 1606 and 1607
- The October 2025 sampling event's data are still undergoing statistical analysis.

VI. Alternative Source Demonstrations Completed

No alternative source for the groundwater protection standard, or background concentration exceedances has been found at Pond 1, and the CCR unit remains in assessment monitoring and remedies are being evaluated for selection as corrective measures.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

A notification that Pond 1 established an assessment monitoring program was placed in the Operating Record on August 1, 2019, in accordance with the requirement of 257.94(e)(3). Pond 1 also initiated and completed an Assessment of Corrective Measures by December 11, 2019. A public meeting was held on December 19, 2019, to discuss the proposed remedies.

As of the date of this report, there has been no remedy selected pursuant to § 257.97. Two semi-annual reports discussing the progress towards selecting a remedy were prepared during this monitoring period. The CCR Unit will continue to sample according to the assessment monitoring program.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production are high enough at this facility that no modification to the semiannual assessment monitoring frequency is needed.

VIII. Other Information Required

Pond 1 has progressed from detection monitoring to its status in assessment and corrective action monitoring. As required under assessment monitoring rules in 40 CFR 257.95 (b) and (d)(1), all wells installed pursuant to the requirements of 257.91 were sampled for Appendix III and IV parameters semi-annually during this reporting period.

IX. Description of Any Problems Encountered and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly, and the schedule was met to support the annual groundwater report preparation.

X. A Projection of Key Activities for the Upcoming Year

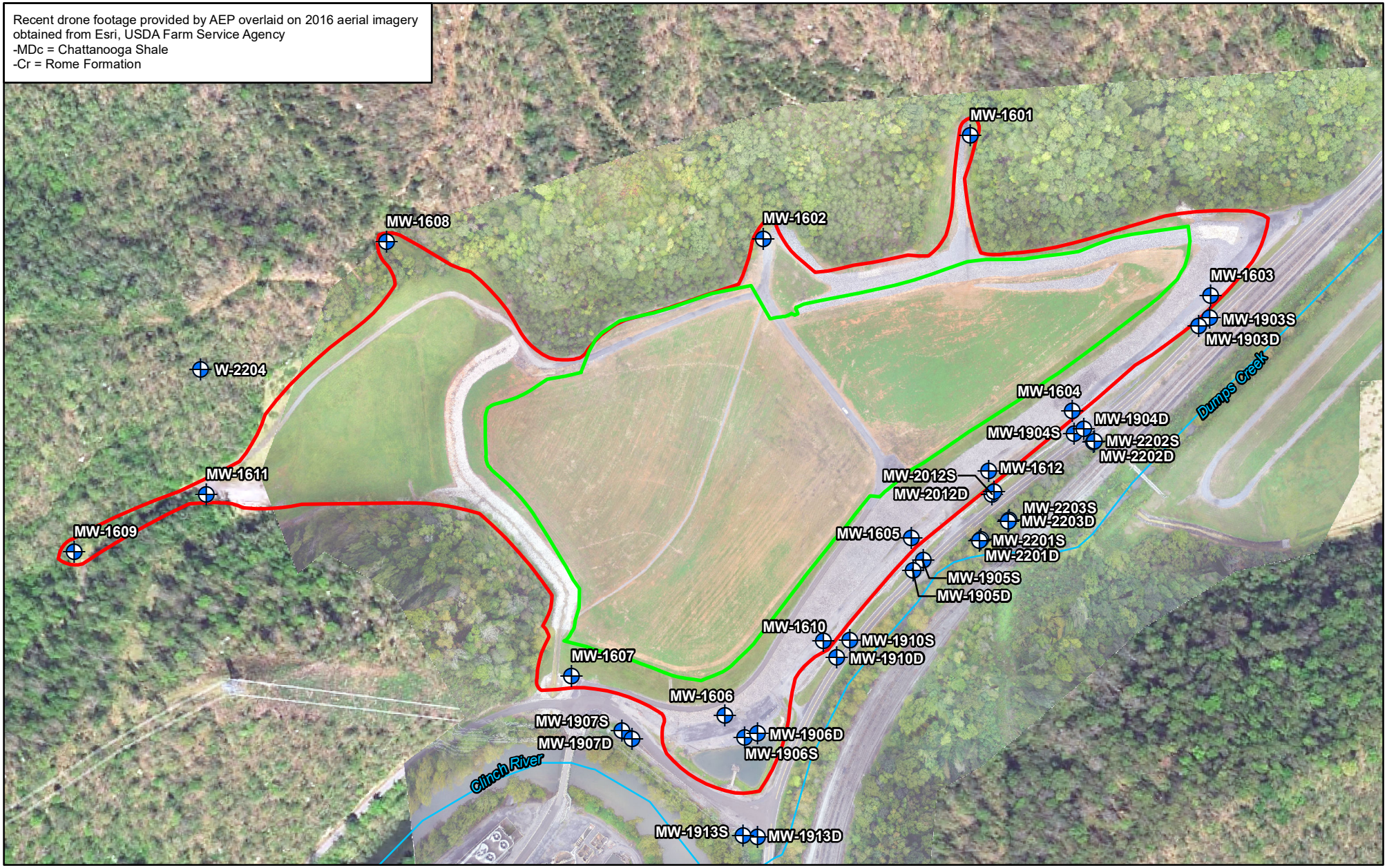
- Complete the statistical evaluation of the second semi-annual groundwater monitoring event that took place in October 2025.
- Conduct the annual groundwater sampling event for all constituents listed in Appendix III and IV as required by 40 CFR 257.95(b).
- Perform statistical analysis on the sampling results for the Appendix III and Appendix IV parameters as required by 40 CFR 257.95(d)(1).
- Determine applicable GWPSs for the Appendix IV parameters and compare the results of Appendix IV concentrations in downgradient wells to the GWPSs.
- Semi-annual progress report on selecting and designing remedial corrective action.
- Responding to any new data received considering CCR rule requirements.
- Preparation of the next annual groundwater report.

APPENDIX 1 – Groundwater Data Tables and Figures

Figures and Tables follow, showing the groundwater monitoring network, data collected and the rate and direction of groundwater flow. The dates that the samples were collected, and it also is shown whether the data were collected under background, detection, or assessment monitoring.

Groundwater Monitoring Network Figure

Recent drone footage provided by AEP overlaid on 2016 aerial imagery obtained from Esri, USDA Farm Service Agency
-MDc = Chattanooga Shale
-Cr = Rome Formation



SYMBOL KEY

- Monitoring Well
- Pond 1 VA Permit SWP620 Boundary
- Pond 1 CCR Unit Boundary
- Stream/Surface Water

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wood.

N

0 50 100 200 300 Meters

0 150 300 600 900 1,200 Feet

FIGURE 1
Pond 1 Groundwater Monitoring Network
American Electric Power, Clinch River Plant Carbo, Virginia

08/29/2022	AEP_Pond1	
PROJ: 3050190394	Drawn: BF	

Groundwater Data Tables

Table 1. Groundwater Data Summary: -MW-1601
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/19/2017	Background	0.447	5.58	23.8	1.86	7.8	166	1180
12/12/2017	Background	0.473	5.88	31.9	1.82	8.3	250	1340
2/13/2018	Background	0.496	5.99	30.8	2.13	8.4	248	1380
4/11/2018	Background	0.514	7.49	41.0	2.10	8.3	319	1620
6/07/2018	Background	0.576	6.34	31.4	2.22	8.4	245	1440
8/20/2018	Background	0.517	8.42	45.8	2.10	8.3	358	1730
10/17/2018	Background	0.542	6.84	34.3	2.20	8.5	258	1500
12/06/2018	Background	0.593	5.65	28.1	2.22	8.5	210	1410
2/07/2019	Detection	0.526	5.50	24.0	2.32	8.4	184	1370
4/08/2019	Assessment	0.577	5.90	25.2	2.18	8.4	173	1390
5/28/2019	Assessment	0.541	5.21	24.3	1.89	8.7	181	1390
10/01/2019	Assessment	0.609	6.90	33.2	2.09	8.3	250	1480
2/10/2020	Assessment	0.563	4.94	20.5	1.75	8.7	168	1350
4/20/2020	Assessment	0.523	4.95	18.9	2.35	8.2	162	1320
10/06/2020	Assessment	0.589	5.60	27.1	2.10	8.2	214	1460
2/08/2021	Assessment	0.549	4.83	23.1	2.40	8.2	185	1360
4/12/2021	Assessment	0.527	5.68	22.5	2.42	8.5	188	1480
10/11/2021	Assessment	0.550	5.4	18.9	2.30	8.6	156	1360
2/22/2022	Assessment	0.531	5.14 M1	24.6	2.29	8.8	302	1580
4/12/2022	Assessment	0.549	4.72	16.8	2.37	8.2	154	1340
10/03/2022	Assessment	0.591	6.96	21.1	2.31	8.2	231	1610
2/13/2023	Assessment	0.534	5.11	23.7	2.32	8.2	270	1560
4/03/2023	Assessment	0.538	5.20	17.0	2.39	6.7	168	1360
10/09/2023	Assessment	0.489	4.30	20.7	2.17	8.3	244	1430
2/19/2024	Assessment	0.480	5.16	15.3	2.18	8.3	164	1340
4/01/2024	Assessment	0.550	5.15	14.5	2.29	8.3	142	1240
10/07/2024	Assessment	0.51	5.2	12.5	2.44	8.3	121	1380
4/01/2025	Assessment	0.54	6.0	15.1	2.36	7.9	165	1400 S7
9/29/2025	Assessment	0.54	5.3	15.0	2.33	8.9	170	1360

Table 1. Groundwater Data Summary: -MW-1601
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/19/2017	Background	0.18	9.18	238	< 0.004 U1	< 0.005 U1	0.221	0.112	1.204	1.86	0.070	0.095	< 0.05 U1	25.7	0.04 J1	0.02 J1
12/12/2017	Background	0.19	8.39	306	0.007 J1	0.009 J1	0.281	0.149	2.077	1.82	0.153	0.092	0.08 J1	21.9	0.06 J1	< 0.01 U1
2/13/2018	Background	0.11	7.06	280	0.007 J1	< 0.005 U1	0.155	0.091	1.010	2.13	0.125	0.098	< 0.05 U1	12.0	0.05 J1	0.04 J1
4/11/2018	Background	0.12	14.9	293	0.007 J1	< 0.005 U1	0.544	0.092	0.862	2.10	0.096	0.110	0.05 J1	6.60	0.07 J1	0.01 J1
6/07/2018	Background	0.16	17.0	262	0.005 J1	0.006 J1	0.279	0.062	1.146	2.22	0.072	0.118	< 0.05 U1	3.77	< 0.03 U1	0.01 J1
8/20/2018	Background	0.25	25.8	296	0.005 J1	< 0.005 U1	0.402	0.099	0.711	2.10	0.047	0.108	< 0.05 U1	3.79	0.06 J1	0.01 J1
10/17/2018	Background	0.20	24.7	222	< 0.02 U1	< 0.01 U1	0.217	0.074	3.229	2.20	0.03 J1	0.098	< 0.05 U1	3.00	0.04 J1	< 0.1 U1
12/06/2018	Background	0.15	17.8	191	< 0.02 U1	< 0.01 U1	0.235	0.061	0.871	2.22	0.06 J1	0.092	< 0.05 U1	3.34	< 0.03 U1	< 0.1 U1
2/07/2019	Detection	0.17	17.8	176	< 0.02 U1	0.01 J1	0.292	0.072	0.157	2.32	0.08 J1	0.099	< 0.05 U1	2.85	< 0.03 U1	< 0.1 U1
4/08/2019	Assessment	0.15	21.7	184	< 0.02 U1	0.02 J1	0.258	0.072	0.337	2.18	0.07 J1	0.111	0.05 J1	1 J1	0.04 J1	< 0.1 U1
5/28/2019	Assessment	0.11	18.4	179	< 0.02 U1	< 0.01 U1	0.288	0.064	0.939	1.89	0.02 J1	0.090	0.1 J1	1 J1	< 0.03 U1	< 0.1 U1
10/01/2019	Assessment	0.11	21.1	239	< 0.02 U1	< 0.01 U1	0.291	0.088	0.481	2.09	< 0.05 U1	0.108	< 0.2 U1	1 J1	0.05 J1	< 0.1 U1
2/10/2020	Assessment	0.07 J1	10.1	156	< 0.02 U1	< 0.01 U1	0.231	0.073	2.076	1.75	< 0.05 U1	0.0901	< 0.2 U1	1 J1	0.04 J1	< 0.1 U1
4/20/2020	Assessment	0.09 J1	11.5	152	< 0.02 U1	< 0.01 U1	0.242	0.093	2.257	2.35	0.05 J1	0.0904	< 0.2 U1	1 J1	0.06 J1	< 0.1 U1
10/06/2020	Assessment	0.06 J1	11.4	172	< 0.02 U1	< 0.01 U1	0.2 J1	0.080	0.618	2.10	0.1 J1	0.0939	< 0.2 U1	2.10	0.06 J1	< 0.1 U1
2/08/2021	Assessment	0.06 J1	7.91	152	< 0.02 U1	< 0.01 U1	0.263	0.078	0.645	2.40	< 0.05 U1	0.0938	< 0.2 U1	1 J1	0.09 J1	< 0.1 U1
4/12/2021	Assessment	0.05 J1	8.77	176	< 0.007 U1	< 0.004 U1	0.1 J1	0.057	0.727	2.42	0.08 J1	0.0975	< 0.2 U1	0.9 J1	< 0.09 U1	< 0.04 U1
10/11/2021	Assessment	0.05 J1	7.00	161	< 0.007 U1	< 0.004 U1	0.14 J1	0.066	0.27	2.30	< 0.1 U1	0.0921	< 0.2 U1	0.9	< 0.09 U1	< 0.08 U1
2/22/2022	Assessment	0.02 J1	5.93	171	< 0.007 U1	< 0.004 U1	0.15 J1	0.058	1.03	2.29	< 0.05 U1	0.108 M1, P3	< 0.2 U1	0.9	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	0.02 J1	4.69	134	< 0.007 U1	< 0.004 U1	0.07 J1	0.052	0.79	2.37	< 0.05 U1	0.0897	< 0.2 U1	0.8	< 0.09 U1	< 0.04 U1
10/03/2022	Assessment	0.02 J1	6.01	175	< 0.007 U1	< 0.004 U1	0.10 J1	0.066	1.19	2.31	< 0.05 U1	0.0964	< 0.2 U1	1.0	< 0.09 U1	< 0.04 U1
2/13/2023	Assessment	0.03 J1	4.47	139	< 0.007 U1	0.004 J1	0.22	0.077	1.62	2.32	0.09 J1	0.0846	< 0.2 U1	0.8	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.023 J1	4.08	127	< 0.007 U1	< 0.004 U1	0.18 J1	0.057	2.47	2.39	0.06 J1	0.106 M1	< 0.2 U1	0.8	< 0.04 U1	< 0.02 U1
10/09/2023	Assessment	0.024 J1	4.22	141	< 0.007 U1	< 0.004 U1	0.28 J1	0.058	1.09	2.17	0.06 J1	0.0926	< 0.2 U1	0.8	< 0.04 U1	< 0.02 U1
2/19/2024	Assessment	0.016 J1	4.03	135	< 0.007 U1	< 0.004 U1	0.19 J1	0.044	0.82	2.18	0.05 J1	0.0898	< 0.2 U1	0.8	0.07 J1	< 0.02 U1
4/01/2024	Assessment	0.021 J1	4.26	137	< 0.007 U1	< 0.004 U1	0.25 J1	0.050	0.63	2.29	0.06 J1	0.101	< 0.2 U1	0.9	< 0.04 U1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	3.3	121	< 0.06 U1	0.03 J1	< 0.6 U1	0.05 J1	0.69	2.44	< 0.4 U1	0.0876	< 0.2 U1	1.0 J1	< 0.3 U1	< 0.2 U1
4/01/2025	Assessment	< 0.06 U1	4.4	155	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	1.23	2.36	0.6 J1	0.0911 M1	< 0.2 U1	1.7 J1	< 0.3 U1	< 0.2 U1
9/29/2025	Assessment	< 0.2 U1	4.1	161	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	0.94	2.33	< 0.4 U1	0.0947	< 0.2 U1	0.9 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1602
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/19/2017	Background	0.654	3.09	4.2	1.45	8.0	32.8	525
12/12/2017	Background	0.584	2.64	4.2	1.57	8.7	29.2	516
2/13/2018	Background	0.621	2.93	4.9	1.61	8.5	32.2	528
4/11/2018	Background	0.614	2.78	5.6	1.63	8.7	32.4	500
6/07/2018	Background	0.672	2.74	5.2	1.64	8.6	29.1	525
8/20/2018	Background	0.547	2.84	6.5	1.57	8.5	37.5	567
10/15/2018	Background	0.664	2.94	5.6	1.61	8.6	29.0	544
12/06/2018	Background	0.637	2.78	3.8	1.64	8.7	16.7	500
2/07/2019	Detection	0.590	3.72	4.4	1.69	8.7	20.5	521
4/08/2019	Assessment	0.620	4.00	5.5	1.56	8.6	25.0	571
5/28/2019	Assessment	0.579	3.39	4.4	1.66	8.8	20.4	517
10/01/2019	Assessment	0.640	4.62	5.7	1.54	8.6	29.5	530
2/10/2020	Assessment	0.617	3.07	3.7	1.56	9.2	15.7	504
4/20/2020	Assessment	0.605	3.83	3.9	1.70	8.6	17.4	510
10/06/2020	Assessment	0.633	3.78	5.3	1.57	8.5	24.5	527
2/08/2021	Assessment	0.610	3.70	3.9	1.76	8.4	16.1	539
4/12/2021	Assessment	0.600	3.73	4.6	1.77	8.6	20.3	522
10/11/2021	Assessment	0.578	4.3	4.56	1.65	8.5	20.2	520
2/22/2022	Assessment	0.590	3.25	4.94	1.73	8.8	25.1	530
4/12/2022	Assessment	0.629	3.22	3.54	1.74	8.1	15.2	510
10/03/2022	Assessment	0.632	4.66	4.94	1.70	7.3	25.1	510
2/13/2023	Assessment	0.597	3.53	4.09	1.76	8.5	17.1	510
4/03/2023	Assessment	0.591	3.24	3.94	1.76	7.2	15.2	510
10/09/2023	Assessment	0.526	3.17	4.91	1.62	8.5	22.0	520
2/19/2024	Assessment	0.547	3.38	4.06	1.61	8.5	14.5	500 S7
4/01/2024	Assessment	0.601	3.61	3.67	1.67	8.4	12.1	480
10/07/2024	Assessment	0.58	3.7	3.66	1.78	8.4	11.7	510
4/01/2025	Assessment	0.61	4.0	4.84	1.75	8.0	17.9	570 S7
9/29/2025	Assessment	0.59	3.8	4.12	1.72	7.9	15.1	520

Table 1. Groundwater Data Summary: -MW-1602
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/19/2017	Background	0.22	2.69	104	0.01 J1	< 0.005 U1	0.472	0.151	0.600	1.45	0.185	0.051	< 0.05 U1	9.80	0.04 J1	0.02 J1
12/12/2017	Background	0.12	2.15	111	0.01 J1	< 0.005 U1	0.291	0.100	0.6097	1.57	0.114	0.043	< 0.05 U1	7.77	< 0.03 U1	< 0.01 U1
2/13/2018	Background	0.07	3.54	111	0.008 J1	< 0.005 U1	0.153	0.060	0.748	1.61	0.093	0.043	< 0.05 U1	8.70	< 0.03 U1	0.03 J1
4/11/2018	Background	0.07	2.90	109	0.006 J1	< 0.005 U1	0.268	0.047	0.18727	1.63	0.140	0.040	< 0.05 U1	6.41	< 0.03 U1	< 0.01 U1
6/07/2018	Background	0.07	2.16	109	0.007 J1	< 0.005 U1	0.262	0.041	0.8588	1.64	0.062	0.045	< 0.05 U1	3.99	< 0.03 U1	< 0.01 U1
8/20/2018	Background	0.13	3.69	114	< 0.004 U1	0.03	0.245	0.042	0.4565	1.57	0.126	0.034	< 0.05 U1	4.84	< 0.03 U1	0.01 J1
10/15/2018	Background	0.06 J1	2.95	101	< 0.02 U1	< 0.01 U1	0.251	0.03 J1	0.2328	1.61	0.06 J1	0.032	< 0.05 U1	3.27	< 0.03 U1	< 0.1 U1
12/06/2018	Background	0.05 J1	1.49	106	< 0.02 U1	< 0.01 U1	0.246	0.04 J1	1.247	1.64	0.05 J1	0.048	< 0.05 U1	2.87	< 0.03 U1	< 0.1 U1
2/07/2019	Detection	0.08 J1	1.88	106	< 0.02 U1	< 0.01 U1	0.231	0.04 J1	0.2875	1.69	0.04 J1	0.045	< 0.05 U1	4.66	0.04 J1	< 0.1 U1
4/08/2019	Assessment	0.09 J1	2.02	103	< 0.02 U1	< 0.01 U1	0.2 J1	0.03 J1	0.135	1.56	0.05 J1	0.043	< 0.05 U1	4.76	< 0.03 U1	< 0.1 U1
5/28/2019	Assessment	0.07 J1	1.67	106	< 0.02 U1	< 0.01 U1	0.2 J1	0.02 J1	0.0613	1.66	0.03 J1	0.036	0.1 J1	3.70	< 0.03 U1	< 0.1 U1
10/01/2019	Assessment	0.09 J1	1.92	109	< 0.02 U1	< 0.01 U1	0.2 J1	0.02 J1	0.701	1.54	< 0.05 U1	0.0419	< 0.2 U1	4.21	< 0.03 U1	< 0.1 U1
2/10/2020	Assessment	0.04 J1	1.52	99.6	< 0.02 U1	< 0.01 U1	0.2 J1	0.060	1.37	1.56	< 0.05 U1	0.0386	< 0.2 U1	2 J1	< 0.03 U1	< 0.1 U1
4/20/2020	Assessment	0.05 J1	1.21	102	< 0.02 U1	< 0.01 U1	0.1 J1	0.02 J1	0.673	1.70	< 0.05 U1	0.0382	< 0.2 U1	2.52	0.06 J1	< 0.1 U1
10/06/2020	Assessment	0.23	2.03	107	< 0.02 U1	< 0.01 U1	0.329	0.04 J1	0.646	1.57	0.08 J1	0.0373	< 0.2 U1	2.41	0.05 J1	< 0.1 U1
2/08/2021	Assessment	0.53	1.39	103	< 0.02 U1	< 0.01 U1	0.2 J1	0.03 J1	0.419	1.76	< 0.05 U1	0.0378	< 0.2 U1	2 J1	0.04 J1	< 0.1 U1
4/12/2021	Assessment	0.54	1.69	98.7	< 0.01 U1	< 0.004 U1	0.06 J1	0.02 J1	0.892	1.77	< 0.05 U1	0.0476	< 0.2 U1	2 J1	< 0.09 U1	< 0.04 U1
10/11/2021	Assessment	0.35	1.61	100	< 0.007 U1	< 0.004 U1	0.07 J1	0.023	0.51	1.65	< 0.05 U1	0.0350	< 0.2 U1	1.4	< 0.09 U1	< 0.04 U1
2/22/2022	Assessment	0.14	1.63	97.2	< 0.007 U1	< 0.004 U1	0.12 J1	0.018 J1	1.00	1.73	< 0.05 U1	0.0367	< 0.2 U1	1	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	0.13	1.27	97.3	< 0.007 U1	< 0.004 U1	< 0.04 U1	0.018 J1	0.72	1.74	< 0.05 U1	0.0375	< 0.2 U1	1	< 0.09 U1	< 0.04 U1
10/03/2022	Assessment	0.13	1.81	98.7	< 0.07 U1	< 0.004 U1	0.11 J1	0.019 J1	0.56	1.70	< 0.05 U1	0.0395	< 0.2 U1	0.9	< 0.09 U1	< 0.04 U1
2/13/2023	Assessment	0.06 J1	1.66	98.4	< 0.007 U1	< 0.004 U1	0.18 J1	0.019 J1	15.74	1.76	< 0.05 U1	0.0347	< 0.2 U1	0.7	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.058 J1	1.47	93.5	< 0.007 U1	< 0.004 U1	0.15 J1	0.021	2.05	1.76	< 0.05 U1	0.0362	< 0.2 U1	0.7	< 0.04 U1	< 0.02 U1
10/09/2023	Assessment	0.049 J1	1.58	83.1	< 0.007 U1	< 0.004 U1	0.18 J1	0.014 J1	0.55	1.62	< 0.05 U1	0.0348	< 0.2 U1	0.6	< 0.04 U1	< 0.02 U1
2/19/2024	Assessment	0.043 J1	1.84	88.6	< 0.007 U1	< 0.004 U1	0.14 J1	0.013 J1	1.17	1.61	< 0.05 U1	0.0349	< 0.2 U1	0.5	< 0.04 U1	< 0.02 U1
4/01/2024	Assessment	0.043 J1	1.64	85.0	< 0.007 U1	< 0.004 U1	0.19 J1	0.012 J1	0.69	1.67	< 0.05 U1	0.0367	< 0.2 U1	0.6	< 0.04 U1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	1.6	94.5	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	8.42	1.78	< 0.4 U1	0.0373	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/01/2025	Assessment	0.06 J1	1.7	93.1	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	0.22	1.75	0.6 J1	0.0360 M1	< 0.2 U1	1.0 J1	< 0.3 U1	< 0.2 U1
9/29/2025	Assessment	< 0.2 U1	1.9	98.3	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	1.05	1.72	< 0.4 U1	0.0353	< 0.2 U1	0.5 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1603
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/17/2017	Background	0.202	23.3	182	0.17	7.3	45.1	678
12/11/2017	Background	0.193	22.1	121	0.1 J1	7.0	47.3	577
2/14/2018	Background	0.199	22.8	58.3	0.11	6.7	23.0	378
4/12/2018	Background	0.379	24.8	168	0.19	7.8	28.3	599
6/12/2018	Background	0.285	22.8	59.0	0.13	7.6	23.0	408
8/22/2018	Background	0.525	24.4	72.6	0.14	7.8	23.2	448
10/16/2018	Background	0.339	21.6	94.7	0.14	7.8	23.4	472
12/12/2018	Background	0.219	20.6	47.4	0.11	7.0	11.5	339
2/12/2019	Detection	0.177	19.8	59.5	0.11	6.8	8.1	374
4/10/2019	Assessment	0.211	21.7	69.5	0.10	7.2	16.2	434
5/30/2019	Assessment	0.197	20.0	77.0	0.13	7.7	6.2	401
10/02/2019	Assessment	0.313	26.7	124	0.10	7.7	8.7	480
2/11/2020	Assessment	0.362	26.6	162	0.12	8.0	1.9	515
4/21/2020	Assessment	0.256	24.6	128	0.10	6.8	2.3	528
10/07/2020	Assessment	0.300	25.7	171	0.15	7.7	0.6	624
2/09/2021	Assessment	0.345	30.9	184	0.12	7.1	1.9	734
4/13/2021	Assessment	0.374	33.1	263	0.17	7.3	1.6	848
10/12/2021	Assessment	0.252	24.1	127	0.12	7.2	0.63	450
2/23/2022	Assessment	0.279	27.5	169	0.11	7.5	0.80	640
4/13/2022	Assessment	0.244	26.9	109	0.1	7.3	0.75	490
10/05/2022	Assessment	0.269	28.6	122	0.11	7.0	0.46	520
2/14/2023	Assessment	0.233	27.1	137	0.10	6.8	0.41	510
4/04/2023	Assessment	0.199	23.2	106	0.09	6.7	0.3 J1	440
10/10/2023	Assessment	0.166	21.6	93.9	0.1	6.6	0.3 J1	390
2/20/2024	Assessment	0.194	26.1	129	0.07	6.9	< 0.1 U1	500
4/02/2024	Assessment	0.204	26.5 M1	129	0.11	6.7	< 0.1 U1	460
10/08/2024	Assessment	0.32 J1	35.5	407	0.19	6.8	< 0.1 U1	1020
2/18/2025	Assessment	0.24 J1	29.2	135	0.11	6.8	< 0.1 U1	490
4/02/2025	Assessment	0.28 J1	33.1	191	0.14	7.7	< 0.1 U1	590
10/01/2025	Assessment	0.23 J1	30.4	163	0.12	7.3	< 0.04 U1	540

Table 1. Groundwater Data Summary: -MW-1603
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/17/2017	Background	0.04 J1	1.82	2160	< 0.004 U1	< 0.005 U1	0.214	0.691	3.233	0.17	0.038	0.054	< 0.05 U1	4.71	0.1	0.02 J1
12/11/2017	Background	0.05 J1	1.70	1950	0.01 J1	< 0.005 U1	0.190	0.541	0.901	0.1 J1	0.021	0.048	0.06 J1	2.55	0.07 J1	0.01 J1
2/14/2018	Background	0.04 J1	1.68	2070	0.01 J1	< 0.005 U1	0.157	0.451	0.6982	0.11	0.008 J1	0.048	< 0.05 U1	2.12	0.1	0.01 J1
4/12/2018	Background	0.04 J1	1.98	2250	< 0.004 U1	< 0.005 U1	0.187	0.616	1.091	0.19	0.01 J1	0.093	< 0.05 U1	1.79	0.04 J1	< 0.01 U1
6/12/2018	Background	0.06	2.20	2140	0.008 J1	< 0.005 U1	0.231	0.795	0.888	0.13	0.009 J1	0.073	< 0.05 U1	1.24	0.06 J1	0.01 J1
8/22/2018	Background	0.07	2.98	2280	< 0.004 U1	< 0.005 U1	0.324	0.776	1.103	0.14	0.02 J1	0.095	< 0.05 U1	1.51	0.05 J1	0.01 J1
10/16/2018	Background	< 0.02 U1	2.89	1980	< 0.02 U1	< 0.01 U1	0.226	0.684	0.383	0.14	< 0.02 U1	0.064	< 0.05 U1	1 J1	0.08 J1	< 0.1 U1
12/12/2018	Background	< 0.02 U1	1.75	1780	< 0.02 U1	< 0.01 U1	0.237	0.511	0.632	0.11	< 0.02 U1	0.042	< 0.05 U1	0.6 J1	0.1 J1	< 0.1 U1
2/12/2019	Detection	0.02 J1	1.63	1860	< 0.02 U1	< 0.01 U1	0.222	0.486	0.3849	0.11	< 0.02 U1	0.049	< 0.05 U1	0.6 J1	0.08 J1	< 0.1 U1
4/10/2019	Assessment	0.02 J1	2.43	2000	< 0.02 U1	< 0.01 U1	0.2 J1	0.477	1.643	0.10	< 0.02 U1	0.052	< 0.05 U1	0.5 J1	0.09 J1	< 0.1 U1
5/30/2019	Assessment	< 0.02 U1	2.44	2100	< 0.02 U1	< 0.01 U1	0.233	0.432	1.050	0.13	< 0.02 U1	0.055	< 0.05 U1	0.5 J1	0.09 J1	< 0.1 U1
10/02/2019	Assessment	< 0.02 U1	2.84	2380	< 0.02 U1	< 0.01 U1	0.208	0.318	1.399	0.10	< 0.05 U1	0.0767	< 0.2 U1	0.6 J1	0.08 J1	< 0.1 U1
2/11/2020	Assessment	0.03 J1	2.32	2840	< 0.02 U1	< 0.01 U1	0.2 J1	0.172	2.02	0.12	< 0.05 U1	0.0873	< 0.2 U1	0.5 J1	< 0.03 U1	< 0.1 U1
4/21/2020	Assessment	0.03 J1	2.00	2570	< 0.02 U1	< 0.01 U1	0.234	0.282	1.013	0.10	< 0.05 U1	0.0661	< 0.2 U1	0.9 J1	0.08 J1	< 0.1 U1
10/07/2020	Assessment	0.06 J1	2.09	2770	< 0.02 U1	< 0.01 U1	0.08 J1	0.189	0.581	0.15	< 0.05 U1	0.0716	< 0.2 U1	0.4 J1	0.04 J1	< 0.1 U1
2/09/2021	Assessment	0.08 J1	3.36	3810	< 0.02 U1	< 0.01 U1	0.1 J1	0.153	1.392	0.12	< 0.05 U1	0.0977	< 0.2 U1	0.4 J1	0.08 J1	< 0.1 U1
4/13/2021	Assessment	0.08 J1	3.94	3540	< 0.007 U1	< 0.004 U1	0.2 J1	0.118	1.565	0.17	< 0.05 U1	0.103	< 0.2 U1	0.5 J1	< 0.09 U1	< 0.04 U1
10/12/2021	Assessment	0.08 J1	2.81	2740	< 0.007 U1	< 0.004 U1	0.24	0.206	1.85	0.12	< 0.05 U1	0.0613	< 0.2 U1	0.5	< 0.09 U1	< 0.04 U1
2/23/2022	Assessment	0.09 J1	2.84	3190	< 0.007 U1	< 0.004 U1	0.12 J1	0.167 B1	1.97	0.11	< 0.05 U1	0.0777	< 0.2 U1	0.4 J1	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	0.09 J1	2.62	2750	< 0.007 U1	< 0.004 U1	0.10 J1	0.203	0.68	0.1	< 0.05 U1	0.0617	< 0.2 U1	0.4 J1	0.1 J1	< 0.04 U1
10/05/2022	Assessment	0.05 J1	2.96	2980	0.007 J1	< 0.004 U1	0.52	0.219	1.83	0.11	< 0.05 U1	0.080	< 0.2 U1	0.4 J1	0.11 J1	< 0.04 U1
2/14/2023	Assessment	0.07 J1	2.74	2850	0.008 J1	< 0.004 U1	0.21	0.219	1.66	0.10	< 0.05 U1	0.0557	< 0.2 U1	1.9	0.09 J1	< 0.04 U1
4/04/2023	Assessment	0.123	2.34	2320	0.01 J1	< 0.004 U1	0.18 J1	0.199	1.70	0.09	< 0.05 U1	0.0522	< 0.2 U1	0.3 J1	0.09 J1	< 0.02 U1
10/10/2023	Assessment	0.026 J1	1.77	2150	0.010 J1	< 0.004 U1	0.22 J1	0.217	2.52	0.1	< 0.05 U1	0.0418	< 0.2 U1	0.2 J1	0.05 J1	< 0.02 U1
2/20/2024	Assessment	0.029 J1	2.28	2680	0.008 J1	< 0.004 U1	0.18 J1	0.202	1.04	0.07	< 0.05 U1	0.0508	< 0.2 U1	0.2 J1	0.11 J1	< 0.02 U1
4/02/2024	Assessment	0.046 J1	2.26	2810 M1	0.009 J1	< 0.004 U1	0.18 J1	0.199	1.36	0.11	< 0.05 U1	0.0560	< 0.2 U1	0.2 J1	0.08 J1	< 0.02 U1
10/08/2024	Assessment	0.07 J1	3.1	3550	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.09 J1	0.81	0.19	< 0.4 U1	0.103	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
2/18/2025	Assessment	0.08 J1	2.4	2820	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.23	1.79	0.11	< 0.4 U1	0.0577	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	0.14 J1	2.9	3340	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.12 J1	1.23	0.14	< 0.4 U1	0.0909	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
10/01/2025	Assessment	< 0.2 U1	2.5	2890	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.17 J1	0.92	0.12	< 0.4 U1	0.0626	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1604
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/17/2017	Background	0.428	27.7	29.9	0.27	6.9	8.2	404
12/11/2017	Background	0.476	29.3	22.5	0.22	6.7	6.3	395
2/14/2018	Background	0.396	26.3	22.6	0.23	7.1	6.7	378
4/12/2018	Background	0.399	27.2	22.5	0.27	7.2	5.6	410
6/12/2018	Background	0.406	26.2	21.0	0.25	7.1	4.2	374
8/22/2018	Background	0.471	27.3	20.3	0.26	7.1	4.1	390
10/16/2018	Background	0.444	27.2	17.8	0.22	7.1	3.4	390
12/12/2018	Background	0.468	28.9	19.4	0.22	7.1	2.8	375
2/12/2019	Detection	0.350	28.0	20.4	0.21	7.2	1.7	386
4/10/2019	Assessment	0.384	28.5	21.1	0.21	7.2	1.4	399
5/30/2019	Assessment	0.348	26.0	19.0	0.26	7.3	1.9	384
10/02/2019	Assessment	0.413	30.9	24.3	0.20	7.1	2.4	407
2/11/2020	Assessment	0.404	27.8	21.9	0.24	7.3	1.3	393
4/21/2020	Assessment	0.392	29.3	24.7	0.25	6.5	0.8	401
10/07/2020	Assessment	0.400	27.3	17.4	0.34	7.0	0.5	384
2/09/2021	Assessment	0.462	22.4	15.7	0.37	7.3	0.9	441
4/13/2021	Assessment	0.403	25.8	16.9	0.30	7.3	0.9	396
10/12/2021	Assessment	0.444	22.9	16.6	0.31	7.6	< 0.06 U1	390
2/23/2022	Assessment	0.413	25.6	16.9	0.30	7.6	0.29 J1	420
4/13/2022	Assessment	0.439	26.5	16.2	0.28	6.8	0.13 J1	390
10/05/2022	Assessment	0.452	25.9	17.3	0.30	6.9	< 0.06 U1	410
2/14/2023	Assessment	0.432	28.6	18.5	0.29	7.2	< 0.06 U1	410
4/04/2023	Assessment	0.436	26.1	17.1	0.28	7.3	< 0.1 U1	360
10/10/2023	Assessment	0.379	23.0	17.1	0.30	7.3	< 0.1 U1	410
2/20/2024	Assessment	0.338	30.6	15.7	0.24	7.2	< 0.1 U1	400
4/02/2024	Assessment	0.405	26.8	16.8	0.27	7.3	< 0.1 U1	370
10/08/2024	Assessment	0.34 J1	30.9	16.4	0.32	7.2	< 0.1 U1	410
2/18/2025	Assessment	0.29 J1	41.6	15.5	0.28	6.7	< 0.1 U1	400
4/02/2025	Assessment	0.36 J1	30.3	17.2	0.33	7.2	< 0.1 U1	420
10/01/2025	Assessment	0.35 J1	33.1 M1	16.9	0.34	7.8	< 0.04 U1	400

Table 1. Groundwater Data Summary: -MW-1604
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/17/2017	Background	0.05	1.64	3330	< 0.004 U1	< 0.005 U1	0.331	0.585	2.503	0.27	0.060	0.078	< 0.05 U1	1.57	0.04 J1	0.01 J1
12/11/2017	Background	0.04 J1	1.39	3160	< 0.004 U1	< 0.005 U1	0.113	0.347	0.46499	0.22	0.02 J1	0.090	0.06 J1	0.83	< 0.03 U1	0.01 J1
2/14/2018	Background	0.05 J1	1.61	3320	< 0.004 U1	< 0.005 U1	0.116	0.487	1.265	0.23	0.01 J1	0.080	< 0.05 U1	0.92	0.05 J1	< 0.01 U1
4/12/2018	Background	0.18	3.10	2880	0.007 J1	< 0.005 U1	0.255	0.427	1.117	0.27	0.068	0.078	< 0.05 U1	0.50	0.07 J1	< 0.01 U1
6/12/2018	Background	0.08	1.58	3210	0.005 J1	< 0.005 U1	0.248	0.687	1.762	0.25	0.047	0.087	< 0.05 U1	0.47	0.05 J1	0.01 J1
8/22/2018	Background	0.07	1.71	3260	< 0.004 U1	< 0.005 U1	0.244	1.03	1.185	0.26	0.01 J1	0.085	< 0.05 U1	0.54	0.05 J1	0.02 J1
10/16/2018	Background	< 0.02 U1	1.89	3040	< 0.02 U1	< 0.01 U1	0.207	1.12	0.776	0.22	< 0.02 U1	0.080	< 0.05 U1	0.6 J1	0.06 J1	< 0.1 U1
12/12/2018	Background	0.04 J1	1.36	3150	< 0.02 U1	< 0.01 U1	0.2 J1	0.634	1.019	0.22	0.02 J1	0.077	< 0.05 U1	0.5 J1	0.03 J1	< 0.1 U1
2/12/2019	Detection	< 0.02 U1	1.50	3010	< 0.02 U1	< 0.01 U1	0.2 J1	0.590	0.6812	0.21	< 0.02 U1	0.076	< 0.05 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
4/10/2019	Assessment	0.03 J1	2.26	3280	< 0.02 U1	< 0.01 U1	0.1 J1	0.701	1.561	0.21	< 0.02 U1	0.083	< 0.05 U1	0.4 J1	0.05 J1	< 0.1 U1
5/30/2019	Assessment	0.02 J1	2.44	3280	< 0.02 U1	< 0.01 U1	0.262	0.766	0.653	0.26	< 0.02 U1	0.077	< 0.05 U1	0.4 J1	0.05 J1	< 0.1 U1
10/02/2019	Assessment	< 0.02 U1	2.98	3320	< 0.02 U1	< 0.01 U1	0.213	0.672	1.521	0.20	< 0.05 U1	0.0887	< 0.2 U1	< 0.4 U1	0.05 J1	< 0.1 U1
2/11/2020	Assessment	0.05 J1	2.40	3200	< 0.02 U1	< 0.01 U1	0.2 J1	0.574	1.596	0.24	< 0.05 U1	0.0636	< 0.2 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
4/21/2020	Assessment	0.03 J1	2.03	3470	< 0.02 U1	< 0.01 U1	0.1 J1	0.580	2.091	0.25	< 0.05 U1	0.0759	< 0.2 U1	0.9 J1	0.03 J1	< 0.1 U1
10/07/2020	Assessment	0.42	2.99	2940	< 0.02 U1	< 0.01 U1	0.286	0.463	0.6107	0.34	< 0.05 U1	0.0661	< 0.2 U1	2 J1	< 0.03 U1	< 0.1 U1
2/09/2021	Assessment	0.12	1.88	3170	< 0.02 U1	< 0.01 U1	0.05 J1	0.329	1.288	0.37	< 0.05 U1	0.0710	< 0.2 U1	< 0.4 U1	0.07 J1	< 0.1 U1
4/13/2021	Assessment	0.05 J1	1.28	3000	< 0.007 U1	< 0.004 U1	0.2 J1	0.299	1.096	0.30	< 0.05 U1	0.0713	< 0.2 U1	0.2 J1	< 0.09 U1	< 0.04 U1
10/12/2021	Assessment	0.06 J1	4.58	3130	< 0.007 U1	< 0.004 U1	0.19 J1	0.210	1.37	0.31	< 0.05 U1	0.0739	< 0.2 U1	0.2 J1	< 0.09 U1	< 0.04 U1
2/23/2022	Assessment	0.12	4.49	3230	< 0.007 U1	< 0.004 U1	0.13 J1	0.186 B1	1.47	0.30	< 0.05 U1	0.0860	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	0.04 J1	2.82	3280	< 0.007 U1	< 0.004 U1	0.04 J1	0.190	1.23	0.28	< 0.05 U1	0.0754	< 0.2 U1	0.2 J1	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.03 J1	3.72	3160	< 0.007 U1	< 0.004 U1	1.71	0.160	1.28	0.30	< 0.05 U1	0.088	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	0.05 J1	3.89	3480	< 0.007 U1	< 0.004 U1	0.19 J1	0.154	0.78	0.29	< 0.05 U1	0.0701	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/04/2023	Assessment	0.023 J1	2.36	2990	< 0.007 U1	< 0.004 U1	0.16 J1	0.144	2.11	0.28	< 0.05 U1	0.0781	< 0.2 U1	0.2 J1	0.04 J1	< 0.02 U1
10/10/2023	Assessment	0.020 J1	2.98	2890	< 0.007 U1	< 0.004 U1	0.45	0.099	1.82	0.30	< 0.05 U1	0.0699	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
2/20/2024	Assessment	0.018 J1	4.57	2870	< 0.007 U1	< 0.004 U1	0.22 J1	0.178	2.00	0.24	< 0.05 U1	0.0604	< 0.2 U1	0.3 J1	0.05 J1	< 0.02 U1
4/02/2024	Assessment	0.023 J1	2.13	3080	< 0.007 U1	< 0.004 U1	0.18 J1	0.123	1.42	0.27	< 0.05 U1	0.0709	< 0.2 U1	0.2 J1	< 0.04 U1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	4.6	2820	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.13 J1	1.16	0.32	< 0.4 U1	0.0677	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
2/18/2025	Assessment	< 0.06 U1	5.0	2440	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.21	1.90	0.28	< 0.4 U1	0.0634	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	< 0.06 U1	3.4	2870	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.12 J1	1.15	0.33	< 0.4 U1	0.0744	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
10/01/2025	Assessment	< 0.2 U1	4.1	2810 M1	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.15 J1	0.56	0.34	< 0.4 U1	0.0653	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1605
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/17/2017	Background	0.540	44.2	184	0.34	7.4	97.8	808
12/12/2017	Background	0.522	44.0	342	0.32	7.7	91.1	807
2/15/2018	Background	0.589	50.8	180	0.35	7.8	101	793
4/11/2018	Background	0.543	48.1	184	0.40	7.8	105	1700
6/12/2018	Background	0.569	48.2	184	0.40	7.7	109	842
8/22/2018	Background	0.699	48.9	186	0.41	7.7	104	857
10/16/2018	Background	0.586	47.9	181	0.37	7.8	85.2	838
12/11/2018	Background	0.589	46.9	177	0.37	7.9	70.5	798
2/12/2019	Detection	0.582	45.1	174	0.35	7.9	61.8	808
4/10/2019	Assessment	0.583	42.9	173	0.33	7.9	46.5	777
5/30/2019	Assessment	0.523	39.5	180	0.39	7.9	47.4	772
10/02/2019	Assessment	0.613	47.6	179	0.31	7.8	35.1	768
2/11/2020	Assessment	0.571	38.7	160	0.36	8.0	11.2	699
4/21/2020	Assessment	0.535	42.3	163	0.33	7.0	5.0	678
10/07/2020	Assessment	0.545	43.4	154	0.38	7.6	< 0.06 U1	682
2/09/2021	Assessment	0.549	42.7	159	0.38	7.8	< 0.06 U1	705
4/13/2021	Assessment	0.529	43.0	161	0.30	7.9	< 0.06 U1	653
10/12/2021	Assessment	0.548	41.6	164	0.36	8.0	< 0.06 U1	660
2/23/2022	Assessment	0.552	45.4	157	0.32	8.1	< 0.06 U1	670
4/13/2022	Assessment	0.571	48.2	154	0.31	7.4	< 0.06 U1	640
10/04/2022	Assessment	0.570	46.6	159	0.30	7.6	< 0.06 U1	650
2/14/2023	Assessment	0.558	47.5	156	0.31	7.7	< 0.06 U1	650
4/04/2023	Assessment	0.535	44.1	146	0.28	7.5	< 0.1 U1	630
10/10/2023	Assessment	0.528	42.1	148	0.28	7.7	< 0.1 U1	630
2/20/2024	Assessment	0.514	44.9	158	0.27	7.8	< 0.1 U1	670
4/02/2024	Assessment	0.537	45.6	145	0.29	7.7	< 0.1 U1	620
10/08/2024	Assessment	0.50	49.7	154	0.35	7.7	< 0.1 U1	660
2/18/2025	Assessment	0.52	48.4 M1	156	0.32	6.8	< 0.1 U1	640
4/02/2025	Assessment	0.49	47.9	159	0.35	7.7	< 0.1 U1	650
9/30/2025	Assessment	0.49	49.5	166	0.34	8.8	< 0.04 U1	650

Table 1. Groundwater Data Summary: -MW-1605
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/17/2017	Background	0.28	5.81	1670	< 0.004 U1	< 0.005 U1	0.163	0.403	2.122	0.34	0.029	0.191	< 0.05 U1	8.54	0.05 J1	< 0.01 U1
12/12/2017	Background	0.21	7.25	1570	0.005 J1	< 0.005 U1	0.158	0.354	2.159	0.32	0.026	0.183	< 0.05 U1	7.42	0.08 J1	0.01 J1
2/15/2018	Background	0.10	4.59	1560	< 0.004 U1	< 0.005 U1	0.136	0.306	1.134	0.35	0.051	0.220	< 0.05 U1	6.62	0.07 J1	0.02 J1
4/11/2018	Background	0.07	4.58	1250	< 0.004 U1	< 0.005 U1	0.219	0.316	1.240	0.40	0.036	0.196	< 0.05 U1	4.35	0.05 J1	< 0.01 U1
6/12/2018	Background	0.14	4.50	1290	0.004 J1	< 0.005 U1	0.230	0.357	1.132	0.40	0.085	0.207	< 0.05 U1	4.19	< 0.03 U1	0.01 J1
8/22/2018	Background	0.11	3.35	1330	0.01 J1	< 0.005 U1	0.291	0.407	0.349	0.41	0.040	0.206	< 0.05 U1	3.38	0.05 J1	0.02 J1
10/16/2018	Background	0.04 J1	3.11	1130	< 0.02 U1	< 0.01 U1	0.215	0.321	0.641	0.37	< 0.02 U1	0.198	< 0.05 U1	2.78	< 0.03 U1	< 0.1 U1
12/11/2018	Background	0.04 J1	3.83	1170	< 0.02 U1	< 0.01 U1	0.2 J1	0.309	2.717	0.37	< 0.02 U1	0.199	< 0.05 U1	2.65	< 0.03 U1	< 0.1 U1
2/12/2019	Detection	0.07 J1	5.22	1110	< 0.02 U1	0.02 J1	0.246	0.264	0.644	0.35	0.05 J1	0.206	< 0.05 U1	2.10	0.04 J1	< 0.1 U1
4/10/2019	Assessment	0.06 J1	4.11	1100	< 0.02 U1	0.01 J1	0.288	0.200	1.137	0.33	0.05 J1	0.199	< 0.05 U1	2.34	0.05 J1	< 0.1 U1
5/30/2019	Assessment	0.04 J1	3.81	1050	< 0.02 U1	< 0.01 U1	0.221	0.176	1.360	0.39	< 0.02 U1	0.178	< 0.05 U1	1 J1	< 0.03 U1	< 0.1 U1
10/02/2019	Assessment	0.03 J1	2.75	1160	< 0.02 U1	< 0.01 U1	0.2 J1	0.125	0.868	0.31	< 0.05 U1	0.204	< 0.2 U1	1 J1	0.07 J1	< 0.1 U1
2/11/2020	Assessment	0.09 J1	3.14	1390	< 0.02 U1	< 0.01 U1	0.455	0.068	0.6629	0.36	< 0.05 U1	0.174	< 0.2 U1	0.7 J1	< 0.03 U1	< 0.1 U1
4/21/2020	Assessment	0.06 J1	1.95	1730	< 0.02 U1	< 0.01 U1	0.335	0.115	1.388	0.33	0.06 J1	0.191	< 0.2 U1	2.68	< 0.03 U1	< 0.1 U1
10/07/2020	Assessment	0.03 J1	2.07	1890	< 0.02 U1	< 0.01 U1	0.300	0.060	6.63	0.38	< 0.05 U1	0.173	< 0.2 U1	0.7 J1	< 0.03 U1	< 0.1 U1
2/09/2021	Assessment	0.03 J1	1.54	2160	< 0.02 U1	< 0.01 U1	0.06 J1	0.04 J1	1.713	0.38	< 0.05 U1	0.190	< 0.2 U1	0.6 J1	0.05 J1	< 0.1 U1
4/13/2021	Assessment	0.04 J1	1.78	2150	< 0.007 U1	< 0.004 U1	0.256	0.04 J1	1.163	0.30	< 0.05 U1	0.182	< 0.2 U1	0.6 J1	< 0.09 U1	< 0.04 U1
10/12/2021	Assessment	0.02 J1	1.29	2390	< 0.007 U1	< 0.004 U1	0.24	0.038	1.65	0.36	0.06 J1	0.191	< 0.2 U1	0.5	< 0.09 U1	< 0.04 U1
2/23/2022	Assessment	< 0.02 U1	0.97	2400	< 0.007 U1	< 0.004 U1	0.26	0.045 B1	1.35	0.32	< 0.05 U1	0.205	< 0.2 U1	0.8	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	< 0.02 U1	1.24	2330	< 0.007 U1	< 0.004 U1	0.06 J1	0.037	1.47	0.31	< 0.05 U1	0.201	< 0.2 U1	0.6	< 0.09 U1	< 0.04 U1
10/04/2022	Assessment	0.03 J1	1.28	2360	< 0.007 U1	< 0.004 U1	0.13 J1	0.035	3.33	0.30	< 0.05 U1	0.208	< 0.2 U1	0.2 J1	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	< 0.02 U1	1.00	2560	< 0.007 U1	< 0.004 U1	0.14 J1	0.046	2.46	0.31	< 0.05 U1	0.177	< 0.2 U1	0.6	< 0.09 U1	< 0.04 U1
4/04/2023	Assessment	0.012 J1	0.74	2200	< 0.007 U1	< 0.004 U1	0.16 J1	0.039	2.25	0.28	< 0.05 U1	0.189	< 0.2 U1	0.2 J1	< 0.04 U1	< 0.02 U1
10/10/2023	Assessment	0.018 J1	1.02	2310	< 0.007 U1	< 0.004 U1	0.24 J1	0.038	1.89	0.28	< 0.05 U1	0.201	< 0.2 U1	0.4 J1	< 0.04 U1	< 0.02 U1
2/20/2024	Assessment	0.011 J1	0.78	2200	< 0.007 U1	< 0.004 U1	0.21 J1	0.051	1.81	0.27	0.07 J1	0.190	< 0.2 U1	0.2 J1	< 0.04 U1	< 0.02 U1
4/02/2024	Assessment	0.047 J1	1.08	2240	< 0.007 U1	< 0.004 U1	0.19 J1	0.042	1.40	0.29	< 0.05 U1	0.185	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	1.2	2300	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.04 J1	1.68	0.35	< 0.4 U1	0.189	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
2/18/2025	Assessment	< 0.06 U1	0.9	2260 M1	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	3.03	0.32	< 0.4 U1	0.191	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	< 0.06 U1	0.8	2220	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	1.71	0.35	< 0.4 U1	0.198	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	0.6 J1	2280	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	1.13	0.34	< 0.4 U1	0.183	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1606
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/18/2017	Background	0.078	50.9	14.3	0.20	6.8	57.9	374
12/12/2017	Background	0.194	55.3	14.4	0.17	7.1	66.8	348
2/14/2018	Background	0.175	56.8	14.9	0.18	7.1	68.3	336
4/10/2018	Background	0.148	44.8	12.9	0.26	7.2	42.4	302
6/11/2018	Background	0.144	55.0	14.0	0.27	7.0	45.4	316
8/21/2018	Background	0.168	64.4	15.7	0.23	7.0	54.9	377
10/15/2018	Background	0.136	60.0	14.3	0.24	7.1	47.8	344
12/11/2018	Background	0.126	58.6	13.9	0.25	7.2	42.1	329
2/12/2019	Detection	0.110	56.8	14.1	0.24	7.2	39.7	341
4/09/2019	Assessment	0.07 J1	62.2	13.0	0.16	7.2	32.5	352
5/29/2019	Assessment	0.05 J1	55.9	11.5	0.16	7.3	27.6	336
10/01/2019	Assessment	0.084	58.9	13.6	0.19	7.0	32.4	350
2/10/2020	Assessment	0.084	54.5	11.8	0.19	7.3	35.4	321
4/20/2020	Assessment	0.04 J1	59.2	7.0	0.12	6.6	25.4	287
10/07/2020	Assessment	0.067	59.3	12.9	0.18	7.1	35.7	321
2/09/2021	Assessment	0.079	57.8	13.0	0.22	7.1	26.5	368
4/12/2021	Assessment	0.083	57.2	13.4	0.22	7.1	26.8	333
10/12/2021	Assessment	0.139	57.7	13.4	0.22	7.3	44.8	330
2/22/2022	Assessment	0.130	57.0	13.6	0.19	7.4	46.4	350
4/13/2022	Assessment	0.137	56.3	12.8	0.19	6.9	44.3	330
10/04/2022	Assessment	0.163	60.4	13.8	0.20	6.9	56.6	360
2/14/2023	Assessment	0.142	58.8	13.2	0.19	7.1	50.7	350
4/04/2023	Assessment	0.136	51.1	12.4	0.20	7.1	45.7	320
10/10/2023	Assessment	0.137	53.1	13.0	0.20	7.1	56.4	340 S7
2/19/2024	Assessment	0.143	54.4	13.2	0.17	7.1	59.4	330
4/02/2024	Assessment	0.150	57.8	13.7	0.20	7.1	62.1	320
10/08/2024	Assessment	0.15 J1	56.8	13.3	0.22	7.1	58.0	350
2/17/2025	Assessment	0.10 J1	49.5	11.9	0.20	6.4	37.4	310
4/02/2025	Assessment	0.14 J1	48.5	12.2	0.26	7.7	38.9	320
9/30/2025	Assessment	0.13 J1	49.0	12.5	0.25	8.5	43.1	320

Table 1. Groundwater Data Summary: -MW-1606
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/18/2017	Background	0.02 J1	7.03	117	< 0.004 U1	0.01 J1	0.139	6.00	2.331	0.20	0.628	0.089	< 0.05 U1	84.2	0.06 J1	0.04 J1
12/12/2017	Background	0.02 J1	6.77	117	0.005 J1	0.01 J1	0.216	6.33	0.7252	0.17	0.573	0.086	0.06 J1	82.4	0.1 J1	0.04 J1
2/14/2018	Background	0.03 J1	6.76	116	0.006 J1	< 0.005 U1	0.140	5.66	1.459	0.18	0.388	0.067	< 0.05 U1	65.1	0.1 J1	0.04 J1
4/10/2018	Background	0.02 J1	6.72	104	0.007 J1	0.01 J1	0.225	5.53	1.156	0.26	0.549	0.095	< 0.05 U1	89.6	0.1	0.04 J1
6/11/2018	Background	0.04 J1	6.89	114	0.006 J1	< 0.005 U1	0.205	4.98	1.154	0.27	0.451	0.099	< 0.05 U1	91.5	0.08 J1	0.05
8/21/2018	Background	0.04 J1	7.19	124	0.006 J1	0.006 J1	0.218	6.13	1.269	0.23	0.515	0.081	< 0.05 U1	66.1	0.08 J1	0.05
10/15/2018	Background	0.03 J1	7.13	116	< 0.02 U1	< 0.01 U1	0.211	5.34	1.148	0.24	0.391	0.087	< 0.05 U1	71.9	0.07 J1	< 0.1 U1
12/11/2018	Background	< 0.02 U1	7.71	117	< 0.02 U1	< 0.01 U1	0.2 J1	5.58	2.743	0.25	0.445	0.091	< 0.05 U1	80.7	0.05 J1	< 0.1 U1
2/12/2019	Detection	< 0.02 U1	7.90	117	< 0.02 U1	< 0.01 U1	0.2 J1	5.79	1.189	0.24	0.343	0.100	< 0.05 U1	87.4	0.04 J1	< 0.1 U1
4/09/2019	Assessment	< 0.02 U1	11.0	107	< 0.02 U1	< 0.01 U1	0.1 J1	4.99	1.491	0.16	0.225	0.044	< 0.05 U1	44.8	0.08 J1	< 0.1 U1
5/29/2019	Assessment	< 0.02 U1	11.6	106	< 0.02 U1	< 0.01 U1	0.2 J1	4.86	1.4097	0.16	0.255	0.038	< 0.05 U1	39.1	< 0.03 U1	< 0.1 U1
10/01/2019	Assessment	< 0.02 U1	8.33	120	< 0.02 U1	< 0.01 U1	0.2 J1	4.66	0.962	0.19	0.358	0.0717	< 0.2 U1	57.8	0.05 J1	< 0.1 U1
2/10/2020	Assessment	0.02 J1	8.09	105	< 0.02 U1	0.02 J1	0.380	5.03	2.82	0.19	0.713	0.0645	< 0.2 U1	61.4	0.1 J1	< 0.1 U1
4/20/2020	Assessment	0.03 J1	2.80	83.1	< 0.02 U1	0.02 J1	0.2 J1	2.15	2.82	0.12	0.253	0.0267	< 0.2 U1	29.3	0.2	0.1 J1
10/07/2020	Assessment	0.04 J1	15.0	106	< 0.02 U1	0.02 J1	0.2 J1	3.52	2.816	0.18	0.731	0.0220	< 0.2 U1	34.6	0.1 J1	< 0.1 U1
2/09/2021	Assessment	0.03 J1	10.5	124	< 0.02 U1	0.04 J1	0.572	4.68	1.630	0.22	1.03	0.0561	< 0.2 U1	56.7	0.1 J1	< 0.1 U1
4/12/2021	Assessment	< 0.02 U1	8.32	113	0.01 J1	0.02 J1	0.234	4.13	1.507	0.22	0.538	0.0558	< 0.2 U1	53.5	< 0.09 U1	< 0.04 U1
10/12/2021	Assessment	0.02 J1	8.37	127 M1	0.019 J1	0.032	0.48	4.19	6.15	0.22	0.98	0.0979 M1, P3	< 0.2 U1	69.4	0.13 J1	< 0.04 U1
2/22/2022	Assessment	< 0.02 U1	7.01	108	0.009 J1	0.018 J1	0.16 J1	3.64	2.07	0.19	0.44	0.0822	< 0.2 U1	58.2	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	< 0.02 U1	7.19	111	0.008 J1	0.009 J1	0.15 J1	3.90	1.62	0.19	0.52	0.0915	< 0.2 U1	67.7	0.1 J1	< 0.04 U1
10/04/2022	Assessment	< 0.02 U1	7.25	112	< 0.007 U1	0.007 J1	0.32	4.47	2.43	0.20	0.53	0.091	< 0.2 U1	60.3	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	0.02 J1	8.06	113	0.011 J1	0.026	0.25	4.65	2.55	0.19	0.86	0.0703	< 0.2 U1	55.0	< 0.09 U1	0.04 J1
4/04/2023	Assessment	< 0.008 U1	6.87	102	< 0.04 U1	< 0.004 U1	0.24 J1	3.55	2.38	0.20	0.32	0.10	< 0.2 U1	62.1	0.06 J1	0.02 J1
10/10/2023	Assessment	0.010 J1	5.10	90.6	< 0.007 U1	0.007 J1	0.17 J1	5.39	1.38	0.20	0.51	0.0840	< 0.2 U1	45.3	0.06 J1	0.04 J1
2/19/2024	Assessment	< 0.008 U1	5.51	95.8	< 0.007 U1	0.005 J1	0.14 J1	5.14	2.59	0.17	0.46	0.0694	< 0.2 U1	42.6	0.07 J1	< 0.02 U1
4/02/2024	Assessment	0.384	5.39	99.7	< 0.007 U1	0.020	0.16 J1	5.51	1.14	0.20	0.58	0.0772	< 0.2 U1	44.3	0.06 J1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	5.0	105	< 0.06 U1	< 0.03 U1	0.7 J1	6.19	1.61	0.22	0.6 J1	0.0894	< 0.2 U1	43.6	< 0.3 U1	< 0.2 U1
2/17/2025	Assessment	< 0.06 U1	10.7	111	< 0.06 U1	< 0.03 U1	< 0.6 U1	4.65	1.67	0.20	0.6 J1	0.0592	< 0.2 U1	48.7	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	< 0.06 U1	5.5	107	< 0.06 U1	< 0.03 U1	< 0.6 U1	3.60	1.61	0.26	0.4 J1	0.105	< 0.2 U1	66.2	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	5.4	104	< 0.2 U1	< 0.03 U1	< 0.6 U1	3.83	1.33	0.25	0.5 J1	0.112	< 0.2 U1	67.1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1607
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/18/2017	Background	0.139	54.9	16.7	0.25	7.6	197	468
12/12/2017	Background	0.212	50.1	16.3	0.22	7.4	206	417
2/14/2018	Background	0.121	48.7	10.7	0.20	7.9	149	284
4/11/2018	Background	0.143	49.1	11.0	0.22	8.0	153	306
6/11/2018	Background	0.143	49.5	11.1	0.23	7.8	156	278
8/21/2018	Background	0.151	46.4	12.0	0.26	8.0	162	315
10/15/2018	Background	0.122	45.8	11.7	0.26	8.1	159	302
12/11/2018	Background	0.111	44.8	10.0	0.25	7.7	150	280
2/12/2019	Detection	0.1 J1	46.3	9.5	0.23	7.9	151	298
4/09/2019	Assessment	0.134	47.2	8.2	0.20	8.0	130	296
5/29/2019	Assessment	0.1 J1	44.5	8.4	0.23	7.9	146	293
10/02/2019	Assessment	0.112	49.4	8.5	0.18	7.8	147	290
2/11/2020	Assessment	0.106	47.3	6.6	0.21	8.1	124	279
4/21/2020	Assessment	0.108	48.5	6.7	0.19	7.0	125	275
10/06/2020	Assessment	0.111	42.7	7.4	0.24	7.7	136	270
2/09/2021	Assessment	0.113	41.5	7.0	0.26	7.5	128	303
4/13/2021	Assessment	0.099	43.9	6.3	0.23	7.9	120	275
10/11/2021	Assessment	0.108	44.1	6.74	0.24	8.0	128	260
2/23/2022	Assessment	0.109	43.6 M1, P3	6.82	0.20	8.2	137	270
4/12/2022	Assessment	0.113	44.7	6.20	0.20	7.4	134	280
10/04/2022	Assessment	0.123	43.9 M1, P3	6.76	0.20	7.7	139	280
2/14/2023	Assessment	0.122	42.7	6.97	0.22	7.8	140	290
4/04/2023	Assessment	0.114	42.0 M1	6.14	0.20	8.0	135	260
10/10/2023	Assessment	0.128	42.8 M1	6.99	0.25	7.6	128	300
2/20/2024	Assessment	0.120	38.9 M1	6.74	0.20	8.1	139	280
4/02/2024	Assessment	0.124	42.1	6.82	0.21	7.7	141	260
10/08/2024	Assessment	0.12 J1	43.5 M1	7.04	0.22	8.0	143	280
2/17/2025	Assessment	0.13 J1	48.9 M1	4.65	0.19	7.0	107	310
4/01/2025	Assessment	0.13 J1	43.6	5.79	0.23	7.2	136	290
9/30/2025	Assessment	0.13 J1	43.9	6.04	0.23	8.9	138	270

Table 1. Groundwater Data Summary: -MW-1607
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/18/2017	Background	0.05	4.38	141	< 0.004 U1	0.02 J1	0.273	4.06	2.733	0.25	0.228	0.110	< 0.05 U1	89.7	0.09 J1	< 0.01 U1
12/12/2017	Background	0.08	5.28	92.5	0.005 J1	0.12	0.194	8.94	1.062	0.22	0.614	0.119	0.08 J1	126	0.09 J1	0.01 J1
2/14/2018	Background	0.05 J1	0.96	71.5	< 0.004 U1	0.18	0.100	11.2	0.743	0.20	0.727	0.110	< 0.05 U1	160	0.1	0.01 J1
4/11/2018	Background	0.04 J1	1.05	71.1	< 0.004 U1	0.17	0.206	11.4	0.436	0.22	0.585	0.125	< 0.05 U1	144	0.1	0.03 J1
6/11/2018	Background	0.05	0.98	74.7	< 0.004 U1	0.09	0.208	11.3	0.975	0.23	0.524	0.133	< 0.05 U1	153	0.2	0.05 J1
8/21/2018	Background	0.06	1.29	75.7	< 0.004 U1	0.11	0.216	10.1	0.511	0.26	0.525	0.129	< 0.05 U1	165	0.2	0.03 J1
10/15/2018	Background	0.09 J1	1.46	71.9	< 0.02 U1	0.11	0.224	10.9	0.999	0.26	0.524	0.132	< 0.05 U1	164	0.04 J1	< 0.1 U1
12/11/2018	Background	0.03 J1	1.01	70.4	< 0.02 U1	0.25	0.2 J1	12.1	0.660	0.25	0.701	0.126	< 0.05 U1	168	0.1 J1	< 0.1 U1
2/12/2019	Detection	0.04 J1	0.86	73.1	< 0.02 U1	0.18	0.2 J1	12.7	0.885	0.23	0.586	0.139	< 0.05 U1	175	0.2 J1	< 0.1 U1
4/09/2019	Assessment	0.03 J1	1.59	75.3	< 0.02 U1	0.11	0.2 J1	8.87	0.701	0.20	0.423	0.127	< 0.05 U1	138	0.2 J1	< 0.1 U1
5/29/2019	Assessment	0.03 J1	1.08	74.2	< 0.02 U1	0.18	0.212	10.2	0.744	0.23	0.366	0.123	< 0.05 U1	154	0.2 J1	< 0.1 U1
10/02/2019	Assessment	< 0.02 U1	1.64	72.4	< 0.02 U1	0.18	0.2 J1	6.74	1.028	0.18	0.228	0.132	< 0.2 U1	148	0.1 J1	< 0.1 U1
2/11/2020	Assessment	0.03 J1	0.83	69.8	< 0.02 U1	0.17	0.1 J1	9.61	1.659	0.21	0.684	0.112	< 0.2 U1	131	0.4	< 0.1 U1
4/21/2020	Assessment	0.04 J1	0.96	72.4	< 0.02 U1	0.17	0.209	10.1	0.978	0.19	0.667	0.120	< 0.2 U1	134	0.7	0.1 J1
10/06/2020	Assessment	0.08 J1	1.27	68.2	< 0.02 U1	0.10	0.05 J1	7.82	0.315	0.24	0.323	0.125	< 0.2 U1	134	0.2	< 0.1 U1
2/09/2021	Assessment	0.04 J1	1.13	68.5	< 0.02 U1	0.07	0.842	8.45	1.624	0.26	0.394	0.126	< 0.2 U1	141	0.1 J1	< 0.1 U1
4/13/2021	Assessment	0.04 J1	1.00	62.0	< 0.007 U1	0.15	0.2 J1	8.87	0.807	0.23	0.626	0.112	< 0.2 U1	128	0.3 J1	0.05 J1
10/11/2021	Assessment	0.03 J1	1.42	66.8	< 0.007 U1	0.064	< 0.04 U1	6.25	1.63	0.24	0.22	0.108 M1	< 0.2 U1	122	0.12 J1	< 0.04 U1
2/23/2022	Assessment	0.02 J1	1.11	64.3	< 0.007 U1	0.113	0.07 J1	10.6 B1	1.01	0.20	0.53	0.134	< 0.2 U1	137 M1	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	0.03 J1	1.16	65.0	< 0.007 U1	0.098	< 0.04 U1	9.76	1.40	0.20	0.50	0.128	< 0.2 U1	129	0.19 J1	< 0.04 U1
10/04/2022	Assessment	0.02 J1	1.50	67.9	< 0.007 U1	0.058	0.29	9.31	1.12	0.20	0.37	0.133	< 0.2 U1	132	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	0.03 J1	1.56	70.2	< 0.007 U1	0.054	0.29	8.54	2.02	0.22	0.33	0.123	< 0.2 U1	135	< 0.09 U1	< 0.04 U1
4/04/2023	Assessment	0.021 J1	1.32	63.2	< 0.007 U1	0.078	0.16 J1	10.2	1.81	0.20	0.53	0.130	< 0.2 U1	131 M1	0.06 J1	< 0.02 U1
10/10/2023	Assessment	0.030 J1	1.21	67.8 M1	< 0.007 U1	0.051	0.19 J1	7.39 M1	1.66	0.25	0.17 J1	0.144 M1	< 0.2 U1	127 M1	0.13 J1	< 0.02 U1
2/20/2024	Assessment	0.015 J1	1.40	66.3	< 0.007 U1	0.052	0.15 J1	7.78	1.90	0.20	0.33	0.127 M1	< 0.2 U1	121	0.05 J1	< 0.02 U1
4/02/2024	Assessment	0.019 J1	1.16	68.9	< 0.007 U1	0.073	0.14 J1	8.62	0.84	0.21	0.32	0.131	< 0.2 U1	131	0.05 J1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	1.2	66.2	< 0.06 U1	0.10 J1	0.8 J1	11.7	1.28	0.22	0.5 J1	0.146 M1	< 0.2 U1	135	< 0.3 U1	< 0.2 U1
2/17/2025	Assessment	< 0.06 U1	1.2	73.6	< 0.06 U1	0.09 J1	< 0.6 U1	7.43	0.55	0.19	0.9 J1	0.108 M1	< 0.2 U1	89.4	1.3 J1	< 0.2 U1
4/01/2025	Assessment	< 0.06 U1	1.8	68.7	< 0.06 U1	0.04 J1	< 0.6 U1	8.28	1.15	0.23	1.2 J1	0.131	< 0.2 U1	115	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	1.8	67.0	< 0.2 U1	< 0.03 U1	< 0.6 U1	6.11	0.84	0.23	< 0.4 U1	0.130	< 0.2 U1	125	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1608
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/19/2017	Background	0.359	1.92	7.6	0.45	8.1	179	484
12/11/2017	Background	0.375	1.31	7.3	0.40	8.0	176	468
2/13/2018	Background	0.349	1.09	8.7	0.45	8.7	182	466
4/10/2018	Background	0.334	0.779	8.0	0.48	8.8	178	466
6/07/2018	Background	0.389	0.708	7.2	0.44	8.7	171	437
8/20/2018	Background	0.315	1.31	7.4	0.43	8.7	173	441
10/17/2018	Background	0.344	1.37	6.8	0.43	0.1	167	439
12/06/2018	Background	0.365	1.24	6.1	0.42	8.7	166	423
2/07/2019	Detection	0.332	1.35	6.2	0.42	8.6	171	445
4/08/2019	Assessment	0.352	1.32	6.7	0.39	8.7	162	454
5/28/2019	Assessment	0.310	1.11	5.4	0.44	8.7	174	443
10/01/2019	Assessment	0.351	1.19	6.6	0.39	8.7	176	457
2/10/2020	Assessment	0.353	0.748	5.2	0.41	9.2	164	422
4/20/2020	Assessment	0.344	0.959	4.6	0.42	8.2	167	418
10/06/2020	Assessment	0.360	1.01	6.6	0.40	8.5	182	445
2/08/2021	Assessment	0.347	0.968	5.8	0.46	8.3	167	442
4/12/2021	Assessment	0.343	0.744	5.8	0.45	8.6	166	434
10/11/2021	Assessment	0.332	0.8	5.68	0.42	8.5	163	420
2/22/2022	Assessment	0.351	0.78	5.89	0.43	8.6	172	440
4/12/2022	Assessment	0.361	0.59	4.37	0.40	8.1	159	410
10/03/2022	Assessment	0.392	0.65	5.24	0.40	7.5	165	450
2/13/2023	Assessment	0.363	0.57	6.38	0.43	8.2	173	450
4/03/2023	Assessment	0.346	0.45	4.04	0.42	7.4	149	400
10/09/2023	Assessment	0.354	0.42	5.09	0.42	8.1	161	430
2/19/2024	Assessment	0.346	0.42	3.87	0.40	8.5	146	410
4/01/2024	Assessment	0.353	0.39	3.78	0.43	8.5	142	390
10/07/2024	Assessment	0.33 J1	0.4	4.36	0.50	8.4	147	440
4/01/2025	Assessment	0.38 J1	0.5	4.37	0.52	7.7	149	440
9/29/2025	Assessment	0.34 J1	0.4 J1	3.92	0.51	8.6	142	420

Table 1. Groundwater Data Summary: -MW-1608
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/19/2017	Background	0.06	1.69	42.7	0.042	< 0.005 U1	0.956	0.442	0.661	0.45	0.405	0.027	< 0.05 U1	9.04	0.1	0.02 J1
12/11/2017	Background	0.06	1.96	42.9	0.066	< 0.005 U1	1.26	0.425	0.498	0.40	0.526	0.032	0.07 J1	7.35	0.1	0.02 J1
2/13/2018	Background	0.05 J1	2.00	43.8	0.062	< 0.005 U1	1.08	0.401	0.939	0.45	0.656	0.024	< 0.05 U1	6.43	0.09 J1	0.03 J1
4/10/2018	Background	0.05 J1	1.86	41.9	0.056	< 0.005 U1	1.11	0.372	0.484	0.48	0.675	0.023	< 0.05 U1	3.52	0.1	0.02 J1
6/07/2018	Background	0.06	2.99	44.3	0.041	0.006 J1	0.912	0.330	0.894	0.44	0.721	0.028	< 0.05 U1	2.49	0.09 J1	0.02 J1
8/20/2018	Background	0.06	1.88	38.4	0.031	0.02 J1	0.938	0.284	2.988	0.43	0.438	0.018	< 0.05 U1	3.20	0.07 J1	0.02 J1
10/17/2018	Background	0.03 J1	1.70	34.2	0.03 J1	< 0.01 U1	0.647	0.217	3.565	0.43	0.273	0.02 J1	< 0.05 U1	2.89	0.06 J1	< 0.1 U1
12/06/2018	Background	0.04 J1	1.36	33.1	0.03 J1	< 0.01 U1	0.639	0.229	0.518	0.42	0.284	0.01 J1	< 0.05 U1	2.67	0.04 J1	< 0.1 U1
2/07/2019	Detection	0.04 J1	1.64	35.3	0.02 J1	< 0.01 U1	0.633	0.233	0.1256	0.42	0.256	0.03 J1	< 0.05 U1	2.66	0.07 J1	< 0.1 U1
4/08/2019	Assessment	0.03 J1	1.46	32.9	< 0.02 U1	< 0.01 U1	0.696	0.227	0.4948	0.39	0.255	0.02 J1	< 0.05 U1	2.32	0.06 J1	< 0.1 U1
5/28/2019	Assessment	0.08 J1	1.35	34.4	0.03 J1	0.02 J1	0.722	0.262	0.163	0.44	0.418	< 0.009 U1	0.1 J1	2.11	< 0.03 U1	< 0.1 U1
10/01/2019	Assessment	0.03 J1	1.46	35.0	< 0.02 U1	< 0.01 U1	0.359	0.159	0.462	0.39	0.214	0.0211	< 0.2 U1	2 J1	0.04 J1	< 0.1 U1
2/10/2020	Assessment	0.03 J1	1.22	29.8	< 0.02 U1	< 0.01 U1	0.618	0.280	0.594	0.41	0.250	0.0197	< 0.2 U1	2 J1	0.04 J1	< 0.1 U1
4/20/2020	Assessment	0.02 J1	0.89	28.9	< 0.02 U1	< 0.01 U1	0.413	0.203	1.497	0.42	0.2 J1	0.0185	< 0.2 U1	1 J1	0.05 J1	< 0.1 U1
10/06/2020	Assessment	0.02 J1	1.25	32.0	< 0.02 U1	< 0.01 U1	0.302	0.200	0.790	0.40	0.1 J1	0.0196	< 0.2 U1	2 J1	0.03 J1	< 0.1 U1
2/08/2021	Assessment	< 0.02 U1	1.15	30.3	< 0.02 U1	< 0.01 U1	0.408	0.175	0.715	0.46	0.1 J1	0.0194	< 0.2 U1	1 J1	0.07 J1	< 0.1 U1
4/12/2021	Assessment	0.02 J1	1.06	28.1	0.008 J1	< 0.004 U1	0.207	0.120	0.646	0.45	0.1 J1	0.0183	< 0.2 U1	1 J1	< 0.09 U1	< 0.04 U1
10/11/2021	Assessment	0.03 J1	0.98	27.7	< 0.007 U1	< 0.004 U1	0.23	0.122	0.68	0.42	0.10 J1	0.0189	< 0.2 U1	1.0	< 0.09 U1	< 0.04 U1
2/22/2022	Assessment	< 0.02 U1	0.97	26.5	< 0.007 U1	< 0.004 U1	0.20	0.109	1.09	0.43	0.07 J1	0.0193	< 0.2 U1	1.2	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	0.02 J1	0.73	24.8	0.008 J1	< 0.004 U1	0.20	0.126	0.70	0.40	0.11 J1	0.0192	< 0.2 U1	1.0	< 0.09 U1	< 0.04 U1
10/03/2022	Assessment	0.02 J1	1.21	27.0	< 0.007 U1	0.004 J1	0.18 J1	0.144	1.73	0.40	0.11 J1	0.0188	< 0.2 U1	1	< 0.09 U1	< 0.04 U1
2/13/2023	Assessment	< 0.02 U1	1.23	26.4	< 0.007 U1	0.005 J1	0.27	0.117	2.05	0.43	0.09 J1	0.0169	< 0.2 U1	0.8	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.018 J1	0.77	21.6	< 0.007 U1	0.008 J1	0.80	0.093	1.31	0.42	0.09 J1	0.0179	< 0.2 U1	0.7	< 0.04 U1	< 0.02 U1
10/09/2023	Assessment	0.197	1.02	23.5	< 0.007 U1	0.007 J1	0.24 J1	0.092	0.58	0.42	0.06 J1	0.0188	< 0.2 U1	0.6	< 0.04 U1	< 0.02 U1
2/19/2024	Assessment	0.011 J1	0.79	21.7	< 0.007 U1	0.006 J1	0.20 J1	0.078	1.36	0.40	0.07 J1	0.0163	< 0.2 U1	0.5	< 0.04 U1	< 0.02 U1
4/01/2024	Assessment	0.009 J1	0.79	21.1	< 0.007 U1	< 0.004 U1	0.15 J1	0.078	0.98	0.43	0.06 J1	0.0182	< 0.2 U1	0.5	< 0.04 U1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	0.9	20.4	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.08 J1	0.51	0.50	< 0.4 U1	0.0181	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/01/2025	Assessment	< 0.06 U1	1.3	23.2	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.08 J1	0.16	0.52	0.4 J1	0.0198	< 0.2 U1	0.9 J1	< 0.3 U1	< 0.2 U1
9/29/2025	Assessment	< 0.2 U1	0.9	21.8	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.09 J1	1.12	0.51	< 0.4 U1	0.0178	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1609
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/18/2017	Background	0.017	66.6	4.1	0.32	6.7	13.6	358
12/11/2017	Background	0.084	67.9	3.1	0.32	6.6	12.6	326
2/13/2018	Background	0.084	60.7	3.2	0.31	7.6	21.8	262
4/10/2018	Background	0.041	59.9	1.7	0.27	7.4	15.8	292
6/11/2018	Background	0.077	75.5	1.9	0.28	7.3	21.0	312
8/21/2018	Background	0.117	72.6	1.5	0.29	7.3	13.7	311
10/15/2018	Background	0.05 J1	70.0	1.6	0.27	7.5	16.8	276
12/06/2018	Background	0.04 J1	66.1	1.5	0.26	7.5	14.9	281
2/07/2019	Detection	< 0.02 U1	72.3	1.3	0.21	7.4	13.7	305
4/08/2019	Assessment	< 0.02 U1	82.5	1.2	0.20	7.5	13.6	323
5/28/2019	Assessment	< 0.02 U1	74.8	1.3	0.25	7.6	17.4	322
10/01/2019	Assessment	< 0.02 U1	69.0	1.3	0.25	7.4	13.2	282
2/10/2020	Assessment	< 0.02 U1	65.6	1.1	0.22	7.8	12.9	287
4/20/2020	Assessment	< 0.02 U1	66.0	1.1	0.21	7.0	12.4	276
10/06/2020	Assessment	< 0.02 U1	70.1	1.4	0.23	7.3	17.3	271
2/08/2021	Assessment	< 0.02 U1	66.4	1.5	0.26	7.4	19.6	284
4/12/2021	Assessment	< 0.009 U1	66.2	1.0	0.24	7.5	11.7	282
10/11/2021	Assessment	< 0.009 U1	71.1	1.40	0.24	7.7	17.0	260
2/22/2022	Assessment	< 0.009 U1	65.3	1.36	0.24	7.8	18.4	290
4/12/2022	Assessment	0.010 J1	72.7	0.97	0.23	7.1	16.9	290
10/03/2022	Assessment	0.014 J1	79.0	1.13	0.24	7.0	11.8	270
2/13/2023	Assessment	0.013 J1	79.1	1.25	0.26	7.4	15.0	260
4/03/2023	Assessment	0.01 J1	74.5	0.90	0.23	6.8	14.7	300
10/09/2023	Assessment	0.012 J1	61.2	1.11	0.26	7.5	14.7	260
2/19/2024	Assessment	0.011 J1	77.5	1.21	0.23	7.5	16.0	270
4/01/2024	Assessment	0.012 J1	83.5	1.35	0.25	7.5	17.6	250
10/07/2024	Assessment	< 0.06 U1	70.1	1.53	0.26	7.5	20.9	270
4/01/2025	Assessment	< 0.06 U1	76.2	1.22	0.26	7.2	17.0	270
9/29/2025	Assessment	< 0.05 U1	69.7	1.40	0.25	8.2	18.5	270

Table 1. Groundwater Data Summary: -MW-1609
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/18/2017	Background	0.06	0.97	476	< 0.004 U1	< 0.005 U1	0.126	0.338	3.258	0.32	0.142	< 0.0002 U1	< 0.05 U1	2.22	0.03 J1	< 0.01 U1
12/11/2017	Background	0.05	0.95	507	0.004 J1	< 0.005 U1	0.112	0.258	1.423	0.32	0.033	0.010	< 0.05 U1	1.78	< 0.03 U1	0.03 J1
2/13/2018	Background	0.05 J1	0.43	333	< 0.004 U1	< 0.005 U1	0.151	0.522	1.661	0.31	0.326	< 0.0002 U1	< 0.05 U1	1.55	0.1 J1	0.03 J1
4/10/2018	Background	0.03 J1	0.18	359	< 0.004 U1	0.02 J1	0.164	0.168	1.544	0.27	0.426	0.0009 J1	< 0.05 U1	1.34	0.2	0.01 J1
6/11/2018	Background	0.07	0.19	397	< 0.004 U1	0.04	0.154	0.082	1.893	0.28	0.524	0.005	< 0.05 U1	0.79	0.1	0.01 J1
8/21/2018	Background	0.13	0.28	435	< 0.004 U1	0.03	0.232	1.38	1.161	0.29	0.548	0.004	< 0.05 U1	0.46	0.03 J1	0.09
10/15/2018	Background	0.05 J1	0.19	345	< 0.02 U1	< 0.01 U1	0.319	0.558	0.8423	0.27	0.506	< 0.009 U1	< 0.05 U1	0.6 J1	< 0.03 U1	< 0.1 U1
12/06/2018	Background	0.02 J1	0.14	356	< 0.02 U1	0.01 J1	0.2 J1	0.114	1.794	0.26	0.350	0.01 J1	< 0.05 U1	0.6 J1	0.1 J1	< 0.1 U1
2/07/2019	Detection	0.03 J1	0.10	365	< 0.02 U1	0.02 J1	0.239	< 0.02 U1	1.569	0.21	0.362	< 0.009 U1	< 0.05 U1	0.4 J1	0.2 J1	< 0.1 U1
4/08/2019	Assessment	0.03 J1	0.10	443	< 0.02 U1	0.01 J1	0.1 J1	0.206	1.519	0.20	0.528	< 0.009 U1	< 0.05 U1	< 0.4 U1	0.06 J1	< 0.1 U1
5/28/2019	Assessment	0.02 J1	0.10	466	< 0.02 U1	0.01 J1	0.234	< 0.02 U1	1.387	0.25	0.337	< 0.009 U1	0.1 J1	< 0.4 U1	0.7	< 0.1 U1
10/01/2019	Assessment	0.02 J1	0.19	412	< 0.02 U1	0.02 J1	0.1 J1	0.634	2.24	0.25	0.935	0.00107	< 0.2 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
2/10/2020	Assessment	< 0.02 U1	0.13	355	< 0.02 U1	0.01 J1	0.1 J1	0.226	2.79	0.22	1.25	0.000755	< 0.2 U1	0.6 J1	0.1 J1	< 0.1 U1
4/20/2020	Assessment	< 0.02 U1	0.08 J1	337	< 0.02 U1	0.01 J1	0.2 J1	< 0.02 U1	5.26	0.21	0.323	0.000559	< 0.2 U1	< 0.4 U1	0.2	< 0.1 U1
10/06/2020	Assessment	0.03 J1	0.1 J1	424	< 0.02 U1	0.01 J1	0.203	0.212	1.938	0.23	0.324	0.000975	< 0.2 U1	1 J1	0.03 J1	< 0.1 U1
2/08/2021	Assessment	0.03 J1	0.1 J1	399	< 0.02 U1	0.01 J1	0.233	0.207	1.224	0.26	0.298	0.00101	< 0.2 U1	< 0.4 U1	0.1 J1	< 0.1 U1
4/12/2021	Assessment	0.02 J1	0.08 J1	340	< 0.007 U1	0.01 J1	0.08 J1	0.005 J1	4.39	0.24	0.242	0.000654	< 0.2 U1	0.3 J1	0.2 J1	< 0.04 U1
10/11/2021	Assessment	0.04 J1	0.09 J1	387	< 0.007 U1	0.015 J1	0.07 J1	0.241	1.3	0.24	0.57	0.00095	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
2/22/2022	Assessment	0.02 J1	0.08 J1	366	< 0.007 U1	0.011 J1	0.07 J1	0.022	2.14	0.24	0.15 J1	0.00093	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	0.02 J1	0.06 J1	410	< 0.007 U1	0.011 J1	< 0.04 U1	0.005 J1	1.36	0.23	0.19 J1	0.00097	< 0.2 U1	0.3 J1	0.17 J1	< 0.04 U1
10/03/2022	Assessment	0.02 J1	0.14	385	< 0.007 U1	0.007 J1	< 0.04 U1	0.433	3.34	0.24	0.23	0.00092	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
2/13/2023	Assessment	< 0.02 U1	0.10	423	< 0.007 U1	0.009 J1	0.19 J1	0.220	2.33	0.26	0.23	0.00085	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.017 J1	0.05 J1	388	< 0.007 U1	0.012 J1	0.22 J1	0.014 J1	2.39	0.23	0.21	0.0009	< 0.2 U1	0.3 J1	0.32 J1	< 0.02 U1
10/09/2023	Assessment	0.018 J1	0.12	364	< 0.007 U1	0.008 J1	0.22 J1	0.178	1.51	0.26	0.20	0.00100	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
2/19/2024	Assessment	0.016 J1	0.10	366	< 0.007 U1	0.009 J1	0.14 J1	0.162	2.19	0.23	0.23	0.00107	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
4/01/2024	Assessment	0.017 J1	0.10	406	< 0.007 U1	0.007 J1	0.16 J1	0.168	0.98	0.25	0.18 J1	0.00100	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	< 0.2 U1	328	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.20	1.08	0.26	< 0.4 U1	0.0012 J1	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/01/2025	Assessment	< 0.06 U1	< 0.2 U1	434	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.17	1.34	0.26	0.8 J1	0.0017 J1	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
9/29/2025	Assessment	< 0.2 U1	< 0.2 U1	378	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.11 J1	2.01	0.25	< 0.4 U1	0.0012 J1	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1610
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/17/2017	Background	0.097	35.5	11.9	0.18	7.3	47.7	260
12/12/2017	Background	0.092	35.0	11.1	0.17	7.1	46.2	241
2/15/2018	Background	0.105	37.3	11.8	0.20	7.5	49.1	247
4/11/2018	Background	0.060	36.1	11.7	0.21	7.6	46.4	254
6/12/2018	Background	0.053	35.8	13.4	0.21	7.5	53.2	258
8/21/2018	Background	0.139	35.2	11.7	0.22	7.6	48.7	258
10/16/2018	Background	0.07 J1	35.0	10.4	0.21	7.7	41.1	245
12/11/2018	Background	0.05 J1	33.6	10.5	0.22	7.7	43.3	233
2/12/2019	Detection	0.03 J1	35.4	10.8	0.21	7.7	41.2	257
4/09/2019	Assessment	0.05 J1	38.5	10.9	0.17	7.7	41.6	263
5/29/2019	Assessment	0.04 J1	35.6	10.5	0.18	7.8	44.1	263
10/01/2019	Assessment	0.04 J1	37.8	10.7	0.18	7.5	40.8	258
2/11/2020	Assessment	0.03 J1	36.8	10.5	0.19	7.8	36.4	245
4/20/2020	Assessment	0.04 J1	39.2	10.6	0.20	6.9	37.7	254
10/07/2020	Assessment	0.068	14.2	10.1	0.35	8.3	47.1	229
2/09/2021	Assessment	0.04 J1	31.2	10.0	0.26	7.7	38.7	251
4/12/2021	Assessment	0.04 J1	29.5	10.3	0.26	7.6	34.2	235
10/12/2021	Assessment	0.035 J1	30.9	9.84	0.20	8.0	14.5	210
2/23/2022	Assessment	0.028 J1	33.6	9.99	0.19	8.0	13.4	230
4/13/2022	Assessment	0.030 J1	36.2	9.37	0.18	7.2	14.7	230
10/04/2022	Assessment	0.032 J1	35.2	9.84	0.19	7.0	17.7	230
2/13/2023	Assessment	0.028 J1	34.4	9.58	0.19	7.5	15.9	230
4/03/2023	Assessment	0.026 J1	33.5	9.34	0.20	7.3	13.8	220
10/09/2023	Assessment	0.029 J1	32.9	9.69	0.19	7.5	20.1	220
2/20/2024	Assessment	0.028 J1	31.1	9.36	0.18	7.5	11.6	240
4/01/2024	Assessment	0.027 J1	31.0 M1	9.54	0.21	7.6	10.2	200
10/07/2024	Assessment	< 0.06 U1	30.4	10.1	0.21	7.5	16.9	230
2/17/2025	Assessment	< 0.06 U1	32.1	9.43	0.20	6.8	13.8	230
4/02/2025	Assessment	< 0.06 U1	33.1	10.1	0.23	7.7	17.6	240
9/30/2025	Assessment	< 0.05 U1	34.5	11.0	0.21	8.9	23.7	240

Table 1. Groundwater Data Summary: -MW-1610
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/17/2017	Background	0.22	1.67	212	< 0.004 U1	0.03	0.167	9.90	0.839	0.18	12.6	0.141	< 0.05 U1	139	0.4	0.03 J1
12/12/2017	Background	0.07	1.18	227	0.004 J1	0.01 J1	0.174	12.1	1.132	0.17	15.2	0.146	0.06 J1	152	0.3	0.01 J1
2/15/2018	Background	0.05 J1	1.56	203	0.007 J1	< 0.005 U1	0.159	11.7	0.688	0.20	11.1	0.180	< 0.05 U1	161	0.2	0.02 J1
4/11/2018	Background	0.09	1.37	193	0.004 J1	0.03	0.192	10.2	0.192	0.21	15.0	0.171	< 0.05 U1	135	0.4	0.02 J1
6/12/2018	Background	0.08	1.24	202	0.004 J1	< 0.005 U1	0.210	10.6	1.788	0.21	8.48	0.188	< 0.05 U1	132	0.3	0.02 J1
8/21/2018	Background	0.06	1.08	200	< 0.004 U1	< 0.005 U1	0.248	10.1	1.039	0.22	3.61	0.206	< 0.05 U1	172	0.1	0.02 J1
10/16/2018	Background	< 0.02 U1	1.28	203	< 0.02 U1	< 0.01 U1	0.262	8.25	0.938	0.21	4.33	0.207	< 0.05 U1	160	0.1 J1	< 0.1 U1
12/11/2018	Background	0.03 J1	1.69	200	< 0.02 U1	< 0.01 U1	0.208	8.97	1.759	0.22	7.18	0.219	< 0.05 U1	182	0.2	< 0.1 U1
2/12/2019	Detection	0.08 J1	1.59	253	< 0.02 U1	0.02 J1	0.2 J1	7.43	0.517	0.21	6.94	0.183	< 0.05 U1	159	0.5	< 0.1 U1
4/09/2019	Assessment	0.12	1.61	247	< 0.02 U1	0.03 J1	0.267	6.28	1.338	0.17	9.60	0.197	< 0.05 U1	156	0.5	< 0.1 U1
5/29/2019	Assessment	0.07 J1	1.29	241	< 0.02 U1	0.04 J1	0.243	7.92	0.331	0.18	6.54	0.191	< 0.05 U1	167	0.3	< 0.1 U1
10/01/2019	Assessment	0.02 J1	1.28	235	< 0.02 U1	< 0.01 U1	0.2 J1	6.35	0.883	0.18	3.28	0.192	< 0.2 U1	135	0.3	< 0.1 U1
2/11/2020	Assessment	0.35	1.00	272	< 0.02 U1	0.03 J1	0.209	6.77	1.182	0.19	4.96	0.173	< 0.2 U1	144	0.3	< 0.1 U1
4/20/2020	Assessment	1.46	1.39	261	< 0.02 U1	0.06	0.800	7.43	1.835	0.20	4.04	0.180	< 0.2 U1	143	0.3	< 0.1 U1
10/07/2020	Assessment	0.69	5.92	151	< 0.02 U1	< 0.01 U1	0.278	4.30	1.734	0.35	1.47	0.348	< 0.2 U1	345	0.3	< 0.1 U1
2/09/2021	Assessment	0.06 J1	1.67	311	< 0.02 U1	0.02 J1	0.248	5.31	0.944	0.26	0.551	0.215	< 0.2 U1	183	0.07 J1	< 0.1 U1
4/12/2021	Assessment	1.44	2.26	251	< 0.007 U1	0.01 J1	0.204	5.26	0.725	0.26	3.09	0.219	< 0.2 U1	185	0.5 J1	< 0.04 U1
10/12/2021	Assessment	0.08 J1	1.41	285	< 0.007 U1	0.007 J1	0.49	4.97	0.48	0.20	0.94	0.150	< 0.2 U1	83.0	0.13 J1	< 0.04 U1
2/23/2022	Assessment	0.06 J1	1.14	303	< 0.007 U1	0.008 J1	0.14 J1	5.94 B1	1.49	0.19	1.11	0.146	< 0.2 U1	75.8	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	0.46	1.67	345	< 0.007 U1	0.006 J1	0.12 J1	4.81	0.83	0.18	1.65	0.132	< 0.2 U1	85.6	0.22 J1	< 0.04 U1
10/04/2022	Assessment	0.21	1.07	299	< 0.007 U1	0.031	0.20	5.87	1.80	0.19	1.17	0.171	< 0.2 U1	110	0.14 J1	< 0.04 U1
2/13/2023	Assessment	0.06 J1	0.95	292	< 0.007 U1	< 0.004 U1	0.18 J1	7.60	1.71	0.19	2.53	0.143	< 0.2 U1	107	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.210	1.26	275	< 0.007 U1	0.009 J1	0.19 J1	6.21	2.92	0.20	1.29	0.144	< 0.2 U1	94.5	0.09 J1	< 0.02 U1
10/09/2023	Assessment	0.057 J1	0.71	268	< 0.007 U1	0.009 J1	0.26 J1	5.08	1.29	0.19	1.19	0.176	< 0.2 U1	98.8	0.05 J1	< 0.02 U1
2/20/2024	Assessment	0.073 J1	0.86	265	< 0.007 U1	0.010 J1	0.28 J1	4.54	0.70	0.18	1.16	0.173	< 0.2 U1	82.5	0.08 J1	0.03 J1
4/01/2024	Assessment	0.112	1.19	267 M1	< 0.007 U1	0.010 J1	0.17 J1	5.21	0.76	0.21	0.74	0.147 M1	< 0.2 U1	80.9	0.06 J1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	1.3	292	< 0.06 U1	< 0.03 U1	< 0.6 U1	5.28	0.84	0.21	0.7 J1	0.142	< 0.2 U1	87.0	< 0.3 U1	< 0.2 U1
2/17/2025	Assessment	0.08 J1	1.1	291	< 0.06 U1	< 0.03 U1	< 0.6 U1	5.28	1.07	0.2	1.2 J1	0.127	< 0.2 U1	75.9	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	0.07 J1	1.1	311	< 0.06 U1	< 0.03 U1	< 0.6 U1	4.91	0.63	0.23	1.8	0.125	< 0.2 U1	80.4	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	0.6 J1	321	< 0.2 U1	< 0.03 U1	0.7 J1	4.80	1.36	0.21	1.2 J1	0.143	< 0.2 U1	80.6	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1611
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/19/2017	Background	0.423	115	131	0.48	7.4	1600	2940
12/11/2017	Background	0.551	124	138	0.68	7.5	1690	3420
2/13/2018	Background	0.663	143	101	0.66	7.7	1330	2720
4/10/2018	Background	0.669	96.2	91.3	0.85	7.8	1400	2520
6/11/2018	Background	0.701	68.6	61.5	0.90	7.7	777	1750
8/21/2018	Background	0.650	46.7	48.9	0.98	7.7	552	1450
10/15/2018	Background	0.634	42.5	38.5	0.92	7.8	389	1200
12/06/2018	Background	0.681	36.3	36.2	0.96	7.9	318	1060
2/12/2019	Detection	0.559	31.9	31.3	0.98	7.8	259	989
4/09/2019	Assessment	0.622	32.8	26.9	0.92	7.9	222	939
5/29/2019	Assessment	0.536	27.7	24.2	0.99	8.0	201	852
10/01/2019	Assessment	0.617	28.2	21.7	1.06	7.8	166	771
2/11/2020	Assessment	0.586	25.8	17.9	1.00	8.0	139	697
4/20/2020	Assessment	0.569	26.0	17.0	1.07	7.1	125	662
10/06/2020	Assessment	0.556	24.0	16.0	1.02	7.7	98.1	622
2/08/2021	Assessment	0.558	22.6	14.7	1.15	7.7	82.9	619
4/12/2021	Assessment	0.546	22.7	14.8	1.18	7.9	71.8	580
10/11/2021	Assessment	0.549	22.6	13.5	0.91	8.1	48.3	540
2/22/2022	Assessment	0.535	18.8	13.7	1.15	8.2	45.1	540
4/12/2022	Assessment	0.546	20.6	13.3	1.11	7.5	42.9	540
10/03/2022	Assessment	0.552	33.8	12.9	1.13	7.4	33.3	520
2/13/2023	Assessment	0.523	24.2	12.5	1.17	7.7	27.4	500
4/03/2023	Assessment	0.511	24.6	12.0	1.15	7.1	24.3	510
10/09/2023	Assessment	0.492	16.7	11.3	1.13	7.8	19.3	470
2/19/2024	Assessment	0.521	27.7	11.0	1.08	7.8	16.7	460
4/01/2024	Assessment	0.526	27.7	11.2	1.13	7.8	15.9	440
10/07/2024	Assessment	0.53	31.5 M1	10.6	1.24	7.9	14.7	480
4/01/2025	Assessment	0.53	34.2	10.8	1.22	7.1	13.8	470
9/29/2025	Assessment	0.49	28.3	10.6	1.19	8.1	14.5	450

Table 1. Groundwater Data Summary: -MW-1611
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/19/2017	Background	0.33	7.16	91.8	< 0.004 U1	0.01 J1	0.656	0.311	1.295	0.48	1.05	0.109	< 0.05 U1	38.0	0.09 J1	< 0.01 U1
12/11/2017	Background	0.18	11.5	63.7	0.01 J1	< 0.01 U1	0.555	0.080	0.278	0.68	0.04 J1	0.130	0.08 J1	6.76	0.1 J1	0.04 J1
2/13/2018	Background	0.54	36.5	53.3	0.01 J1	< 0.005 U1	0.836	0.131	0.748	0.66	0.146	0.161	< 0.05 U1	2.19	0.1	0.11
4/10/2018	Background	0.50	39.5	51.0	0.009 J1	< 0.005 U1	0.864	0.122	0.257	0.85	0.142	0.130	< 0.05 U1	2.54	0.1	< 0.01 U1
6/11/2018	Background	0.23	27.5	57.2	0.008 J1	< 0.005 U1	0.640	0.092	0.766	0.90	0.169	0.110	< 0.05 U1	2.10	0.09 J1	< 0.01 U1
8/21/2018	Background	0.15	20.1	60.6	0.007 J1	< 0.005 U1	0.572	0.076	0.360	0.98	0.144	0.090	< 0.05 U1	1.85	0.08 J1	0.04 J1
10/15/2018	Background	0.10	19.2	63.3	< 0.02 U1	< 0.01 U1	0.454	0.062	0.467	0.92	0.133	0.079	< 0.05 U1	2 J1	0.05 J1	< 0.1 U1
12/06/2018	Background	0.06 J1	16.4	68.8	< 0.02 U1	< 0.01 U1	0.355	0.055	0.384	0.96	0.120	0.080	< 0.05 U1	2.41	0.04 J1	< 0.1 U1
2/12/2019	Detection	0.05 J1	13.2	75.7	< 0.02 U1	< 0.01 U1	0.326	0.056	0.3448	0.98	0.109	0.071	< 0.05 U1	2.52	0.04 J1	< 0.1 U1
4/09/2019	Assessment	0.05 J1	11.9	80.8	< 0.02 U1	< 0.01 U1	0.415	0.062	0.512	0.92	0.09 J1	0.087	< 0.05 U1	2.36	0.05 J1	< 0.1 U1
5/29/2019	Assessment	0.05 J1	9.20	85.3	< 0.02 U1	< 0.01 U1	0.343	0.03 J1	0.457	0.99	< 0.02 U1	0.073	< 0.05 U1	2.12	0.05 J1	< 0.1 U1
10/01/2019	Assessment	0.03 J1	9.46	100	< 0.02 U1	< 0.01 U1	0.295	0.055	0.524	1.06	0.08 J1	0.0699	< 0.2 U1	2.84	0.08 J1	< 0.1 U1
2/11/2020	Assessment	0.03 J1	8.01	112	< 0.02 U1	< 0.01 U1	0.221	0.03 J1	0.34769	1.00	0.06 J1	0.0629	< 0.2 U1	3.89	0.04 J1	< 0.1 U1
4/20/2020	Assessment	0.02 J1	7.30	113	< 0.02 U1	< 0.01 U1	0.2 J1	0.02 J1	1.935	1.07	< 0.05 U1	0.0646	< 0.2 U1	2.08	0.04 J1	< 0.1 U1
10/06/2020	Assessment	0.04 J1	6.69	130	< 0.02 U1	< 0.01 U1	0.293	0.03 J1	0.763	1.02	0.07 J1	0.0630	< 0.2 U1	2.21	0.06 J1	< 0.1 U1
2/08/2021	Assessment	0.02 J1	6.62	151	< 0.02 U1	< 0.01 U1	0.261	0.02 J1	0.915	1.15	< 0.05 U1	0.0620	< 0.2 U1	2 J1	0.03 J1	< 0.1 U1
4/12/2021	Assessment	0.02 J1	6.19	157	< 0.007 U1	< 0.004 U1	0.2 J1	0.02 J1	0.753	1.18	< 0.05 U1	0.0613	< 0.2 U1	1 J1	< 0.09 U1	< 0.04 U1
10/11/2021	Assessment	0.03 J1	6.64	208	< 0.007 U1	< 0.004 U1	0.11 J1	0.016 J1	0.36	0.91	< 0.05 U1	0.0604	< 0.2 U1	1.5	< 0.09 U1	< 0.04 U1
2/22/2022	Assessment	< 0.02 U1	6.04	218	< 0.007 U1	< 0.004 U1	0.14 J1	0.013 J1	0.72	1.15	< 0.05 U1	0.0622	< 0.2 U1	1.5	< 0.09 U1	< 0.04 U1
4/12/2022	Assessment	< 0.02 U1	5.82	213	< 0.007 U1	< 0.004 U1	0.05 J1	0.011 J1	0.66	1.11	< 0.05 U1	0.0639	< 0.2 U1	1.5	< 0.09 U1	< 0.04 U1
10/03/2022	Assessment	< 0.02 U1	5.91	245	< 0.07 U1	< 0.004 U1	0.27	0.015 J1	1.32	1.13	< 0.05 U1	0.0656	< 0.2 U1	1.6	< 0.09 U1	< 0.04 U1
2/13/2023	Assessment	< 0.02 U1	5.97	280	< 0.007 U1	< 0.004 U1	0.15 J1	0.012 J1	2.13	1.17	< 0.05 U1	0.0542	< 0.2 U1	1.7	< 0.09 U1	< 0.04 U1
4/03/2023	Assessment	0.013 J1	5.76	287	< 0.04 U1	< 0.004 U1	0.17 J1	0.012 J1	2.62	1.15	< 0.05 U1	0.063	< 0.2 U1	1.7	< 0.04 U1	< 0.02 U1
10/09/2023	Assessment	0.012 J1	4.68	273	< 0.007 U1	< 0.004 U1	0.21 J1	0.01 J1	0.78	1.13	< 0.05 U1	0.0566	< 0.2 U1	1.7	< 0.04 U1	< 0.02 U1
2/19/2024	Assessment	0.012 J1	5.00	301	< 0.007 U1	< 0.004 U1	0.19 J1	0.011 J1	1.00	1.08	< 0.05 U1	0.0601	< 0.2 U1	1.9	< 0.04 U1	< 0.02 U1
4/01/2024	Assessment	0.015 J1	4.82	319	< 0.007 U1	< 0.004 U1	0.13 J1	0.010 J1	0.50	1.13	< 0.05 U1	0.0614	< 0.2 U1	1.8	< 0.04 U1	< 0.02 U1
10/07/2024	Assessment	< 0.06 U1	4.5	312 M1	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	0.36	1.24	< 0.4 U1	0.0641 M1	< 0.2 U1	1.9 J1	< 0.3 U1	< 0.2 U1
4/01/2025	Assessment	< 0.06 U1	4.6	345	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	0.56	1.22	0.4 J1	0.0624	< 0.2 U1	2.4 J1	< 0.3 U1	< 0.2 U1
9/29/2025	Assessment	< 0.2 U1	4.7	324	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	0.82	1.19	< 0.4 U1	0.0593	< 0.2 U1	2.0 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1612
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
12/13/2017	Background	0.453	38.7	13.3	0.12	7.1	6.0	384
2/14/2018	Background	0.532	43.0	14.5	0.12	6.9	9.3	506
4/12/2018	Background	0.476	44.9	21.6	0.17	7.1	13.9	546
6/12/2018	Background	0.452	42.4	22.7	0.17	7.0	16.9	524
8/22/2018	Background	0.543	42.0	20.9	0.19	7.1	15.6	550
10/16/2018	Background	0.5 J1	38.1	37.1	0.21	7.3	10.8	528
12/11/2018	Background	0.439	37.9	35.3	0.20	7.4	7.8	522
2/12/2019	Detection	0.393	36.4	32.8	0.19	7.3	5.4	537
4/10/2019	Assessment	0.527	41.0	27.5	0.18	7.4	4.6	551
5/30/2019	Assessment	0.355	34.9	32.8	0.22	7.4	3.3	537
10/02/2019	Assessment	0.423	45.9	30.7	0.14	7.1	1.9	533
2/11/2020	Assessment	0.367	40.1	33.3	0.17	7.3	1.2	520
4/21/2020	Assessment	0.381	54.4	9.9	0.08	6.2	0.2 J1	495
10/07/2020	Assessment	0.399	50.7	20.0	0.16	6.8	< 0.06 U1	526
2/09/2021	Assessment	0.369	41.4	26.8	0.19	7.2	0.3 J1	555
4/13/2021	Assessment	0.339	41.6	29.6	0.19	7.3	0.4	524
10/12/2021	Assessment	0.400	42.3	27.5	0.18	7.4	< 0.06 U1	520
2/23/2022	Assessment	0.371	42.8	22.7	0.15	7.6	< 0.06 U1	520
4/13/2022	Assessment	0.394	49.9	15.2	0.13	6.7	< 0.06 U1	520
10/05/2022	Assessment	0.407	45.9 M1, P3	20.8	0.16	6.7	< 0.06 U1	510
2/14/2023	Assessment	0.388	46.0	20.3	0.14	7.1	< 0.06 U1	520
4/04/2023	Assessment	0.417	52.3	13.1	0.11	6.9	< 0.1 U1	500
10/10/2023	Assessment	0.404	45.7	12.3	0.12	7.0	< 0.1 U1	480
2/20/2024	Assessment	0.351	44.1	15.8	0.11	7.1	< 0.1 U1	500
4/02/2024	Assessment	0.372	45.6	19.2	0.13	7.1	< 0.1 U1	490
10/08/2024	Assessment	0.37 J1	43.0	21.9	0.17	7.2	0.2 J1	510
2/18/2025	Assessment	0.39 J1	46.1	16.9	0.15	6.9	< 0.1 U1	490
4/02/2025	Assessment	0.37 J1	44.2	20.8	0.17	7.2	< 0.1 U1	490
9/30/2025	Assessment	0.38 J1	42.4	19.5	0.17	8.5	< 0.04 U1	500

Table 1. Groundwater Data Summary: -MW-1612
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
12/13/2017	Background	0.30	3.86	2020	0.045	< 0.005 U1	0.437	0.274	2.942	0.12	0.331	0.109	0.06 J1	3.60	0.1	0.01 J1
2/14/2018	Background	0.08	2.61	2560	0.01 J1	< 0.005 U1	0.190	0.149	1.358	0.12	0.083	0.121	< 0.05 U1	1.59	0.06 J1	0.03 J1
4/12/2018	Background	0.11	2.26	2170	0.005 J1	< 0.005 U1	0.196	0.115	2.209	0.17	0.040	0.128	< 0.05 U1	1.13	0.03 J1	< 0.01 U1
6/12/2018	Background	0.07	1.82	2170	0.006 J1	< 0.005 U1	0.206	0.094	1.580	0.17	0.038	0.132	< 0.05 U1	0.83	0.04 J1	0.01 J1
8/22/2018	Background	0.05	1.56	2090	< 0.004 U1	< 0.005 U1	0.251	0.124	2.76	0.19	0.025	0.136	< 0.05 U1	0.67	0.03 J1	0.01 J1
10/16/2018	Background	0.02 J1	1.17	1640	< 0.02 U1	< 0.01 U1	0.2 J1	0.242	1.051	0.21	0.02 J1	< 0.09 U1	< 0.05 U1	0.8 J1	0.04 J1	< 0.1 U1
12/11/2018	Background	0.03 J1	0.92	1880	< 0.02 U1	< 0.01 U1	0.2 J1	0.304	3.009	0.20	< 0.02 U1	0.134	< 0.05 U1	0.7 J1	< 0.03 U1	< 0.1 U1
2/12/2019	Detection	0.02 J1	0.71	1880	< 0.02 U1	< 0.01 U1	0.204	0.320	0.574	0.19	< 0.02 U1	0.123	< 0.05 U1	0.50 J1	< 0.03 U1	< 0.1 U1
4/10/2019	Assessment	0.03 J1	0.74	2060	< 0.02 U1	< 0.01 U1	0.1 J1	0.339	1.25	0.18	< 0.02 U1	0.133	< 0.05 U1	0.7 J1	< 0.03 U1	< 0.1 U1
5/30/2019	Assessment	0.02 J1	0.76	1930	< 0.02 U1	< 0.01 U1	0.257	0.228	0.621	0.22	< 0.02 U1	0.113	< 0.05 U1	0.7 J1	< 0.03 U1	< 0.1 U1
10/02/2019	Assessment	< 0.02 U1	0.56	2150	< 0.02 U1	< 0.01 U1	0.218	0.182	1.137	0.14	< 0.05 U1	0.128	< 0.2 U1	2.01	0.05 J1	< 0.1 U1
2/11/2020	Assessment	0.05 J1	0.45	2050	< 0.02 U1	< 0.01 U1	0.2 J1	0.121	1.888	0.17	< 0.05 U1	0.106	< 0.2 U1	2 J1	0.03 J1	< 0.1 U1
4/21/2020	Assessment	0.15	0.39	2600	< 0.02 U1	< 0.01 U1	0.216	0.176	2.65	0.08	0.07 J1	0.107	< 0.2 U1	0.8 J1	0.03 J1	< 0.1 U1
10/07/2020	Assessment	0.03 J1	0.76	2450	< 0.02 U1	< 0.01 U1	0.1 J1	0.183	1.765	0.16	< 0.05 U1	0.103	< 0.2 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
2/09/2021	Assessment	0.03 J1	0.50	2400	< 0.02 U1	< 0.01 U1	0.1 J1	0.097	2.053	0.19	< 0.05 U1	0.113	< 0.2 U1	0.6 J1	< 0.03 U1	< 0.1 U1
4/13/2021	Assessment	0.04 J1	0.37	2120	< 0.007 U1	< 0.004 U1	0.2 J1	0.125	1.572	0.19	< 0.05 U1	0.113	< 0.2 U1	0.7 J1	< 0.09 U1	< 0.04 U1
10/12/2021	Assessment	0.03 J1	0.48	2470	< 0.007 U1	< 0.004 U1	0.18 J1	0.116	1.90	0.18	< 0.05 U1	0.115	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
2/23/2022	Assessment	< 0.04 U1	0.38	2440	< 0.007 U1	< 0.004 U1	0.15 J1	0.091 B1	1.62	0.15	< 0.05 U1	0.129	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	< 0.02 U1	0.31	2550	< 0.007 U1	< 0.004 U1	0.10 J1	0.115	1.75	0.13	< 0.05 U1	0.131	< 0.2 U1	0.1 J1	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	< 0.02 U1	0.33	2390 M1, P3	< 0.007 U1	< 0.004 U1	0.39	0.096	3.01	0.16	< 0.05 U1	0.147	< 0.2 U1	0.1 J1	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	< 0.02 U1	0.34	2620	< 0.007 U1	< 0.004 U1	0.23	0.085	1.92	0.14	< 0.05 U1	0.112	< 0.2 U1	0.2 J1	< 0.09 U1	< 0.04 U1
4/04/2023	Assessment	0.023 J1	0.32	2520	< 0.007 U1	< 0.004 U1	0.21 J1	0.103	2.23	0.11	< 0.05 U1	0.125	< 0.2 U1	0.1 J1	< 0.04 U1	< 0.02 U1
10/10/2023	Assessment	0.026 J1	0.31	2410	< 0.007 U1	< 0.004 U1	0.23 J1	0.075	1.91	0.12	< 0.05 U1	0.137	< 0.2 U1	0.2 J1	< 0.04 U1	< 0.02 U1
2/20/2024	Assessment	0.042 J1	0.31	2310	< 0.007 U1	< 0.004 U1	0.19 J1	0.068	1.70	0.11	< 0.05 U1	0.129	< 0.2 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1
4/02/2024	Assessment	0.030 J1	0.21	2320	< 0.007 U1	< 0.004 U1	0.21 J1	0.077	1.95	0.13	< 0.05 U1	0.112	< 0.2 U1	0.1 J1	< 0.04 U1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	0.3 J1	2240	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.06 J1	2.11	0.17	< 0.4 U1	0.121	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
2/18/2025	Assessment	< 0.06 U1	0.4 J1	2270	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.12 J1	1.63	0.15	< 0.4 U1	0.131	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
4/02/2025	Assessment	< 0.06 U1	< 0.2 U1	2280	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.06 J1	1.31	0.17	< 0.4 U1	0.129	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	0.3 J1	2140	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	1.56	0.17	< 0.4 U1	0.127	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1903D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.302	196	4170	< 0.4 U1	7.0	< 2 U1	7060
11/09/2020	Assessment	0.270	231	4780	0.4 J1	8.0	< 0.8 U1	8000
2/16/2021	Assessment	< 0.4 U1	169	4940	0.5 J1	8.1	< 0.8 U1	7440
4/14/2021	Assessment	0.275	177	4790	0.6 J1	8.2	< 0.8 U1	7060
10/13/2021	Assessment	0.25 J1	145	4020	0.6 J1	8.3	< 0.8 U1	6400
2/24/2022	Assessment	0.22 J1	136	4130	0.5 J1	8.5	< 0.8 U1	6400
4/14/2022	Assessment	0.28	137	3760	0.5 J1	7.8	< 0.8 U1	6000
10/05/2022	Assessment	0.4 J1	139	3410	0.5 J1	7.6	2.4 J1	5500
2/15/2023	Assessment	0.3 J1	124	3700	0.5 J1	8.1	< 0.8 U1	6020 S7, S1
4/05/2023	Assessment	0.3 J1	117	3410	0.4 J1	8.0	< 2 U1	5200
10/11/2023	Assessment	0.3 J1	106	3340	0.6 J1	8.0	< 2 U1	5680
4/03/2024	Assessment	0.263	134	3870	0.6 J1	8.2	< 2 U1	6100
10/09/2024	Assessment	< 0.4 U1	146	3940	0.4 J1	8.2	< 2 U1	6500
4/07/2025	Assessment	0.6 J1	156 M1	4040	0.5 J1	8.8	< 2 U1	6890
10/01/2025	Assessment	0.33 J1	141	4050	0.4 J1	8.7	< 0.5 U1	6670

Table 1. Groundwater Data Summary: -MW-1903D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.22	8.73	15000	< 0.04 U1	< 0.02 U1	0.2 J1	0.471	7.24	< 0.4 U1	0.1 J1	0.425	< 0.2 U1	13.7	0.1 J1	< 0.2 U1
11/09/2020	Assessment	< 0.1 U1	6.47	24700	< 0.1 U1	< 0.05 U1	< 0.2 U1	< 0.1 U1	8.28	0.4 J1	< 0.2 U1	0.459	< 0.2 U1	20.9	< 0.2 U1	< 0.5 U1
2/16/2021	Assessment	< 0.4 U1	7.88	23200	< 0.4 U1	< 0.2 U1	< 0.8 U1	< 0.4 U1	10.34	0.5 J1	< 1 U1	0.442	< 0.2 U1	20 J1	< 0.6 U1	< 2 U1
4/14/2021	Assessment	0.1 J1	7.27	20300	< 0.04 U1	< 0.02 U1	< 0.2 U1	0.06 J1	6.54	0.6 J1	< 0.2 U1	0.430	< 0.2 U1	21.9	< 0.4 U1	< 0.2 U1
10/13/2021	Assessment	0.3 J1	6.8	15100	< 0.07 U1	< 0.04 U1	< 0.4 U1	0.07 J1	7.57	0.6 J1	< 0.5 U1	0.402	< 0.2 U1	25	< 0.9 U1	< 0.4 U1
2/24/2022	Assessment	< 0.2 U1	6.3	16200	< 0.07 U1	< 0.04 U1	0.5 J1	0.05 J1	7.27	0.5 J1	< 0.5 U1	0.395	< 0.2 U1	24	< 0.9 U1	< 0.4 U1
4/14/2022	Assessment	0.6	6.7	12500	< 0.04 U1	< 0.02 U1	< 0.2 U1	0.05 J1	6.24	0.5 J1	< 0.3 U1	0.351	< 0.2 U1	21.6	< 0.5 U1	< 0.2 U1
10/05/2022	Assessment	2.7	7.5	9820	< 0.1 U1	< 0.08 U1	3.1 J1	0.11 J1	7.23	0.5 J1	< 1 U1	0.355	< 0.2 U1	18	< 2 U1	< 0.2 U1
2/15/2023	Assessment	1.0 J1	7.1	13500	< 0.1 U1	< 0.08 U1	< 0.8 U1	< 0.06 U1	5.68	0.5 J1	< 1 U1	0.326	< 0.2 U1	22	< 2 U1	< 0.2 U1
4/05/2023	Assessment	1.2 J1	4.4	9630 M1	< 0.1 U1	< 0.08 U1	1 J1	< 0.1 U1	7.44	0.4 J1	< 1 U1	0.38 M1	< 0.2 U1	18	< 0.8 U1	< 0.2 U1
10/11/2023	Assessment	1 J1	5.3	9810	< 0.1 U1	< 0.08 U1	2 J1	< 0.1 U1	7.35	0.6 J1	< 1 U1	0.366	< 0.2 U1	18	< 0.8 U1	< 0.1 U1
4/03/2024	Assessment	0.501	6.02	14800	< 0.007 U1	< 0.004 U1	0.14 J1	0.025	5.99	0.6 J1	0.08 J1	0.357	< 0.2 U1	16.0	< 0.04 U1	< 0.02 U1
10/09/2024	Assessment	< 0.4 U1	7	14700	< 0.4 U1	< 0.2 U1	< 4 U1	< 0.3 U1	6.02	0.4 J1	< 3 U1	0.376	< 0.2 U1	15 J1	< 2 U1	< 0.2 U1
4/07/2025	Assessment	0.5 J1	8	16000 M1	< 0.4 U1	< 0.2 U1	11 M1, J1	< 0.3 U1	8.30	0.5 J1	< 3 U1	0.426 M1	< 0.2 U1	17 M1, J1	3 J1	0.9 M1, J1
10/01/2025	Assessment	< 0.2 U1	6.4	16100	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	5.58	0.4 J1	< 0.4 U1	0.321	< 0.2 U1	11.4	0.3 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1903S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.350	95.4	1190	0.11	6.3	< 0.06 U1	2320
11/09/2020	Assessment	0.383	80.0	937	0.1 J1	7.0	< 0.2 U1	2020
2/16/2021	Assessment	0.355	70.2	879	0.15	7.2	< 0.2 U1	1520
4/14/2021	Assessment	0.355	83.6	1050	0.15	7.3	< 0.2 U1	1780
10/13/2021	Assessment	0.381	83.4	989	0.13 J1	7.4	< 0.2 U1	2000
2/24/2022	Assessment	0.361	81.4 P3	1030	0.09 J1	7.5	< 0.2 U1	2000
4/14/2022	Assessment	0.380	87.2 M1, P3	1000	0.12 J1	6.8	< 0.2 U1	1700
10/05/2022	Assessment	0.407	91.7	1040	0.12 J1	6.6	< 0.2 U1	1900
2/15/2023	Assessment	0.375	95.5	1070	0.1 J1	6.8	< 0.2 U1	1990
4/05/2023	Assessment	0.41	92.9	1060	0.1 J1	7.0	< 0.3 U1	2000
10/11/2023	Assessment	0.37	77.0	1010	0.13 J1	6.9	< 0.3 U1	1940
4/03/2024	Assessment	0.350	83.9	1020	0.13 J1	7.0	< 0.3 U1	1700
10/09/2024	Assessment	0.371	78	1030	0.09 J1	7.0	< 0.3 U1	1800
4/07/2025	Assessment	0.351	93.5 M1	1050	0.13 J1	8.0	< 0.3 U1	1990
10/01/2025	Assessment	0.36 J1	82.1	1010	0.12 J1	7.3	< 0.1 U1	1920

Table 1. Groundwater Data Summary: -MW-1903S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.06 J1	2.99	9280	0.03 J1	< 0.01 U1	0.362	0.208	4.55	0.11	0.713	0.194	< 0.2 U1	1 J1	0.06 J1	< 0.1 U1
11/09/2020	Assessment	0.13	1.76	7420	< 0.02 U1	< 0.01 U1	0.1 J1	0.120	3.71	0.1 J1	< 0.05 U1	0.169	< 0.2 U1	0.9 J1	< 0.03 U1	< 0.1 U1
2/16/2021	Assessment	0.04 J1	1.51	7610	< 0.02 U1	< 0.01 U1	0.2 J1	0.097	6.772	0.15	0.1 J1	0.158	< 0.2 U1	0.6 J1	< 0.03 U1	< 0.1 U1
4/14/2021	Assessment	0.07 J1	1.44	8020	0.01 J1	< 0.004 U1	0.08 J1	0.079	3.68	0.15	0.08 J1	0.164	< 0.2 U1	0.5 J1	< 0.09 U1	< 0.04 U1
10/13/2021	Assessment	0.06 J1	1.18	7790 M1, P3	< 0.07 U1	< 0.004 U1	0.19 J1	0.081	3.88	0.13 J1	< 0.05 U1	0.186	< 0.2 U1	0.5	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.08 J1	1.02	7910	0.012 J1	< 0.004 U1	0.15 J1	0.091	3.62	0.09 J1	0.08 J1	0.199 M1, P3	< 0.2 U1	0.4 J1	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.19	0.95	7600 M1, P3	0.008 J1	< 0.004 U1	0.11 J1	0.090	3.90	0.12 J1	0.08 J1	0.189 P3	< 0.2 U1	0.4 J1	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.07 J1	0.97	8430	0.010 J1	< 0.004 U1	0.15 J1	0.099	6.90	0.12 J1	0.08 J1	0.191	< 0.2 U1	0.4 J1	< 0.09 U1	< 0.04 U1
2/15/2023	Assessment	0.07 J1	0.92	8840	0.011 J1	< 0.004 U1	0.14 J1	0.085	4.62	0.1 J1	0.08 J1	0.160	< 0.2 U1	0.5	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.04 J1	0.9	8220	< 0.04 U1	< 0.02 U1	0.8 J1	0.08 J1	6.01	0.1 J1	< 0.3 U1	0.196	< 0.2 U1	0.6 J1	< 0.2 U1	< 0.1 U1
10/11/2023	Assessment	0.07 J1	0.8	7880	< 0.04 U1	< 0.02 U1	0.8 J1	0.09 J1	4.19	0.13 J1	< 0.3 U1	0.182	< 0.2 U1	< 0.5 U1	< 0.2 U1	< 0.1 U1
4/03/2024	Assessment	0.069 J1	0.70	8040	0.012 J1	< 0.004 U1	0.19 J1	0.078	3.96	0.13 J1	0.09 J1	0.166	< 0.2 U1	0.2 J1	0.06 J1	< 0.02 U1
10/09/2024	Assessment	0.062 J1	0.67	6620	0.009 J1	< 0.004 U1	0.17 J1	0.089	2.88	0.09 J1	0.06 J1	0.168	< 0.2 U1	0.4 J1	< 0.04 U1	< 0.02 U1
4/07/2025	Assessment	0.086 J1	0.70	6730 M1	< 0.04 U1	< 0.004 U1	0.46	0.092	3.93	0.13 J1	< 0.3 U1	0.177 M1	< 0.2 U1	0.3 J1	0.08 J1	0.1 J1
10/01/2025	Assessment	< 0.2 U1	0.7 J1	7230	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.09 J1	2.88	0.12 J1	< 0.4 U1	0.158	< 0.2 U1	< 0.4 U1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1904D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.504	8.82	84.3	1.17	7.3	8.0	795
11/09/2020	Assessment	0.472	8.68	92.3	1.18	8.0	< 0.06 U1	802
2/15/2021	Assessment	0.500	8.24	91.5	1.17	8.2	< 0.06 U1	829
4/14/2021	Assessment	0.505	8.52	93.9	1.16	8.3	< 0.06 U1	809
10/13/2021	Assessment	0.489	8.3	93.4	1.09	8.5	< 0.3 U1	830
2/24/2022	Assessment	0.491	8.30	99.9	1.13	8.6	< 0.06 U1	840
4/14/2022	Assessment	0.550	8.85	95.6	1.06	7.9	< 0.06 U1	850
10/05/2022	Assessment	0.560	8.60	97.0	1.06	8.0	< 0.06 U1	850
2/15/2023	Assessment	0.409	19.4	98.7	1.09	8.1	< 0.06 U1	850
4/05/2023	Assessment	0.553	8.81	96.9	1.06	8.2	< 0.1 U1	830
10/11/2023	Assessment	0.522	8.44	98.8	1.05	8.1	< 0.1 U1	850
4/03/2024	Assessment	0.511	8.83	102	1.05	8.2	< 0.1 U1	860
10/09/2024	Assessment	0.52	8.6	101	1.12	8.1	< 0.1 U1	860
4/07/2025	Assessment	0.55	9.6	103	1.10	6.8	< 0.1 U1	840
10/01/2025	Assessment	0.50	9.0	105	1.11	8.3	< 0.04 U1	860

Table 1. Groundwater Data Summary: -MW-1904D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.26	2.76	712	< 0.02 U1	< 0.01 U1	0.229	0.162	2.18	1.17	0.06 J1	0.154	< 0.2 U1	4.60	< 0.03 U1	< 0.1 U1
11/09/2020	Assessment	3.23	2.48	850	< 0.02 U1	< 0.01 U1	0.1 J1	0.05 J1	3.103	1.18	< 0.05 U1	0.168	< 0.2 U1	4.32	0.08 J1	< 0.1 U1
2/15/2021	Assessment	0.91	2.78	848	< 0.1 U1	< 0.05 U1	0.3 J1	< 0.1 U1	1.402	1.17	< 0.05 U1	0.165	< 0.2 U1	6 J1	< 0.2 U1	< 0.1 U1
4/14/2021	Assessment	0.59	2.51	841	< 0.007 U1	< 0.004 U1	0.08 J1	0.03 J1	1.186	1.16	< 0.05 U1	0.160	< 0.2 U1	5.07	< 0.09 U1	< 0.04 U1
10/13/2021	Assessment	0.59	2.47	881	< 0.007 U1	< 0.004 U1	0.27	0.027	0.99	1.09	< 0.05 U1	0.157	< 0.2 U1	6.0	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.25	2.40	981	< 0.007 U1	< 0.004 U1	0.21	0.043	1.93	1.13	< 0.05 U1	0.172	< 0.2 U1	7.3	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.22	1.96	980	< 0.007 U1	< 0.004 U1	0.05 J1	0.041	1.60	1.06	< 0.05 U1	0.177	< 0.2 U1	6.1	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.25	1.76	949	< 0.007 U1	< 0.004 U1	0.15 J1	0.117	1.53	1.06	< 0.05 U1	0.183	< 0.2 U1	4.9	< 0.09 U1	< 0.04 U1
2/15/2023	Assessment	0.17	2.74	1370	0.013 J1	< 0.004 U1	0.17 J1	0.197	2.78	1.09	< 0.05 U1	0.0892	< 0.2 U1	2.1	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.117	1.30	925	< 0.007 U1	< 0.004 U1	0.17 J1	0.086	2.21	1.06	< 0.05 U1	0.170	< 0.2 U1	3.4	< 0.04 U1	< 0.02 U1
10/11/2023	Assessment	0.140	1.36	1050	< 0.007 U1	< 0.004 U1	0.19 J1	0.186	0.74	1.05	< 0.05 U1	0.188	< 0.2 U1	3.6	< 0.04 U1	< 0.02 U1
4/03/2024	Assessment	0.095 J1	1.51	1000	< 0.007 U1	< 0.004 U1	0.15 J1	0.140	1.81	1.05	< 0.05 U1	0.164	< 0.2 U1	4.4	< 0.04 U1	< 0.02 U1
10/09/2024	Assessment	0.10 J1	1.4	929	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.23	1.77	1.12	< 0.4 U1	0.180	< 0.2 U1	4.2	< 0.3 U1	< 0.2 U1
4/07/2025	Assessment	0.35 J1	1.8	970	< 0.06 U1	0.25	0.7 J1	0.47	2.02	1.10	< 0.4 U1	0.189	< 0.2 U1	4.4	< 0.3 U1	0.2 J1
10/01/2025	Assessment	0.2 J1	1.3	961	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.28	1.18	1.11	< 0.4 U1	0.163	< 0.2 U1	3.9 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1904S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.541	11.5	10.9	0.42	7.3	0.2 J1	411
11/09/2020	Assessment	0.452	18.5	10.1	0.29	7.3	< 0.06 U1	384
2/15/2021	Assessment	0.451	18.4	9.8	0.30	7.4	< 0.06 U1	405
4/14/2021	Assessment	0.457	21.1	10.0	0.28	7.3	< 0.06 U1	366
10/13/2021	Assessment	0.405	20.1	10.2	0.25	7.5	< 0.06 U1	380
2/24/2022	Assessment	0.406	19.4	10.4	0.23	7.5	< 0.06 U1	390
4/14/2022	Assessment	0.424	22.1	10.1	0.21	6.7	< 0.06 U1	360
10/05/2022	Assessment	0.436	19.5	10.7	0.23	6.4	< 0.06 U1	350
2/15/2023	Assessment	0.524	8.86	10.8	0.23	7.1	< 0.06 U1	380
4/05/2023	Assessment	0.386	19.7	10.5	0.21	7.1	< 0.1 U1	350
10/11/2023	Assessment	0.345	20.7	10.3	0.18	7.0	< 0.1 U1	350
4/03/2024	Assessment	0.368	21.2	10.8	0.20	7.0	< 0.1 U1	340
10/09/2024	Assessment	0.364	21	10.6	0.23	7.1	< 0.1 U1	350
4/07/2025	Assessment	0.371	21.5	10.6	0.24	6.4	< 0.1 U1	360
10/01/2025	Assessment	0.35 J1	20.6	11.0	0.25	7.2	< 0.04 U1	350

Table 1. Groundwater Data Summary: -MW-1904S
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.18	3.13	866	< 0.02 U1	< 0.01 U1	0.2 J1	0.218	1.471	0.42	0.1 J1	0.115	< 0.2 U1	3.52	< 0.03 U1	< 0.1 U1
11/09/2020	Assessment	0.16	2.64	1230	< 0.02 U1	< 0.01 U1	0.1 J1	0.118	4.591	0.29	< 0.05 U1	0.113	< 0.2 U1	2 J1	0.07 J1	< 0.1 U1
2/15/2021	Assessment	0.08 J1	2.97	1260	< 0.02 U1	< 0.01 U1	0.2 J1	0.123	3.355	0.30	< 0.05 U1	0.0966	< 0.2 U1	2.30	< 0.03 U1	< 0.1 U1
4/14/2021	Assessment	0.07 J1	2.63	1300	0.009 J1	< 0.004 U1	0.06 J1	0.141	1.438	0.28	< 0.05 U1	0.0990	< 0.2 U1	1 J1	< 0.09 U1	< 0.04 U1
10/13/2021	Assessment	0.05 J1	2.08	1290	0.008 J1	< 0.004 U1	0.44	0.116	2.42	0.25	< 0.05 U1	0.0940	< 0.2 U1	1.3	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.28	3.26	1300	0.013 J1	< 0.004 U1	0.13 J1	0.142	1.65	0.23	0.10 J1	0.0955	< 0.2 U1	1.2	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.13	2.51	1400	0.008 J1	< 0.004 U1	0.22	0.178	1.80	0.21	< 0.05 U1	0.0880	< 0.2 U1	1.4	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.08 J1	2.88	1300	0.011 J1	0.010 J1	0.15 J1	0.162	2.70	0.23	< 0.05 U1	0.108	< 0.2 U1	1.6	< 0.09 U1	< 0.04 U1
2/15/2023	Assessment	0.15	1.68	1080	< 0.007 U1	< 0.004 U1	0.11 J1	0.076	2.12	0.23	0.07 J1	0.161	< 0.2 U1	4.6	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.062 J1	2.27	1190	0.014 J1	< 0.004 U1	0.16 J1	0.221	3.32	0.21	< 0.05 U1	0.0917	< 0.2 U1	1.0	0.06 J1	< 0.02 U1
10/11/2023	Assessment	0.037 J1	2.02	1460	0.014 J1	< 0.004 U1	0.21 J1	0.249	1.71	0.18	< 0.05 U1	0.0864	< 0.2 U1	0.6	< 0.04 U1	< 0.02 U1
4/03/2024	Assessment	0.035 J1	2.43	1380	0.014 J1	< 0.004 U1	0.39	0.270	1.99	0.20	< 0.05 U1	0.0784	< 0.2 U1	0.6	< 0.04 U1	< 0.02 U1
10/09/2024	Assessment	0.023 J1	2.53	1250	0.009 J1	< 0.004 U1	0.16 J1	0.202	1.04	0.23	< 0.05 U1	0.0744	< 0.2 U1	0.5	0.06 J1	< 0.02 U1
4/07/2025	Assessment	0.022 J1	2.80	1270	0.015 J1	< 0.004 U1	0.23 J1	0.190	1.82	0.24	< 0.05 U1	0.091	< 0.2 U1	0.4 J1	0.05 J1	< 0.02 U1
10/01/2025	Assessment	< 0.2 U1	2.1	1260	< 0.2 U1	< 0.03 U1	1.1 J1	0.17 J1	1.09	0.25	< 0.4 U1	0.0855	< 0.2 U1	0.7 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1905D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.515	155	3220	< 0.4 U1	7.0	8.1	5180
11/09/2020	Assessment	0.519	181	3140	0.3 J1	7.7	< 0.3 U1	5240
2/16/2021	Assessment	< 0.2 U1	156	3260	0.32	7.8	< 0.3 U1	5580
4/14/2021	Assessment	0.534	172	3350	0.43	7.9	< 0.3 U1	5380
10/13/2021	Assessment	0.407	171	3350	0.4	8.1	< 0.3 U1	5600
2/24/2022	Assessment	0.5 J1	185	3400	0.4	8.3	< 0.3 U1	5200 P1
4/14/2022	Assessment	0.61	199	3450	0.4 J1	7.5	< 0.8 U1	5600
10/06/2022	Assessment	0.64	193	3640	0.4 J1	7.3	< 0.8 U1	5900
2/15/2023	Assessment	0.6 J1	169	3360	< 0.3 U1	7.6	< 8 U1	5300
4/05/2023	Assessment	0.6 J1	177	3280	< 0.3 U1	7.7	< 2 U1	5700
10/11/2023	Assessment	0.6 J1	181	3350	0.4 J1	7.6	< 2 U1	5760
4/03/2024	Assessment	0.6 J1	197	3380	0.3 J1	7.7	< 2 U1	5800
10/09/2024	Assessment	0.59	187	3310	< 0.3 U1	7.7	< 2 U1	5600
4/07/2025	Assessment	0.61	203	3310	< 0.3 U1	7.4	< 0.06 U1	5630
10/02/2025	Assessment	0.56	183	3250	< 0.3 U1	8.1	< 0.5 U1	5840

Table 1. Groundwater Data Summary: -MW-1905D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.31	5.40	5080	< 0.04 U1	< 0.02 U1	0.3 J1	0.163	7.36	< 0.4 U1	< 0.1 U1	0.991	< 0.2 U1	7.17	< 0.06 U1	< 0.1 U1
11/09/2020	Assessment	< 0.1 U1	5.21	12600	< 0.1 U1	< 0.05 U1	< 0.2 U1	< 0.1 U1	10.38	0.3 J1	< 0.2 U1	0.935	< 0.2 U1	4 J1	< 0.2 U1	< 0.5 U1
2/16/2021	Assessment	< 0.2 U1	3.03	5320	< 0.2 U1	< 0.1 U1	< 0.4 U1	< 0.2 U1	11.05	0.32	1 J1	0.501	< 0.2 U1	< 4 U1	< 0.3 U1	< 1 U1
4/14/2021	Assessment	< 0.2 U1	4.92	10800	< 0.07 U1	< 0.04 U1	< 0.4 U1	0.04 J1	8.19	0.43	< 0.05 U1	1.05	< 0.4 U1	4 J1	< 0.9 U1	< 0.04 U1
10/13/2021	Assessment	0.04 J1	3.42	10200	< 0.07 U1	0.005 J1	0.21	0.016 J1	11.77	0.4	< 0.5 U1	1.05	< 0.2 U1	4.2	< 0.09 U1	< 0.4 U1
2/24/2022	Assessment	< 0.4 U1	3.2	9380	< 0.1 U1	< 0.08 U1	1.4 J1	< 0.06 U1	9.89	0.4	< 1 U1	1.17	< 0.2 U1	7 J1	< 2 U1	< 0.4 U1
4/14/2022	Assessment	< 0.1 U1	2.9	8970	< 0.04 U1	< 0.02 U1	< 0.2 U1	0.03 J1	8.45	0.4 J1	< 0.3 U1	0.963	< 0.4 U1	5.9	< 0.5 U1	< 0.2 U1
10/06/2022	Assessment	< 0.1 U1	2.3	9040	< 0.04 U1	< 0.02 U1	0.2 J1	0.03 J1	9.66	0.4 J1	< 0.3 U1	1.20	< 0.4 U1	4.7	< 0.5 U1	< 0.2 U1
2/15/2023	Assessment	< 0.4 U1	2.1	9170	0.008 J1	< 0.08 U1	44.6	0.07 J1	9.15	< 0.3 U1	< 1 U1	1.12	< 0.2 U1	7 J1	< 2 U1	< 0.2 U1
4/05/2023	Assessment	< 0.2 U1	1.9 J1	8550	< 0.1 U1	< 0.08 U1	2 J1	< 0.1 U1	12.87	< 0.3 U1	< 1 U1	1.14	< 0.2 U1	3 J1	< 0.8 U1	< 0.2 U1
10/11/2023	Assessment	< 0.2 U1	1.8 J1	9130	< 0.1 U1	< 0.08 U1	2 J1	< 0.1 U1	8.00	0.4 J1	< 1 U1	1.19	< 0.2 U1	3 J1	< 0.8 U1	< 0.1 U1
4/03/2024	Assessment	< 0.2 U1	2.1	9850	< 0.1 U1	< 0.08 U1	< 1 U1	< 0.1 U1	7.68	0.3 J1	< 1 U1	1.15	< 0.2 U1	2 J1	< 0.8 U1	0.7 J1
10/09/2024	Assessment	< 0.06 U1	1.9	9680	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	7.60	< 0.3 U1	< 0.4 U1	0.617	< 0.2 U1	2.2 J1	< 0.3 U1	< 0.2 U1
4/07/2025	Assessment	< 0.06 U1	2.4	9550	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	7.24	< 0.3 U1	< 0.4 U1	1.05	< 0.2 U1	2.3 J1	< 0.3 U1	< 0.2 U1
10/02/2025	Assessment	< 0.2 U1	2.4	10300	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	4.26	< 0.3 U1	< 0.4 U1	0.969	< 0.2 U1	1.6 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1905S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.184	83.5	334	0.33	6.7	69.3	810
11/09/2020	Assessment	0.236	66.8	177	0.36	7.5	72.5	598
2/16/2021	Assessment	0.230	81.8	1660	0.32	7.8	6.4	2930
4/14/2021	Assessment	0.551	234	1740	0.35	7.7	4.0	2840
10/13/2021	Assessment	0.500	242	1730	0.33	7.9	2.6	3400
2/24/2022	Assessment	0.486	231	1730	0.30	8.5	2.7	3300
4/14/2022	Assessment	0.594	263	1750	0.26	7.3	1.5	3000
10/06/2022	Assessment	0.58	249 M1, P3	1870	0.28	7.2	1.4	3400
2/15/2023	Assessment	0.522	250	1780	0.2 J1	7.4	1.7 J1	2970 S7
4/05/2023	Assessment	0.560	239	1740	0.2 J1	7.5	1.5 J1	3100
10/11/2023	Assessment	0.511	233	1780	0.3	7.4	1.6 J1	3780
4/03/2024	Assessment	0.516	246	1760	0.3	7.6	1.8 J1	3200
10/09/2024	Assessment	0.562	240 M1	1730	0.3	7.6	1.7 J1	3000 S7
4/07/2025	Assessment	0.57	243	1710	0.3	7.6	3.3	3100
10/02/2025	Assessment	0.57	251 M1	1710	0.2 J1	7.2	1.2 J1	2950 S7

Table 1. Groundwater Data Summary: -MW-1905S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.12	2.39	166	< 0.02 U1	< 0.01 U1	0.348	1.22	1.886	0.33	0.1 J1	0.110	< 0.2 U1	97.0	0.7	< 0.1 U1
11/09/2020	Assessment	1.62	6.25	285	< 0.02 U1	< 0.01 U1	0.285	0.642	2.515	0.36	0.1 J1	0.113	< 0.2 U1	93.6	0.6	< 0.1 U1
2/16/2021	Assessment	5.15	2.12	519	< 0.02 U1	0.02 J1	0.210	0.462	5.84	0.32	0.218	0.137	< 0.2 U1	82.6	0.5	< 0.1 U1
4/14/2021	Assessment	0.08 J1	7.06	3490	0.01 J1	< 0.004 U1	0.05 J1	0.120	4.36	0.35	< 0.05 U1	0.517	< 0.2 U1	8.42	< 0.09 U1	< 0.04 U1
10/13/2021	Assessment	0.05 J1	2.66	3960	< 0.04 U1	< 0.004 U1	0.41	0.118	7.03	0.33	< 0.05 U1	0.530	< 0.2 U1	7.9	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.06 J1	4.66	5750	< 0.007 U1	0.024	0.39	0.090	5.47	0.30	0.06 J1	0.587	< 0.2 U1	8.1	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.03 J1	3.06	5420	< 0.007 U1	< 0.004 U1	0.11 J1	0.075	4.61	0.26	< 0.05 U1	0.530	< 0.2 U1	5.5	< 0.09 U1	< 0.04 U1
10/06/2022	Assessment	< 0.1 U1	2.3	5440 M1, P3	< 0.04 U1	< 0.02 U1	0.4 J1	0.08 J1	6.09	0.28	< 0.3 U1	0.581 M1	< 0.2 U1	5.1	< 0.5 U1	< 0.2 U1
2/15/2023	Assessment	0.03 J1	1.38	6040	< 0.007 U1	< 0.004 U1	0.17 J1	0.065	4.70	0.2 J1	< 0.05 U1	0.542	< 0.2 U1	4.6	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.026 J1	1.93	5130	< 0.007 U1	< 0.004 U1	0.30	0.060	7.92	0.2 J1	< 0.05 U1	0.504	< 0.2 U1	4.3	< 0.04 U1	< 0.02 U1
10/11/2023	Assessment	0.026 J1	1.26	6160	< 0.007 U1	< 0.004 U1	0.19 J1	0.052	4.76	0.3	0.14 J1	0.562	< 0.2 U1	4.1	< 0.04 U1	< 0.02 U1
4/03/2024	Assessment	0.130	1.48	5830	< 0.007 U1	< 0.004 U1	0.16 J1	0.047	5.37	0.3	< 0.05 U1	0.551	< 0.2 U1	5.1	0.09 J1	< 0.02 U1
10/09/2024	Assessment	0.055 J1	2.32	5850	< 0.007 U1	< 0.004 U1	0.17 J1	0.044	5.07	0.3	< 3 U1	0.537 M1	< 0.2 U1	4.8	0.04 J1	< 0.2 U1
4/07/2025	Assessment	0.14 J1	1.0	5420	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.05 J1	6.60	0.3	< 0.4 U1	0.541	< 0.2 U1	4.4	< 0.3 U1	< 0.2 U1
10/02/2025	Assessment	< 0.2 U1	0.9	6630 M1	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	5.28	0.2 J1	< 0.4 U1	0.486 M1	< 0.2 U1	4.0	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1906D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	< 0.02 U1	11.7	14.7	0.21	8.6	30.5	116
11/10/2020	Assessment	< 0.02 U1	19.0	13.1	0.14	8.6	26.5	132
2/15/2021	Assessment	< 0.02 U1	23.0	3.6	0.24	8.3	6.2	135
4/13/2021	Assessment	0.009 J1	22.6	11.5	0.14	8.4	23.9	146
10/12/2021	Assessment	0.011 J1	27.4	10.8	0.12	8.5	24.2	170
2/22/2022	Assessment	< 0.009 U1	27.0	11.9	0.11	8.5	51.4	230
4/13/2022	Assessment	0.020 J1	30.3	13.5	0.12	8.0	93.3	290
10/04/2022	Assessment	0.022 J1	29.7	14.2	0.11	7.2	92.9	300
2/14/2023	Assessment	0.021 J1	32.1	13.9	0.11	7.9	92.1	330
4/04/2023	Assessment	0.023 J1	35.4	13.3	0.1	8.0	91.0	330
10/10/2023	Assessment	0.024 J1	37.0	14.5	0.1	7.9	108	400
4/02/2024	Assessment	0.028 J1	51.0	16.6	0.09	7.8	130	440
10/08/2024	Assessment	< 0.06 U1	48.3	15.6	0.10	7.7	118	460
4/03/2025	Assessment	< 0.06 U1	46.6	15.9	0.11	8.1	101	450
9/30/2025	Assessment	< 0.05 U1	48.2	15.5	0.10	8.2	80.4	400

Table 1. Groundwater Data Summary: -MW-1906D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.77	6.47	18.4	< 0.02 U1	0.01 J1	0.2 J1	0.623	2.814	0.21	0.09 J1	0.0139	< 0.2 U1	39.9	0.3	< 0.1 U1
11/10/2020	Assessment	1.03	4.63	23.5	< 0.02 U1	0.02 J1	0.09 J1	0.500	1.845	0.14	0.2 J1	0.0141	< 0.2 U1	34.8	0.3	< 0.1 U1
2/15/2021	Assessment	0.15	2.37	27.2	< 0.02 U1	< 0.01 U1	0.1 J1	0.572	1.015	0.24	0.05 J1	0.0104	< 0.2 U1	12.5	0.09 J1	< 0.1 U1
4/13/2021	Assessment	0.54	3.44	24.6	< 0.007 U1	0.01 J1	0.2 J1	0.486	1.034	0.14	0.08 J1	0.0141	< 0.2 U1	21.1	0.2 J1	< 0.04 U1
10/12/2021	Assessment	0.25	3.34	27.9	< 0.007 U1	0.005 J1	0.23	0.433	2.03	0.12	< 0.05 U1	0.0139	< 0.2 U1	17.2	0.12 J1	< 0.04 U1
2/22/2022	Assessment	0.04 J1	2.74	30.8	< 0.007 U1	< 0.004 U1	0.17 J1	0.474	2.00	0.11	< 0.05 U1	0.0130	< 0.2 U1	10.8	< 0.09 U1	< 0.04 U1
4/13/2022	Assessment	0.09 J1	3.53	39.2	< 0.007 U1	< 0.004 U1	< 0.04 U1	0.760	1.97	0.12	< 0.05 U1	0.0144	< 0.2 U1	10.1	< 0.09 U1	< 0.04 U1
10/04/2022	Assessment	0.06 J1	3.08	36.6	< 0.007 U1	< 0.004 U1	0.16 J1	0.783	2.12	0.11	< 0.05 U1	0.015	< 0.2 U1	8.8	< 0.09 U1	< 0.04 U1
2/14/2023	Assessment	0.07 J1	2.88	37.5	< 0.007 U1	< 0.004 U1	0.23	0.880	3.04	0.11	0.11 J1	0.0119	< 0.2 U1	7.0	< 0.09 U1	< 0.04 U1
4/04/2023	Assessment	0.061 J1	2.92	40.7	< 0.007 U1	< 0.004 U1	0.15 J1	0.906	1.84	0.1	< 0.05 U1	0.0127	< 0.2 U1	4.8	0.05 J1	< 0.02 U1
10/10/2023	Assessment	0.102	2.40	38.6	< 0.007 U1	0.004 J1	0.24 J1	0.754	0.69	0.1	0.08 J1	0.0121	< 0.2 U1	5.2	< 0.04 U1	< 0.02 U1
4/02/2024	Assessment	0.036 J1	3.71	47.6	< 0.007 U1	< 0.004 U1	0.21 J1	0.420	2.60	0.09	< 0.05 U1	0.00996	< 0.2 U1	2.2	< 0.04 U1	< 0.02 U1
10/08/2024	Assessment	< 0.06 U1	4.7	45.7	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.40	1.95	0.10	< 0.4 U1	0.0104	< 0.2 U1	1.8 J1	< 0.3 U1	< 0.2 U1
4/03/2025	Assessment	< 0.06 U1	3.6	42.1	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.22	1.06	0.11	< 0.4 U1	0.0094	< 0.2 U1	1.5 J1	< 0.3 U1	< 0.2 U1
9/30/2025	Assessment	< 0.2 U1	3.5	39.5	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.28	2.32	0.10	< 0.4 U1	0.0076	< 0.2 U1	1.4 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1906S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.375	39.3	19.7	0.51	6.4	147	297
11/10/2020	Assessment	0.407	45.6	15.4	0.45	8.7	124	294
2/15/2021	Assessment	0.415	41.3	14.6	0.52	8.3	133	297
4/13/2021	Assessment	0.404	43.0	15.0	0.49	7.8	131	283
10/12/2021	Assessment	0.431	47.5	13.4	0.50	9.0	133	290
2/22/2022	Assessment	0.408	48.5	14.5	0.50	9.0	152	300
4/13/2022	Assessment	0.449	53.7	14.4	0.48	8.5	144	310
10/04/2022	Assessment	0.410	48.6	13.5	0.45	8.5	131	280
2/14/2023	Assessment	0.340	47.9	14.6	0.42	8.9	131	300
4/04/2023	Assessment	0.339	45.1	13.8	0.42	8.8	128	280
10/10/2023	Assessment	0.334	40.3	12.9	0.42	9.0	122	270
4/02/2024	Assessment	0.315	47.5	14.5	0.38	7.3	141	280
10/08/2024	Assessment	0.20 J1	40.4	14.3	0.35	9.0	98.3	260
4/03/2025	Assessment	0.21 J1	38.2 M1	14.6	0.37	8.9	108	260
9/30/2025	Assessment	0.20 J1	35.7	14.6	0.34	9.5	91.9	220

Table 1. Groundwater Data Summary: -MW-1906S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.16	3.61	62.4	< 0.02 U1	< 0.01 U1	0.2 J1	1.31	2.366	0.51	0.2 J1	0.121	< 0.2 U1	451	0.5	< 0.1 U1
11/10/2020	Assessment	0.29	4.15	57.6	< 0.02 U1	< 0.01 U1	0.07 J1	0.457	5.343	0.45	< 0.05 U1	0.150	< 0.2 U1	389	0.4	< 0.1 U1
2/15/2021	Assessment	0.15	3.79	58.4	< 0.02 U1	0.03 J1	0.07 J1	0.443	1.7664	0.52	< 0.05 U1	0.151	< 0.2 U1	337	0.4	< 0.1 U1
4/13/2021	Assessment	0.20	3.67	59.4	< 0.007 U1	< 0.004 U1	0.2 J1	0.485	1.169	0.49	< 0.05 U1	0.146	< 0.2 U1	380	0.5 J1	< 0.04 U1
10/12/2021	Assessment	0.25	5.39	61.7	< 0.007 U1	0.005 J1	0.24	0.320	2.11	0.50	< 0.05 U1	0.172	< 0.2 U1	413	0.43 J1	< 0.04 U1
2/22/2022	Assessment	0.15	5.05	60.8	< 0.007 U1	0.007 J1	0.13 J1	0.298	1.04	0.50	< 0.05 U1	0.173	< 0.2 U1	517	0.38 J1	< 0.04 U1
4/13/2022	Assessment	0.17	5.91	60.6	< 0.007 U1	< 0.004 U1	0.06 J1	0.336	2.14	0.48	0.13 J1	0.165	< 0.2 U1	467 M1	0.41 J1	< 0.04 U1
10/04/2022	Assessment	0.14	5.90	52.7	< 0.007 U1	< 0.004 U1	0.14 J1	0.318	1.94	0.45	< 0.05 U1	0.170	< 0.2 U1	374	0.41 J1	< 0.04 U1
2/14/2023	Assessment	0.16	8.06	54.1	< 0.007 U1	< 0.004 U1	0.23	0.381	3.72	0.42	< 0.05 U1	0.141	< 0.2 U1	410	0.37 J1	< 0.04 U1
4/04/2023	Assessment	0.146	7.26	50.6	< 0.007 U1	< 0.004 U1	0.18 J1	0.300	2.02	0.42	< 0.05 U1	0.160	< 0.2 U1	399	0.45 J1	< 0.02 U1
10/10/2023	Assessment	0.173	8.11	44.3	< 0.007 U1	< 0.004 U1	0.21 J1	0.278	1.09	0.42	< 0.05 U1	0.157	< 0.2 U1	310	0.37 J1	< 0.02 U1
4/02/2024	Assessment	0.219	7.33	55.3	0.011 J1	0.032	0.35	0.423	1.21	0.38	0.10 J1	0.156	< 0.2 U1	429	0.37 J1	< 0.02 U1
10/08/2024	Assessment	0.19 J1	13.3	38.1	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.30	2.59	0.35	< 0.4 U1	0.0921	< 0.2 U1	262	0.3 J1	< 0.2 U1
4/03/2025	Assessment	0.17 J1	12.5	36.0	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.30	1.35	0.37	< 0.4 U1	0.104	< 0.2 U1	293 M1	0.4 J1	< 0.2 U1
9/30/2025	Assessment	0.2 J1	15.5	31.1	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.32	0.88	0.34	< 0.4 U1	0.0824	< 0.2 U1	243	0.3 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1907D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/23/2020	Assessment	< 0.02 U1	53.1	5.1	0.13	6.8	61.2	360
11/10/2020	Assessment	< 0.02 U1	59.9	3.6	0.14	7.4	37.1	300
2/16/2021	Assessment	< 0.02 U1	53.7	3.6	0.15	7.6	34.9	325
4/15/2021	Assessment	0.01 J1	57.1	3.5	0.16	7.6	33.5	299
10/14/2021	Assessment	0.01 J1	53.1	3.38	0.12	7.9	30.4	300
2/25/2022	Assessment	0.024 J1	55.7	3.52	0.1	8.0	33.0	310
4/14/2022	Assessment	0.010 J1	53.7	3.11	0.10	7.2	32.2	310
10/06/2022	Assessment	0.009 J1	51.0	3.45	0.10	7.2	32.2	290
2/16/2023	Assessment	0.011 J1	54.8	3.21	0.09	7.5	30.9	290
4/06/2023	Assessment	0.011 J1	55.0	3.15	0.09	7.5	30.9	290
10/12/2023	Assessment	0.009 J1	50.8	3.12	0.09	7.5	30.2	290
4/04/2024	Assessment	0.013 J1	53.4	3.12	0.10	7.6	29.6	300
10/10/2024	Assessment	< 0.06 U1	51.8	3.18	0.12	7.6	29.2	290
4/03/2025	Assessment	< 0.06 U1	51.1	3.18	0.12	7.5	29.5	310 S7
10/02/2025	Assessment	< 0.05 U1	51.6	2.92	0.09	8.5	28.9	280

Table 1. Groundwater Data Summary: -MW-1907D
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/23/2020	Assessment	0.25	2.19	43.0	< 0.02 U1	< 0.01 U1	0.432	1.55	1.120	0.13	0.09 J1	0.00423	< 0.2 U1	7.64	0.04 J1	< 0.1 U1
11/10/2020	Assessment	0.08 J1	2.11	37.7	< 0.02 U1	< 0.01 U1	0.07 J1	1.01	2.074	0.14	< 0.05 U1	0.00399	< 0.2 U1	2.09	< 0.03 U1	< 0.1 U1
2/16/2021	Assessment	0.07 J1	1.88	38.4	< 0.02 U1	< 0.01 U1	0.210	0.633	1.718	0.15	< 0.05 U1	0.00376	< 0.2 U1	2.36	0.1 J1	< 0.1 U1
4/15/2021	Assessment	0.06 J1	1.60	36.8	0.009 J1	< 0.004 U1	0.05 J1	0.387	1.282	0.16	< 0.05 U1	0.00380	< 0.2 U1	2.33	< 0.09 U1	< 0.04 U1
10/14/2021	Assessment	0.05 J1	0.98	34.9	< 0.007 U1	< 0.004 U1	0.25	0.206	1.83	0.12	0.06 J1	0.00383	< 0.2 U1	1.6	< 0.09 U1	< 0.04 U1
2/25/2022	Assessment	0.05 J1	1.34	38.4	0.01 J1	< 0.004 U1	0.29	0.318	1.94	0.1	< 0.05 U1	0.00452	< 0.2 U1	2.6	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.04 J1	1.32	35.5	< 0.007 U1	< 0.004 U1	0.06 J1	0.280	1.88	0.10	< 0.05 U1	0.00402	< 0.2 U1	2.1	< 0.09 U1	< 0.04 U1
10/06/2022	Assessment	0.05 J1	1.15	33.7	0.008 J1	< 0.004 U1	0.16 J1	0.207	1.30	0.10	< 0.05 U1	0.00390	< 0.2 U1	1.6	< 0.09 U1	< 0.04 U1
2/16/2023	Assessment	0.04 J1	1.29	36.0	< 0.007 U1	< 0.004 U1	0.07 J1	0.261	1.41	0.09	< 0.05 U1	0.00355	< 0.2 U1	1.8	< 0.09 U1	< 0.04 U1
4/06/2023	Assessment	0.017 J1	1.34	36.8	0.009 J1	< 0.004 U1	0.15 J1	0.259	1.31	0.09	< 0.05 U1	0.00392	< 0.2 U1	1.9	< 0.04 U1	< 0.02 U1
10/12/2023	Assessment	0.018 J1	1.07	34.7	0.008 J1	< 0.004 U1	0.34	0.160	1.44	0.09	< 0.05 U1	0.00381	< 0.2 U1	1.8	< 0.04 U1	< 0.02 U1
4/04/2024	Assessment	0.022 J1	1.04	36.0	0.011 P2, J1	< 0.004 U1	0.22 J1	0.155	2.75	0.10	< 0.05 U1	0.00410	< 0.2 U1	1.9	< 0.04 U1	< 0.02 U1
10/10/2024	Assessment	< 0.06 U1	1.0	34.9	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.16	2.01	0.12	< 0.4 U1	0.0042	< 0.2 U1	2.3 J1	< 0.3 U1	< 0.2 U1
4/03/2025	Assessment	< 0.06 U1	0.9	34.9	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.16	1.26	0.12	< 0.4 U1	0.0043	< 0.2 U1	2.3 J1	< 0.3 U1	< 0.2 U1
10/02/2025	Assessment	< 0.2 U1	0.8	33.1	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.16 J1	0.84	0.09	< 0.4 U1	0.0037	< 0.2 U1	1.8 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1907S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/23/2020	Assessment	< 0.02 U1	69.3	12.9	0.06 J1	7.0	30.9	433
11/10/2020	Assessment	< 0.02 U1	73.8	11.9	0.06 J1	7.3	20.5	399
2/16/2021	Assessment	< 0.02 U1	66.4	11.9	0.06	7.5	18.4	403
4/15/2021	Assessment	0.01 J1	70.7	12.1	0.07	7.6	17.7	383
10/14/2021	Assessment	0.01 J1	64.0	11.7	0.06	8.0	15.4	400
2/25/2022	Assessment	0.040 J1	68.0	12.0	0.04 J1	7.9	16.5	380
4/14/2022	Assessment	0.013 J1	66.8	11.3	0.04 J1	7.2	16.3	370
10/06/2022	Assessment	0.01 J1	67.4	12.2	0.04 J1	7.3	15.2	390
2/16/2023	Assessment	0.011 J1	68.9	11.7	0.05 J1	7.3	14.8	380 S7
4/06/2023	Assessment	0.009 J1	66.3 M1	11.7	0.05 J1	7.5	15.0	380
10/12/2023	Assessment	0.009 J1	62.0	11.5	0.06	7.4	14.9	380
4/04/2024	Assessment	0.015 J1	66.4	11.7	0.05 J1	7.4	14.0	370
10/10/2024	Assessment	< 0.06 U1	63.2	11.7	0.05 J1	7.4	14.4	370
4/03/2025	Assessment	< 0.06 U1	60.9	11.8	0.06	7.6	14.2	360
10/02/2025	Assessment	< 0.05 U1	63.8	11.5	0.05 J1	8.2	14.9	360

Table 1. Groundwater Data Summary: -MW-1907S
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/23/2020	Assessment	1.62	0.79	55.6	< 0.02 U1	0.01 J1	0.242	13.3	2.091	0.06 J1	0.07 J1	0.00691	8.87	7.40	0.3	< 0.1 U1
11/10/2020	Assessment	0.34	0.50	49.9	< 0.02 U1	< 0.01 U1	0.1 J1	12.8	2.158	0.06 J1	0.07 J1	0.00701	8.01	1 J1	0.2 J1	< 0.1 U1
2/16/2021	Assessment	0.09 J1	0.59	55.2	< 0.02 U1	< 0.01 U1	0.221	14.0	2.061	0.06	< 0.05 U1	0.00689	9.68	1 J1	0.2 J1	< 0.1 U1
4/15/2021	Assessment	0.12	0.48	54.9	< 0.007 U1	0.009 J1	< 0.04 U1	13.2	0.921	0.07	< 0.05 U1	0.00701	10.4	1 J1	0.2 J1	< 0.04 U1
10/14/2021	Assessment	0.06 J1	0.45	51.0	< 0.007 U1	0.005 J1	0.24	11.3	1.91	0.06	< 0.05 U1	0.00708	13.4 H2	1.1	0.18 J1	< 0.04 U1
2/25/2022	Assessment	0.02 J1	0.39	54.4	< 0.007 U1	< 0.004 U1	0.26	12.2	1.51	0.04 J1	< 0.05 U1	0.00656	23	2.6	0.31 J1	< 0.04 U1
4/14/2022	Assessment	0.04 J1	0.46	50.3	< 0.007 U1	0.005 J1	0.09 J1	10.8	1.78	0.04 J1	< 0.05 U1	0.00724	17.8	2.4	0.27 J1	< 0.04 U1
10/06/2022	Assessment	0.03 J1	0.50	51.7	< 0.007 U1	< 0.004 U1	0.16 J1	9.23	1.10	0.04 J1	< 0.05 U1	0.00664	14.4	0.7	0.23 J1	< 0.04 U1
2/16/2023	Assessment	0.03 J1	0.39	53.4	< 0.007 U1	< 0.004 U1	0.12 J1	10.5	1.65	0.05 J1	< 0.05 U1	0.00628	21	0.8	0.29 J1	< 0.04 U1
4/06/2023	Assessment	0.054 J1	0.47	52.4	< 0.007 U1	0.019 J1	0.18 J1	8.72	1.58	0.05 J1	0.08 J1	0.00695	15	0.7	0.27 J1	< 0.02 U1
10/12/2023	Assessment	0.022 J1	0.44	50.4	< 0.007 U1	0.005 J1	0.19 J1	8.00	0.81	0.06	< 0.05 U1	0.00688	12.6	0.6	0.26 J1	< 0.02 U1
4/04/2024	Assessment	0.016 J1	0.31	52.0	< 0.007 P2, U1	< 0.004 U1	0.20 J1	9.49	0.59	0.05 J1	< 0.05 U1	0.00678	21	0.9	0.22 J1	< 0.02 U1
10/10/2024	Assessment	< 0.06 U1	0.4 J1	50.7	< 0.06 U1	< 0.03 U1	< 0.6 U1	8.57	0.98	0.05 J1	< 0.4 U1	0.0075	17	< 0.8 U1	0.4 J1	< 0.2 U1
4/03/2025	Assessment	< 0.06 U1	0.3 J1	49.5	< 0.06 U1	< 0.03 U1	< 0.6 U1	8.08	1.07	0.06	< 0.4 U1	0.0069	17.6	1.0 J1	< 0.3 U1	< 0.2 U1
10/02/2025	Assessment	< 0.2 U1	0.4 J1	50.6	< 0.2 U1	< 0.03 U1	< 0.6 U1	8.17	1.60	0.05 J1	< 0.4 U1	0.0081	16.4	0.6 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1910S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/21/2020	Assessment	0.055	27.1	13.7	0.20	7.0	2.7	246
11/09/2020	Assessment	0.053	28.0	12.5	0.18	7.1	0.9	240
2/15/2021	Assessment	0.05 J1	24.1	13.6	0.22	7.8	0.7	256
4/15/2021	Assessment	0.057	25.8	13.3	0.21	7.8	0.9	247
10/13/2021	Assessment	0.062	20.1	15.3	0.22	8.1	0.67	250
2/23/2022	Assessment	0.058	22.6	15.3	0.20	8.0	1.20	250
4/12/2022	Assessment	0.057	23.7	14.0	0.17	7.4	1.22	240
10/04/2022	Assessment	0.073	20.8	16.4	0.20	7.4	0.95	250
2/15/2023	Assessment	0.062	21.3	15.8	0.19	7.8	1.18	250
4/05/2023	Assessment	0.07 J1	25.0	14.5	0.17	7.8	1.1	230
10/12/2023	Assessment	0.06 J1	20.5	16.2	0.18	7.8	0.9	250
4/04/2024	Assessment	0.068	22.2	16.4	0.18	7.8	1.1	260
10/10/2024	Assessment	0.06 J1	20.9	16.6	0.23	7.8	0.6	250
4/07/2025	Assessment	0.07 J1	21.7	16.0	0.23	7.5	0.6	260 S7
10/07/2025	Assessment	0.09 J1	21.8	16.8	0.23	8.7	0.52 J1	250

Table 1. Groundwater Data Summary: -MW-1910S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/21/2020	Assessment	0.17	2.32	283	< 0.02 U1	< 0.01 U1	0.397	0.619	1.635	0.20	0.466	0.0136	< 0.2 U1	17.1	0.2 J1	< 0.1 U1
11/09/2020	Assessment	0.17	1.88	268	< 0.02 U1	< 0.01 U1	0.1 J1	0.388	2.39	0.18	0.310	0.0124	< 0.2 U1	4.37	0.4	< 0.1 U1
2/15/2021	Assessment	0.1 J1	2.32	281	< 0.02 U1	< 0.01 U1	0.211	0.469	2.033	0.22	0.487	0.0128	< 0.2 U1	5.17	0.2	< 0.1 U1
4/15/2021	Assessment	0.08 J1	1.94	313	< 0.007 U1	< 0.004 U1	< 0.04 U1	0.408	1.009	0.21	0.732	0.0134	< 0.2 U1	4.54	0.3 J1	< 0.04 U1
10/13/2021	Assessment	0.03 J1	2.05	249	< 0.007 U1	< 0.004 U1	0.28	0.614	1.50	0.22	0.35	0.0161	< 0.2 U1	4.1	0.21 J1	< 0.04 U1
2/23/2022	Assessment	0.03 J1	1.86	285	< 0.007 U1	< 0.004 U1	0.09 J1	0.626 B1	2.46	0.20	0.24	0.0158	< 0.2 U1	3.9	0.19 J1	< 0.04 U1
4/12/2022	Assessment	0.04 J1	1.48	316	< 0.007 U1	< 0.004 U1	< 0.04 U1	0.460	2.01	0.17	0.40	0.0160	< 0.2 U1	3.3	0.26 J1	< 0.04 U1
10/04/2022	Assessment	< 0.02 U1	1.68	261	< 0.007 U1	< 0.004 U1	0.16 J1	0.467	2.27	0.20	0.22	0.020	< 0.2 U1	3.8	0.34 J1	< 0.04 U1
2/15/2023	Assessment	0.02 J1	1.42	261	< 0.007 U1	< 0.004 U1	0.15 J1	0.341	1.52	0.19	0.25	0.0144	< 0.2 U1	2.6	0.28 J1	< 0.04 U1
4/05/2023	Assessment	< 0.04 U1	1.3	327	< 0.04 U1	< 0.02 U1	< 0.4 U1	0.27	1.58	0.17	0.3 J1	0.018	< 0.2 U1	2.2 J1	0.4 J1	< 0.1 U1
10/12/2023	Assessment	< 0.04 U1	1.1	251	< 0.04 U1	< 0.02 U1	0.4 J1	0.28	1.20	0.18	< 0.3 U1	0.0185	< 0.2 U1	3.8	0.6 J1	< 0.1 U1
4/04/2024	Assessment	0.030 J1	1.07	321	< 0.007 P2, U1	< 0.004 U1	0.19 J1	0.299	2.28	0.18	0.22	0.0193	< 0.2 U1	3.2	0.35 J1	< 0.02 U1
10/10/2024	Assessment	< 0.06 U1	1.3	360	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.25	1.77	0.23	< 0.4 U1	0.0188	< 0.2 U1	2.2 J1	0.7 J1	< 0.2 U1
4/07/2025	Assessment	< 0.06 U1	1.1	372	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.22	1.90	0.23	< 0.4 U1	0.0211	< 0.2 U1	2.0 J1	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	1.1	387 M1	< 0.2 U1	< 0.03 U1	1.5 J1	0.20 J1	1.54	0.23	< 0.4 U1	0.0183	< 0.2 U1	1.8 J1	0.6 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1913D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/23/2020	Assessment	0.727	56.8	21.9	0.18	9.9	132	326
11/10/2020	Assessment	0.816	55.6	15.2	0.33	10.7	131	295
2/17/2021	Assessment	0.791	51.5	14.1	0.38	10.7	137	315
4/15/2021	Assessment	0.714	43.1	16.3	0.31	10.7	127	290
10/14/2021	Assessment	0.747	49.1	12.9	0.34	10.8	131	300
2/24/2022	Assessment	0.698	49.1	13.6	0.31	11.0	143	310
4/15/2022	Assessment	0.681	50.3 M1, P3	13.1	0.29	10.3	146	300
10/06/2022	Assessment	0.668	47.9	13.7	0.31	10.5	135	290
2/16/2023	Assessment	0.692	49.4	12.4	0.34	10.5	141	280
4/06/2023	Assessment	0.666	50.6	13.1	0.28	10.6	138	300
10/12/2023	Assessment	0.607	46.4	12.1	0.32	10.4	133	290
4/04/2024	Assessment	0.603	51.0	13.3	0.30	10.5	152	330
10/10/2024	Assessment	0.57	50.5	12.8	0.35	10.2	136	300 S7
4/03/2025	Assessment	0.57	51.4	13.2	0.37	9.3	139	280
10/02/2025	Assessment	0.57	46.9	13.2	0.35	10.2	122	280

Table 1. Groundwater Data Summary: -MW-1913D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/23/2020	Assessment	0.22	10.8	50.6	< 0.02 U1	< 0.01 U1	0.253	0.280	0.931	0.18	0.2 J1	0.0597	< 0.2 U1	362	0.4	< 0.1 U1
11/10/2020	Assessment	0.29	9.69	45.9	< 0.02 U1	< 0.01 U1	0.09 J1	0.161	0.853	0.33	0.1 J1	0.139	< 0.2 U1	403	0.5	< 0.1 U1
2/17/2021	Assessment	0.31	9.16	47.1	< 0.02 U1	0.02 J1	0.2 J1	0.135	1.684	0.38	0.07 J1	0.154	< 0.2 U1	402	0.5	< 0.1 U1
4/15/2021	Assessment	0.24	9.86	43.2	< 0.007 U1	< 0.004 U1	0.06 J1	0.154	1.49	0.31	0.06 J1	0.115	< 0.2 U1	387	0.4 J1	< 0.04 U1
10/14/2021	Assessment	0.26	9.63	44.7	< 0.007 U1	< 0.004 U1	0.26	0.137	0.93	0.34	0.08 J1	0.152	< 0.2 U1	437	0.49 J1	< 0.04 U1
2/24/2022	Assessment	0.24	9.22	46.3	< 0.007 U1	0.015 J1	0.26	0.279	1.25	0.31	< 0.05 U1	0.157	< 0.2 U1	457	0.42 J1	< 0.04 U1
4/15/2022	Assessment	0.24	8.69	46.0	< 0.007 U1	< 0.004 U1	< 0.04 U1	0.125	1.58	0.29	0.06 J1	0.157 M1	< 0.2 U1	526 M1, P3	0.36 J1	< 0.04 U1
10/06/2022	Assessment	0.25	9.67	44.4	< 0.007 U1	0.005 J1	0.12 J1	0.128	0.40	0.31	0.05 J1	0.154	< 0.2 U1	485	0.41 J1	< 0.04 U1
2/16/2023	Assessment	0.25	8.49	47.9	< 0.007 U1	< 0.004 U1	0.06 J1	0.116	1.22	0.34	0.08 J1	0.175	< 0.2 U1	508	0.42 J1	< 0.04 U1
4/06/2023	Assessment	0.231	8.96	48.2	< 0.007 U1	< 0.004 U1	0.14 J1	0.117	0.30	0.28	0.05 J1	0.153	< 0.2 U1	479	0.43 J1	< 0.02 U1
10/12/2023	Assessment	0.218	7.65	43.5	< 0.007 U1	< 0.004 U1	0.20 J1	0.112	1.16	0.32	< 0.05 U1	0.163	< 0.2 U1	430	0.31 J1	< 0.02 U1
4/04/2024	Assessment	0.208	6.95	50.4	< 0.007 P2, U1	0.033	0.15 J1	0.099	1.19	0.30	< 0.05 U1	0.204	< 0.2 U1	476	0.39 J1	< 0.02 U1
10/10/2024	Assessment	0.20 J1	7.5	46.9	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.11 J1	1.67	0.35	< 0.4 U1	0.177	< 0.2 U1	444	< 0.3 U1	< 0.2 U1
4/03/2025	Assessment	0.23 J1	7.0	49.4	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.09 J1	0.44	0.37	< 0.4 U1	0.205	< 0.2 U1	439	< 0.3 U1	< 0.2 U1
10/02/2025	Assessment	0.2 J1	6.9	43.2	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.12 J1	0.76	0.35	< 0.4 U1	0.187	< 0.2 U1	387	0.5 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-1913S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
4/22/2020	Assessment	0.059	59.6	32.5	0.1 J1	7.0	139	373
11/10/2020	Assessment	0.057	62.5	32.6	0.13	7.7	134	357
2/16/2021	Assessment	0.05 J1	52.8	32.3	0.17	7.9	135	370
4/15/2021	Assessment	0.058	59.3	33.7	0.19	7.6	132	375
10/14/2021	Assessment	0.071	54.6	30.3	0.17	8.0	132	350
2/24/2022	Assessment	0.067	56.7 M1, P3	31.4	0.13	8.2	135	360
4/15/2022	Assessment	0.079	60.4 M1, P3	21.7	0.09	7.4	96.8	260
10/06/2022	Assessment	0.083	55.8	31.4	0.11	7.6	129	370
2/16/2023	Assessment	0.084	57.1	29.3	0.12	7.7	124	340
4/06/2023	Assessment	0.088	57.7	29.5	0.11	7.6	119	340
10/12/2023	Assessment	0.089	52.9	26.2	0.13	7.7	124	330
4/04/2024	Assessment	0.095	51.5	26.4	0.15	7.8	116	310
10/10/2024	Assessment	0.09 J1	52.8	24.7	0.16	7.8	113	320
4/03/2025	Assessment	0.09 J1	54.4	27.1	0.17	7.4	106	300
10/02/2025	Assessment	0.10 J1	53.2	25.0	0.13	8.5	103	320

Table 1. Groundwater Data Summary: -MW-1913S
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
4/22/2020	Assessment	0.07 J1	1.33	111	< 0.02 U1	< 0.01 U1	0.2 J1	29.7	2.94	0.1 J1	4.54	0.00221	< 0.2 U1	63.3	0.1 J1	0.1 J1
11/10/2020	Assessment	0.33	1.14	94.0	< 0.02 U1	< 0.01 U1	0.05 J1	32.9	2.934	0.13	5.36	0.00161	< 0.2 U1	57.5	0.03 J1	0.2 J1
2/16/2021	Assessment	0.04 J1	1.32	93.7	< 0.02 U1	< 0.01 U1	0.2 J1	31.8	7.833	0.17	3.87	0.00140	< 0.2 U1	58.2	0.08 J1	0.1 J1
4/15/2021	Assessment	0.29	0.93	95.5	< 0.007 U1	0.007 J1	< 0.04 U1	29.3	2.177	0.19	5.33	0.00135	< 0.2 U1	59.7	< 0.09 U1	0.2 J1
10/14/2021	Assessment	< 0.02 U1	0.89	90.2	< 0.007 U1	0.006 J1	0.25	27.5	2.25	0.17	5.71	0.00092	< 0.2 U1	72.3	< 0.09 U1	0.29
2/24/2022	Assessment	< 0.02 U1	1.01	97.2 M1	< 0.007 U1	0.008 J1	0.30	29.2 M1	4.00	0.13	5.15	0.00105	< 0.2 U1	71.8	< 0.09 U1	0.23
4/15/2022	Assessment	0.06 J1	1.01	91.7	< 0.1 U1	< 0.004 U1	0.07 J1	27.9	3.59	0.09	5.09	0.001 J1	< 0.2 U1	69.1	< 0.09 U1	0.34
10/06/2022	Assessment	< 0.02 U1	0.71	90.6	< 0.007 U1	0.006 J1	0.13 J1	26.3	1.52	0.11	6.40	0.00090	< 0.2 U1	76.7	0.11 J1	0.31
2/16/2023	Assessment	0.02 J1	0.88	93.3	< 0.007 U1	< 0.004 U1	0.05 J1	28.3	3.40	0.12	6.00	0.00086	< 0.2 U1	77.8	< 0.09 U1	0.35
4/06/2023	Assessment	0.025 J1	0.91	93.6	< 0.007 U1	< 0.004 U1	0.14 J1	25.6	1.58	0.11	5.44	0.00089	< 0.2 U1	76.5	0.07 J1	0.29
10/12/2023	Assessment	0.01 J1	0.46	86.3	< 0.007 U1	< 0.004 U1	0.20 J1	23.7	1.38	0.13	6.17	0.00079	< 0.2 U1	82.2	0.11 J1	0.32
4/04/2024	Assessment	0.012 J1	0.45	84.8	< 0.007 P2, U1	0.009 J1	0.14 J1	22.5	1.75	0.15	5.57	0.00081	< 0.2 U1	78.6	0.07 J1	0.31
10/10/2024	Assessment	< 0.06 U1	0.5 J1	84.5	< 0.06 U1	< 0.03 U1	< 0.6 U1	24.1	1.64	0.16	6.4	0.0013 J1	< 0.2 U1	83.2	< 0.3 U1	0.3 J1
4/03/2025	Assessment	< 0.06 U1	0.4 J1	88.9	< 0.06 U1	< 0.03 U1	< 0.6 U1	23.5	1.54	0.17	6.2	0.0010 J1	< 0.2 U1	73.7	< 0.3 U1	0.3 J1
10/02/2025	Assessment	< 0.2 U1	0.4 J1	87.6	< 0.2 U1	< 0.03 U1	< 0.6 U1	22.4	1.07	0.13	5.8	0.0012 J1	< 0.2 U1	79.7	< 0.3 U1	0.4 J1

Table 1. Groundwater Data Summary: -MW-2012D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
2/17/2021	Assessment	0.511	12.1	456	1.06	8.2	44.8	1230
4/14/2021	Assessment	0.513	11.9	407	1.03	8.3	12.0	1080
10/13/2021	Assessment	0.447	11.5	379	0.98	8.5	11.9	1190
2/24/2022	Assessment	0.467	11.5	410	0.95	8.6	8.2	1170
4/14/2022	Assessment	0.492	12.6	398	0.94	8.0	6.3	1100
10/05/2022	Assessment	0.487	12.0 P3	428	0.89	7.9	2.7	1160
2/15/2023	Assessment	0.445	12.0	432	0.93	8.0	2.0	1180
4/05/2023	Assessment	0.491	12.1	415	0.91	8.3	1.6	1150
10/11/2023	Assessment	0.449	11.5	446	0.89	8.2	1.3 J1	1230
4/03/2024	Assessment	0.422	12.4	448	0.90	8.2	0.8 J1	1120
10/09/2024	Assessment	0.481	15	457	0.98	8.2	0.6 J1	1260
4/07/2025	Assessment	0.424	12.8	457	1.01	7.7	0.5 J1	1220
10/01/2025	Assessment	0.42	13.1	450	1.03	8.3	0.2 J1	1180

Table 1. Groundwater Data Summary: -MW-2012D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
2/17/2021	Assessment	0.2 J1	7.62	749	0.4 J1	< 0.05 U1	10.1	5.09	0.7405	1.06	17.7	0.245	< 0.2 U1	8 J1	0.3 J1	< 0.5 U1
4/14/2021	Assessment	0.08 J1	2.55	934	0.05 J1	< 0.004 U1	1.01	0.884	1.363	1.03	3.21	0.258	< 0.2 U1	2 J1	0.09 J1	< 0.04 U1
10/13/2021	Assessment	0.04 J1	1.55	604	0.01 J1	< 0.004 U1	0.68	0.298	2.77	0.98	1.14	0.172	< 0.2 U1	1	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.02 J1	1.25	1060	0.009 J1	< 0.004 U1	0.39	0.136	1.42	0.95	0.57	0.276	< 0.2 U1	0.6	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.04 J1	1.16	974	< 0.007 U1	< 0.004 U1	0.18 J1	0.109	0.61	0.94	0.34	0.270	< 0.2 U1	0.6	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.04 J1	1.07	1030 M1, P3	0.010 J1	< 0.004 U1	0.35	0.194	1.26	0.89	0.64	0.287 M1, P3	< 0.2 U1	0.4 J1	< 0.09 U1	< 0.04 U1
2/15/2023	Assessment	0.02 J1	0.85	1150	0.008 J1	< 0.004 U1	0.40	0.125	1.33	0.93	0.46	0.248	< 0.2 U1	0.3 J1	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.023 J1	0.85	991	< 0.007 U1	< 0.004 U1	0.22 J1	0.124	1.63	0.91	0.43	0.254	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
10/11/2023	Assessment	0.018 J1	0.90	1150	< 0.007 U1	< 0.004 U1	0.26 J1	0.066	1.53	0.89	0.25	0.288	< 0.2 U1	0.3 J1	< 0.04 U1	< 0.02 U1
4/03/2024	Assessment	0.015 J1	1.30	1120	< 0.007 U1	< 0.004 U1	0.17 J1	0.047	0.95	0.90	0.12 J1	0.264	< 0.2 U1	0.5	< 0.04 U1	< 0.02 U1
10/09/2024	Assessment	0.017 J1	1.00	1070	< 0.007 U1	< 0.004 U1	0.26 J1	0.097	1.58	0.98	0.24	0.266	< 0.2 U1	0.4 J1	0.05 J1	< 0.02 U1
4/07/2025	Assessment	0.011 J1	1.77	1010	< 0.007 U1	< 0.004 U1	0.21 J1	0.031	1.14	1.01	0.07 J1	0.277	< 0.2 U1	0.7	< 0.04 U1	< 0.02 U1
10/01/2025	Assessment	< 0.2 U1	0.8	1110	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	0.97	1.03	< 0.4 U1	0.246	< 0.2 U1	0.5 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -MW-2012S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
2/17/2021	Assessment	0.360	30.3	81.6	0.37	7.9	4.8	567
4/14/2021	Assessment	0.376	33.1	78.7	0.37	7.9	5.0	512
10/13/2021	Assessment	0.353	34.6	94.9	0.35	8.1	0.88	590
2/24/2022	Assessment	0.225	40.5	69.7	0.28	8.0	49.6	550
4/14/2022	Assessment	0.328	36.7	83.5	0.33	7.4	18.4	520
10/05/2022	Assessment	0.357	38.4	89.9	0.33	7.4	11.9	520
2/15/2023	Assessment	0.311	38.3	80.0	0.34	7.7	17.4	530
4/05/2023	Assessment	0.321	34.0	74.4	0.33	7.8	12.5	500
10/11/2023	Assessment	0.359	29.5	106	0.36	7.8	0.7 J1	580
4/03/2024	Assessment	0.364	30.5	86.6	0.37	7.9	< 0.1 U1	460
10/09/2024	Assessment	0.341	35	85.2	0.39	7.8	8.3	560
4/07/2025	Assessment	0.261	43.4	69.4	0.34	7.8	17.2	510
10/01/2025	Assessment	0.32 J1	38.0	92.2	0.40	8.2	< 0.04 U1	520

Table 1. Groundwater Data Summary: -MW-2012S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
2/17/2021	Assessment	0.17	2.03	1960	< 0.02 U1	< 0.01 U1	0.2 J1	0.412	2.169	0.37	0.1 J1	0.134	< 0.2 U1	8.78	< 0.03 U1	< 0.1 U1
4/14/2021	Assessment	0.15	3.08	1870	< 0.007 U1	< 0.004 U1	0.08 J1	0.561	1.029	0.37	< 0.05 U1	0.135	< 0.2 U1	6.12	< 0.09 U1	< 0.04 U1
10/13/2021	Assessment	0.09 J1	2.69	1500	< 0.01 U1	< 0.004 U1	0.32	0.786	3.62	0.35	0.08 J1	0.101	< 0.2 U1	5.5	< 0.09 U1	< 0.04 U1
2/24/2022	Assessment	0.08 J1	12.6	1250	0.019 J1	< 0.004 U1	0.28	1.41	1.33	0.28	0.19 J1	0.0677	< 0.2 U1	10.9	< 0.09 U1	< 0.04 U1
4/14/2022	Assessment	0.07 J1	6.67	1680	0.023 J1	< 0.004 U1	0.21	0.978	1.25	0.33	0.21	0.128	< 0.2 U1	5.3	< 0.09 U1	< 0.04 U1
10/05/2022	Assessment	0.04 J1	5.56	1660	0.007 J1	< 0.004 U1	0.71	0.676	0.87	0.33	0.14 J1	0.143	< 0.2 U1	5.9	< 0.09 U1	< 0.04 U1
2/15/2023	Assessment	0.04 J1	6.58	1680	< 0.007 U1	< 0.004 U1	0.18 J1	0.613	1.93	0.34	0.06 J1	0.106	< 0.2 U1	6.2	< 0.09 U1	< 0.04 U1
4/05/2023	Assessment	0.039 J1	4.19	1450	0.009 J1	< 0.004 U1	0.14 J1	0.347	1.82	0.33	0.12 J1	0.126	< 0.2 U1	3.8	< 0.04 U1	< 0.02 U1
10/11/2023	Assessment	0.021 J1	2.08	2040	< 0.007 U1	< 0.004 U1	0.19 J1	0.149	1.67	0.36	< 0.05 U1	0.162	< 0.2 U1	1.1	< 0.04 U1	< 0.02 U1
4/03/2024	Assessment	0.020 J1	2.29	1970	< 0.007 U1	< 0.004 U1	0.16 J1	0.168	1.58	0.37	< 0.05 U1	0.143	< 0.2 U1	1.1	< 0.04 U1	< 0.02 U1
10/09/2024	Assessment	0.034 J1	4.68	1640	< 0.007 U1	< 0.004 U1	0.13 J1	0.316	1.33	0.39	< 0.05 U1	0.134	< 0.2 U1	3.3	< 0.04 U1	< 0.02 U1
4/07/2025	Assessment	0.025 J1	9.94	1310	0.017 J1	< 0.004 U1	0.31	0.487	1.09	0.34	0.14 J1	0.114	< 0.2 U1	4.7	0.06 J1	< 0.02 U1
10/01/2025	Assessment	< 0.2 U1	2.0	1900	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.13 J1	1.61	0.40	< 0.4 U1	0.132	< 0.2 U1	1.1 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2201D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/07/2022	Assessment	0.643	75.5	1370	0.6	7.6	788	3600
2/16/2023	Assessment	0.631	125	1400	0.4	7.3	1150	4600
4/06/2023	Assessment	0.718	129	1410	0.4	7.5	1170	4520
10/16/2023	Assessment	0.589	95.0	1540	0.5	7.5	689	3700
4/15/2024	Assessment	0.559	91.9	1570	0.5	7.5	662	4000
10/21/2024	Assessment	0.61	84	1620	0.5	10.4	339	3600
4/08/2025	Assessment	0.62	75.0	1520	0.5	7.3	242	3400
10/07/2025	Assessment	0.59	70.0	1630	0.6	8.5	181	3600

Table 1. Groundwater Data Summary: -W-2201D
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/07/2022	Assessment	0.15	6.58	246	< 0.4 U1	< 0.004 U1	0.80	0.254	0.54	0.6	0.27	0.591	< 0.2 U1	1.6	0.39 J1	< 0.04 U1
2/16/2023	Assessment	0.18	9.51	26.3	< 0.007 U1	0.005 J1	0.33	0.132	1.20	0.4	0.31	0.517	< 0.2 U1	1.6	0.34 J1	< 0.04 U1
4/06/2023	Assessment	0.140	12.8	26.2	0.007 J1	< 0.004 U1	0.47	0.128	0.84	0.4	< 1 U1	0.531	< 0.2 U1	1.4	0.36 J1	< 0.2 U1
10/16/2023	Assessment	0.145	6.80	45.5	< 0.007 U1	< 0.004 U1	0.33	0.055	1.12	0.5	0.19 J1	0.593	< 0.2 U1	1	0.21 J1	< 0.02 U1
4/15/2024	Assessment	0.085 J1	5.30	99.4	< 0.007 U1	< 0.004 U1	0.32	0.035	0.54	0.5	0.12 J1	0.583	< 0.2 U1	2.1	0.22 J1	< 0.02 U1
10/21/2024	Assessment	0.09 J1	4.5	65.4	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	0.38	0.5	< 0.4 U1	0.565	< 0.2 U1	3.1 J1	< 0.3 U1	< 0.2 U1
4/08/2025	Assessment	< 0.06 U1	3.8	93.9	< 0.3 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	1.08	0.5	0.4 J1	0.554	< 0.2 U1	2.1 J1	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	1.8	462	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	1.34	0.6	< 0.4 U1	0.575	< 0.2 U1	0.6 J1	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2201S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/06/2022	Assessment	0.383	29.5	131	0.36	6.7	42.0	510
2/16/2023	Assessment	0.359	28.9	137	0.38	7.5	37.1	530
4/06/2023	Assessment	0.391	28.5	128	0.39	7.6	29.3	520
10/16/2023	Assessment	0.394	25.1	137	0.41	7.5	24.2	510
4/15/2024	Assessment	0.413	28.3	154	0.44	7.7	18.7	560
10/21/2024	Assessment	0.49	30.9	178	0.60	10.5	10.3	590
4/08/2025	Assessment	0.48	30.7	174	0.57	7.0	7.1	570
10/07/2025	Assessment	0.46	29.4	187	0.64	8.7	2.05	590

Table 1. Groundwater Data Summary: -W-2201S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/06/2022	Assessment	0.12	4.03	465	< 0.007 U1	< 0.004 U1	0.13 J1	2.44	1.81	0.36	0.12 J1	0.120	< 0.2 U1	4.5	< 0.09 U1	< 0.04 U1
2/16/2023	Assessment	0.17	2.98	432	< 0.007 U1	0.01 J1	< 0.04 U1	1.24	1.36	0.38	0.18 J1	0.106	< 0.2 U1	6.3	< 0.09 U1	< 0.04 U1
4/06/2023	Assessment	0.045 J1	2.45	370	< 0.007 U1	< 0.004 U1	0.14 J1	1.33	1.15	0.39	0.12 J1	0.112	< 0.2 U1	4.5	< 0.04 U1	0.03 J1
10/16/2023	Assessment	0.026 J1	2.21	336	< 0.007 U1	< 0.004 U1	0.14 J1	0.881	0.83	0.41	0.15 J1	0.116	< 0.2 U1	4.4	< 0.04 U1	< 0.02 U1
4/15/2024	Assessment	0.010 J1	3.54	428	< 0.007 U1	< 0.004 U1	0.19 J1	0.597	0.95	0.44	0.30	0.135	< 0.2 U1	5.3	< 0.04 U1	< 0.02 U1
10/21/2024	Assessment	< 0.06 U1	7.4	603	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.20	1.84	0.60	< 0.4 U1	0.157	< 0.2 U1	10.4	< 0.3 U1	< 0.2 U1
4/08/2025	Assessment	< 0.06 U1	6.1	662	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.11 J1	2.35	0.57	< 0.4 U1	0.176	< 0.2 U1	9.8	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	4.5	749	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	1.81	0.64	2.5	0.165	< 0.2 U1	7.4	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2202D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/06/2022	Assessment	--	--	--	--	7.1	--	--
2/17/2023	Assessment	0.672	34.4	241	0.36	7.2	873	2740
10/16/2023	Assessment	0.736	53.5	296	0.34	7.2	1180	3600
4/15/2024	Assessment	0.658	53.6	312	0.36	7.4	1130	3770
10/21/2024	Assessment	0.74	52.0	299	0.43	9.9	811	3570
4/08/2025	Assessment	0.77	47.9	312	0.47	7.0	774	3530

Table 1. Groundwater Data Summary: -W-2202D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
2/17/2023	Assessment	0.08 J1	12.0	65.7	0.010 J1	< 0.004 U1	0.71	7.11	--	0.36	0.92	0.398	1.9	47.4	0.58	< 0.04 U1
10/16/2023	Assessment	0.117	18.9	43.1	0.009 J1	0.01 J1	1.20	4.18	0.40	0.34	0.18 J1	0.622	< 0.2 U1	34.2	0.58	< 0.02 U1
4/15/2024	Assessment	0.108	18.6	40.4	0.008 J1	0.004 J1	1.26	1.55	1.45	0.36	0.14 J1	0.622	< 0.2 U1	11.3	0.65	< 0.02 U1
10/21/2024	Assessment	0.13 J1	22.1	40.2	< 0.06 U1	< 0.03 U1	1.2 J1	0.92	0.88	0.43	< 0.4 U1	0.317	< 0.2 U1	2.7 J1	0.7 J1	< 0.2 U1
4/08/2025	Assessment	0.09 J1	25.6	49.1	< 0.4 U1	< 0.03 U1	1.7 J1	1.02	1.88	0.47	< 0.4 U1	0.593	< 0.2 U1	4.6	0.8 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2202S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/06/2022	Assessment	0.798	63.8	71.5	0.25	7.0	919	1880
2/17/2023	Assessment	0.748	58.5	53.1	0.34	7.0	746	1750 S7
4/06/2023	Assessment	0.772	55.8	49.7	0.34	7.0	689	1700
10/16/2023	Assessment	0.738	41.5	16.9	0.17	7.1	480	1420
4/15/2024	Assessment	0.642	35.9	35.1	0.59	7.4	318	1230
10/21/2024	Assessment	0.68	28.7	32.8	0.74	10.3	236	1080
4/08/2025	Assessment	0.58	24.4	29.6	0.93	7.0	170	960
10/07/2025	Assessment	0.62	23.1	29.6	0.96	8.4	114	920

Table 1. Groundwater Data Summary: -W-2202S
ClinchRiver - Pond1
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/06/2022	Assessment	1.73	0.99	33.6	< 0.007 U1	0.019 J1	0.51	2.22	0.95	0.25	0.07 J1	0.257	< 0.2 U1	17.4	0.50	0.13 J1
2/17/2023	Assessment	1.86	0.75	33.2	< 0.007 U1	0.027	0.08 J1	3.39	1.25	0.34	< 0.05 U1	0.195	< 0.2 U1	22.8	0.42 J1	0.1 J1
4/06/2023	Assessment	1.88	0.63	32.6	< 0.04 U1	0.017 J1	0.16 J1	2.57	1.20	0.34	0.09 J1	0.247	< 0.2 U1	22.0	0.44 J1	0.07 J1
10/16/2023	Assessment	0.202	5.45	69.7	< 0.007 U1	< 0.004 U1	0.27 J1	6.83	1.58	0.17	0.16 J1	0.234	< 0.2 U1	22.5	0.23 J1	0.06 J1
4/15/2024	Assessment	0.056 J1	3.82	67.8	< 0.007 U1	0.005 J1	0.24 J1	3.70	0.65	0.59	0.08 J1	0.189	< 0.2 U1	31.8	0.25 J1	< 0.02 U1
10/21/2024	Assessment	< 0.06 U1	9.3	71.0	< 0.06 U1	< 0.03 U1	< 0.6 U1	3.13	0.55	0.74	< 0.4 U1	0.230	< 0.2 U1	29.7	< 0.3 U1	< 0.2 U1
4/08/2025	Assessment	< 0.06 U1	5.2	103	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.64	1.31	0.93	< 0.4 U1	0.169	< 0.2 U1	24.2	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	11.9	158	< 0.2 U1	< 0.03 U1	0.7 J1	0.22 J1	1.33	0.96	< 0.4 U1	0.176	< 0.2 U1	20.3	< 0.3 U1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2203D
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/07/2022	Assessment	0.810	167	2050	0.4 J1	7.1	1620	6580 S1, H2
2/16/2023	Assessment	0.57	130	2270	0.4 J1	7.1	1130	6000 S7
4/06/2023	Assessment	0.62	143	2380	0.3 J1	7.2	975	5440
10/16/2023	Assessment	0.60	128	2640	0.5 J1	7.2	618	5740
4/15/2024	Assessment	0.488	130	2720	0.5 J1	7.3	513	5600
10/21/2024	Assessment	0.60	155	2750	< 0.3 U1	10.1	430	5500
4/08/2025	Assessment	0.58	135	2810	0.4 J1	6.9	410	5700
10/07/2025	Assessment	0.61	135	2850	0.4 J1	8.2	312	5700

Table 1. Groundwater Data Summary: -W-2203D
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/07/2022	Assessment	0.22	15.2	40.0	< 0.4 U1	< 0.004 U1	0.52	4.05	1.29	0.4 J1	0.24	0.847	< 0.2 U1	43.0	0.59	< 0.04 U1
2/16/2023	Assessment	< 0.1 U1	10.1	42.7	< 0.04 U1	< 0.02 U1	0.5 J1	0.74	1.39	0.4 J1	3.5	0.756	< 0.2 U1	10.6	< 0.5 U1	< 0.2 U1
4/06/2023	Assessment	0.06 J1	9.4	50.5	< 0.04 U1	< 0.02 U1	< 0.4 U1	0.51	0.31	0.3 J1	< 0.3 U1	0.845	< 0.2 U1	6.2	< 0.2 U1	< 0.1 U1
10/16/2023	Assessment	< 0.04 U1	7.0	65.3	< 0.04 U1	< 0.02 U1	0.7 J1	0.25	1.43	0.5 J1	< 0.3 U1	1.00	< 0.2 U1	2.6	< 0.2 U1	< 0.1 U1
4/15/2024	Assessment	0.016 J1	5.38	74.0	< 0.007 U1	< 0.004 U1	0.35	0.145	0.45	0.5 J1	0.41	0.845	< 0.2 U1	1.0	0.18 J1	< 0.02 U1
10/21/2024	Assessment	< 0.06 U1	5.1	79.6	< 0.06 U1	< 0.03 U1	< 0.6 U1	0.10 J1	0.80	< 0.3 U1	< 0.4 U1	0.470	< 0.2 U1	< 0.8 U1	0.3 J1	< 0.2 U1
4/08/2025	Assessment	< 0.06 U1	4.8	81.8	< 0.7 U1	< 0.03 U1	< 0.6 U1	0.13 J1	1.15	0.4 J1	< 0.4 U1	0.999	< 0.2 U1	< 0.8 U1	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	4.5	102	< 0.2 U1	< 0.03 U1	< 0.6 U1	0.10 J1	0.27	0.4 J1	0.4 J1	0.892	< 0.2 U1	< 0.4 U1	0.3 J1	< 0.2 U1

Table 1. Groundwater Data Summary: -W-2203S
ClinchRiver - Pond1
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
10/07/2022	Assessment	0.793	36.7	169	0.98	7.7	721	1870
2/16/2023	Assessment	0.601	26.7	153	1.06	7.8	499	760
4/06/2023	Assessment	0.631	25.8	146	1.06	7.9	419	1240
10/16/2023	Assessment	0.612	20.8	138	1.07	7.9	325	1240
4/15/2024	Assessment	0.613	20.4 M1	133	1.07	8.0	253	1160
10/21/2024	Assessment	0.63	17.9	129	1.20	11.0	176	1030
4/08/2025	Assessment	0.62	15.9	128	1.24	7.3	128	980
10/07/2025	Assessment	0.65	15.2	123	1.22	8.7	98.6	950

Table 1. Groundwater Data Summary: -W-2203S
ClinchRiver - Pond1
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
10/07/2022	Assessment	0.11	13.9	39.3	< 0.4 U1	< 0.004 U1	0.13 J1	0.083	3.88	0.98	0.22	0.236	< 0.2 U1	16.9	0.41 J1	< 0.04 U1
2/16/2023	Assessment	0.09 J1	11.4	41.6	< 0.007 U1	< 0.004 U1	0.13 J1	0.038	1.44	1.06	0.07 J1	0.172	< 0.2 U1	12.5	0.24 J1	< 0.04 U1
4/06/2023	Assessment	0.055 J1	9.95	52.5	< 0.04 U1	< 0.004 U1	0.16 J1	0.043	0.64	1.06	0.09 J1	0.206	< 0.2 U1	10.2	0.16 J1	< 0.02 U1
10/16/2023	Assessment	0.105	7.11	55.8	< 0.007 U1	< 0.004 U1	0.18 J1	0.076	1.53	1.07	0.27	0.214	< 0.2 U1	7.2	0.12 J1	< 0.02 U1
4/15/2024	Assessment	0.026 J1	6.52	66.7	< 0.007 U1	< 0.004 U1	0.17 J1	0.022	0.58	1.07	0.28	0.206 M1	< 0.2 U1	6.9	0.10 J1	< 0.02 U1
10/21/2024	Assessment	< 0.06 U1	5.6	74.2	< 0.06 U1	< 0.03 U1	< 0.6 U1	< 0.04 U1	0.54	1.20	< 0.4 U1	0.202	< 0.2 U1	1.4 J1	< 0.3 U1	< 0.2 U1
4/08/2025	Assessment	< 0.06 U1	4.3	88.4	< 0.06 U1	< 0.03 U1	0.7 J1	< 0.04 U1	0.71	1.24	< 0.4 U1	0.210	< 0.2 U1	3.0 J1	< 0.3 U1	< 0.2 U1
10/07/2025	Assessment	< 0.2 U1	3.1	112	< 0.2 U1	< 0.03 U1	< 0.6 U1	< 0.08 U1	0.30	1.22	0.6 J1	0.199	< 0.2 U1	1.6 J1	< 0.3 U1	< 0.2 U1

Notes:
Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: Not analyzed
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
B1: Analyte detected in method blank (MB) at or above the method criteria.
H2: Sample analysis performed past holding time.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P1: The precision between duplicate results was above acceptance limits.
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.
pCi/L: picocuries per liter
S1: Residue weight is above or below the method criteria and needs to be re-analyzed at a different dilution.
S7: Sample did not achieve constant weight.
SU: standard unit
µg/L: micrograms per liter

Groundwater Flow Direction Maps

Legend

- Groundwater Monitoring Well; Background
- Nature and Extent Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water level data (collected on February 17, 2025) provided by AEP.
2. Site features based on information available in Groundwater Monitoring Network Evaluation (Amec 2015) provided by AEP.
3. Groundwater elevation units and Post-Closure Pond Topographic units are feet above mean sea level (ft amsl).
4. Nature and extent wells will no longer be sampled during the annual 95b events.
5. Wells MW-1606 (1501.73 ft amsl) and MW-1609 (1669.69 ft amsl) were not included in the contouring as they were screened in the Rome Formation.
6. Wells MW-1610 (1508.92 ft amsl) and MW-1611 (1550.79 ft amsl) were not included in the contouring as they are screened across the Dumps Fault to monitor potential lateral migration of groundwater.
7. Wells MW-1607 and W-2204 were not gauged during the February 2025 event.
8. Aerial basemap downloaded from Google Earth Pro (November 2023).

250 125 0 250
Feet

Potentiometric Surface Map
Pond 1 - Uppermost Aquifer
February 2025
AEP Clinch River Plant - Bottom Ash Pond
Carbo, Virginia

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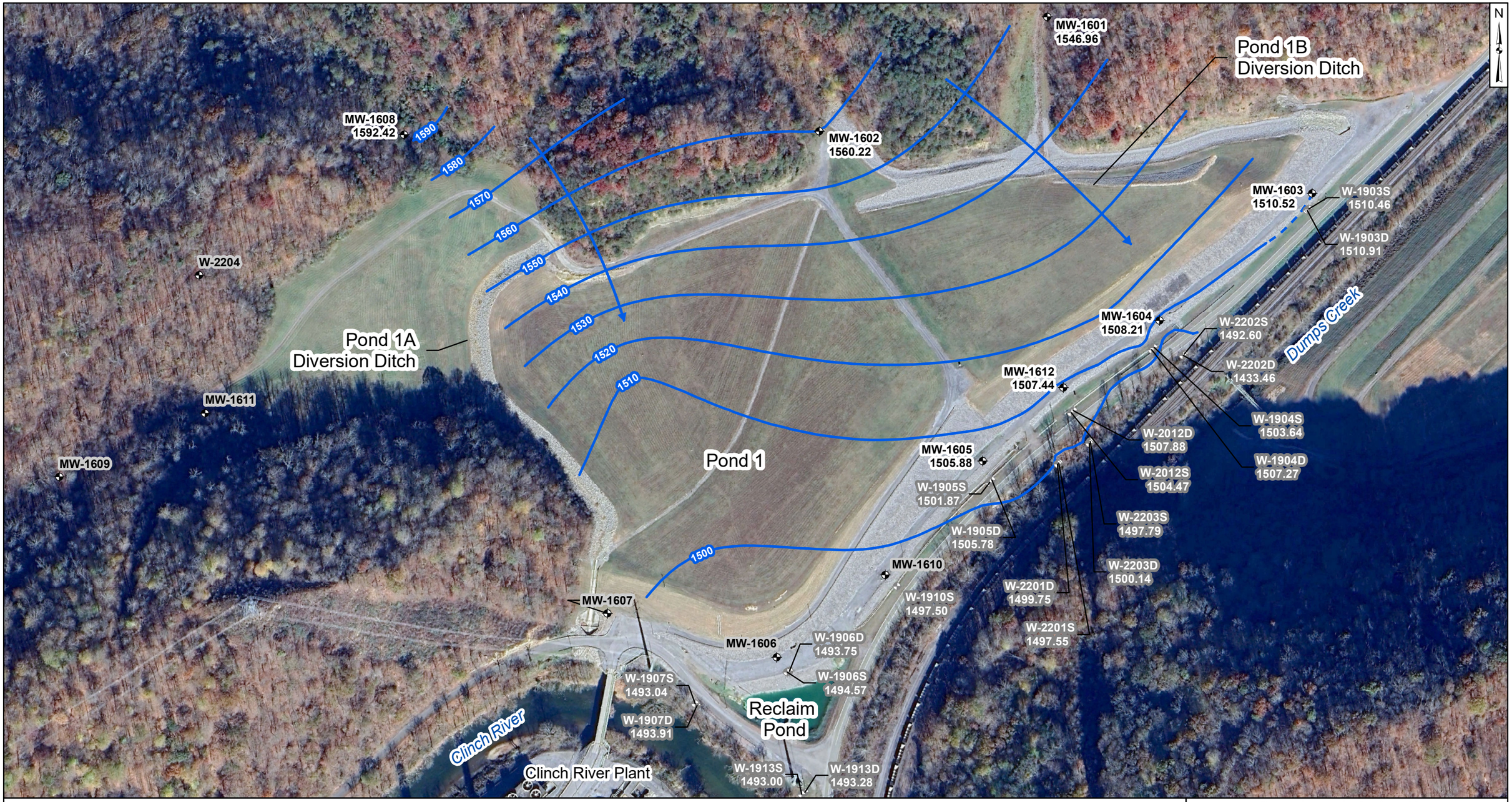
Figure **2**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Clinch River\2025\AEP-ClinchRiver_Pond 1_GW_2025-02_Feb.mxd. ASoltero. 5/30/2025. CHA8423.



Legend

- Groundwater Monitoring Well; Background
- Nature and Extent Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water level data (collected on April 1, 2025) provided by AEP.
2. Site features based on information available in Groundwater Monitoring Network Evaluation (Amec 2015) provided by AEP.
3. Groundwater elevation units and Post-Closure Pond Topographic units are feet above mean sea level (ft amsl).
4. Wells MW-1606 (1494.72 ft amsl), MW-1607 (1522.49 ft amsl) and MW-1609 (1659.90 ft amsl) were not included in the contouring as they were screened in the Rome Formation.
5. Wells MW-1610 (1504.51 ft amsl), MW-1611 (1556.90 ft amsl) and W-2204 (1702.78 ft amsl) were not included in the contouring as they are screened across the Dumps Fault to monitor potential lateral migration of groundwater.
6. Aerial basemap downloaded from Google Earth Pro (November 2023).

250 125 0 250 Feet

Potentiometric Surface Map
Pond 1 - Uppermost Aquifer
April 2025
AEP Clinch River Plant - Bottom Ash Pond
Carbo, Virginia

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Figure 3

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Clinch River\2025\AEP-ClinchRiver_Pond 1_GW_2025-04_Apr.mxd. ASoltero. 5/30/2025. CHA8423.

Legend

- Groundwater Monitoring Well; Background
- Nature and Extent Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water level data (collected on September 29, 2025) provided by AEP.
2. Site features based on information available in Groundwater Monitoring Network Evaluation (Amec 2015) provided by AEP.
3. Groundwater elevation units and Post-Closure Pond Topographic units are feet above mean sea level (ft amsl).
4. Wells MW-1606 (1492.31 ft amsl), MW-1607 (1502.68 ft amsl) and MW-1609 (1654.12 ft amsl) were not included in the contouring as they were screened in the Rome Formation.
5. Wells MW-1610 (1503.68 ft amsl), MW-1611 (1563.52 ft amsl) and W-2204 (1696.75 ft amsl) were not included in the contouring as they are screened across the Dumps Fault to monitor potential lateral migration of groundwater.
6. Aerial basemap downloaded from Google Earth Pro (November 2023).

250 125 0 250 Feet

Potentiometric Surface Map
Pond 1 - Uppermost Aquifer
September 2025
AEP Clinch River Plant - Pond 1
Carbo, Virginia

Geosyntec consultants

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Figure 4

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Clinch River\2025\AEP-ClinchRiver_Pond 1_GW_2025-09_Sept.mxd. okiemute.commander. 12/19/2025. CHA8423.

Groundwater Flow Velocity Calculations

Residence Time Calculation Summary
SWP-620 Clinch River Pond 1A/1B

Geosyntec Consultants, Inc.

			2025-02		2025-04		2025-09	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Pond 1A/1B	MW-1601[1,4]	2.0	116	0.5	155	0.4	186	0.3
	MW-1602[1,4]	2.0	419	0.1	273	0.2	274	0.2
	MW-1603[2,4]	2.0	152	0.4	206	0.3	178	0.3
	MW-1604[2,4]	2.0	190	0.3	202	0.3	230	0.3
	MW-1605[2,4]	2.0	284	0.2	184	0.3	140	0.4
	MW-1606[2,3]	2.0	NC	NC	NC	NC	NC	NC
	MW-1607[2,3]	2.0	NC	NC	NC	NC	NC	NC
	MW-1608[1,4]	2.0	317	0.2	360	0.2	347	0.2
	MW-1609[1,3]	2.0	NC	NC	NC	NC	NC	NC
	MW-1610[2,5]	2.0	NC	NC	NC	NC	NC	NC
	MW-1611[1,5]	2.0	NC	NC	NC	NC	NC	NC
	MW-1612[2,4]	2.0	210	0.3	366	0.2	351	0.2

Notes:
[1] - Upgradient Well
[2] - Downgradient Well
[3] - Rome Formation
[4] - Chattanooga Formation
[5] - Dumps Fault Formation
NC - Not calculated
Hydraulic conductivity was updated in 2021 to reflect current data

APPENDIX 2 – Statistical Analyses

The reports summarizing the statistical evaluations.

Geosyntec consultants

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STATISTICAL ANALYSIS SUMMARY 2024 2ND SEMIANNUAL EVENT ASH POND 1

Clinch River Plant

Carbo, Virginia

Prepared for

American Electric Power
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Prepared by

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Project Number: CHA8500B

February 2025

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Attachment B: Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

CCR	coal combustion residuals
CFR	code of federal regulations
GWPS	groundwater protection standard
LCL	lower confidence limit
LPL	lower prediction limit
mg/L	milligrams per liter
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at Ash Pond 1, an existing CCR unit at the Clinch River Plant in Carbo, Virginia. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above the groundwater protection standards (GWPSs).

Eight monitoring events were completed from December 2017 to December 2018 to establish background concentrations for Appendix III and Appendix IV parameters under the CCR rule. Data collected through April 2019 were compared to the background concentrations to evaluate for any statistically significant increases (SSIs) or statistically significant levels (SSLs) of Appendix III or Appendix IV constituents. SSLs and SSIs were identified for several constituents in groundwater. Because an alternative source of these constituents was not identified, an assessment of corrective measures was initiated for Ash Pond 1 in accordance with 40 CFR 257.96. The assessment of corrective measures has been conducted and the selection of a remedy is ongoing. Ash Pond 1 continues to undergo assessment monitoring in the interim.

A semiannual sampling event for all Appendix III parameters and Appendix IV parameters, as required by 40 CFR 257.95(d)(1), was completed in October 2024. The results of the October 2024 assessment sampling event are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

Groundwater data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. The statistics were completed in three separate groups that correspond to differences in the underlying geology at the monitoring locations. GWPSs were reestablished for the Appendix IV parameters following calculation of site-specific background values. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at SSLs above the corresponding GWPS. SSLs were identified for barium, cobalt, lithium, and molybdenum. Therefore, the selection of remedy will continue, and the groundwater monitoring will continue in accordance with the assessment monitoring program as required by 40 CFR 257.96(b). Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. ASH POND 1 EVALUATION

2.1 Data Validation and QA/QC

One set of samples was collected in October 2024 for analysis from each background and compliance well throughout the three geologically distinct monitoring well networks to meet the requirements of 40 CFR 257.95(d)(1). The three geological units are the Chattanooga Shale, the Rome Limestone, and the Dumps Fault water-bearing unit. Samples from the October 2024 sample event were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during this assessment monitoring event is presented in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program-certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.24 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for Ash Pond 1 were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B. The data obtained in October 2024 were screened for potential outliers. One outlier was identified for combined radium at background well MW-1602 and flagged for removal from the dataset.

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the Statistical Analysis Plan (Geosyntec 2020). The established GWPS was determined to be the greater value of the background concentration and either the maximum contaminant level or risk-based level specified in 40 CFR 257.95(h)(2) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events. Separate tolerance limits were calculated for each of the three geologic units.

Tolerance limits for Chattanooga Shale wells were calculated parametrically with 95% coverage and 95% confidence for antimony, cobalt, and combined radium. Nonparametric tolerance limits for Chattanooga Shale wells were calculated for arsenic, barium, chromium, fluoride, lead, lithium, and molybdenum due to apparent nonnormal distributions and for beryllium, cadmium, mercury, selenium, and thallium because greater than 50% of the data was composed of nondetect results.

Tolerance limits for Rome Limestone wells were calculated parametrically with 95% coverage and 95% confidence for barium, cobalt, combined radium, fluoride, and lead. Nonparametric tolerance

limits for Rome Limestone wells were calculated for antimony, arsenic, cadmium, chromium, lithium, molybdenum, and selenium due to apparent nonnormal distributions and for beryllium, mercury, and thallium because greater than 50% of the data was composed of nondetect results.

Tolerance limits for Dumps Fault wells were calculated parametrically with 95% coverage and 95% confidence for arsenic, barium, chromium, cobalt, and fluoride. Nonparametric tolerance limits for Dumps Fault wells were calculated for antimony, combined radium, lithium, molybdenum, and selenium due to apparent nonnormal distributions and for beryllium, cadmium, lead, mercury, and thallium because greater than 50% of the data was composed of nondetect results. Upper tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). Sen's Slope/Mann-Kendall trend tests at a 95% confidence level were used to evaluated data for statistically significant trends. A statistically significant decreasing trend was observed for molybdenum at MW-1607; therefore, the lower confidence limit (LCL) was calculated using the most recent eight data points (i.e., data collected since April 2022). Additionally, the confidence interval for barium at MW-1605 was calculated using data collected since February 2021 due to a statistically significant increasing trend, and confidence intervals at MW-1610 were calculated using data since April 2019 for cobalt and since October 2021 for lithium and molybdenum, as earlier results were above the GWPS and recent concentrations are more stable with lower reported values.

An SSL was concluded if the LCL exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2.

The following SSLs were identified at Clinch River Ash Pond 1 (Table 3):

- Chattanooga Shale
    - LCLs for barium at MW-1603 (2.28 milligrams per liter [mg/L]), MW-1604 (3.06 mg/L), MW-1605 (2.21 mg/L), and MW-1612 (2.12 mg/L) were above the GWPS of 2.00 mg/L.
    - The LCL for lithium at MW-1605 (0.188 mg/L) was above the GWPS of 0.118 mg/L.
- Rome Limestone
    - The LCL for cobalt at MW-1607 (0.00846 mg/L) was above the GWPS of 0.00600 mg/L.
    - LCLs for lithium at MW-1606 (0.0687 mg/L) and MW-1607 (0.121 mg/L) were above the GWPS of 0.0400 mg/L.

- The LCL for molybdenum at MW-1607 (0.125 mg/L) was above the GWPS of 0.100 mg/L.

As a result of the identified SSLs, the selection of remedy will continue, and groundwater monitoring will continue in accordance with the assessment monitoring program per 40 CFR 257.96(b).

2.2.3 Updating Appendix III Prediction Limits

Upper prediction limits (UPLs) were originally established for all Appendix III parameters following the background monitoring period. As described in the February 2024 Statistical Analysis Summary report (Geosyntec 2024):

- In the Chattanooga Shale formation, intrawell tests were used to evaluate potential SSIs for boron, fluoride, sulfate, and total dissolved solids (TDS), and interwell tests were used for calcium, chloride, and pH.
- In the Rome Limestone formation, intrawell tests were used to evaluate potential SSIs for boron, calcium, fluoride, pH, and TDS, and interwell tests were used for chloride and sulfate.
- In the Dumps Fault water-bearing unit, intrawell tests were used to evaluate potential SSIs for all Appendix III parameters.

Prediction limits have been updated periodically during the assessment monitoring period as sufficient data became available.

Mann-Whitney (Wilcoxon rank-sum) tests were performed to determine whether the newer data are affected by a release from the Ash Pond 1. Because the interwell Appendix III limits and the Appendix IV GWPSs are based on data from upgradient wells which we would not expect to have been impacted by a release, these tests were used for intrawell Appendix III tests only. Mann-Whitney tests were used to compare the medians of historical data (October 2017 – April 2022) to the new compliance samples (October 2022 – April 2024). Results were evaluated to determine if the medians of the two groups were statistically different at the 99% confidence level. Where no statistically significant difference was found, the new compliance data were added to the background dataset. Where a statistically significant difference was found between the medians of the two groups, the data were reviewed to evaluate the cause of the difference and to determine if adding newer data to the background dataset, truncating historical data and using only the newer data, or continuing to use the existing background dataset was most appropriate. If the differences appeared to have been caused by a release, then the previous background dataset would have continued to be used.

The complete Mann-Whitney and trend test results and a summary of the significant findings can be found in Attachment B. The datasets for all wells were updated to include both the historical and more recent results.

Prediction limits for the interwell tests were recalculated using data collected during the 2024 assessment monitoring events. New upgradient well data were tested for outliers prior to being added to the background dataset. Upgradient well data were also evaluated for statistically

significant trends using the Sen's Slope/Mann-Kendall trend test, and the results are included in Attachment B.

After the revised background set was established, a parametric or nonparametric analysis was selected based on the distribution of the data and the frequency of nondetect data. Estimated results less than the reporting limit (practical quantitation limit, [PQL]) but above the method detection limit – i.e., "J-flagged" data – were considered detections and the estimated results were used in the statistical analyses. Nonparametric analyses were selected for datasets with at least 50% nondetect data or datasets that could not be normalized by transformation. Parametric analyses were selected for datasets (either transformed or untransformed) that passed the Shapiro-Wilk / Shapiro-Francía test for normality. The Kaplan-Meier nondetect adjustment was applied to datasets with between 15% and 50% nondetect data. For datasets with fewer than 15% nondetect data, nondetect data were replaced with one half of the PQL. The selected analysis (i.e., parametric or nonparametric) and transformation (where applicable) for each background dataset are shown in Attachment B.

The updated interwell prediction limits and the previously established intrawell prediction limits are summarized in Table 4. The UPLs were calculated for a one-of-two retesting procedure; i.e., if at least one sample in a series of two does not exceed the UPL, or in the case of pH, is neither less than the lower prediction limit (LPL) nor greater than the UPL, then it can be concluded that an SSI has not occurred. In practice, where the initial result does not exceed the UPL, or in the case of pH, is neither less than the LPL nor greater than the UPL, a second sample will not be collected. The retesting procedures allow achieving an acceptably high statistical power to detect changes at downgradient wells for constituents evaluated using intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix III SSIs

While SSLs were identified, a review of the Appendix III results was also completed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the October 2024 assessment monitoring event from each compliance well were compared to updated prediction limits to assess whether the results were statistically above background values. The results from these events and the prediction limits are summarized in Table 4. The following SSIs above the UPLs were noted:

- Calcium concentrations were above the Chattanooga Shale interwell UPL of 8.42 mg/L at MW-1603 (35.5 mg/L), MW-1604 (30.9 mg/L), MW-1605 (49.7 mg/L), and MW-1612 (43.0 mg/L).

- Chloride concentrations were above the Chattanooga Shale interwell UPL of 34.3 mg/L at MW-1603 (407 mg/L) and MW-1605 (154 mg/L). Chloride concentrations were above the Rome Limestone interwell UPL of 4.10 mg/L at MW-1606 (13.3 mg/L) and MW-1607 (7.04 mg/L).

- Fluoride concentrations were above the Chattanooga Shale intrawell UPL of 0.171 mg/L at MW-1603 (0.19 mg/L).

- Sulfate concentrations were above the Rome Limestone interwell UPL of 20.6 mg/L at MW-1606 (58.0 mg/L) and MW-1607 (143 mg/L).

- TDS concentrations were above the Chattanooga Shale intrawell UPL of 739 mg/L at MW-1603 (1,020 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the October 2024 sample was above the UPL or, in the case of pH, below the LPL.

2.3 Conclusions

A semiannual assessment monitoring event was conducted in October 2024 in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that prevented data usage. One outlier for combined radium was flagged in the October 2024 data. GWPSs were reestablished for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPSs. SSLs were identified for barium, cobalt, lithium, and molybdenum.

Appendix III parameters were compared to updated prediction limits; concentrations of calcium, chloride, fluoride, sulfate, and TDS were identified above the prediction limits.

Based on this evaluation, the selection of remedy for the Clinch River Ash Pond 1 CCR unit will continue, and groundwater monitoring will continue in accordance with the assessment monitoring program per 40 CFR 257.96(b).

3. REFERENCES

Geosyntec. 2020. Statistical Analysis Plan – Clinch River Plant. Geosyntec Consultants, Inc. October.

Geosyntec. 2024. Statistical Analysis Summary – Ash Pond 1, Clinch River Plant, Carbo, Virginia. Geosyntec Consultants, Inc. February.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Clinch River Plant, Ash Pond 1

Parameter	Unit	MW-1601	MW-1602	MW-1603	MW-1604	MW-1605	MW-1606	MW-1607	MW-1608	MW-1609	MW-1610	MW-1611	MW-1612
		10/7/2024	10/7/2024	10/8/2024	10/8/2024	10/8/2024	10/8/2024	10/8/2024	10/7/2024	10/7/2024	10/7/2024	10/7/2024	10/8/2024
Antimony	µg/L	0.8 U1	0.8 U1	0.07 J1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1
Arsenic	µg/L	3.3	1.6	3.1	4.6	1.2	5.0	1.2	0.9	0.8 U1	1.3	4.5	0.3 J1
Barium	µg/L	121	94.5	3,550	2,820	2,300	105	66.2	20.4	328	292	312 M1	2,240
Beryllium	µg/L	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1
Boron	mg/L	0.51	0.58	0.32 J1	0.34 J1	0.50	0.15 J1	0.12 J1	0.33 J1	0.4 U1	0.4 U1	0.53	0.37 J1
Cadmium	µg/L	0.03 J1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.10 J1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1
Calcium	mg/L	5.2	3.7	35.5	30.9	49.7	56.8	43.5 M1	0.4	70.1	30.4	31.5 M1	43.0
Chloride	mg/L	12.5	3.66	407	16.4	154	13.3	7.04	4.36	1.53	10.1	10.6	21.9
Chromium	µg/L	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	0.7 J1	0.8 J1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1
Cobalt	µg/L	0.05 J1	0.16 U1	0.09 J1	0.13 J1	0.04 J1	6.19	11.7	0.08 J1	0.20	5.28	0.16 U1	0.06 J1
Combined Radium	pCi/L	0.69	8.42	0.81	1.16	1.68	1.61	1.28	0.51	1.08	0.84	0.36	2.11
Fluoride	mg/L	2.44	1.78	0.19	0.32	0.35	0.22	0.22	0.50	0.26	0.21	1.24	0.17
Lead	µg/L	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	0.6 J1	0.5 J1	1.6 U1	1.6 U1	0.7 J1	1.6 U1	1.6 U1
Lithium	mg/L	0.0876	0.0373	0.103	0.0677	0.189	0.0894	0.146 M1	0.0181	0.0012 J1	0.142	0.0641 M1	0.121
Mercury	µg/L	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1
Molybdenum	µg/L	1.0 J1	4 U1	4 U1	4 U1	4 U1	43.6	135	4 U1	4 U1	87.0	1.9 J1	4 U1
Selenium	µg/L	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1
Sulfate	mg/L	121	11.7	0.6 U1	0.6 U1	0.6 U1	58.0	143	147	20.9	16.9	14.7	0.2 J1
Thallium	µg/L	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1
Total Dissolved Solids	mg/L	1,380	510	1,020	410	660	350	280	440	270	230	480	510
pH	SU	8.3	8.4	6.8	7.2	7.7	7.1	8.0	8.4	7.5	7.5	7.9	7.2

Notes:
J1: concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1: the associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Chattanooga Shale Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000493	0.00600
Arsenic, Total (mg/L)	0.0100		0.0115	0.0115
Barium, Total (mg/L)	2.00		0.306	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00126	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.000416	0.00600
Combined Radium, Total (pCi/L)	5.00		2.63	5.00
Fluoride, Total (mg/L)	4.00		2.44	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00160	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.118	0.118
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.0257	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Rome Limestone Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000400	0.00600
Arsenic, Total (mg/L)	0.0100		0.000970	0.0100
Barium, Total (mg/L)	2.00		0.496	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00120	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.00102	0.00600
Combined Radium, Total (pCi/L)	5.00		4.53	5.00
Fluoride, Total (mg/L)	4.00		0.324	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00108	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0100	0.0400
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00400	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Dumps Fault Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000800	0.00600
Arsenic, Total (mg/L)	0.0100		0.0216	0.0216
Barium, Total (mg/L)	2.00		0.442	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00109	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.000159	0.00600
Combined Radium, Total (pCi/L)	5.00		2.62	5.00
Fluoride, Total (mg/L)	4.00		1.32	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00160	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.161	0.161
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00676	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix IV Identified Statistically Significant Levels
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Formation	Well ID	Constituent	GWPS	LCL
Chattanooga Shale	MW-1603	Barium	2.00	2.28
	MW-1604	Barium	2.00	3.06
	MW-1605	Barium	2.00	2.21
		Lithium	0.118	0.188
	MW-1612	Barium	2.00	2.12
Rome Limestone	MW-1606	Lithium	0.0400	0.0687
	MW-1607	Cobalt	0.00600	0.00846
		Lithium	0.0400	0.121
		Molybdenum*	0.100	0.125

Notes:
1. All values are in milligrams per liter
*: The LCL for molybdenum at MW-1607 was calculated using the most recent eight data points, due to the observation of a statistically significant decreasing trend.
GWPS: groundwater protection standard
LCL: lower confidence limit

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Analyte	Unit	Description	Chattanooga Shale			
			MW-1603	MW-1604	MW-1605	MW-1612
			10/8/2024	10/8/2024	10/8/2024	10/8/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.431	0.487	0.699	0.531
		Analytical Result	0.32	0.34	0.50	0.37
Calcium	mg/L	Interwell Background Value (UPL)	8.42			
		Analytical Result	**35.5**	**30.9**	**49.7**	**43.0**
Chloride	mg/L	Interwell Background Value (UPL)	34.3			
		Analytical Result	**407**	16.4	**154**	21.9
Fluoride	mg/L	Intrawell Background Value (UPL)	0.171	0.345	0.417	0.227
		Analytical Result	**0.19**	0.32	0.35	0.17
pH	SU	Interwell Background Value (UPL)	9.1			
		Interwell Background Value (LPL)	6.7			
		Analytical Result	6.8	7.2	7.7	7.2
Sulfate	mg/L	Intrawell Background Value (UPL)	3.49	1.17	11.2	1.2
		Analytical Result	0.1	0.1	0.1	0.2
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	739	428	715	559
		Analytical Result	**1,020**	410	660	510

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Analyte	Unit	Description	Rome Limestone	
			MW-1606	MW-1607
			10/8/2024	10/8/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.189	0.212
		Analytical Result	0.15	0.12
Calcium	mg/L	Intrawell Background Value (UPL)	63.3	51.5
		Analytical Result	56.8	43.5
Chloride	mg/L	Interwell Background Value (UPL)	4.10	
		Analytical Result	**13.3**	**7.04**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.259	0.263
		Analytical Result	0.22	0.22
pH	SU	Intrawell Background Value (UPL)	7.4	8.2
		Intrawell Background Value (LPL)	6.8	7.3
		Analytical Result	7.1	8.0
Sulfate	mg/L	Interwell Background Value (UPL)	20.6	
		Analytical Result	**58.0**	**143**
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	373	310
		Analytical Result	350	280

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Analyte	Unit	Description	Dumps Fault MW-1610 10/7/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.139
		Analytical Result	0.06
Calcium	mg/L	Intrawell Background Value (UPL)	38.7
		Analytical Result	30.4
Chloride	mg/L	Intrawell Background Value (UPL)	12.0
		Analytical Result	10.1
Fluoride	mg/L	Intrawell Background Value (UPL)	0.35
		Analytical Result	0.21
pH	SU	Intrawell Background Value (UPL)	8.0
		Intrawell Background Value (LPL)	7.1
		Analytical Result	7.5
Sulfate	mg/L	Intrawell Background Value (UPL)	50.0
		Analytical Result	16.9
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	266
		Analytical Result	230

Notes:

1. Bold values exceed the background value.

2. Background values are shaded gray.

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Clinch River Ash Pond 1 CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

058541	Virginia	02.17.2025
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

February 11, 2025

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Ste. #250
Worthington, OH 43085

RE: Clinch River Pond 1 – Assessment Monitoring Report & Background Update – 2024

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update of statistical limits and the statistical evaluation of groundwater data for the October 2024 sample event at American Electric Power Company's Clinch River Pond 1. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the Clinch River Pond 1 for the Coal Combustion Residuals (CCR) program in 2017 at each of the groundwater monitoring wells. The monitoring well network, as provided by Geosyntec Consultants, consists of the following three formations:

Chattanooga Shale:
Upgradient Wells: MW-1601, MW-1602, MW-1608
Downgradient Wells: MW-1603, MW-1604, MW-1605, MW-1612

Rome Limestone:
Cross-gradient (background) Well: MW-1609
Downgradient Wells: MW-1606, MW-1607

Dumps Fault:
Upgradient Well: MW-1611
Downgradient Well: MW-1610

The statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting

The CCR program consists of the following Assessment Monitoring constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

For all constituents, a substitution of the most recent reporting limit is used for non-detect data. Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% non-detects follows this letter.

A separate section is provided for each formation and includes time series plots for Appendix III and IV parameters at all wells within the same formation, for the purpose of screening data (Figure A for each formation). Additionally, box plots are included for all constituents at upgradient and downgradient wells (Figure B for each formation). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

In the 2019 original background screening, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the background update conducted in February 2021 and demonstrated that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance recommendations as discussed below.

Summary of Statistical Methods:

Based on the original background screening described in the 2017 screening report, the following statistical methods were used for analyzing Appendix III parameters:

Chattanooga Shale:

1) Interwell parametric prediction limits, combined with a 1-of-2 resample plan for calcium, chloride, and pH
2) Intrawell parametric prediction limits, combined with a 1-of-2 resample plan for boron, fluoride, sulfate, and TDS

Rome Limestone:

1) Interwell prediction limits, combined with a 1-of-2 resample plan for chloride and sulfate
2) Intrawell parametric prediction limits, combined with a 1-of-2 resample plan for boron, calcium, fluoride, pH, and TDS

Dumps Fault:

1) Intrawell parametric prediction limits, combined with a 1-of-2 resample plan, for boron, calcium, chloride, fluoride, pH, sulfate and TDS

Appendix III Constituents

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA, 2009), data are analyzed using either parametric or non-parametric prediction and tolerance limits as appropriate. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.

- Nonparametric tolerance limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In the interwell case, prediction limits are updated with upgradient well data following each sampling event after careful screening for any new outliers. In some cases, deselecting the earlier portion of data may be necessary prior to construction of limits so that resulting statistical limits are conservative (i.e., lower) from a regulatory perspective and capable of rapidly detecting changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Summary of Original Background Screening – June 2019

Outlier Evaluation

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective, in proposed background data. Suspected outliers at all wells for Appendix III and Appendix IV parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits.

Seasonality

No distinct seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Trend Test Evaluation

While a trend may be visually apparent, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each

well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When the historical records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits. No adjustments were required at the time, and results of the trend tests were included with the 2019 screening.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) is used when 2 or more upgradient wells are available to statistically evaluate whether there are significant differences in average concentrations among the wells, and assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The application of Analysis of Variance, upgradient tolerance limits, and downgradient confidence intervals for evaluation of these criteria is described in the 2019 screening study report and resulted in the recommended method for each Appendix III parameter at each respective formation.

Appendix III Background Update Summary

2022 & 2023 Updates

Proposed background data, as mentioned above, were originally screened during June 2019. Intrawell prediction limits were then updated during the Fall 2020 background update using background data through April 2020, and the results were submitted with that report.

During the Fall 2022 background update, background data were screened for updating intrawell prediction limits through April 2022. Tukey's outlier test and visual screening were used to identify outliers at all wells for constituents evaluated with intrawell prediction limits. Previously flagged outliers for TDS at Chattanooga Shale and Rome Limestone were confirmed, and a low value of TDS at well MW-1612 was flagged to construct statistical limits within each well readily capable of detecting changes in groundwater quality

The Mann-Whitney test was applied to compare historical data through April 2020 with new compliance samples through April 2022 at each well. Among records with statistically significant differences in medians, all records were updated to use data through April 2022. Sulfate at downgradient wells MW-1603, MW-1604, and MW-1605 and TDS at downgradient well MW-1605 at Chattanooga Shale, and calcium, chloride, sulfate, and TDS in well MW-1611 at Dumps Fault were truncated and utilized at least the most recent 8 measurements from February 2020 through April 2022 to construct statistical limits using relatively stable data. Similarly, while not statistically significantly different at the 99% confidence level, more recent concentrations for sulfate in well MW-1612 at Chattanooga Shale have decreased by more than an order of magnitude since October 2018. The earlier portions of the record were substantially higher than the more recent concentrations; therefore, the earlier measurements were deselected prior to construction of statistical limits.

In the Fall 2023 update, pooled upgradient well data were evaluated using Tukey's outlier test and visual screening on Appendix III constituents that are evaluated with interwell prediction limits. Tukey's outlier test on pooled upgradient well data did not identify any potential outliers for Appendix III parameters. Although not identified by Tukey's, the two highest values for chloride in upgradient well MW-1601 (Chattanooga Shale) were flagged in order to construct statistical limits that were more representative of current groundwater quality conditions.

For parameters tested using interwell analyses (calcium, chloride, and pH at Chattanooga Shale; and chloride and sulfate at Rome Limestone), the Sen's Slope/Mann-Kendall trend test was used to evaluate data at upgradient wells and determine whether concentrations are statistically increasing, decreasing or stable at the 99% confidence level. The magnitudes of the well/constituent pairs with statistically significant trends were either low relative to average concentrations within each well or would not greatly affect the resulting interwell prediction limits. With limited background samples collected to date, all data from upgradient wells were used to construct interwell prediction limits. As more data are collected, all upgradient well data will be re-evaluated for possible deselection

of earlier measurements if they no longer appear represent upgradient groundwater quality conditions.

Current Update – Fall 2024

Outlier Analysis

Prior to updating background data during this analysis, Tukey's outlier test and visual screening were used to re-evaluate data through April 2024 for outliers at all wells for parameters using intrawell prediction limits and through October 2024 for outliers at all upgradient wells for parameters utilizing interwell prediction limits. Several low values exist in the data sets and appear on the graphs as possible low outliers relative to the laboratory's Practical Quantitation Limit. However, these values are observed trace values (i.e., measurements reported by the laboratory between the Method Detection Limit and the Practical Quantitation Limit); therefore, they were not flagged as outliers.

Any values flagged as outliers (o-flag) are plotted in a disconnected symbol and lighter font on the time series graph. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

Tukey's outlier analysis results for upgradient and downgradient wells and outlier summaries are included with this report in Figure C for each formation. Note that outlier analysis results are combined for Appendix III constituents using interwell prediction limits and Appendix IV constituents. Also note that for the tables of Tukey's results for downgradient wells, the upgradient wells for the same parameters are included for comparison.

For parameters which use intrawell prediction limits, Tukey's outlier test on all wells confirmed previously flagged outliers for TDS at Chattanooga Shale and Rome Limestone. These values remain flagged as outliers. Any values identified by Tukey's but not flagged in the database appeared representative of natural variation.

Tukey's outlier test on pooled upgradient well data identified the highest value for chloride in upgradient well MW-1609 at Rome Limestone, but this value was not flagged since the remaining concentrations in the record are similar. Visual screening confirmed the flagged values for chloride in upgradient well MW-1601 at Chattanooga Shale. No additional values were flagged among upgradient wells for Appendix III parameters. Tukey's outlier test results are provided in Figure C. A list of flagged outliers follows this report.

Intrawell Parameters—Mann-Whitney Testing

For parameters that require intrawell prediction limits, the Mann-Whitney (Wilcoxon Rank Sum) test was used to compare the medians of historical data through April 2022 to the new compliance samples at each well through April 2024. The test evaluates whether the groups are statistically different at the 99% confidence level. If no statistically significant differences are noted, background data may be updated to include more recent data. Any records that were truncated in previous updates used the truncated data, not the full records, in the Mann-Whitney test. Discussions of any truncated records were included in previous background update reports. Complete graphical results of the Mann-Whitney tests are included at the end of this report (Figure D for each of the three formations). Statistically significant differences were identified for the following well/constituent pairs at the following formations:

Chattanooga Shale
- Fluoride: MW-1605
- Sulfate: MW-1608 (upgradient) and MW-1603
- TDS: MW-1612

Rome Limestone
- Boron: MW-1609 (upgradient)
- Calcium: MW-1607
- TDS: MW-1609 (upgradient)

Dumps Fault
- Boron: MW-1611 (upgradient) and MW-1610
- Chloride: MW-1611 (upgradient) and MW-1610
- Fluoride: MW-1611 (upgradient)
- Sulfate: MW-1611 (upgradient) and MW-1610
- TDS: MW-1611 (upgradient) and MW-1610

Typically, when the test concludes that the medians of the two groups are significantly different, particularly in the downgradient wells, the background data are not updated to include the newer data but will be reconsidered in the future. Even though statistically significant differences in medians were identified, for each of the significant cases, listed above, either the newer median is lower or the majority of compliance concentrations were within the range of existing background. Therefore, these records were updated with data through April 2024. A list of well/constituent pairs utilizing a truncated portion of their records follows this report (Date Ranges Table). Those include sulfate and TDS at well MW-1611, Dumps Fault, both of which continue to use more recent and lower concentrations. These records will continue to be evaluated as more samples are collected.

Intrawell Parameters—Prediction Limits

All available background data through April 2024, except in cases mentioned above, were used to establish intrawell background limits, combined with a 1-of-2 resample plan, that will be used for future comparisons (Figure E).

Interwell Parameters—Trend Testing

For parameters tested using interwell analyses (calcium, chloride, and pH at Chattanooga Shale; and chloride and sulfate at Rome Limestone), the Sen's Slope/Mann-Kendall trend test was used to evaluate data at upgradient wells and determine whether concentrations are statistically increasing, decreasing, or stable at the 99% confidence level (Figure F). Statistically significant trends were identified for the following upgradient well/constituent pairs:

Increasing

- None

Decreasing

Chattanooga Shale

- Calcium: MW-1601 and MW-1608
- Chloride: MW-1601 and MW-1608

Rome Limestone

- Chloride: MW-1609

The magnitudes of the trends above are either low relative to average concentrations within each well or would not greatly affect the interwell prediction limits. While chloride in upgradient well MW-1601 at Chattanooga Shale exhibited a decrease in concentrations, the entire record was retained since concentrations downgradient of the facility in well MW-1612 at Chattanooga Shale resemble those reported upgradient of the facility earlier in the record. With limited background samples collected to date, all data from upgradient wells were used to construct interwell prediction limits. As more data are collected, all upgradient well data will be re-evaluated for possible deselection of earlier measurements if they no longer represent upgradient groundwater quality conditions.

Interwell Parameters—Prediction Limits

Interwell prediction limits using data through October 2024 for parameters mentioned above, combined with a 1-of-2 resample plan, were constructed from pooled upgradient well data for the Chattanooga Shale and Rome Limestone formations (Figure G). Time series plots for the corresponding upgradient wells are included to display the

background data. Downgradient measurements will be compared to these background limits during each subsequent semi-annual sampling event.

Evaluation of Appendix IV Parameters – Fall 2024

Groundwater Protections Standards (GWPS) are updated annually and are updated in the current analysis. The GWPS will be updated again during the Fall 2025 semi-annual statistical analysis. The methodology used to establish these GWPS is described below.

Outlier Analysis

Background data were originally screened in June 2019, and all data are re-screened annually. The results were submitted with each respective report. During this analysis, data at all wells were re-evaluated through October 2024 using time series plots and Tukey's outlier test to confirm previously identified outliers as well as identify new outliers and extreme trending patterns that would lead to artificially elevated statistical limits. Note that for the downgradient well data that are evaluated with confidence intervals, a regulatory conservative approach is taken in that values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. Any flagged values, as further discussed below, may be seen on the Outlier Summary table for each formation following this letter.

Tukey's outlier test on pooled upgradient well data for Chattanooga Shale, Rome Limestone, and Dumps Fault identified values for combined radium 226 + 228 and molybdenum. Although not identified by Tukey's, the second highest observation for combined radium 226 + 228 in upgradient well MW-1602 at Chattanooga Shale was flagged since this reported observation was at least four standard deviations above the remaining concentrations among upgradient well data. Tukey's outlier test and visual screening confirmed previously flagged measurements. Any values identified by Tukey's test but not flagged in the database were either similar to remaining concentrations among upgradient wells, were below the respective Maximum Containment Level or CCR-Rule Specified levels. Values identified as outliers are flagged with "o" and displayed in a lighter font and disconnected symbol on the time series graphs. Summaries of all flagged outliers are included in Figure C for each of the three formations.

Interwell Upper Tolerance Limits

Interwell upper tolerance limits were calculated to create background limits for the Appendix IV constituents from all available pooled upgradient well data through October 2024 at each of the formations (Figures H). Parametric limits use a target of 95%

confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. The upper tolerance limits are updated annually and will be updated again during the 2025 2nd semi-annual analysis.

Groundwater Protection Standards

Interwell upper tolerance limits were compared to the MCLs and CCR-Rule specified levels, as shown in the Groundwater Protection Standards (GWPS) table following this letter (Figures I), to determine the highest limit for use as the GWPS in the Confidence Interval comparisons.

Confidence Intervals

Confidence intervals were then constructed for each Appendix IV constituent and each downgradient well using data through October 2024 (Figures J). These intervals were constructed as either parametric or nonparametric confidence intervals depending on the data distribution and percentage of non-detects. When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete results of the confidence interval analysis follow this letter. The following confidence interval exceedances were identified using all available data within each well, except for barium at Chattanooga Shale well MW-1605 as discussed below:

Chattanooga Shale
- Barium: MW-1603, MW-1604, MW-1605, and MW-1612
- Lithium: MW-1605

Rome Limestone
- Cobalt: MW-1607
- Lithium: MW-1606 and MW-1607
- Molybdenum: MW-1607

Dumps Fault

- None

As noted in previous analyses, barium at downgradient wells MW-1603 and MW-1612 have had statistically significant increases over their records; however, truncation of these records would have no impact on the resulting confidence interval exceedances. For barium in well MW-1605 at Chattanooga Shale, however, the statistically significant increase identified in concentrations from 2019 through February 2021 compared to historic measurements required truncation for construction of a confidence interval using only more recent and stable data (USEPA Unified Guidance, 2009, Chapter 7). Additionally, more recent concentrations for cobalt, lithium, and molybdenum at downgradient well MW-1610 have stabilized at concentrations at or below the GWPS; therefore, confidence intervals were constructed using only more recent data. A list of well/constituent pairs using a truncated portion of their records is provided in the Date Range Table which follows this report.

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level (Figure L). Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Significant trends were identified for the following well/constituent pairs:

Increasing

Chattanooga Shale

- Barium: MW-1603, MW-1605, and MW-1612

Rome Limestone

- None

Dumps Fault

- None

Decreasing

Chattanooga Shale

- Barium: MW-1601, MW-1602, and MW-1608 (all upgradient)
- Lithium: MW-1602 and MW-1608 (both upgradient)

Rome Limestone

- Lithium: MW-1609 (upgradient)
- Molybdenum: MW-1609 (upgradient) and MW-1607

Dumps Fault

- None

Note that the decreasing trend for lithium at Rome Limestone is a result of reporting limits earlier in the record compared to trace values later in the record.

Confidence Intervals – Most Recent 8 Measurements

Downgradient well/constituent pairs that meet both of the following criteria are further evaluated with confidence intervals using only the most recent 8 measurements through October 2024 (USEPA Unified Guidance, 2009, Chapter 7) to determine present-day groundwater quality conditions relative to the respective GWPS:

- Exceedance of the respective GWPS when using the entire record of data
- Statistically significant decreasing trends

This includes molybdenum in downgradient well MW-1607 at Rome Limestone, which was the only downgradient well/constituent pair to meet these criteria (Figure M). The confidence interval was compared against the respective GWPS to assess compliance. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete results of the confidence interval analysis follow this letter and an exceedance was identified for molybdenum at well MW-1607.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Clinch River Pond 1. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew T. Collins
Project Manager

Kristina L. Rayner
Senior Statistician

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Date Ranges

Date: 1/29/2025 2:22 PM

Clinch River Client: AEP Data: Clinch River Pond 1

Barium total (mg/L)
- MW-1605 overall:2/9/2021-10/8/2024

Calcium total (mg/L)
- MW-1611 background:2/11/2020-4/1/2024

Chloride total (mg/L)
- MW-1611 background:2/11/2020-4/1/2024

Cobalt total (mg/L)
- MW-1610 overall:4/9/2019-10/8/2024

Lithium total (mg/L)
- MW-1610 overall:10/12/2021-10/8/2024

Molybdenum total (mg/L)
- MW-1610 overall:10/12/2021-10/8/2024

Sulfate total (mg/L)
- MW-1603 background:2/11/2020-4/2/2024
- MW-1604 background:2/11/2020-4/2/2024
- MW-1605 background:2/11/2020-4/2/2024
- MW-1611 background:2/11/2020-4/1/2024
- MW-1612 background:2/11/2020-4/2/2024

Total Dissolved Solids (mg/L)
- MW-1605 background:2/11/2020-4/2/2024
- MW-1611 background:2/11/2020-4/1/2024

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100% Non-Detects

Cadmium total (mg/L)
MW-1603, MW-1604, MW-1612

Mercury total (mg/L)
MW-1605

FIGURE A.

Time Series - Chattanooga Shale

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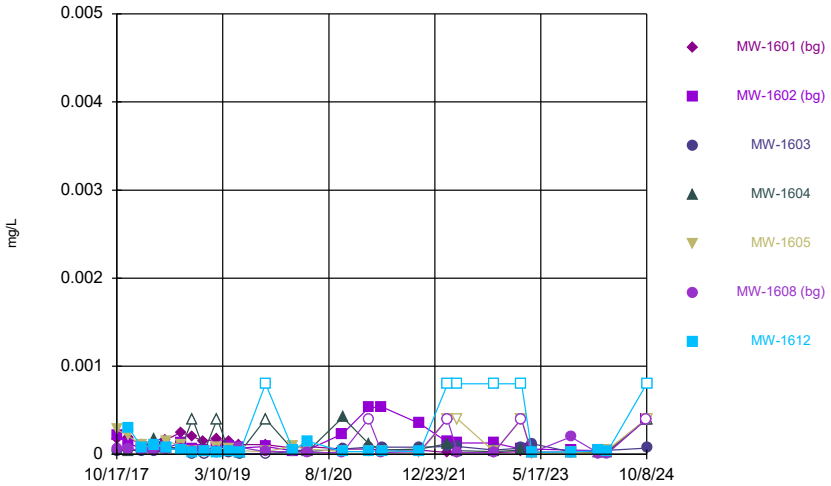
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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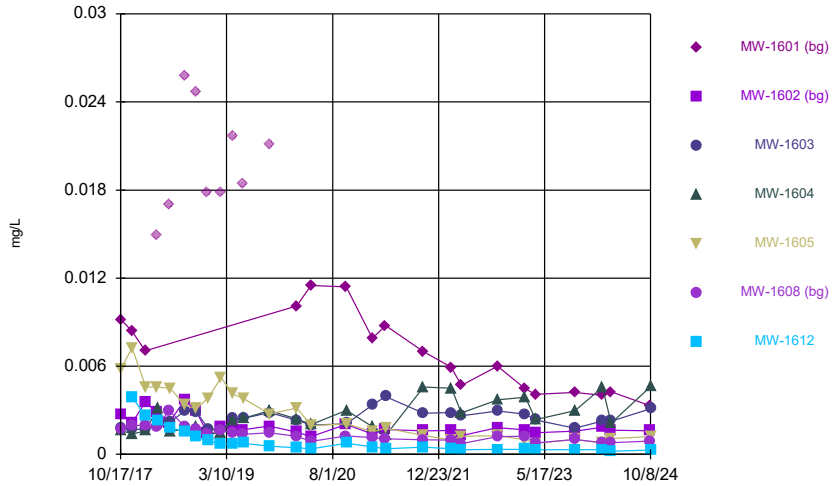
Time Series



Constituent: Arsenic total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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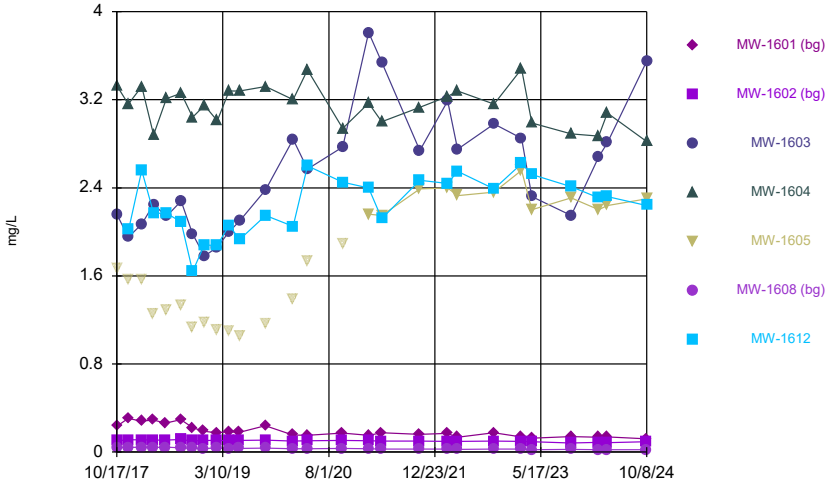
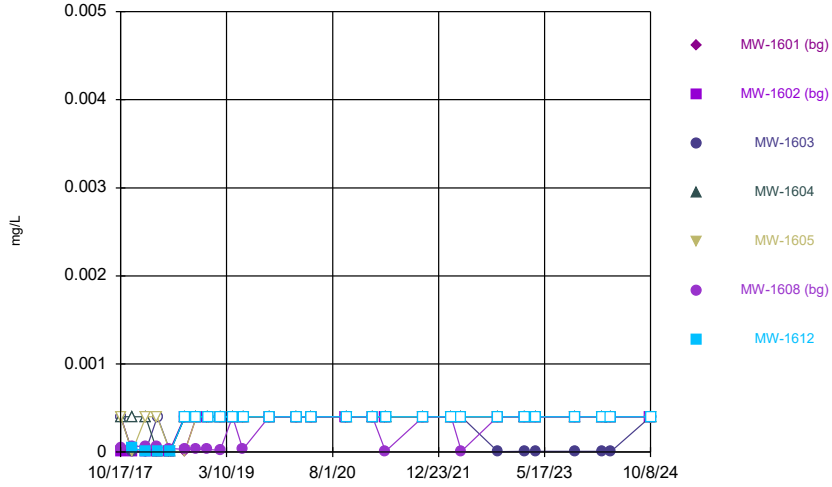
Time Series



Constituent: Barium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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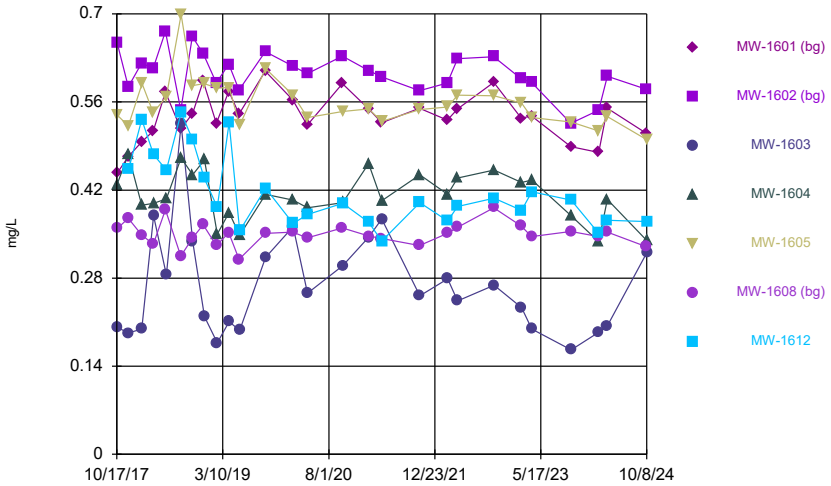
Time Series



Constituent: Boron total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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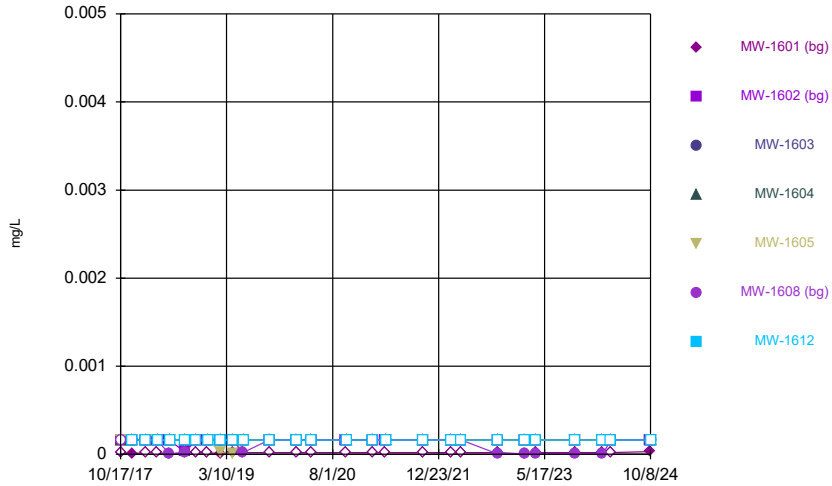
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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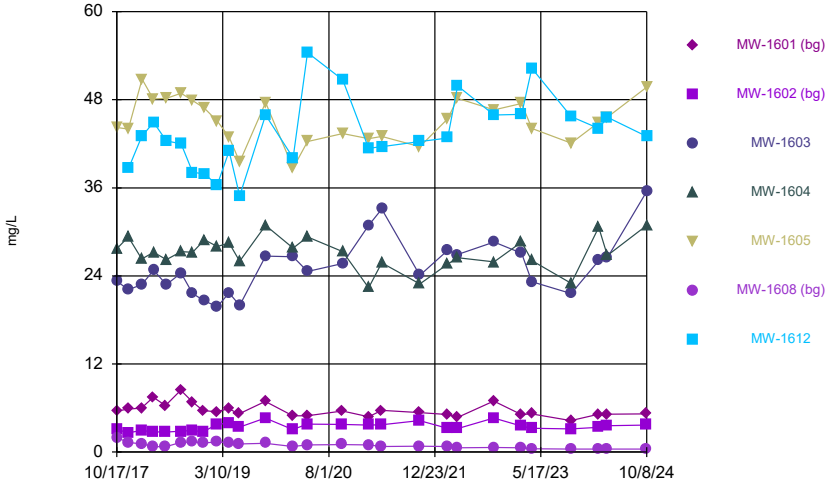
Time Series



Constituent: Calcium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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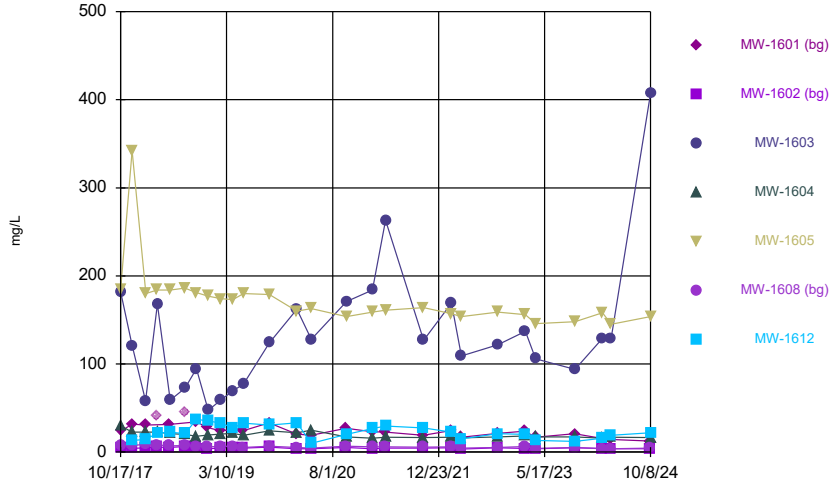
Time Series



Constituent: Chloride total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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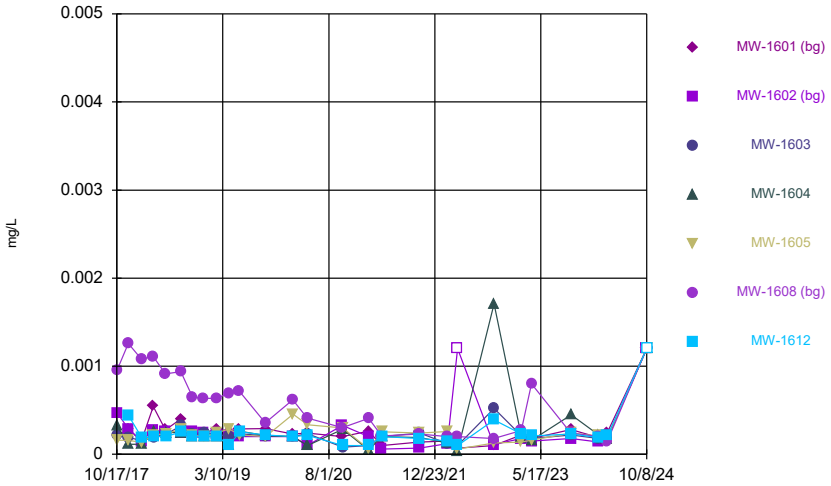
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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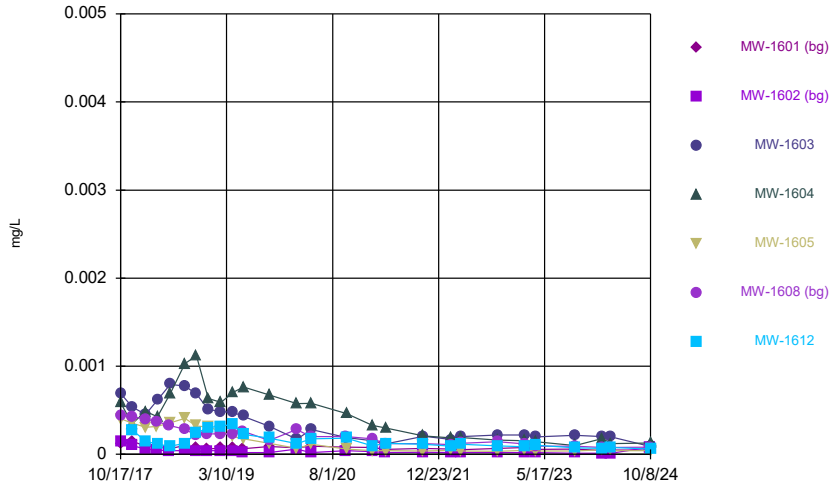
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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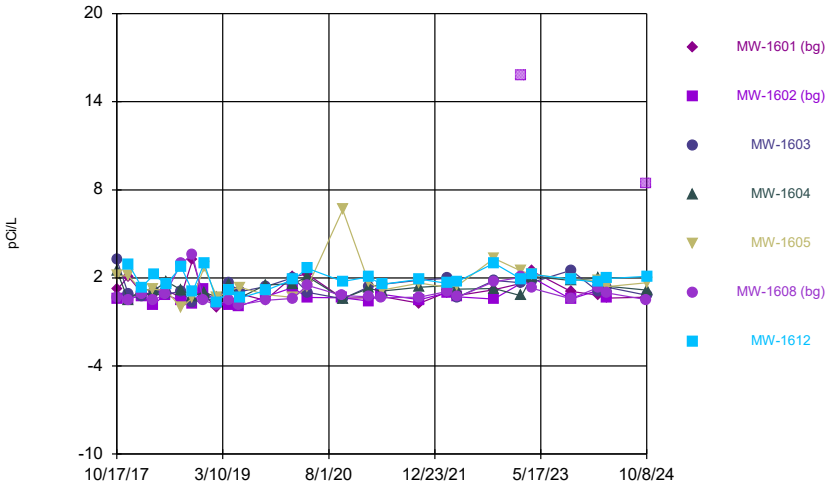
Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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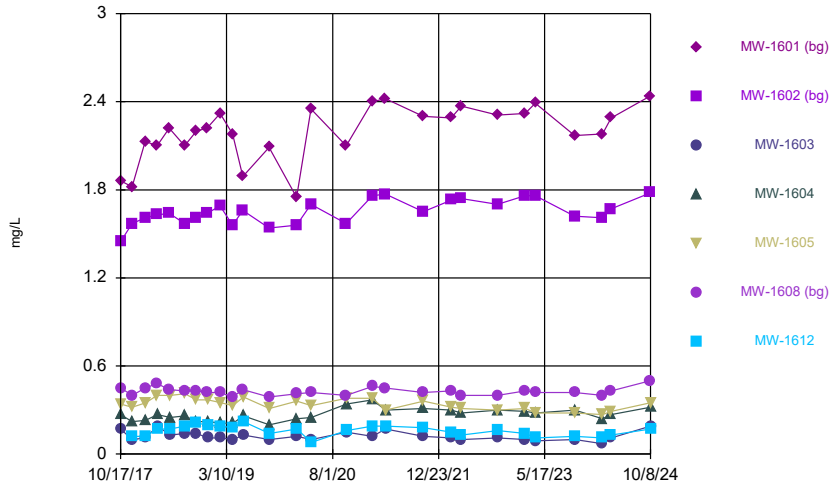
Time Series



Constituent: Fluoride total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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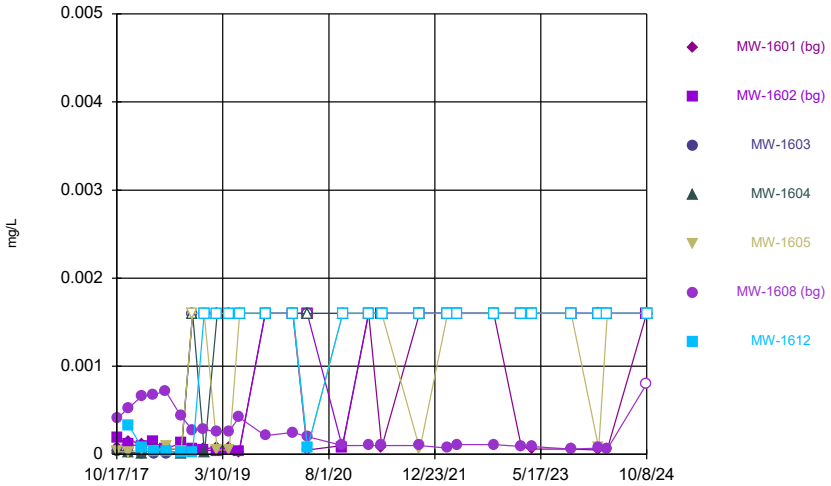
Hollow symbols indicate censored values.

Time Series



Constituent: Lead total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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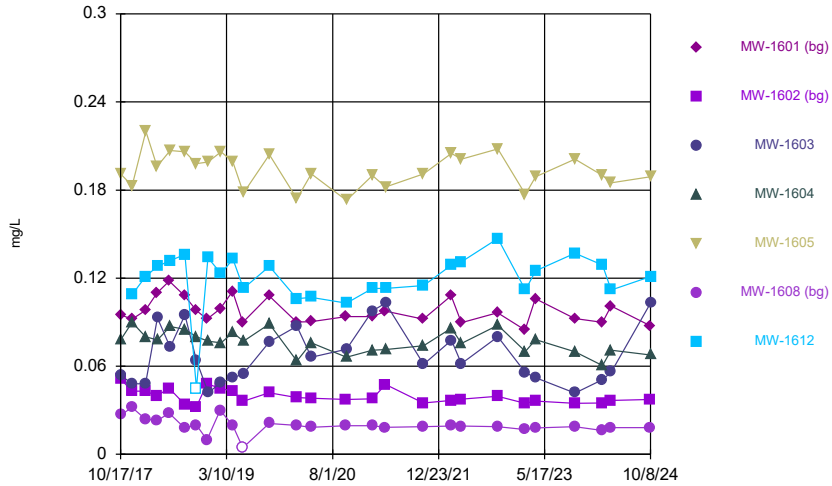
Hollow symbols indicate censored values.

Time Series



Constituent: Lithium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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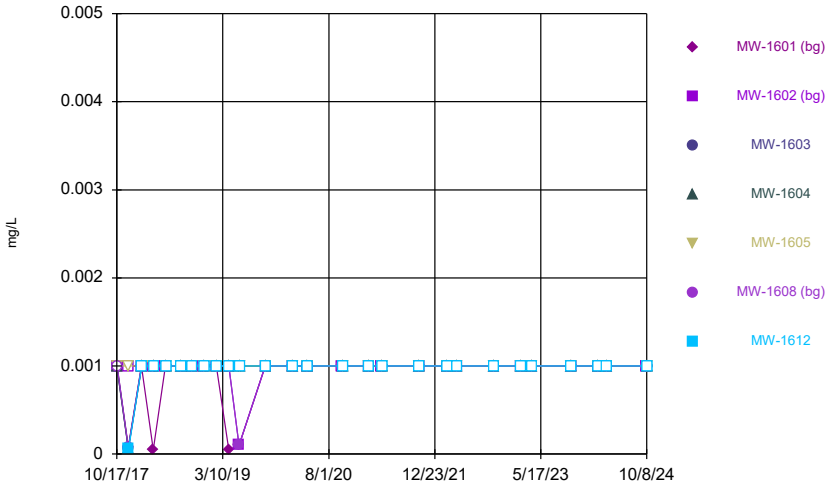
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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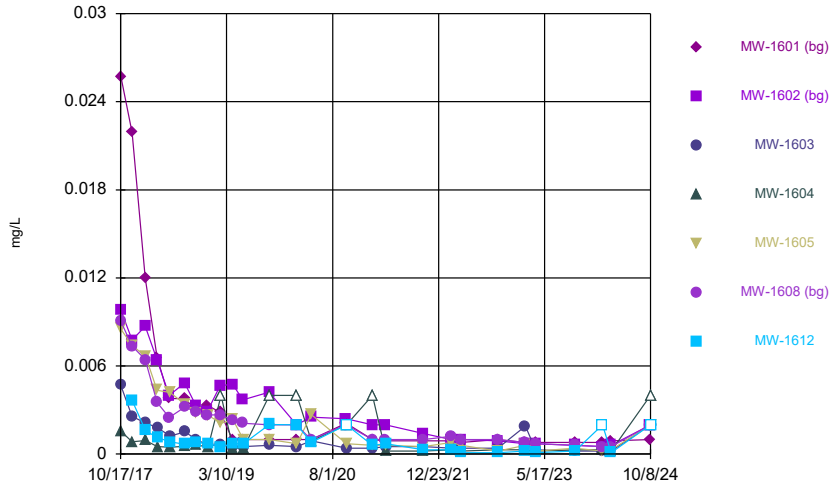
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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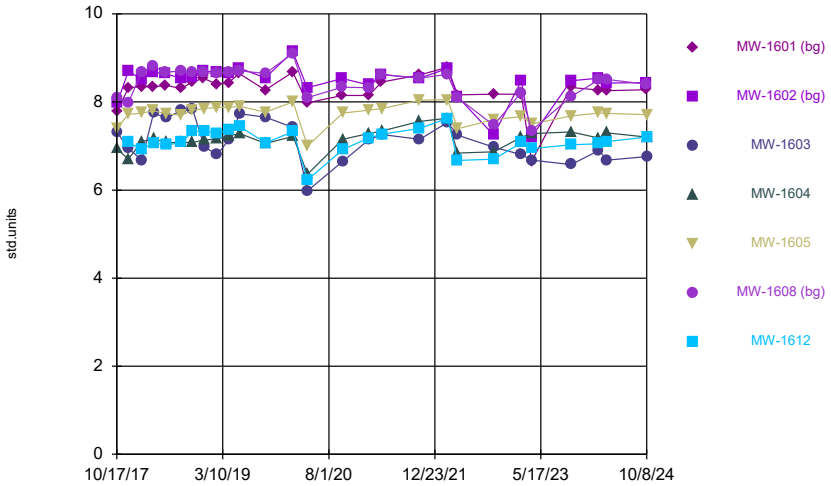
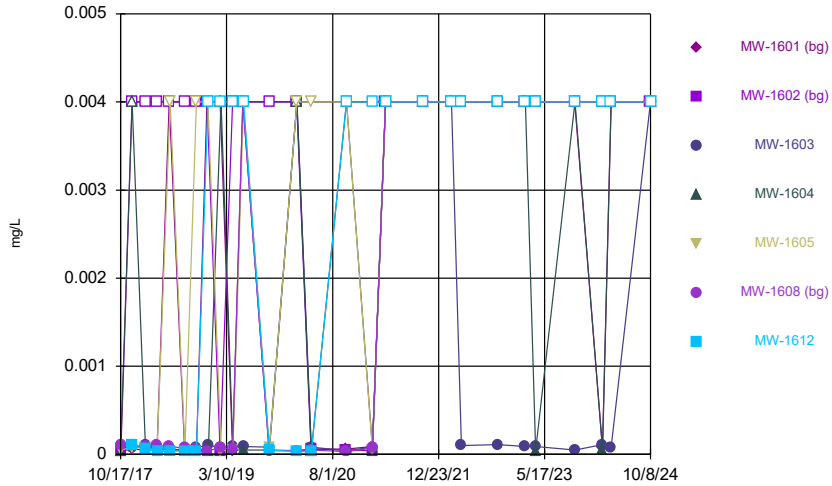
Time Series



Constituent: pH [field] Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

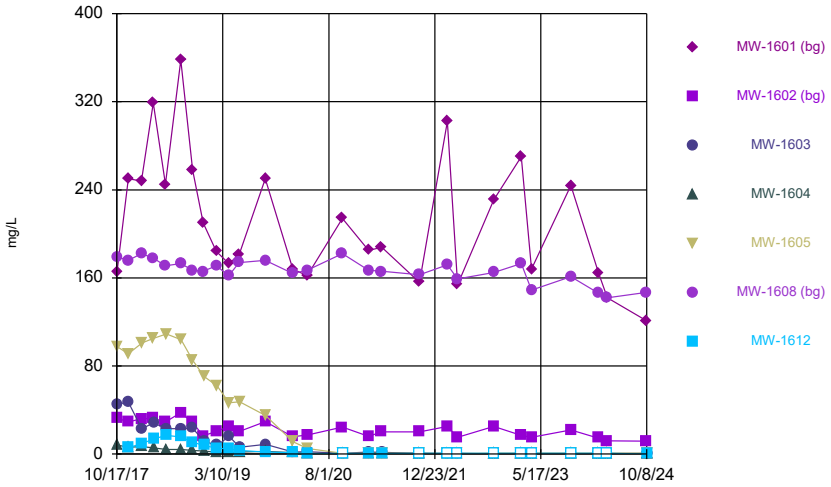
Time Series



Constituent: Selenium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

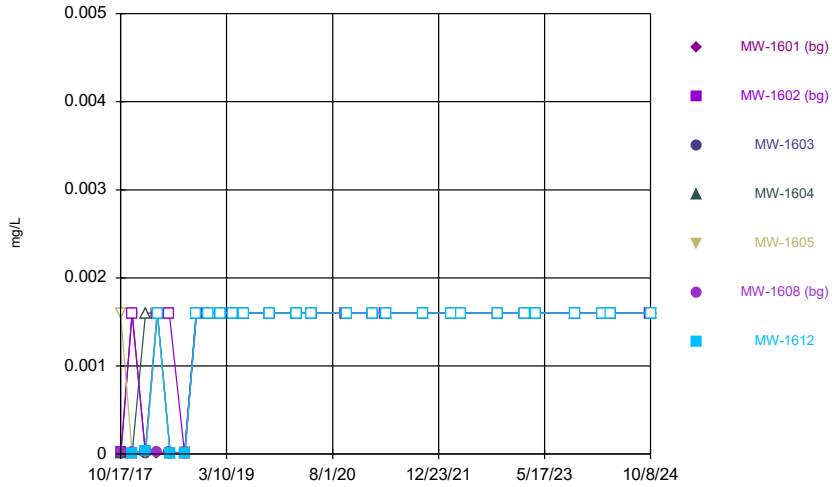
Time Series



Constituent: Sulfate total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

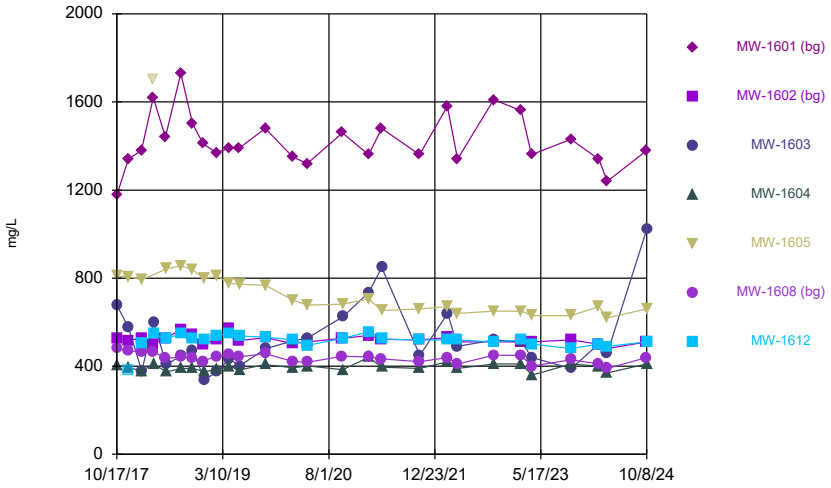
Time Series



Constituent: Thallium total Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 2/3/2025 3:48 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Time Series - Rome Limestone

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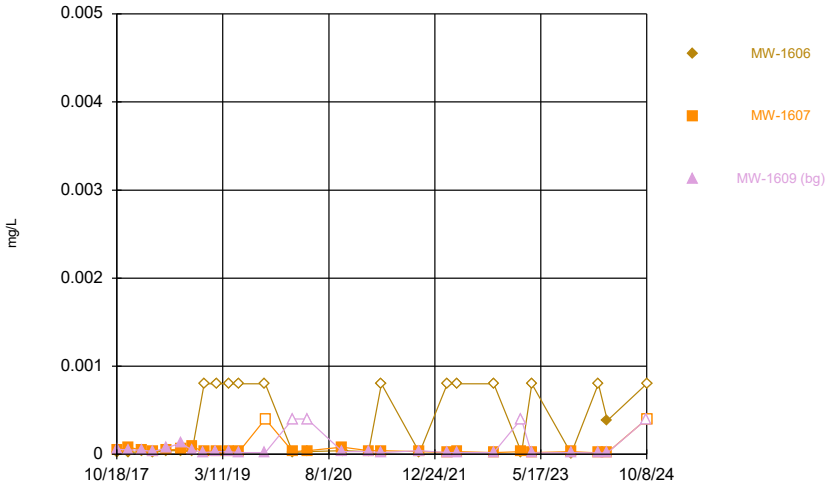
Hollow symbols indicate censored values.

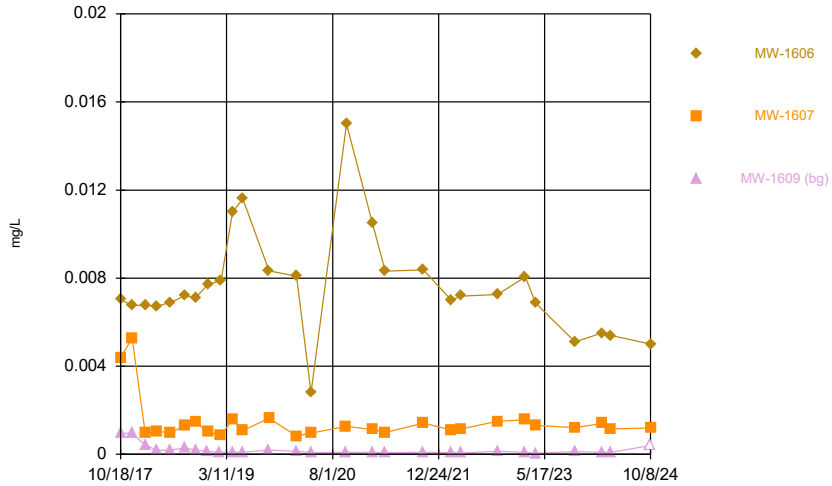
Time Series



Constituent: Antimony total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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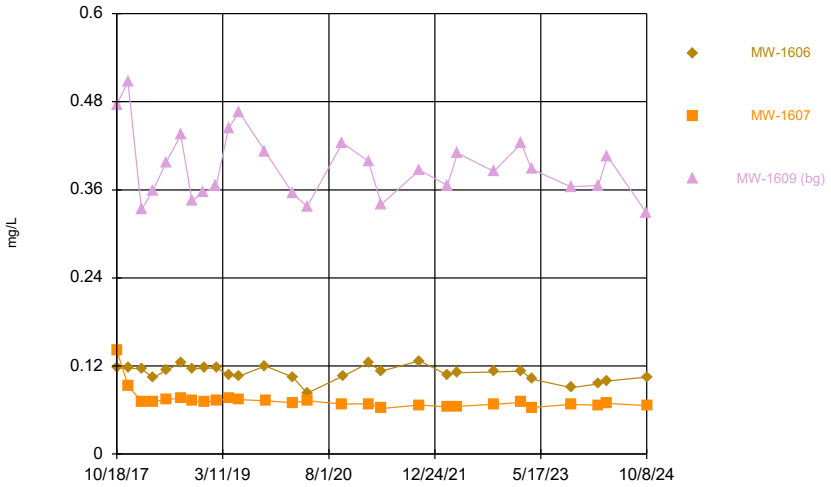
Time Series



Constituent: Barium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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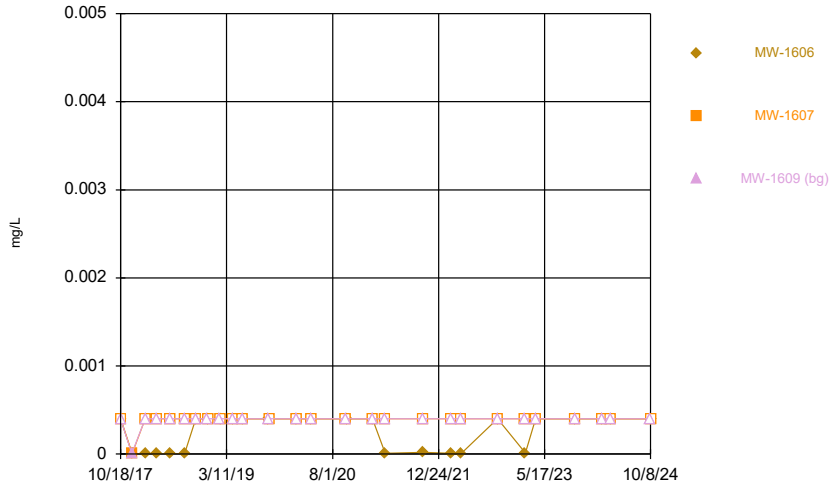
Hollow symbols indicate censored values.

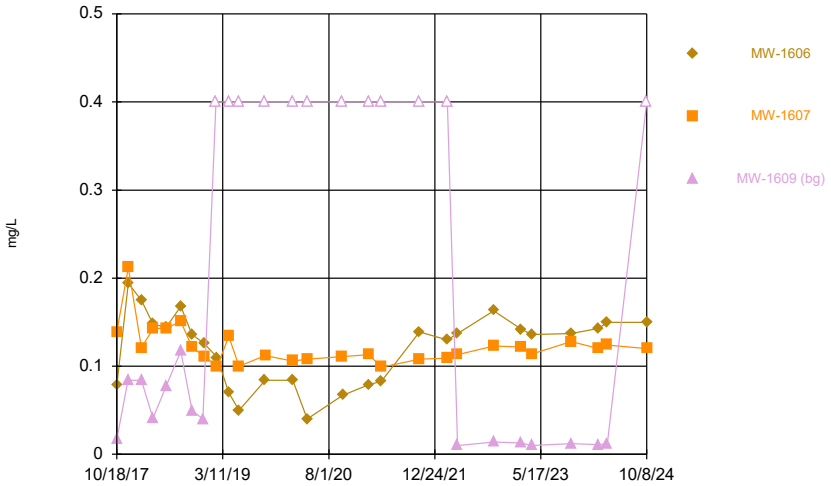
Time Series



Constituent: Beryllium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

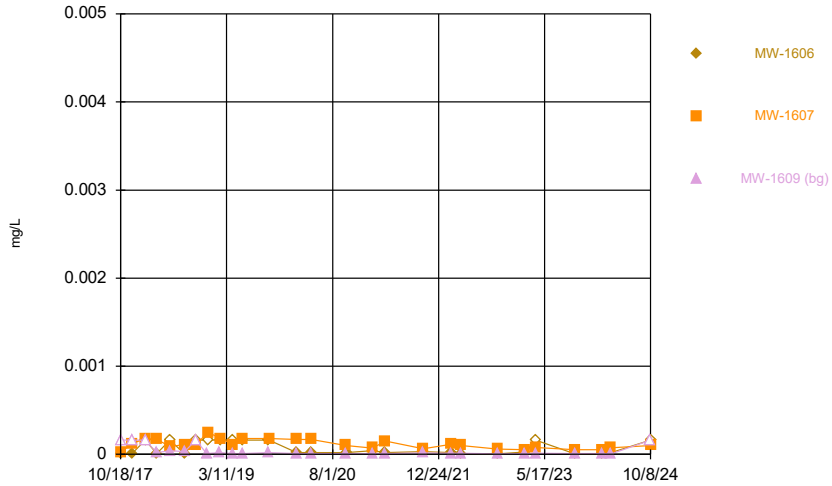
Time Series



Constituent: Boron total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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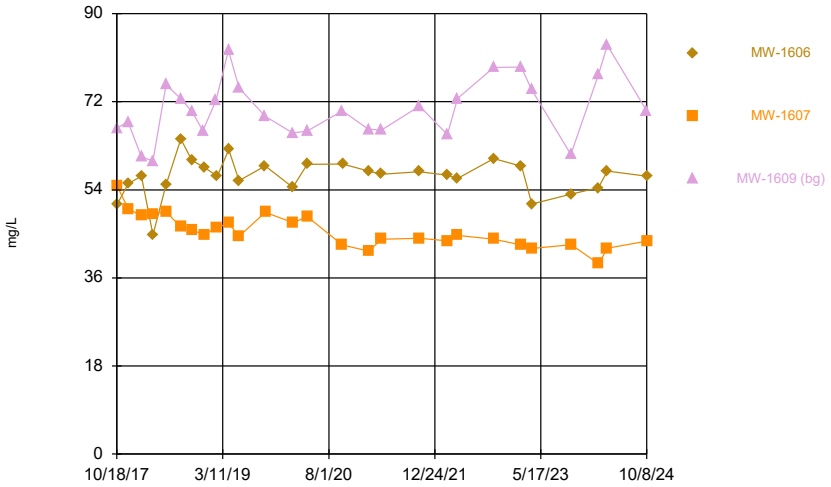
Time Series



Constituent: Calcium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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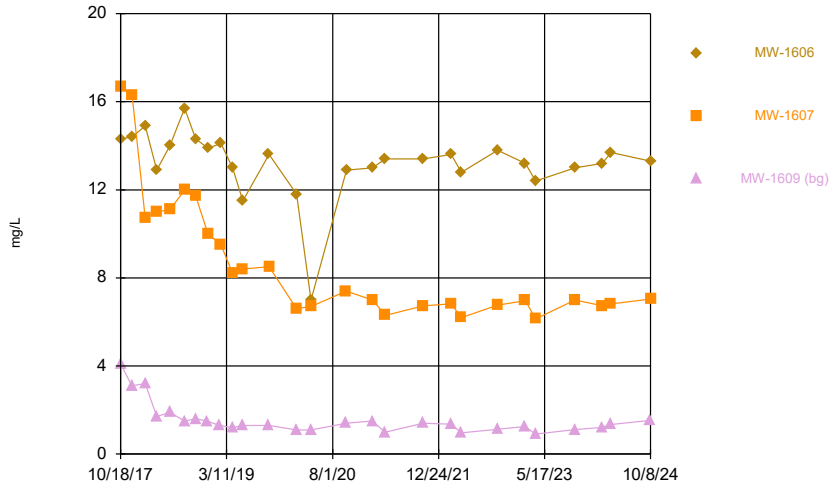
Time Series



Constituent: Chloride total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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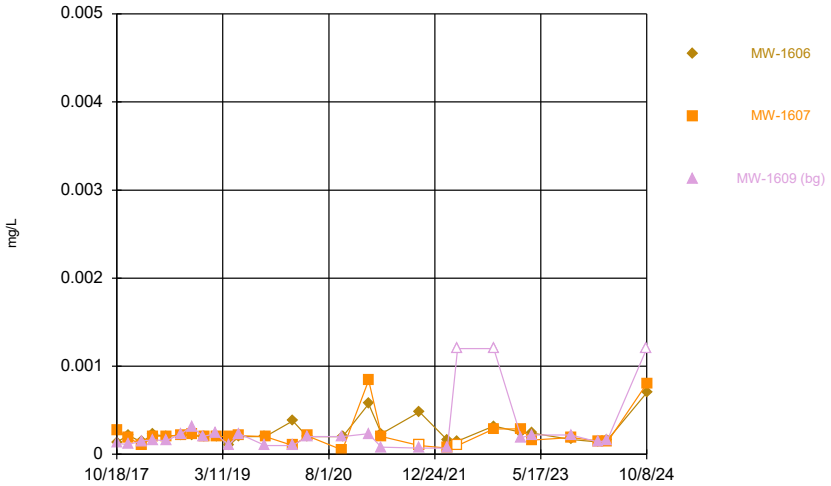
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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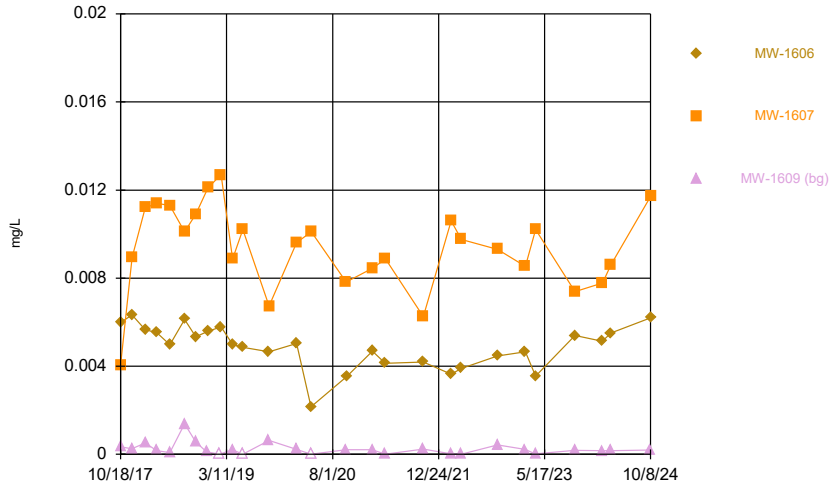
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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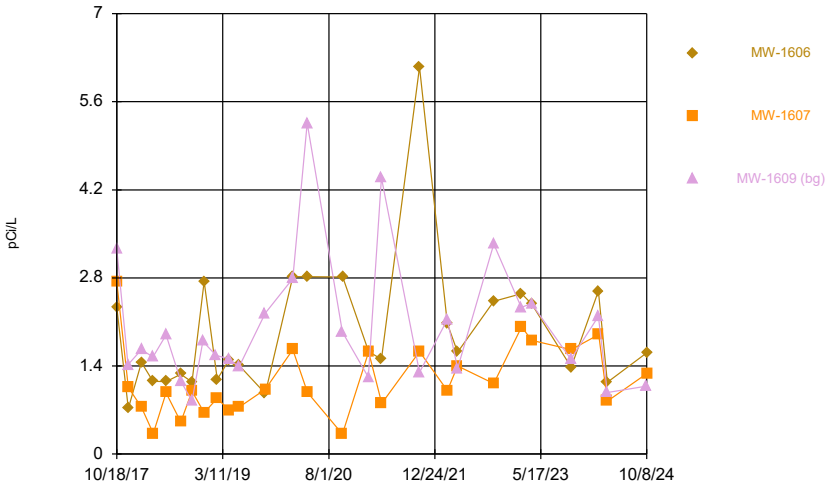
Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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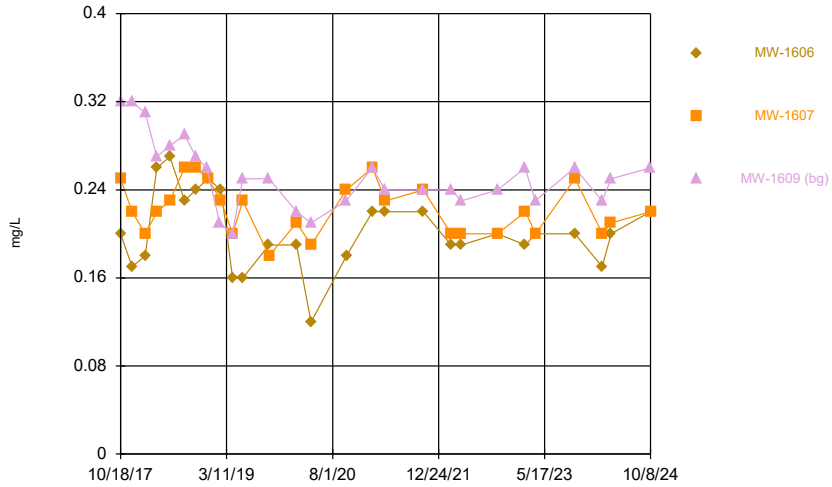
Time Series



Constituent: Fluoride total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
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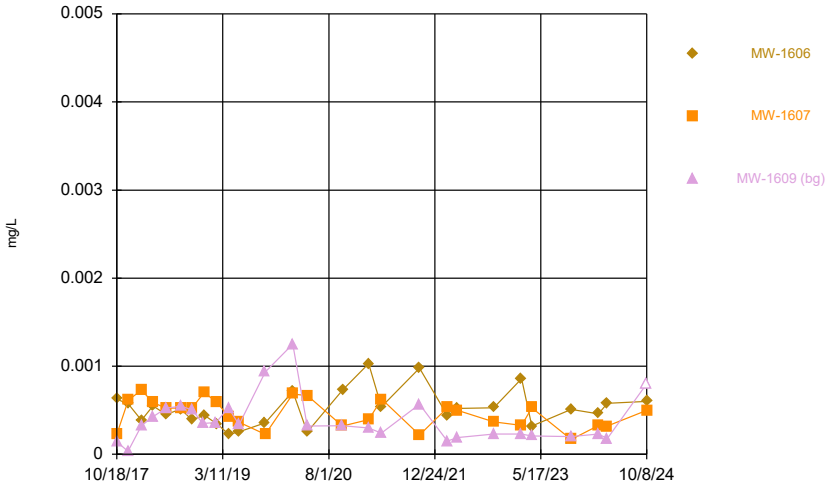
Hollow symbols indicate censored values.

Time Series



Constituent: Lead total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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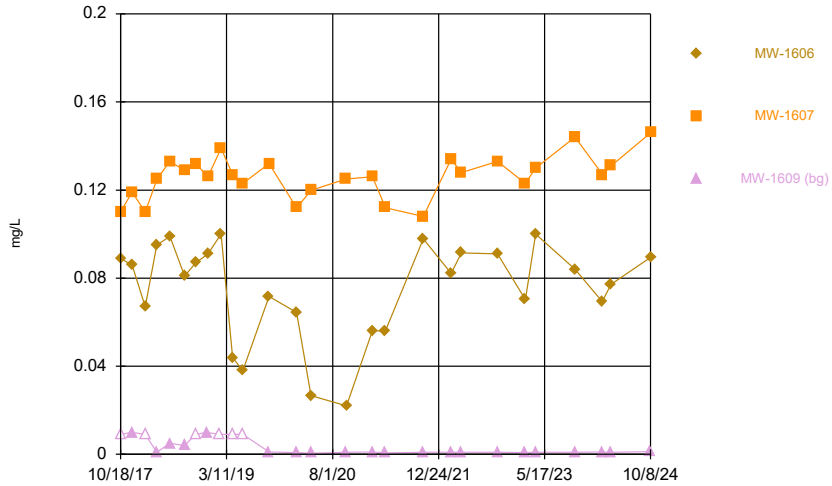
Hollow symbols indicate censored values.

Time Series



Constituent: Lithium total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
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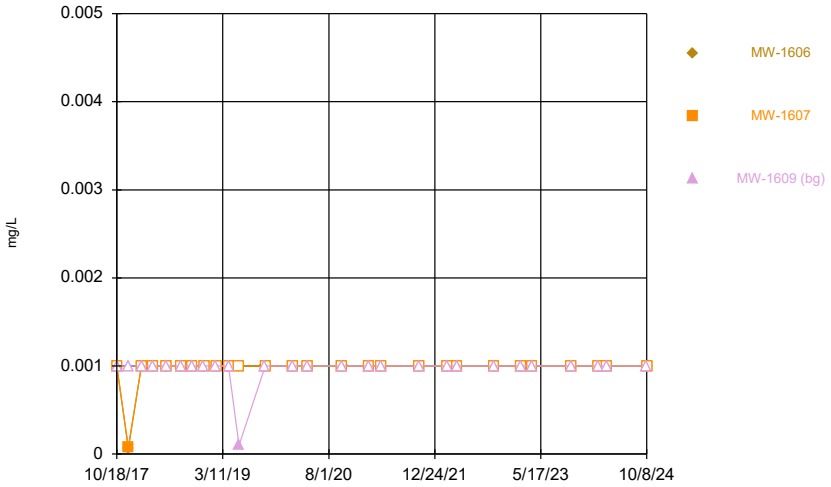
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury total Analysis Run 1/29/2025 3:23 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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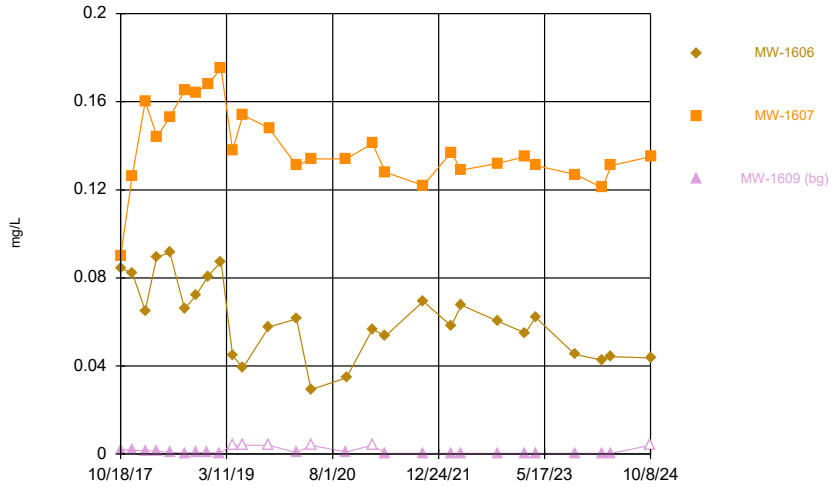
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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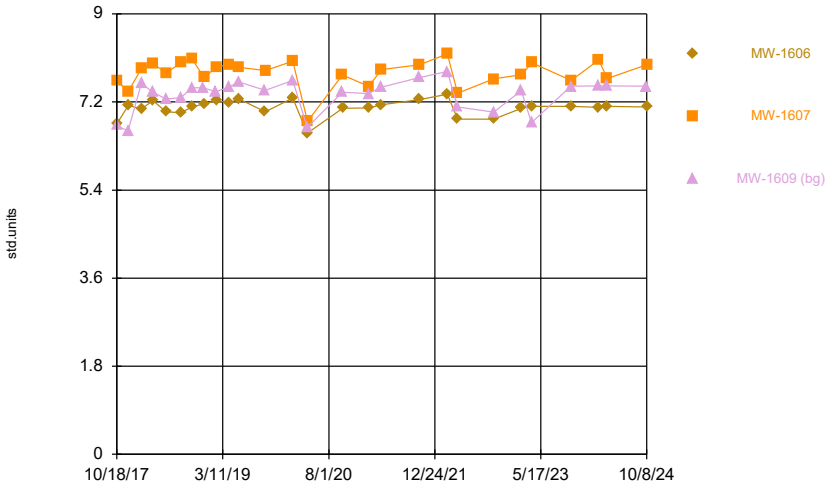
Time Series



Constituent: pH [field] Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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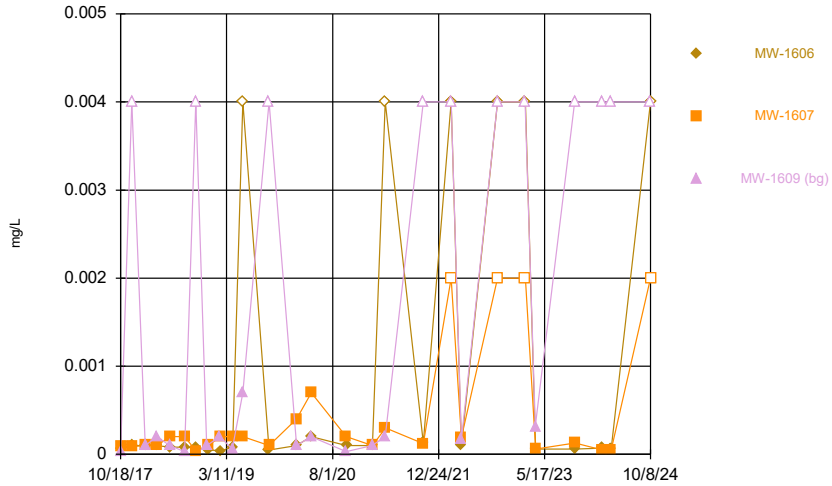
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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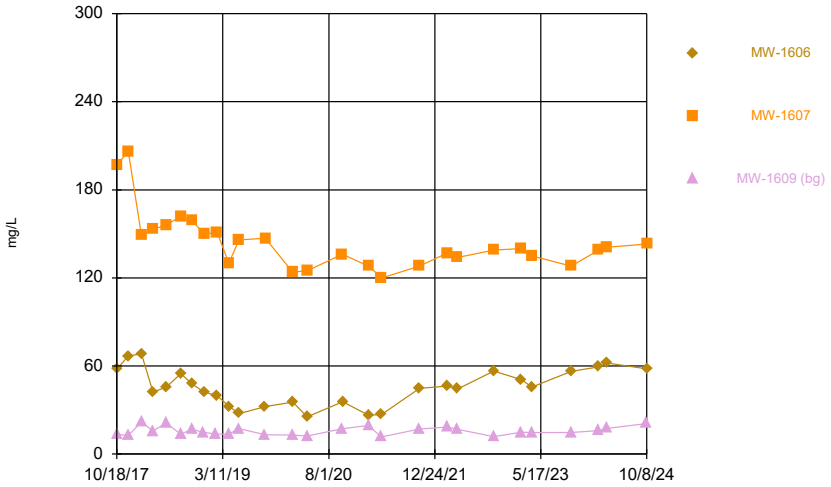
Time Series



Constituent: Sulfate total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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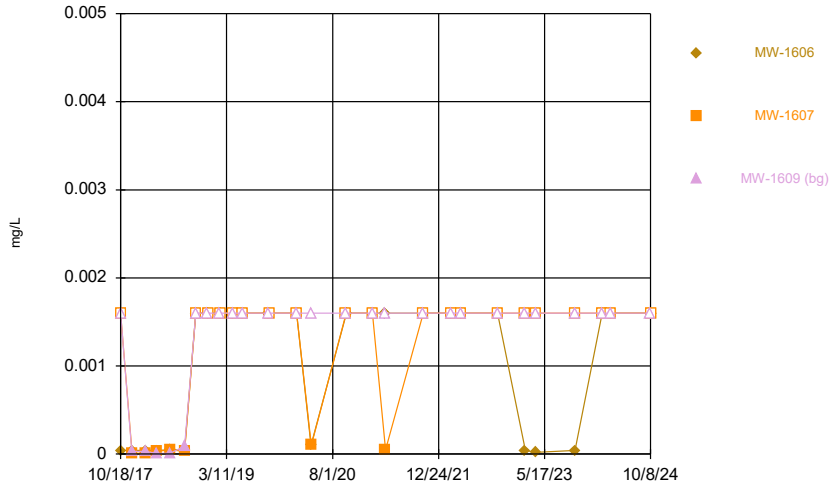
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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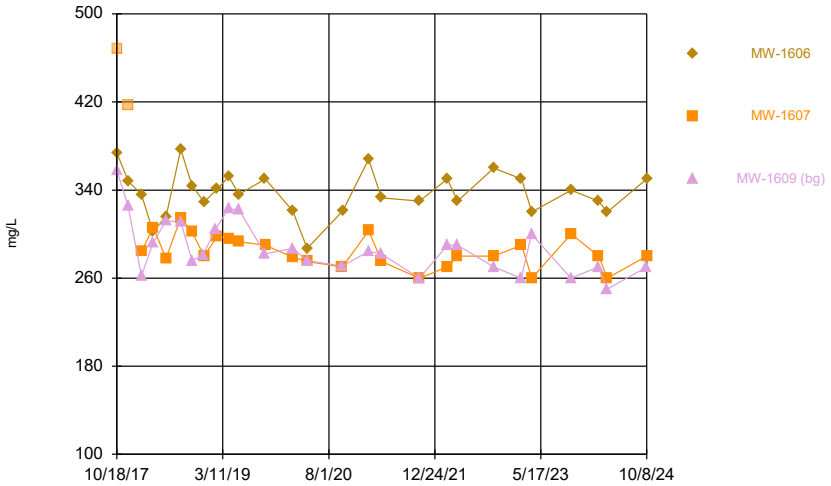
Time Series

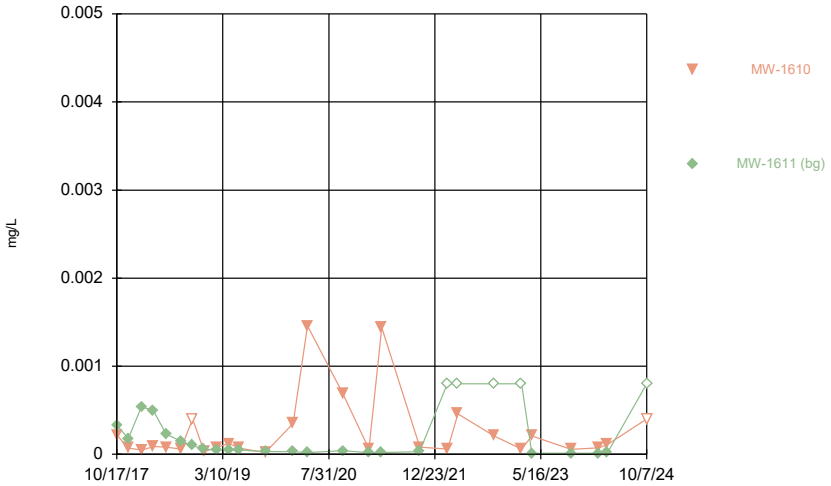


Constituent: Total Dissolved Solids Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Time Series - Dumps Fault

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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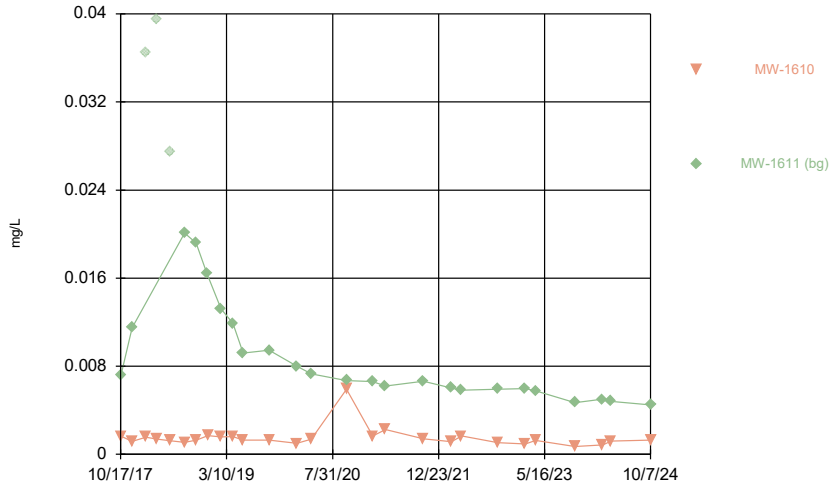
Time Series



Constituent: Arsenic total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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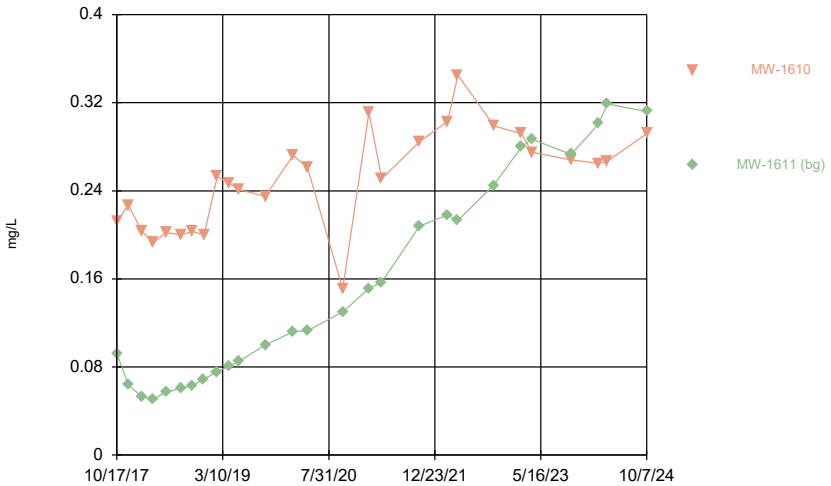
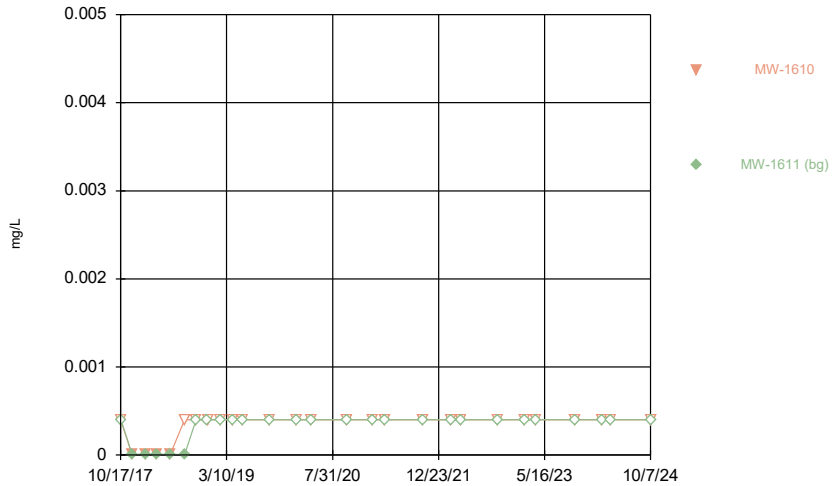
Time Series



Constituent: Barium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

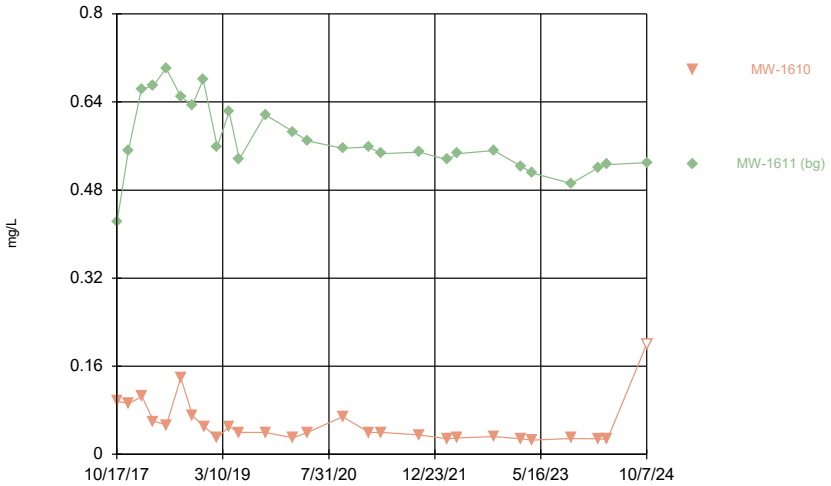
Time Series



Constituent: Beryllium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

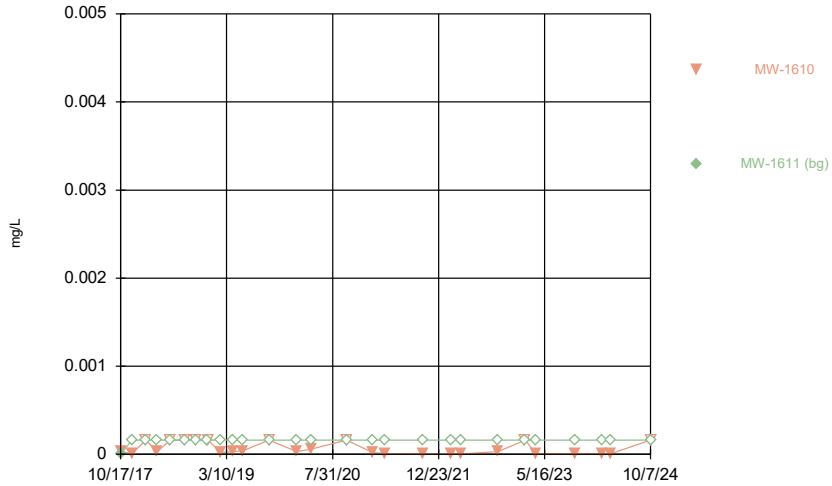
Time Series



Constituent: Boron total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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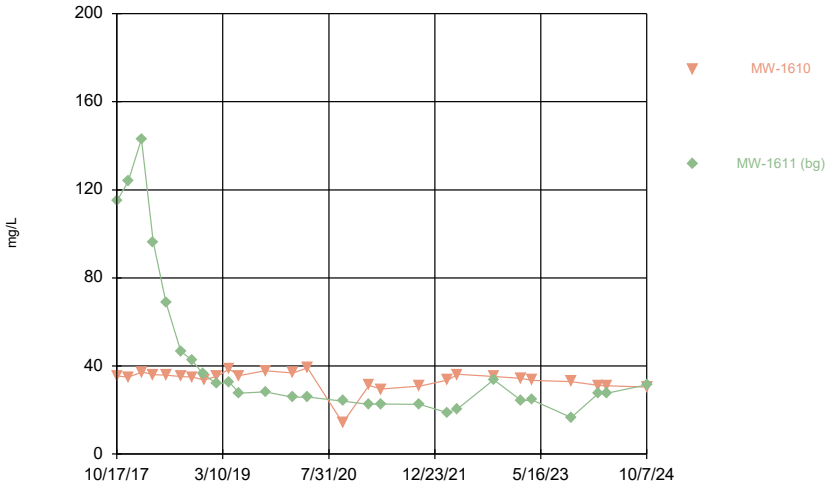
Time Series



Constituent: Calcium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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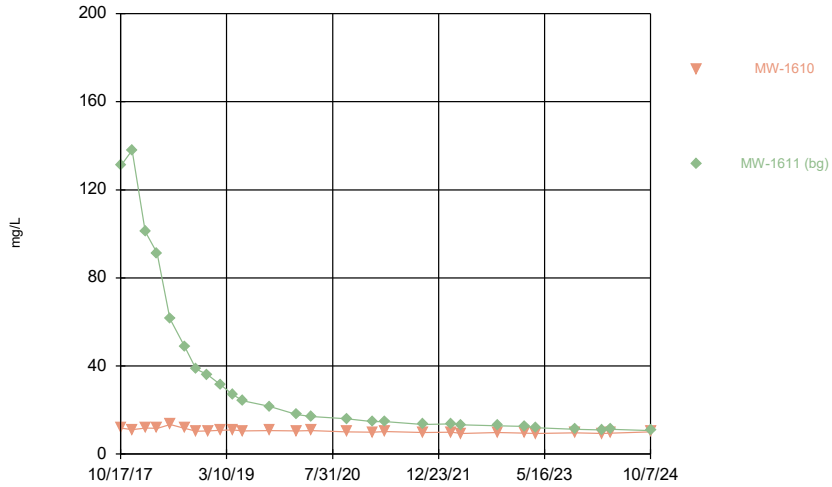
Time Series



Constituent: Chloride total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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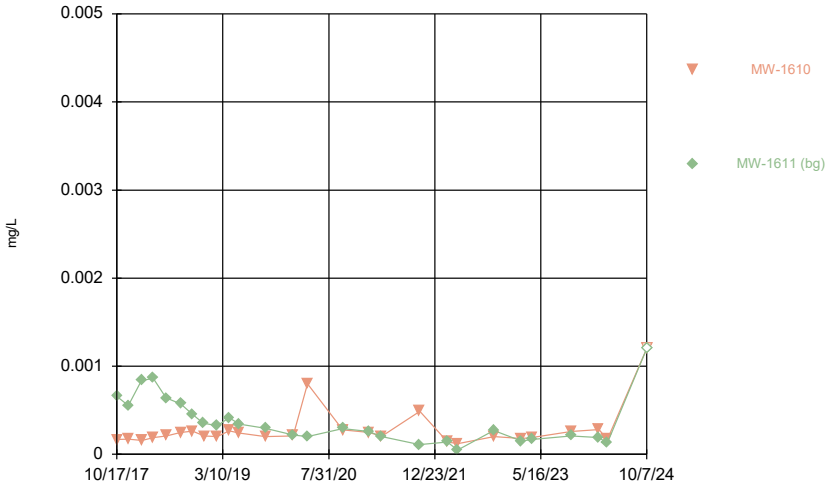
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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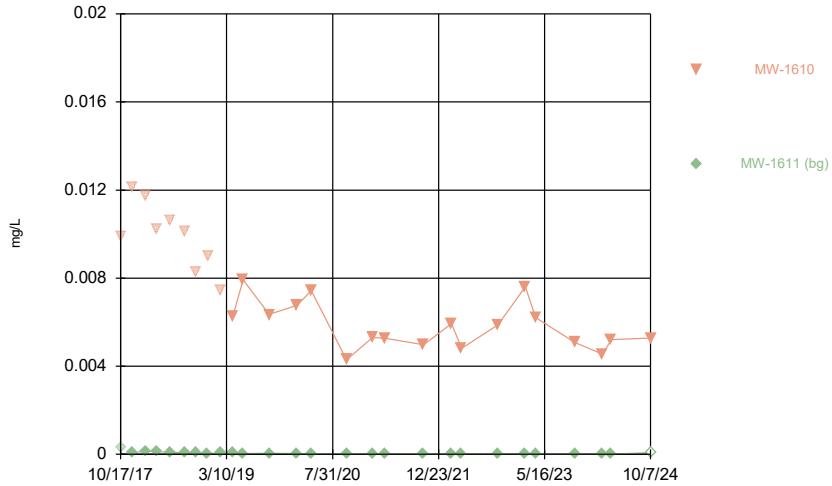
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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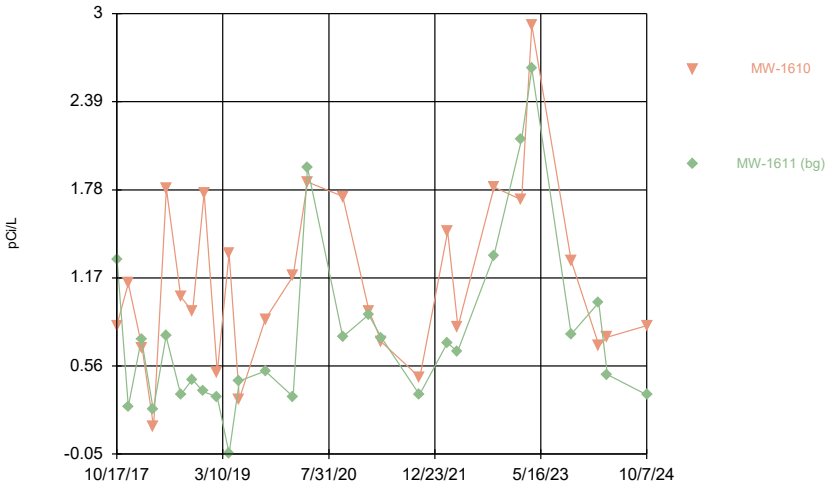
Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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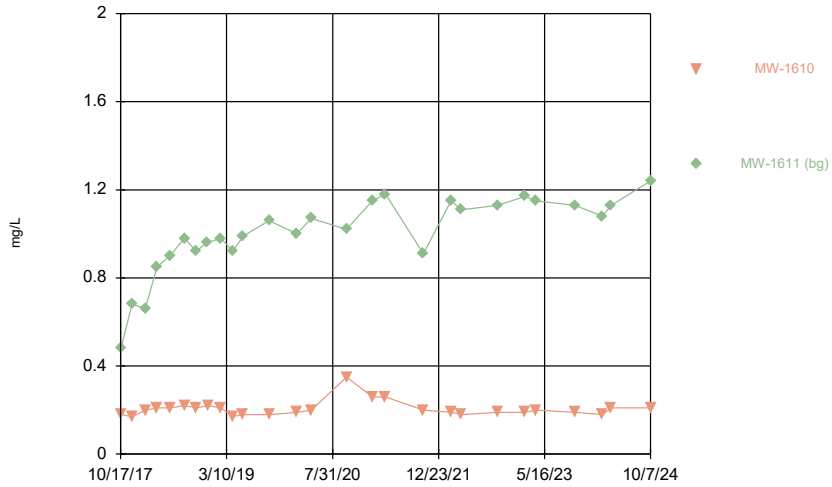
Time Series



Constituent: Fluoride total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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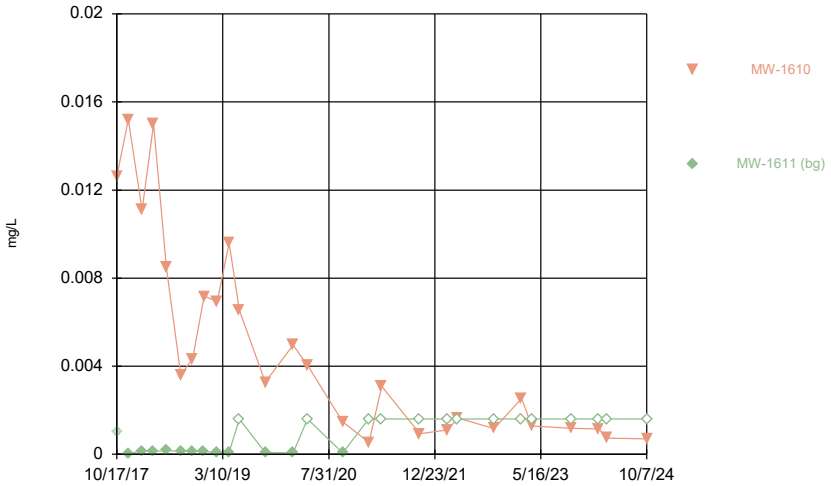
Hollow symbols indicate censored values.

Time Series



Constituent: Lead total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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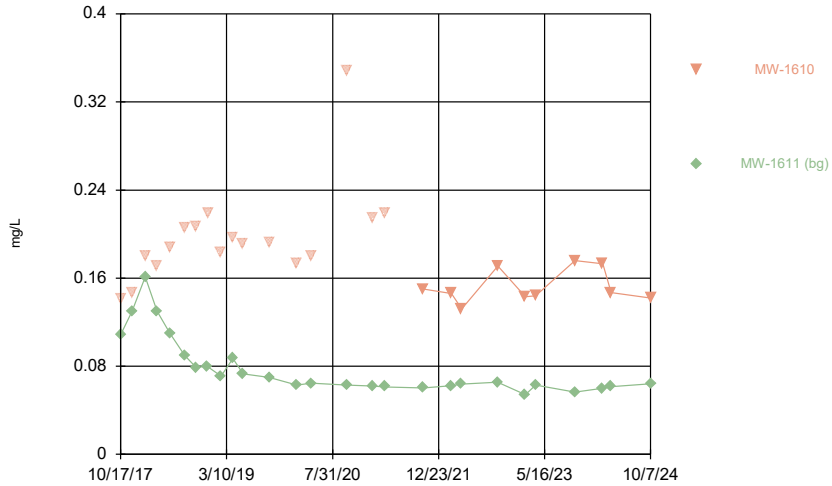
Time Series



Constituent: Lithium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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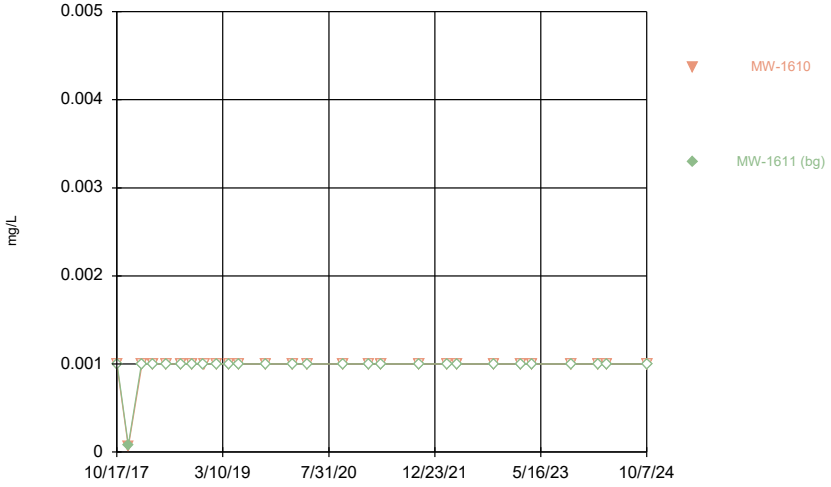
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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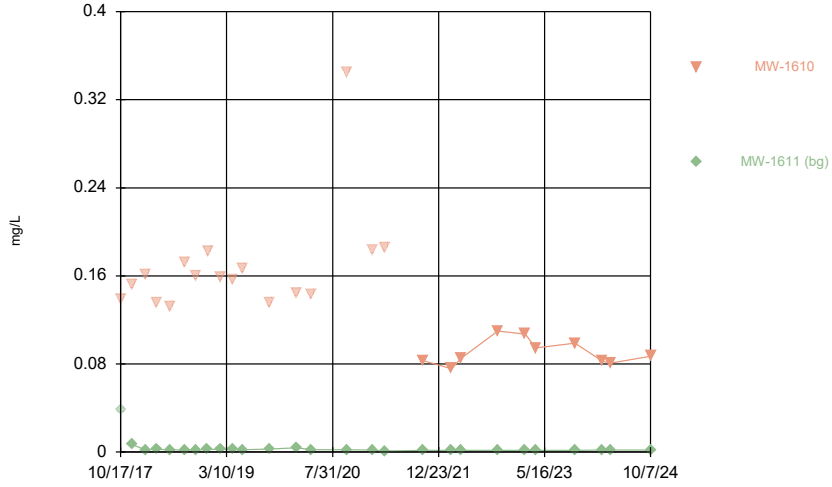
Time Series



Constituent: Molybdenum total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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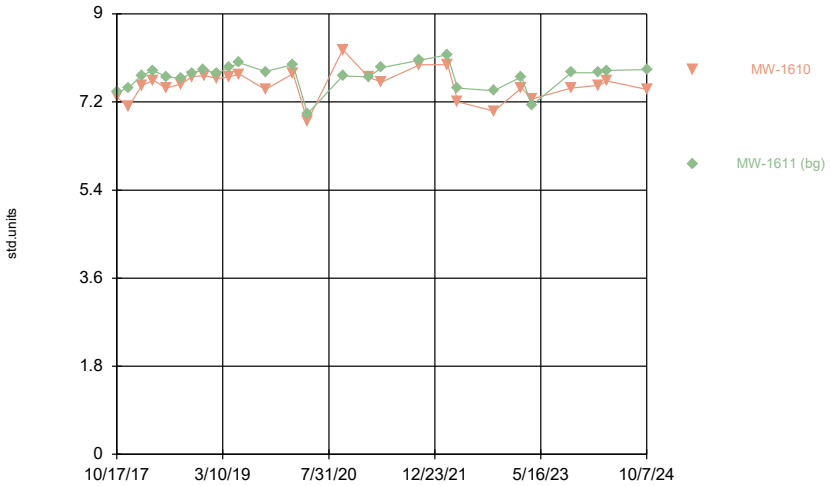
Time Series



Constituent: pH [field] Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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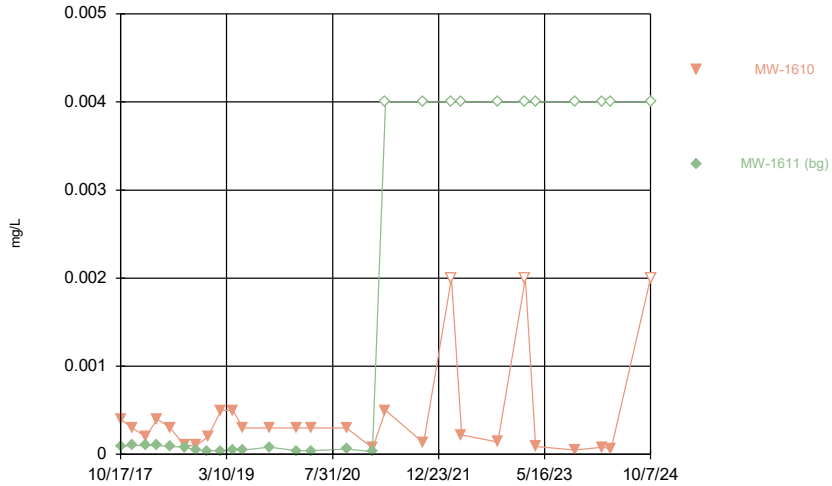
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium total Analysis Run 1/29/2025 3:32 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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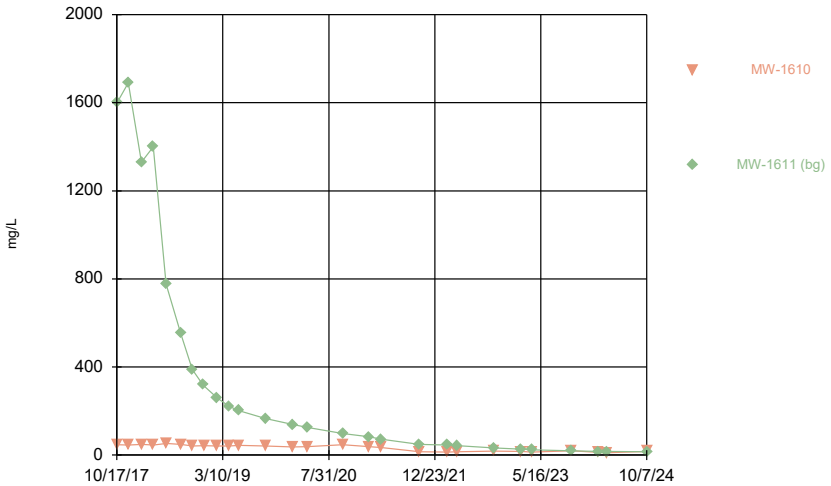
Time Series



Constituent: Sulfate total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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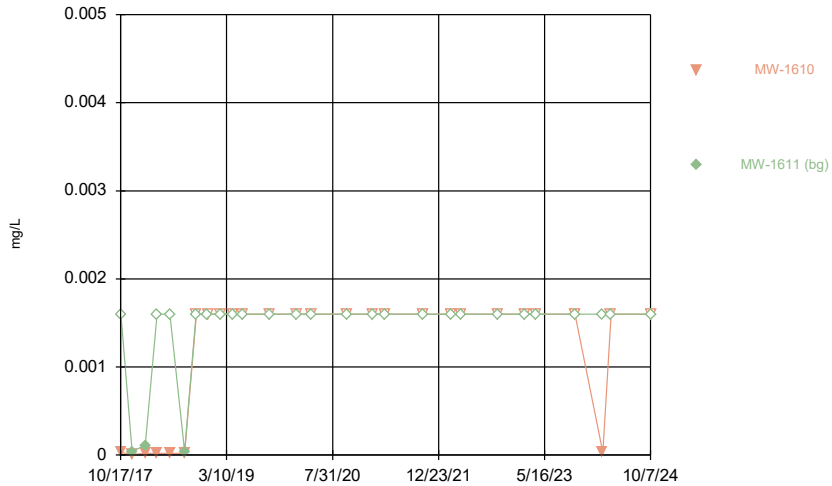
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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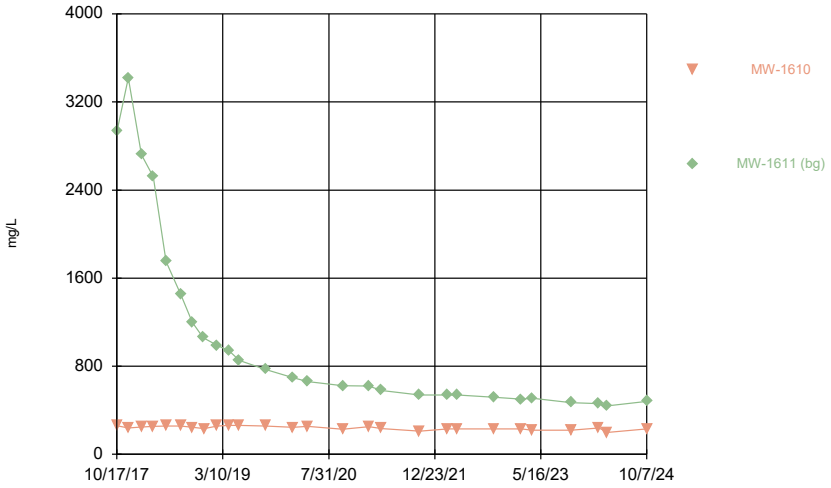
Time Series



Constituent: Total Dissolved Solids Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE B.

Box Plots - Chattanooga Shale

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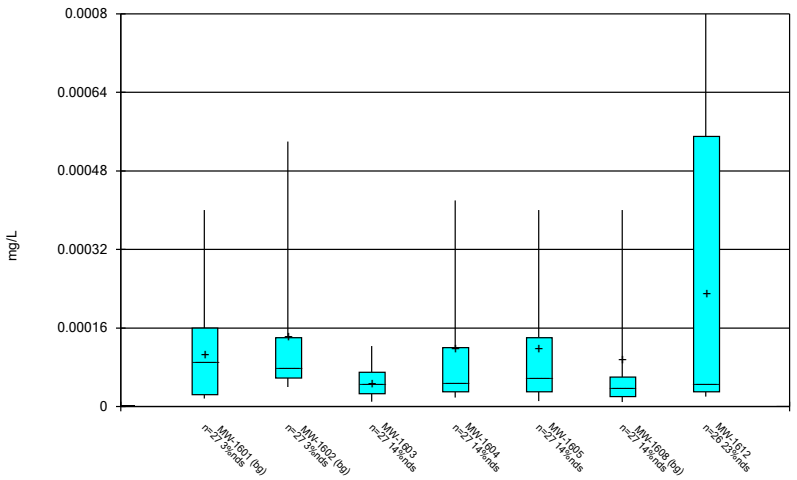
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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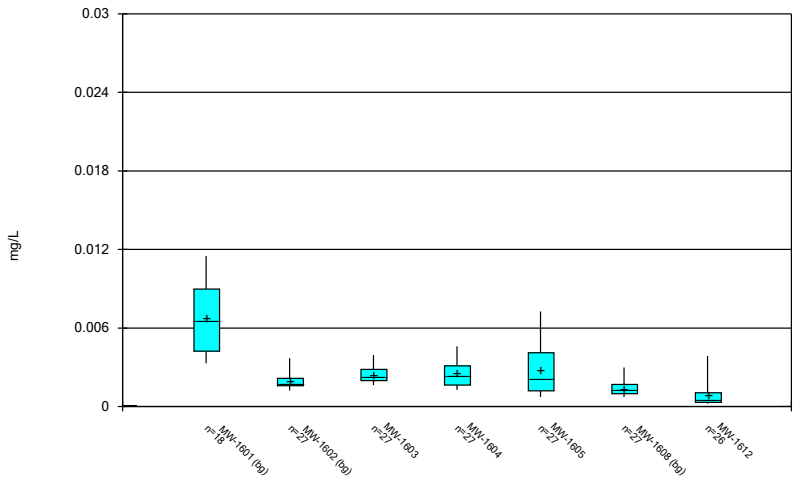
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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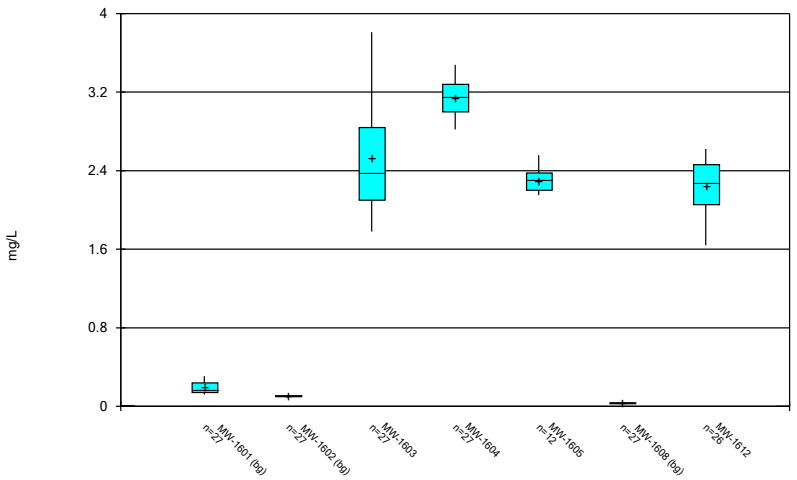
Box & Whiskers Plot



Constituent: Barium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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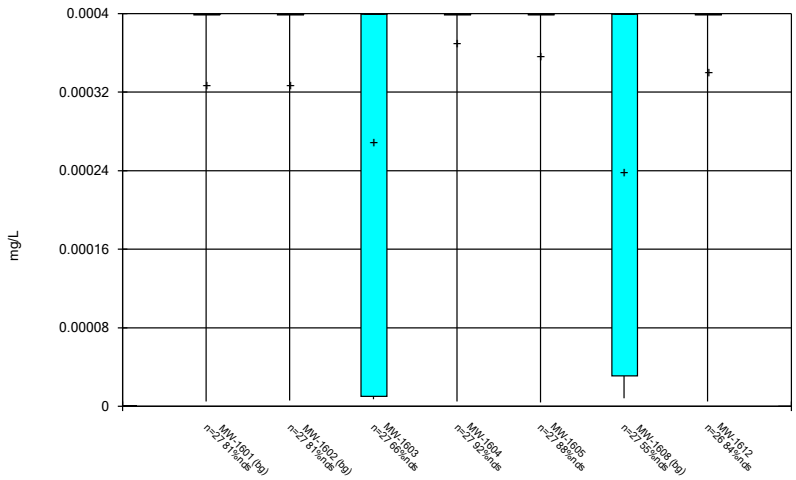
Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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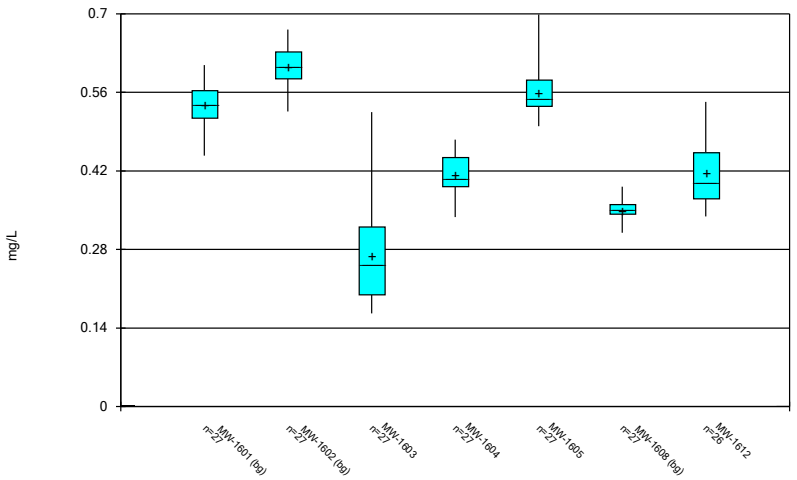
Box & Whiskers Plot



Constituent: Boron total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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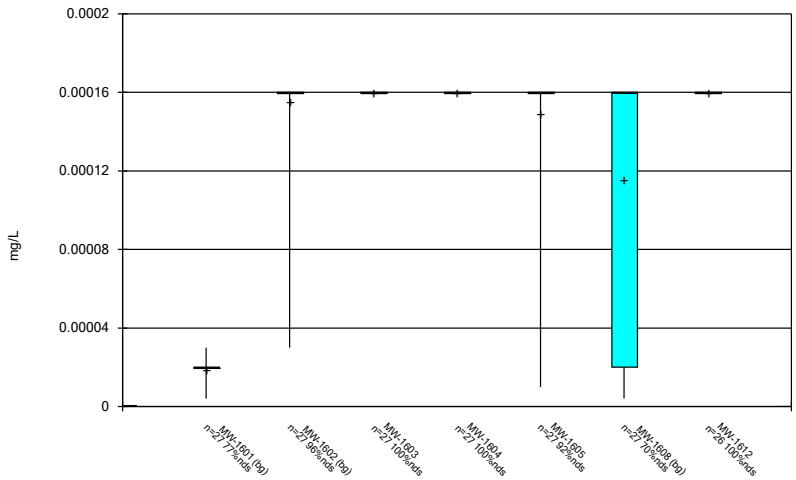
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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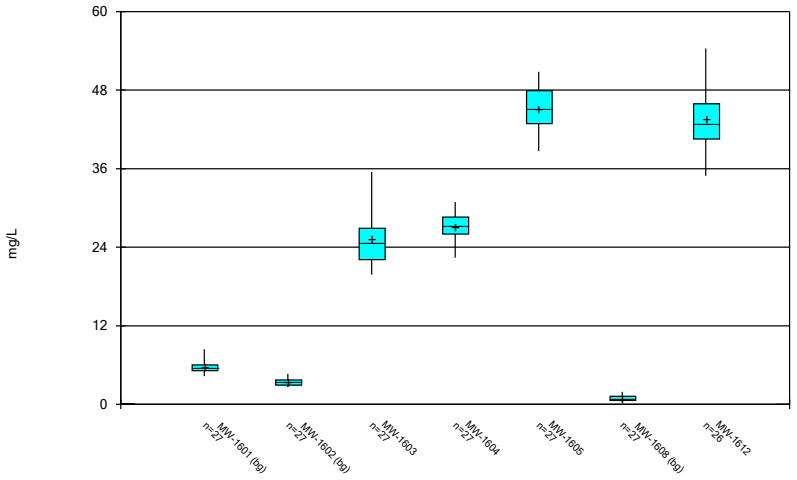
Box & Whiskers Plot



Constituent: Calcium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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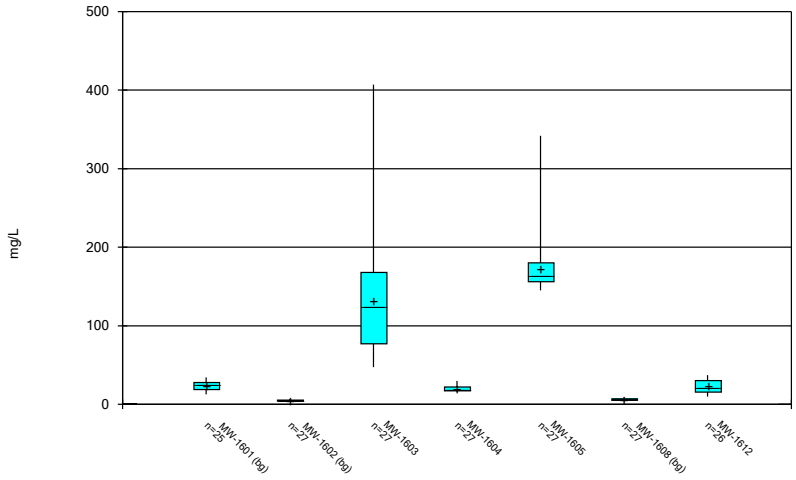
Box & Whiskers Plot



Constituent: Chloride total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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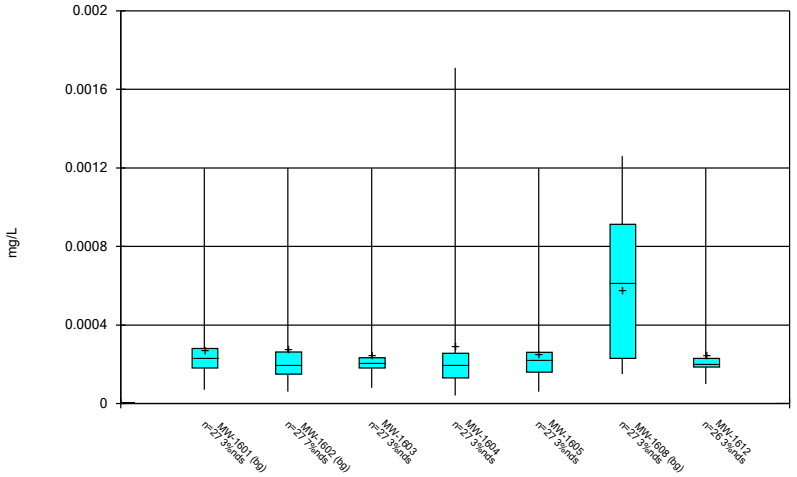
Box & Whiskers Plot



Constituent: Chromium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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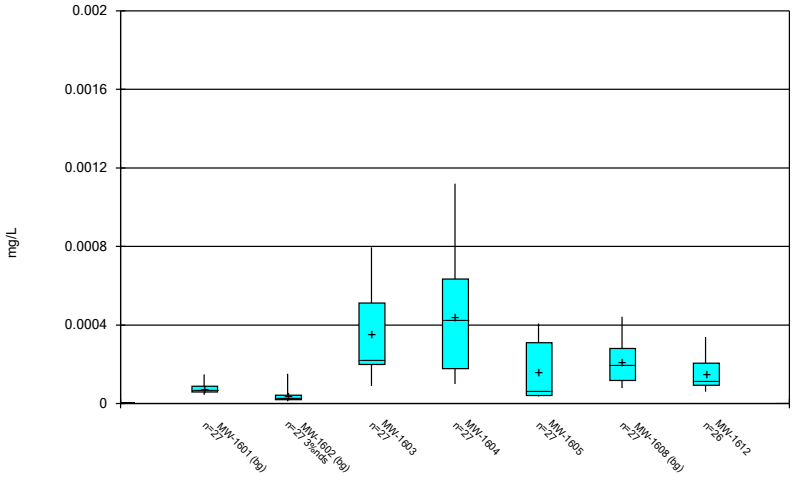
Box & Whiskers Plot



Constituent: Cobalt total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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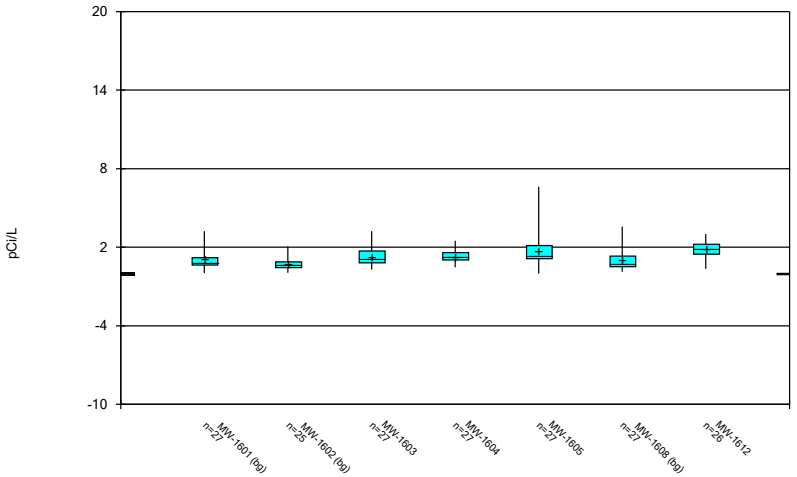
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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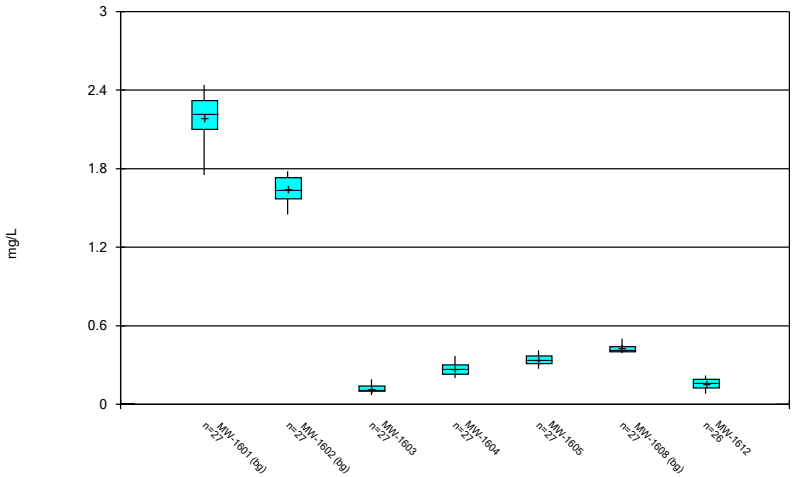
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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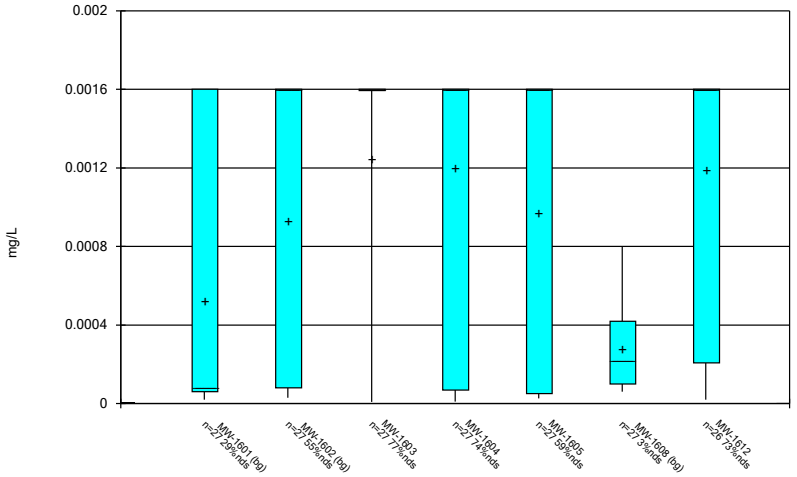
Box & Whiskers Plot



Constituent: Lead total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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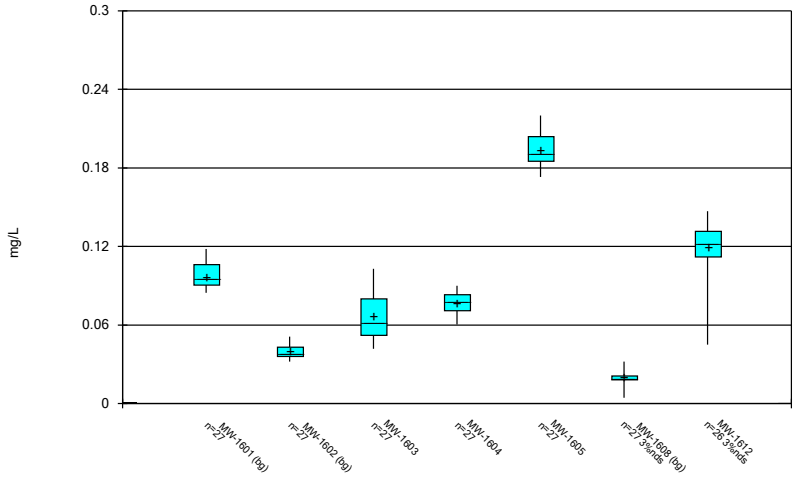
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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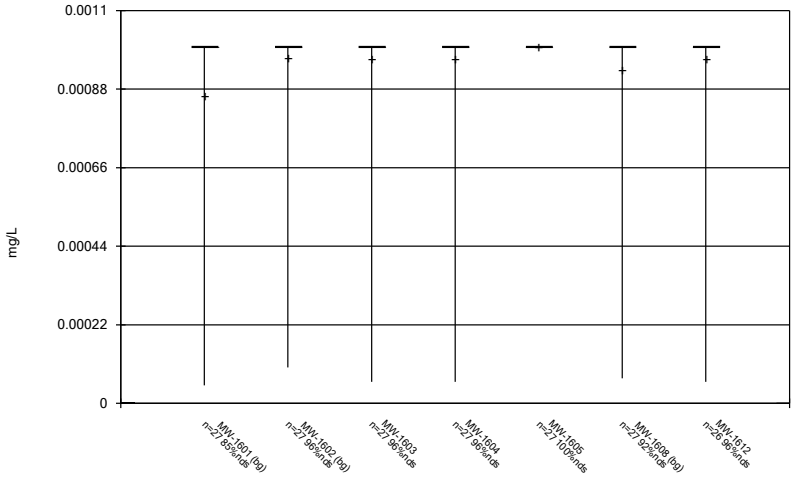
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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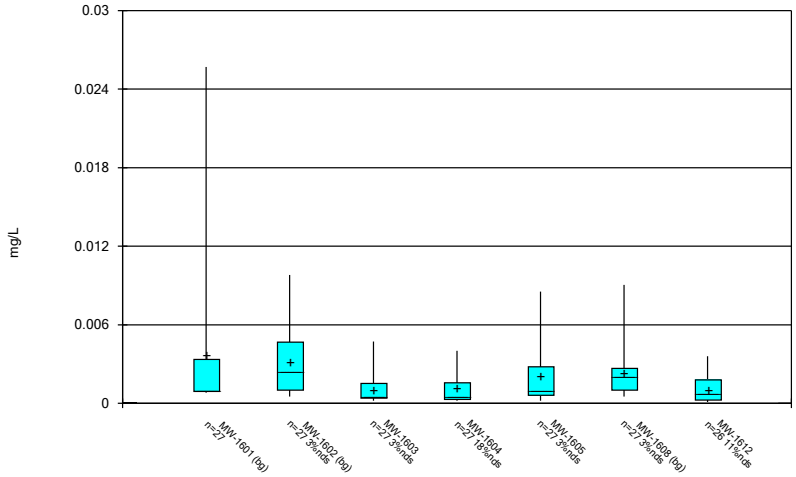
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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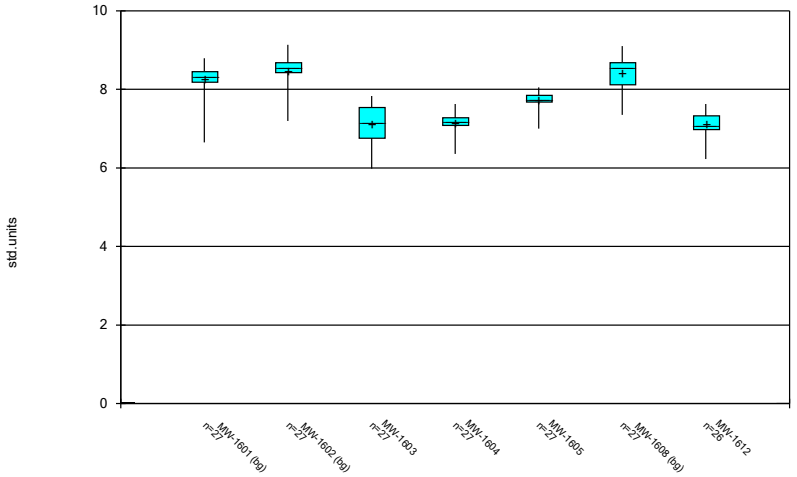
Box & Whiskers Plot



Constituent: pH [field] Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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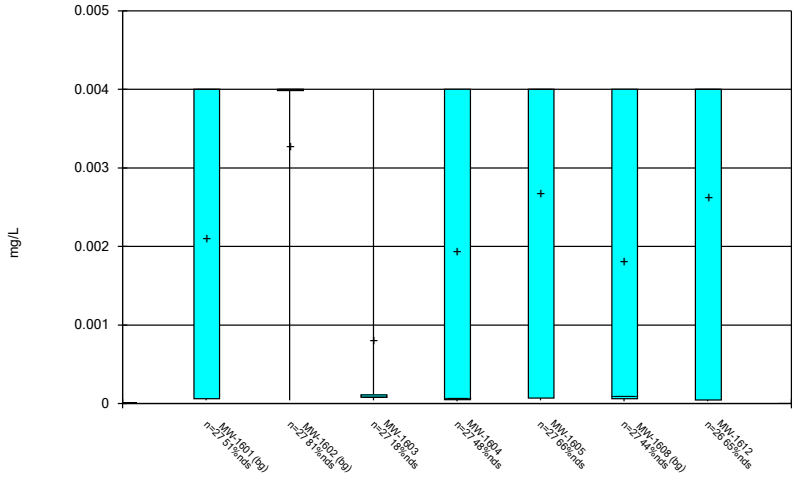
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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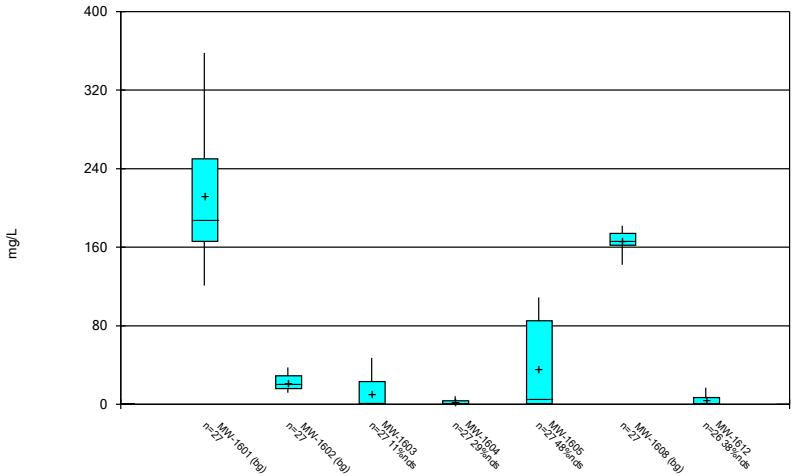
Box & Whiskers Plot



Constituent: Sulfate total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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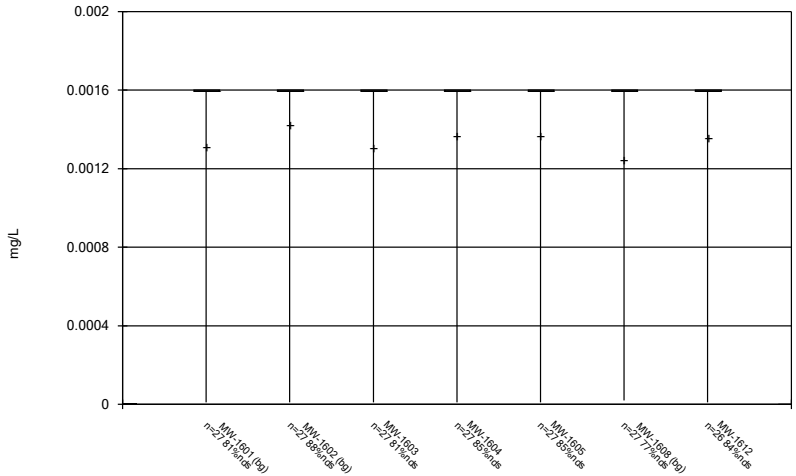
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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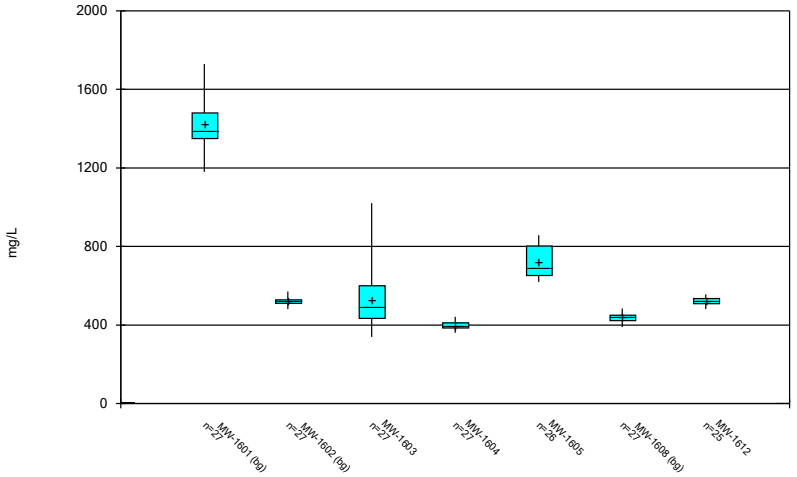
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 2/3/2025 3:51 PM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Box Plots - Rome Limestone

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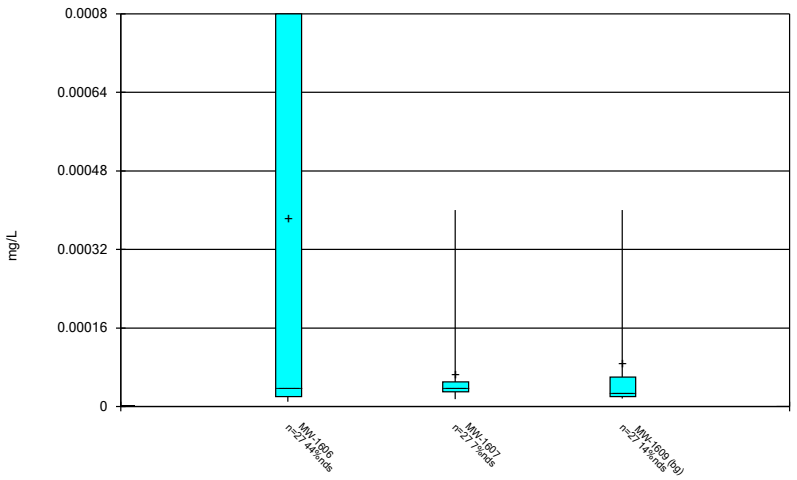
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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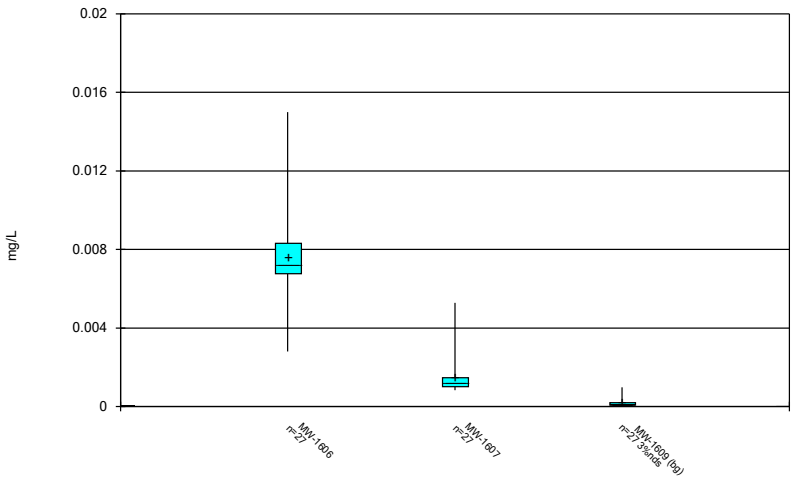
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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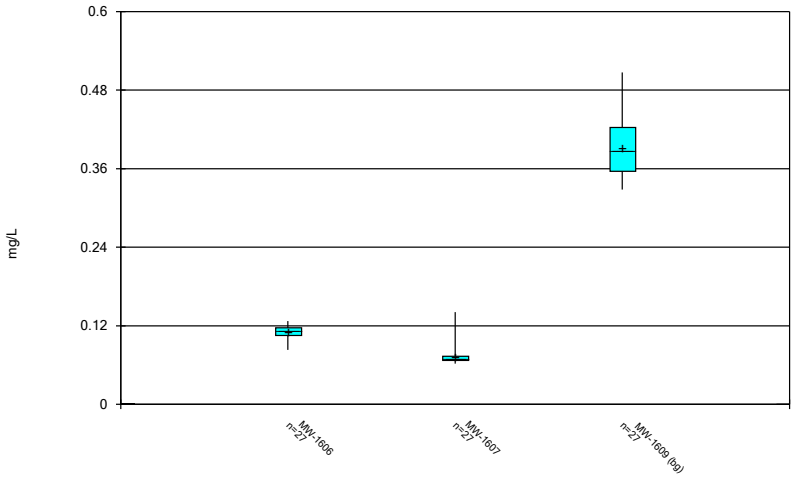
Box & Whiskers Plot



Constituent: Barium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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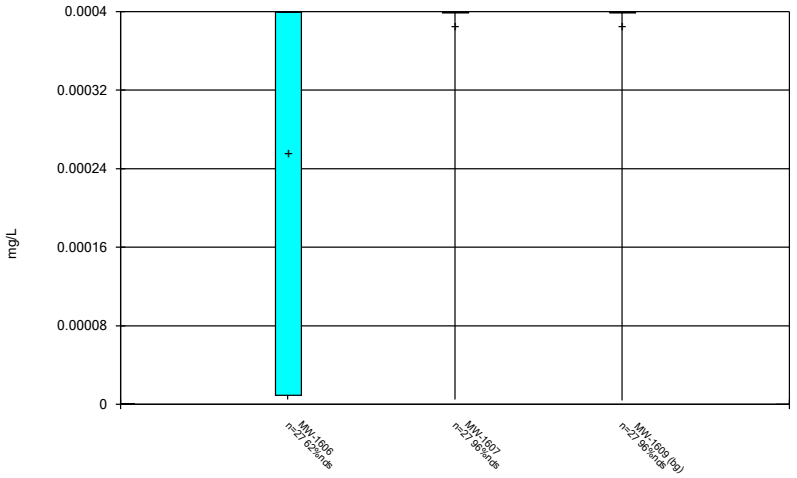
Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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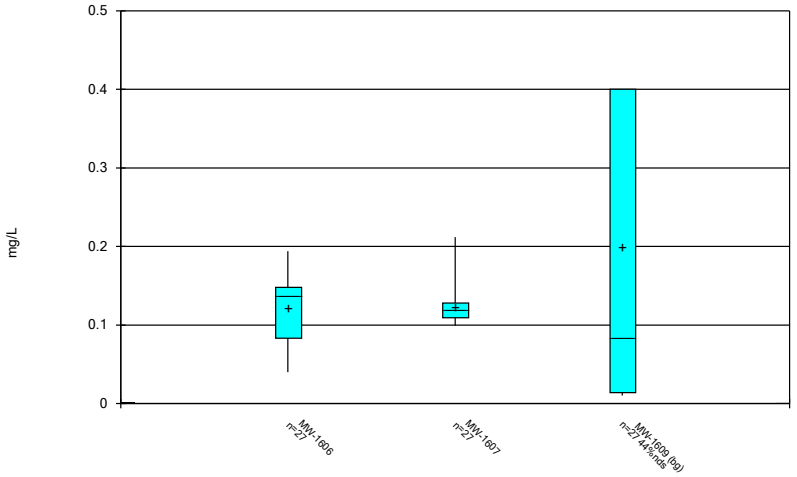
Box & Whiskers Plot



Constituent: Boron total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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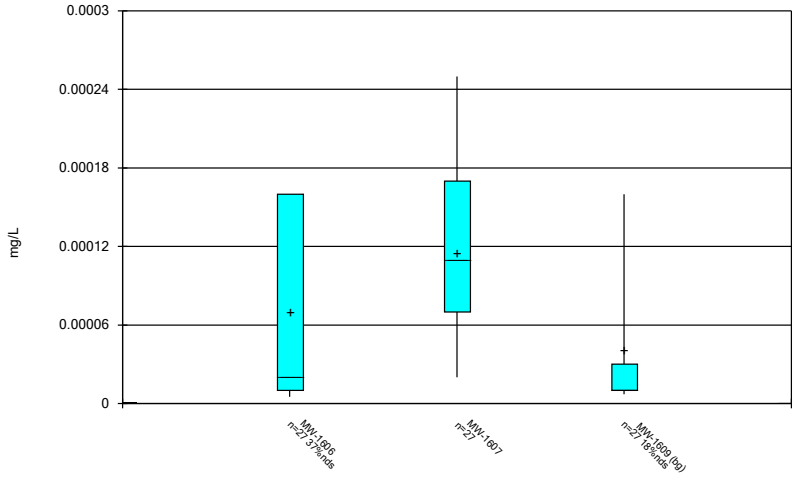
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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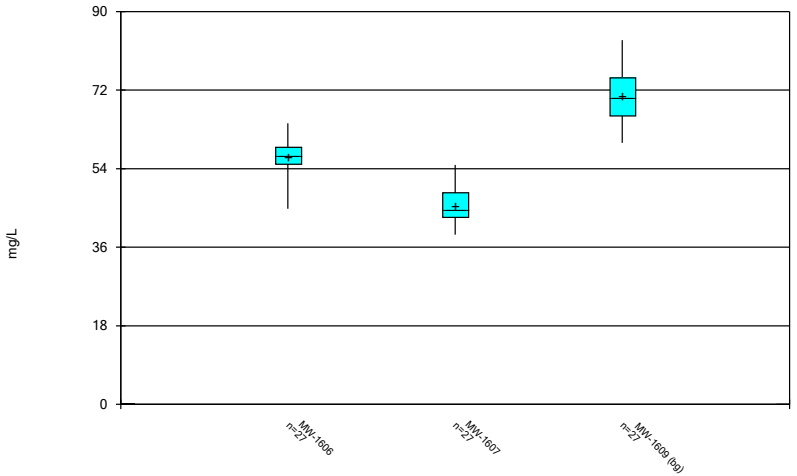
Box & Whiskers Plot



Constituent: Calcium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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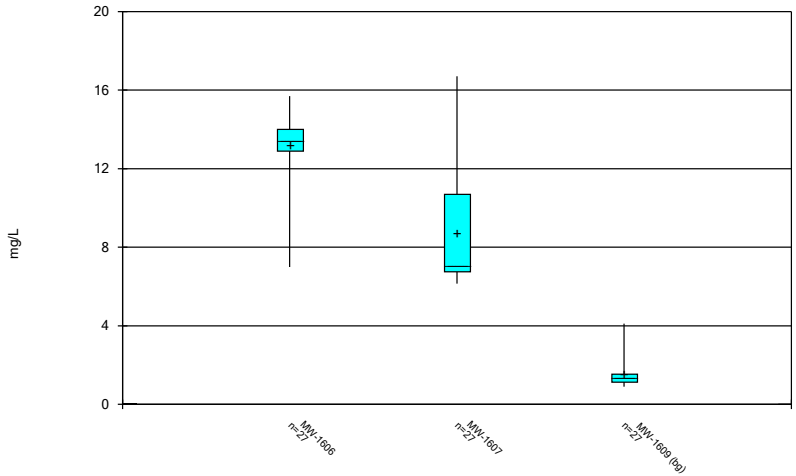
Box & Whiskers Plot



Constituent: Chloride total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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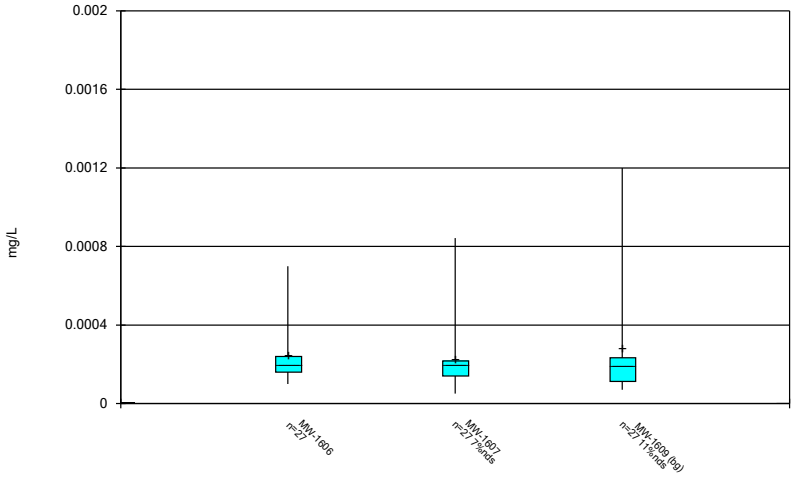
Box & Whiskers Plot



Constituent: Chromium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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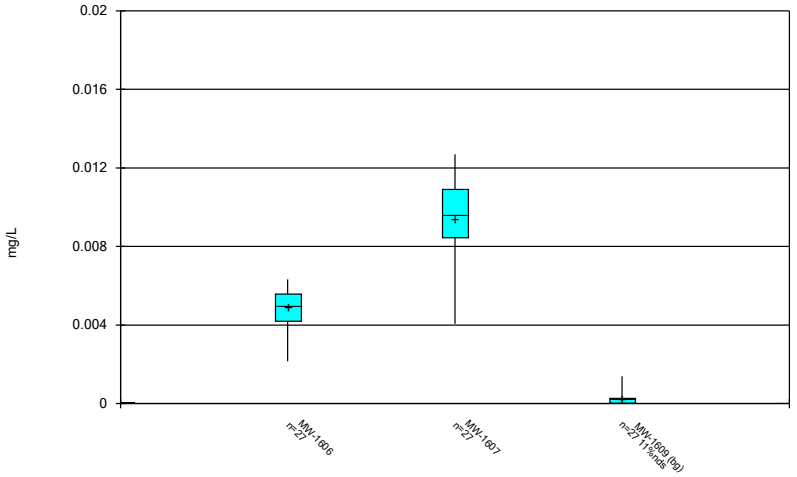
Box & Whiskers Plot



Constituent: Cobalt total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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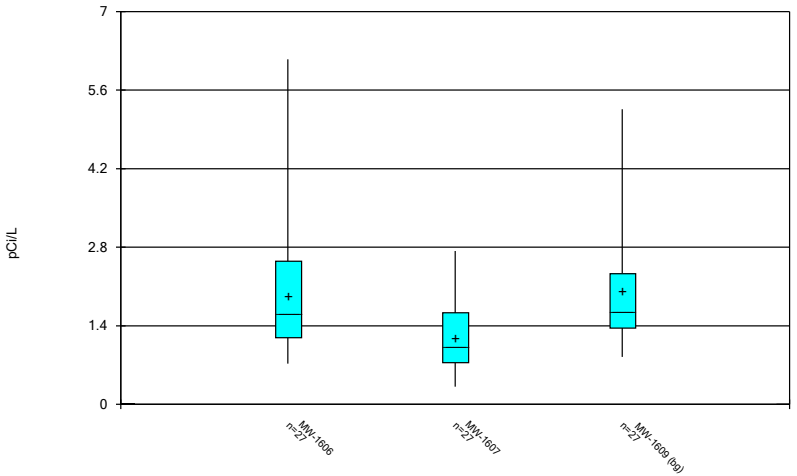
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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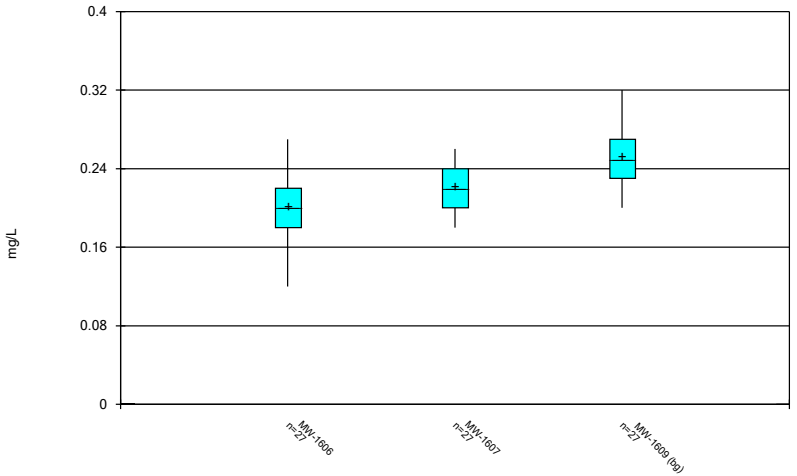
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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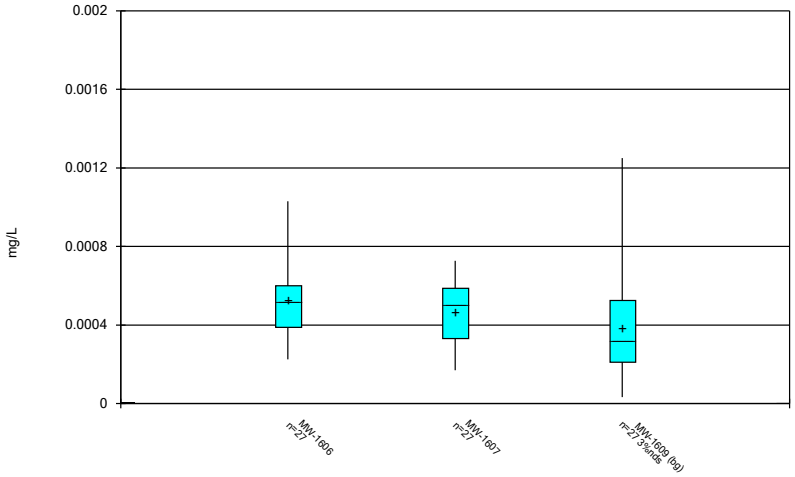
Box & Whiskers Plot



Constituent: Lead total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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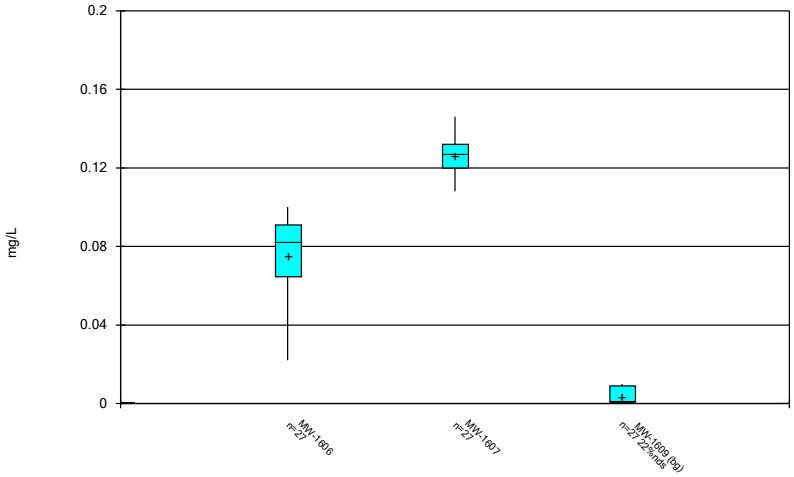
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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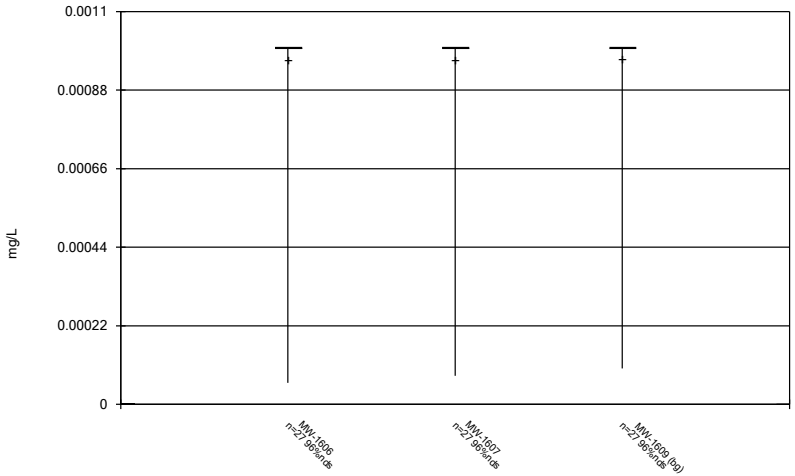
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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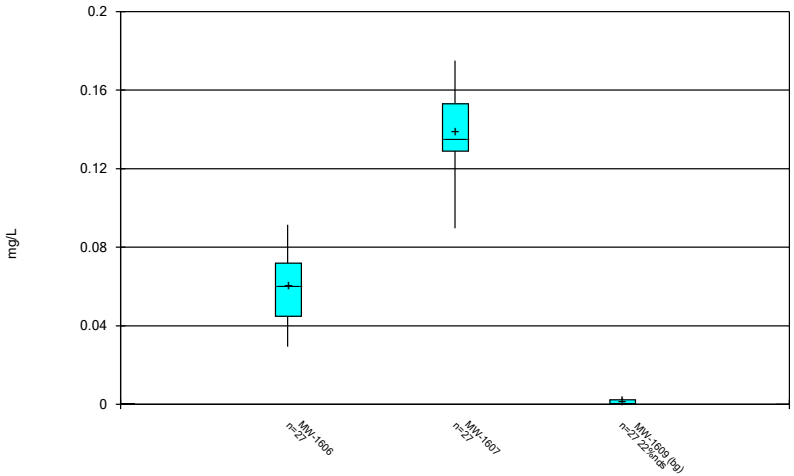
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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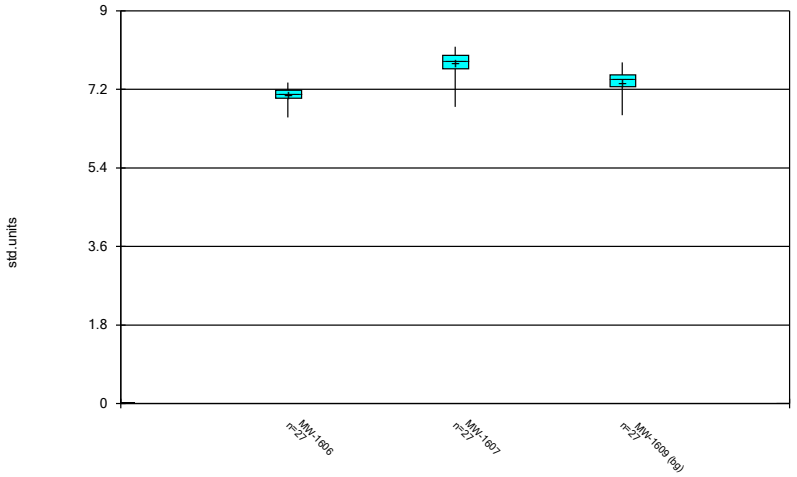
Box & Whiskers Plot



Constituent: pH [field] Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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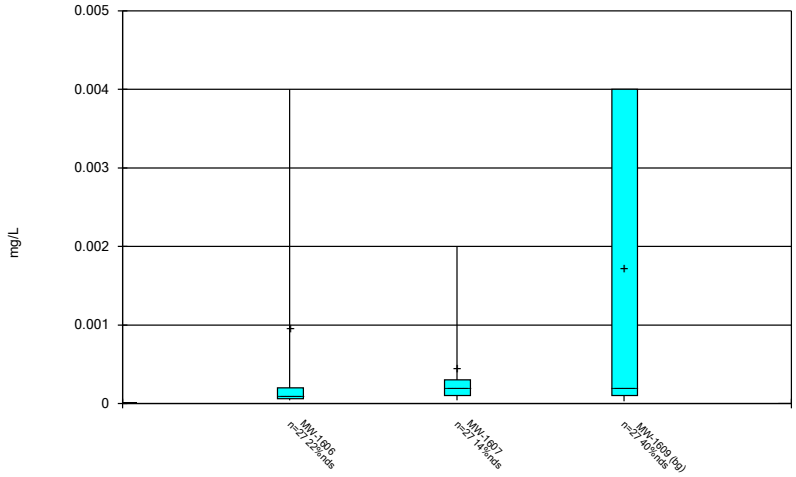
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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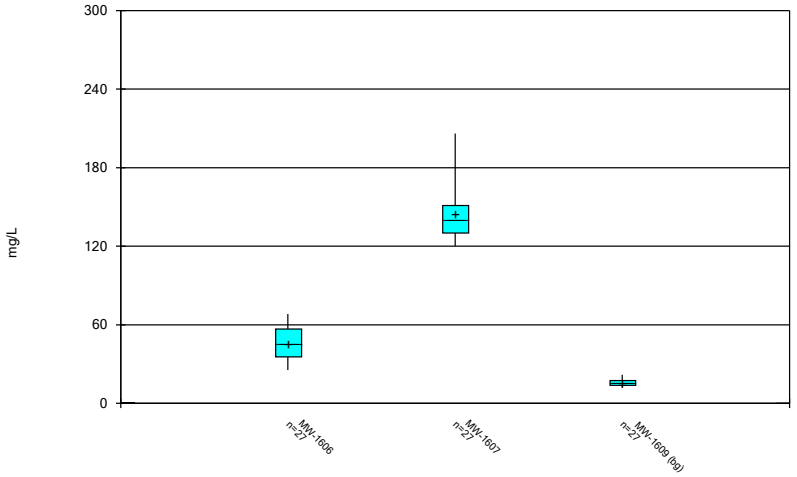
Box & Whiskers Plot



Constituent: Sulfate total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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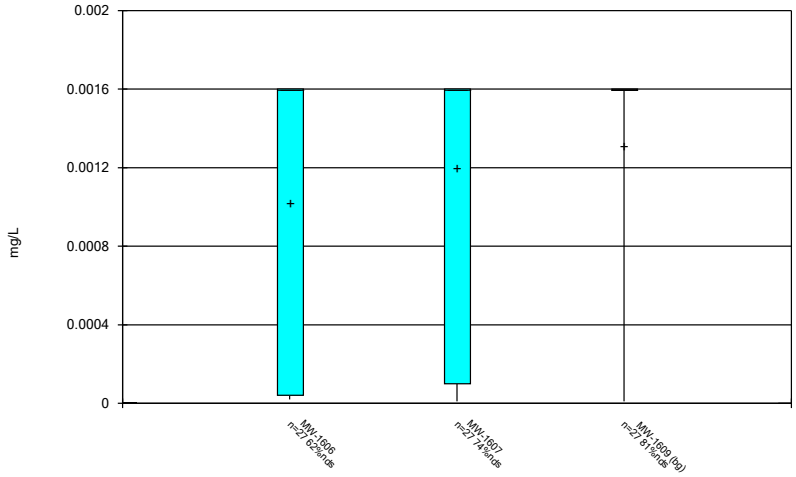
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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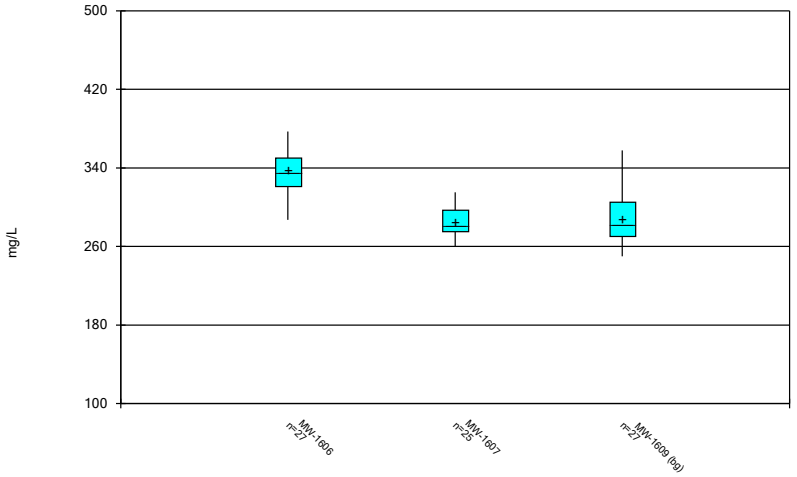
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 1/29/2025 3:24 PM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Box Plots - Dumps Fault

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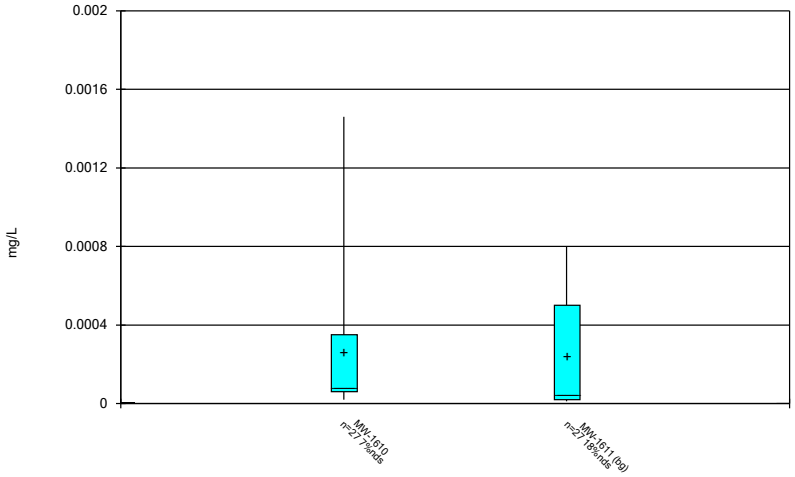
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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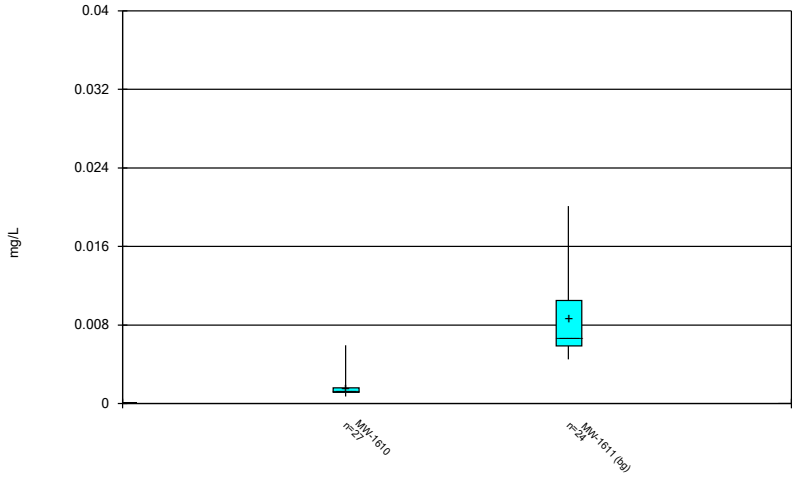
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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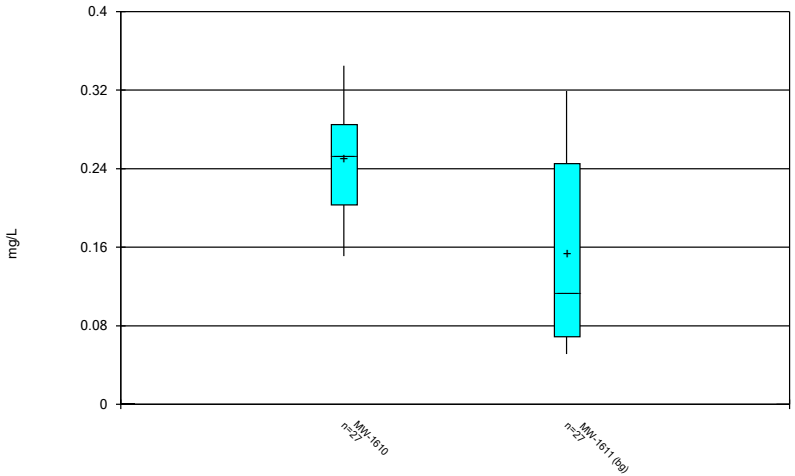
Box & Whiskers Plot



Constituent: Barium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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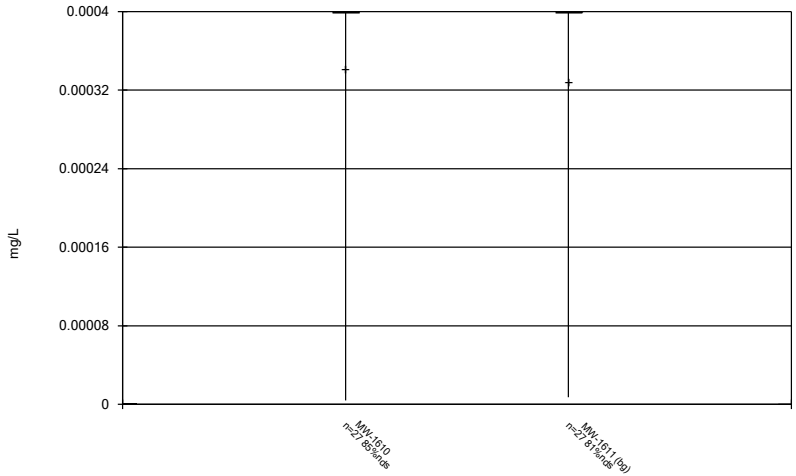
Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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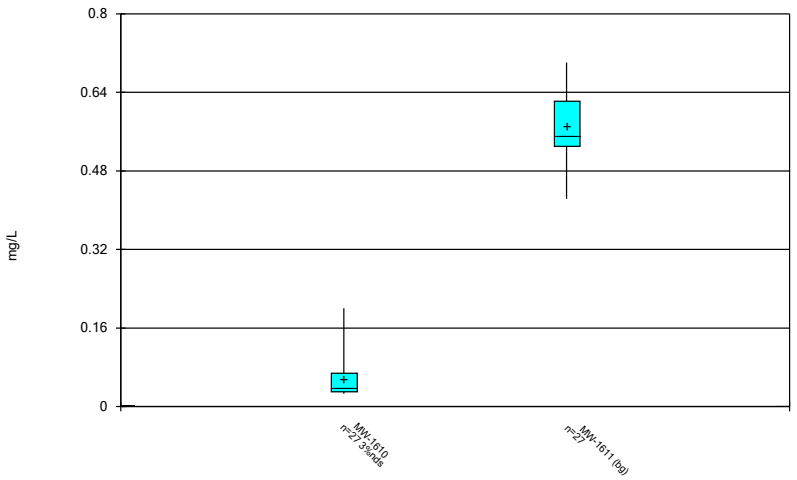
Box & Whiskers Plot



Constituent: Boron total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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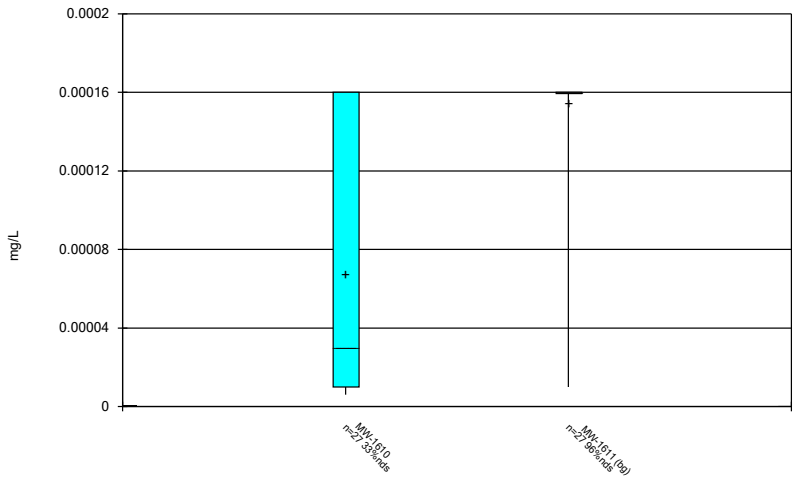
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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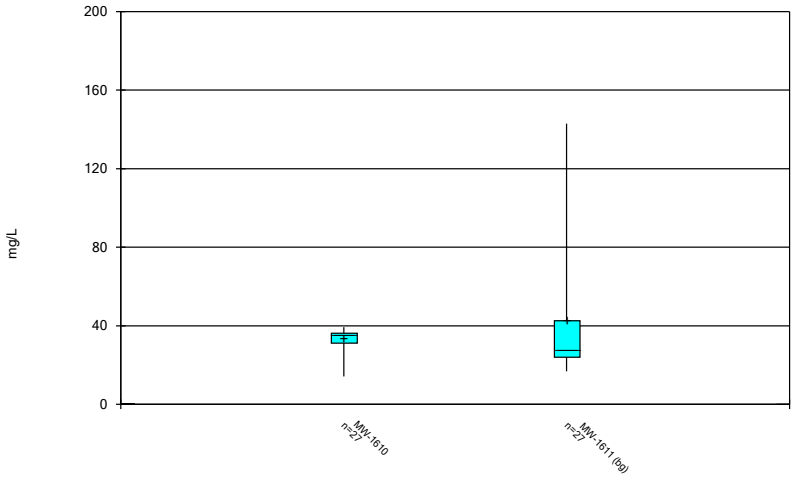
Box & Whiskers Plot



Constituent: Calcium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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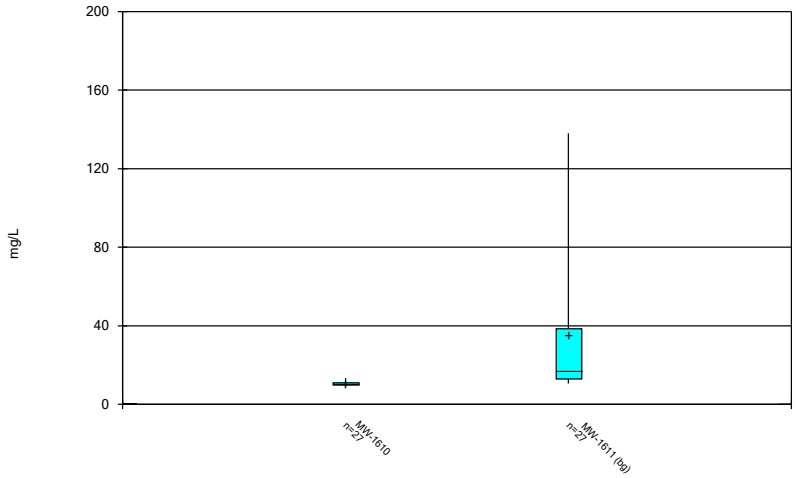
Box & Whiskers Plot



Constituent: Chloride total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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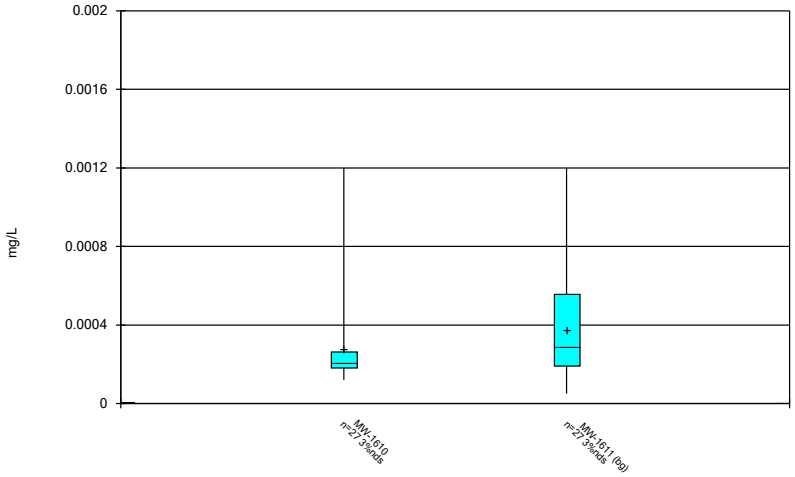
Box & Whiskers Plot



Constituent: Chromium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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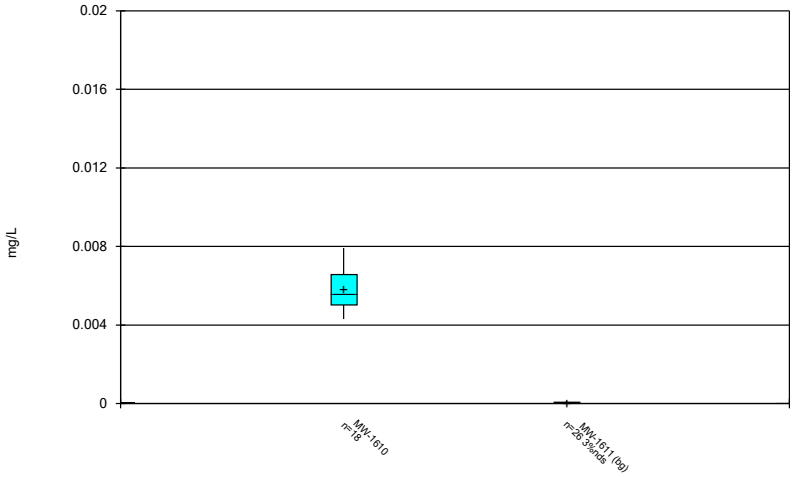
Box & Whiskers Plot



Constituent: Cobalt total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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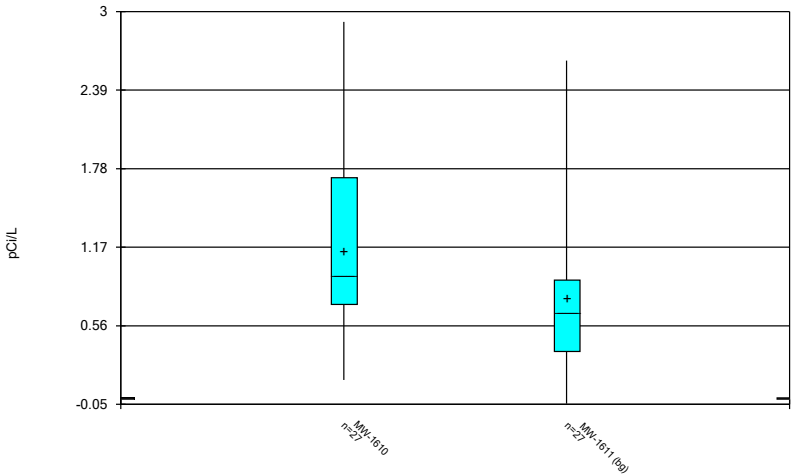
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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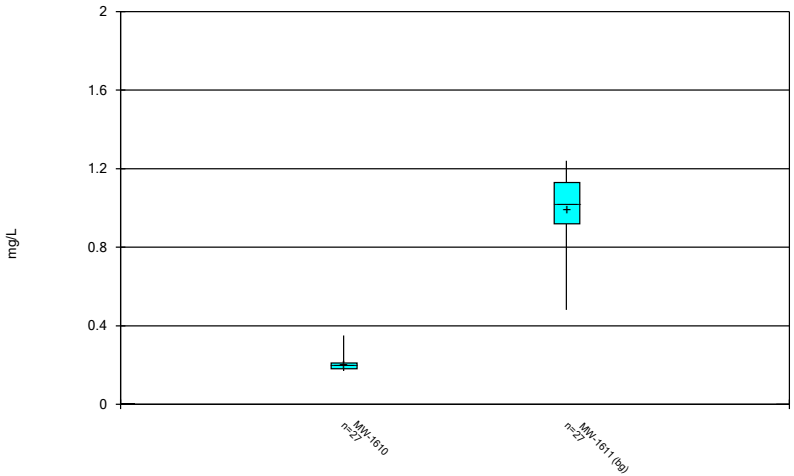
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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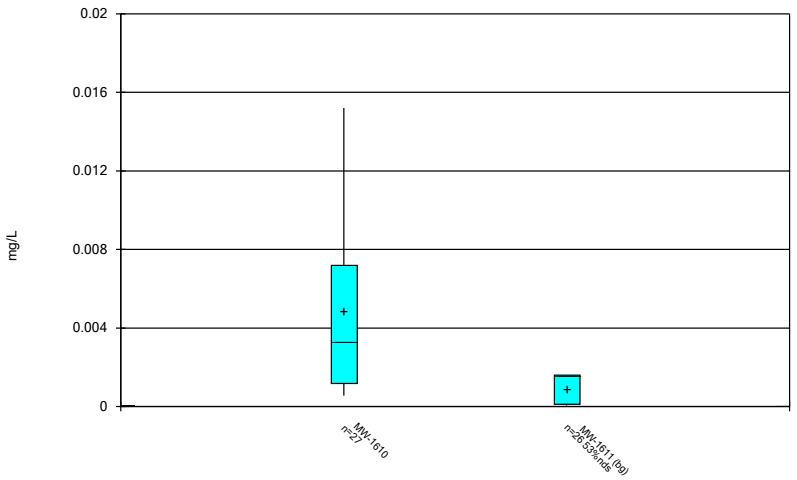
Box & Whiskers Plot



Constituent: Lead total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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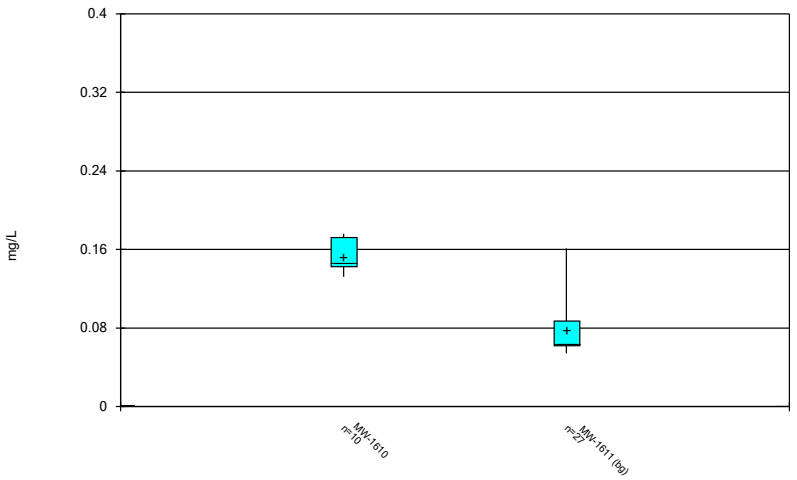
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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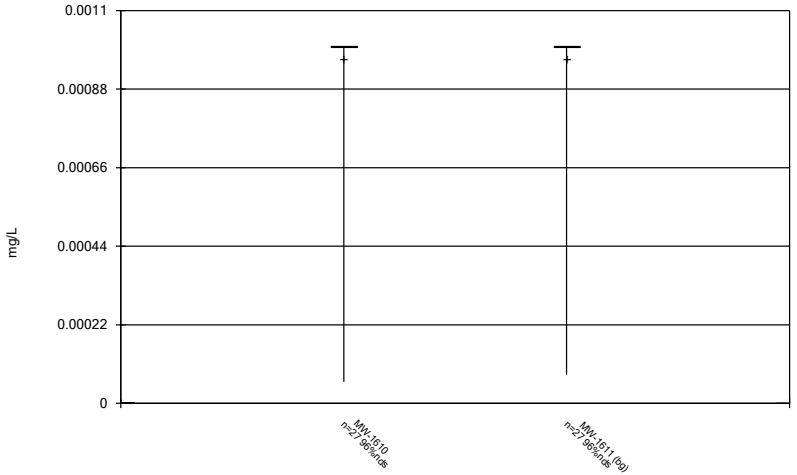
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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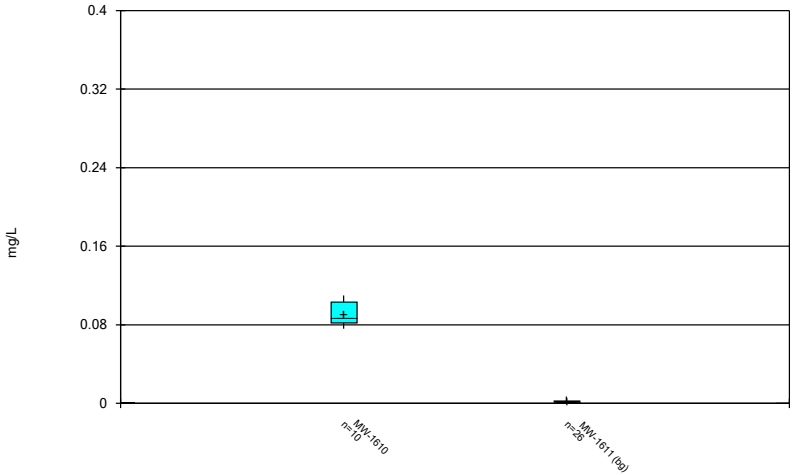
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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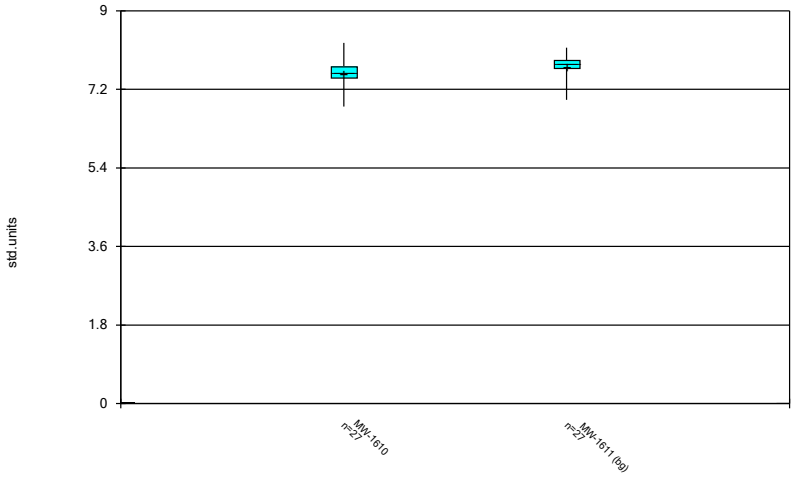
Box & Whiskers Plot



Constituent: pH [field] Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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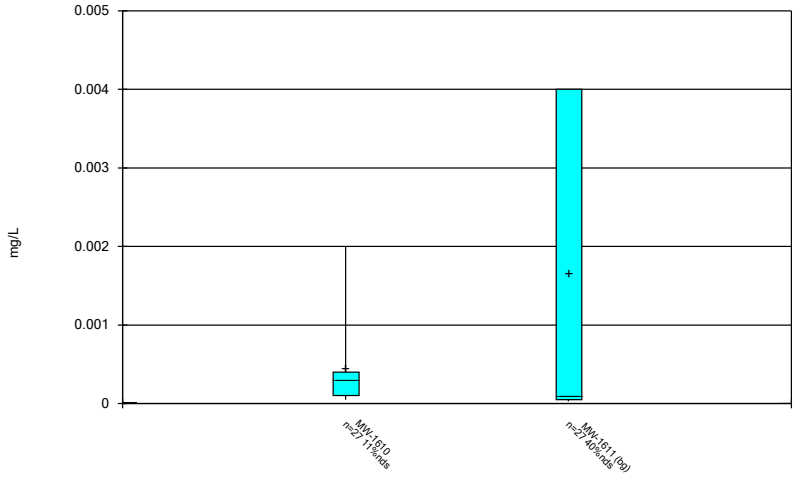
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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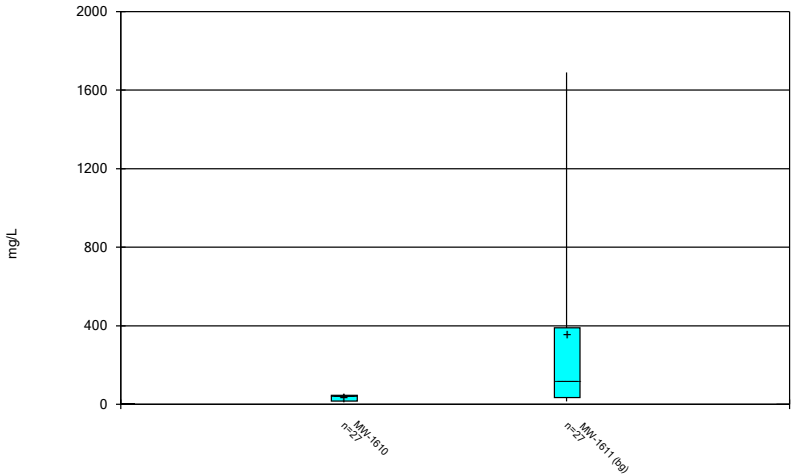
Box & Whiskers Plot



Constituent: Sulfate total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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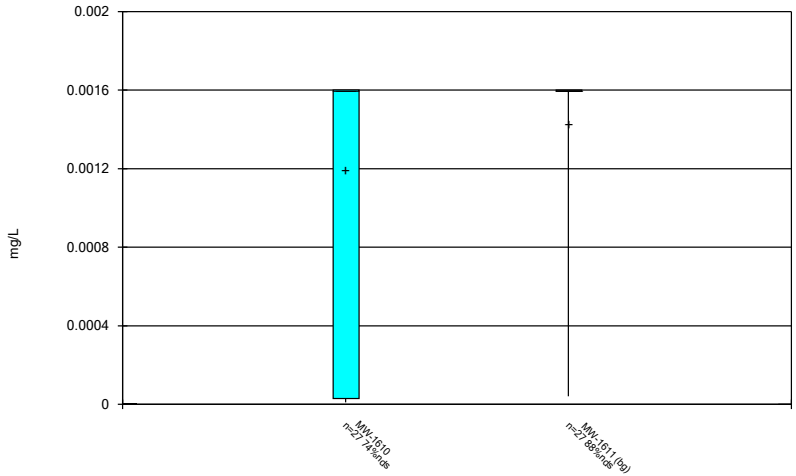
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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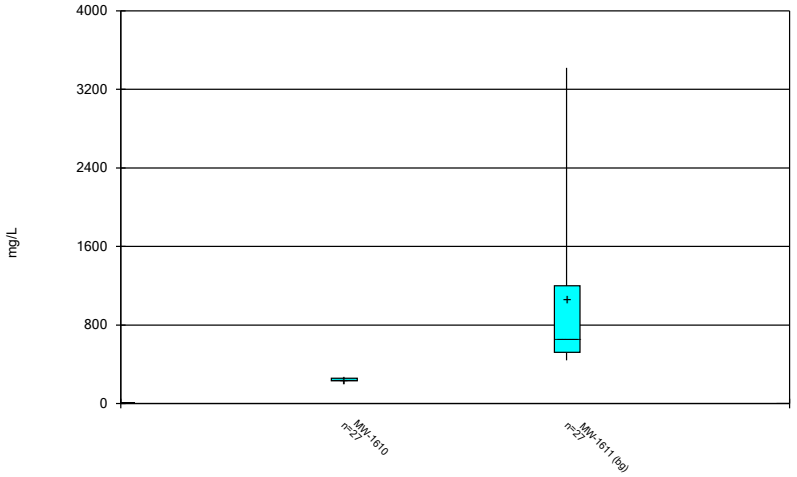
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 1/29/2025 3:33 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE C.

Outlier Summary - Chattanooga Shale

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 3:53 PM

	MW-1601 Arsenic total (mg/L)	MW-1601 Chloride total (mg/L)	MW-1602 Combined Radium 226 and 228 (pCi/L)	MW-1605 Total Dissolved Solids (mg/L)	MW-1612 Total Dissolved Solids (mg/L)
12/13/2017					384 (o)
4/11/2018	0.0149 (o)	41 (o)		1700 (o)	
6/7/2018	0.017 (o)				
8/20/2018	0.0258 (o)	45.8 (o)			
10/17/2018	0.0247 (o)				
12/6/2018	0.0178 (o)				
2/7/2019	0.0178 (o)				
4/8/2019	0.0217 (o)				
5/28/2019	0.0184 (o)				
10/1/2019	0.0211 (o)				
2/13/2023			15.74 (o)		
10/7/2024			8.42 (o)		

Tukey's Outlier Test - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/28/2025, 3:25 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Total Dissolved Solids (mg/L)	**MW-1605**	**Yes**	**1700**	**4/11/2018**	**NP**	**NaN**	**26**	**761.7**	**206.4**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/28/2025, 3:25 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron total (mg/L)	MW-1601 (bg)	No	n/a	n/a	NP	NaN	26	0.5375	0.03961	x^2	ShapiroWilk
Boron total (mg/L)	MW-1602 (bg)	No	n/a	n/a	NP	NaN	26	0.6068	0.03517	x^3	ShapiroWilk
Boron total (mg/L)	MW-1603	No	n/a	n/a	NP	NaN	26	0.266	0.08329	ln(x)	ShapiroWilk
Boron total (mg/L)	MW-1604	No	n/a	n/a	NP	NaN	26	0.4147	0.03748	x^2	ShapiroWilk
Boron total (mg/L)	MW-1605	No	n/a	n/a	NP	NaN	26	0.5608	0.03787	ln(x)	ShapiroWilk
Boron total (mg/L)	MW-1608 (bg)	No	n/a	n/a	NP	NaN	26	0.3508	0.01846	sqrt(x)	ShapiroWilk
Boron total (mg/L)	MW-1612	No	n/a	n/a	NP	NaN	25	0.4181	0.05843	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1601 (bg)	No	n/a	n/a	NP	NaN	26	2.183	0.1837	x^6	ShapiroWilk
Fluoride total (mg/L)	MW-1602 (bg)	No	n/a	n/a	NP	NaN	26	1.645	0.08135	x^2	ShapiroWilk
Fluoride total (mg/L)	MW-1603	No	n/a	n/a	NP	NaN	26	0.1192	0.02727	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1604	No	n/a	n/a	NP	NaN	26	0.265	0.04198	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1605	No	n/a	n/a	NP	NaN	26	0.3388	0.04102	x^(1/3)	ShapiroWilk
Fluoride total (mg/L)	MW-1608 (bg)	No	n/a	n/a	NP	NaN	26	0.4242	0.02248	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1612	No	n/a	n/a	NP	NaN	25	0.1572	0.036	normal	ShapiroWilk
Sulfate total (mg/L)	MW-1601 (bg)	No	n/a	n/a	NP	NaN	26	215	56.41	ln(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1602 (bg)	No	n/a	n/a	NP	NaN	26	22.88	6.918	ln(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1603	No	n/a	n/a	NP	NaN	26	10.64	13.95	ln(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1604	No	n/a	n/a	NP	NaN	26	2.22	2.28	ln(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1605	No	n/a	n/a	NP	NaN	26	37.61	43.29	sqrt(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1608 (bg)	No	n/a	n/a	NP	NaN	26	167.3	10.19	x^6	ShapiroWilk
Sulfate total (mg/L)	MW-1612	No	n/a	n/a	NP	NaN	25	4.144	5.256	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1601 (bg)	No	n/a	n/a	NP	NaN	26	1424	122.2	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1602 (bg)	No	n/a	n/a	NP	NaN	26	520.6	19.68	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1603	No	n/a	n/a	NP	NaN	26	509.1	120.1	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1604	No	n/a	n/a	NP	NaN	26	394.9	17.15	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	**MW-1605**	**Yes**	**1700**	**4/11/2018**	**NP**	**NaN**	**26**	**761.7**	**206.4**	**ln(x)**	**ShapiroWilk**
Total Dissolved Solids (mg/L)	MW-1608 (bg)	No	n/a	n/a	NP	NaN	26	437.8	22.13	x^2	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1612	No	n/a	n/a	NP	NaN	25	515.9	33.51	x^6	ShapiroWilk

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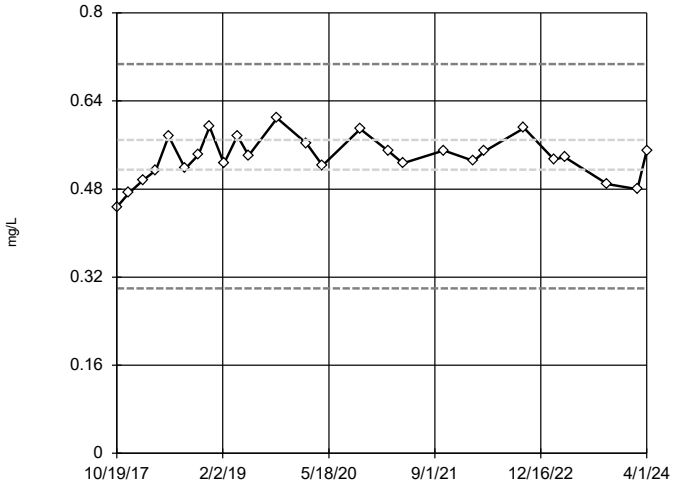
Tukey's Outlier Screening

MW-1601 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7073, low cutoff = 0.2998, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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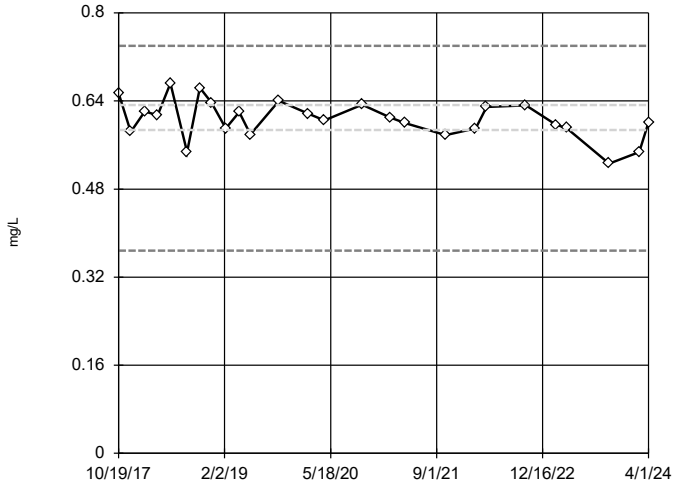
Tukey's Outlier Screening

MW-1602 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7401, low cutoff = 0.3684, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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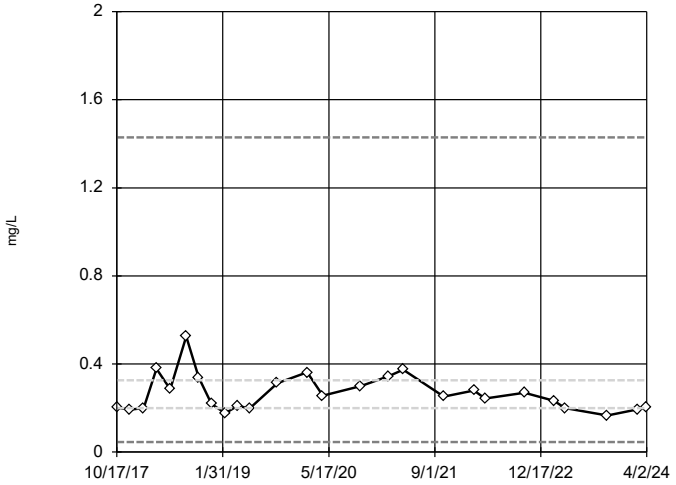
Tukey's Outlier Screening

MW-1603



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.429, low cutoff = 0.04537, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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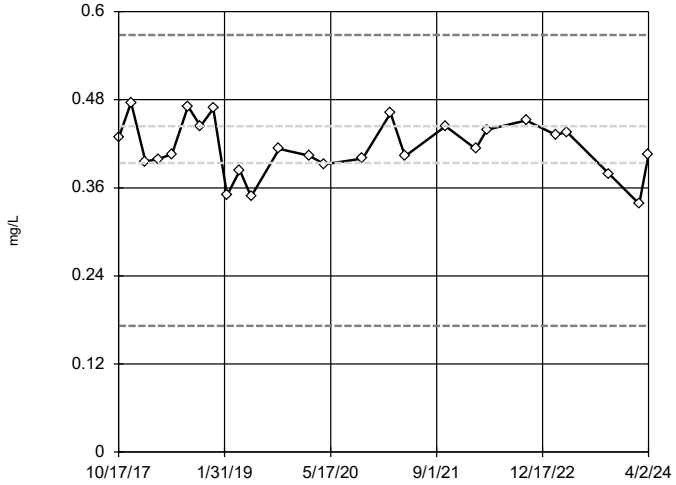
Tukey's Outlier Screening

MW-1604



n = 26

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.5682, low cutoff = 0.1719, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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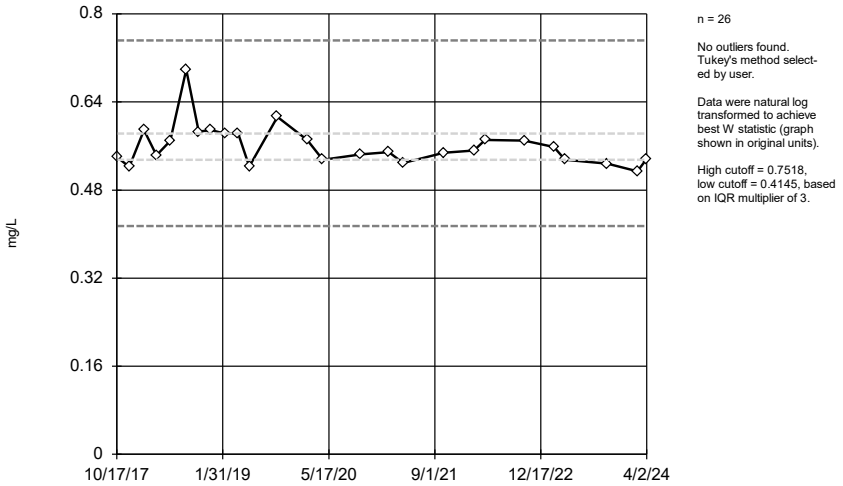
Tukey's Outlier Screening

MW-1605



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7518, low cutoff = 0.4145, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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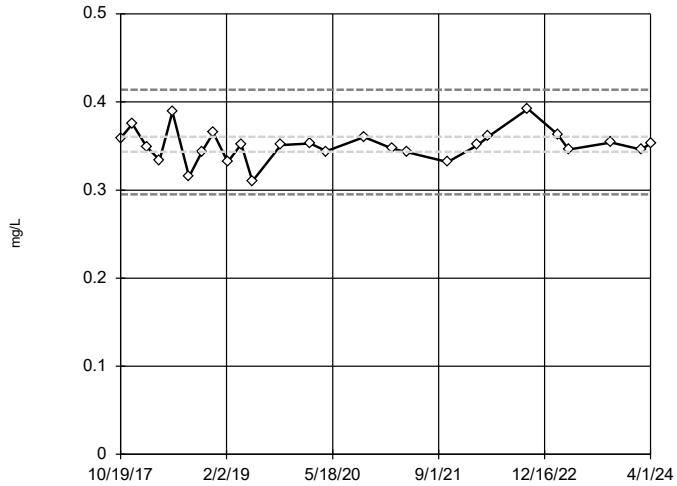
Tukey's Outlier Screening

MW-1608 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.414, low cutoff = 0.295, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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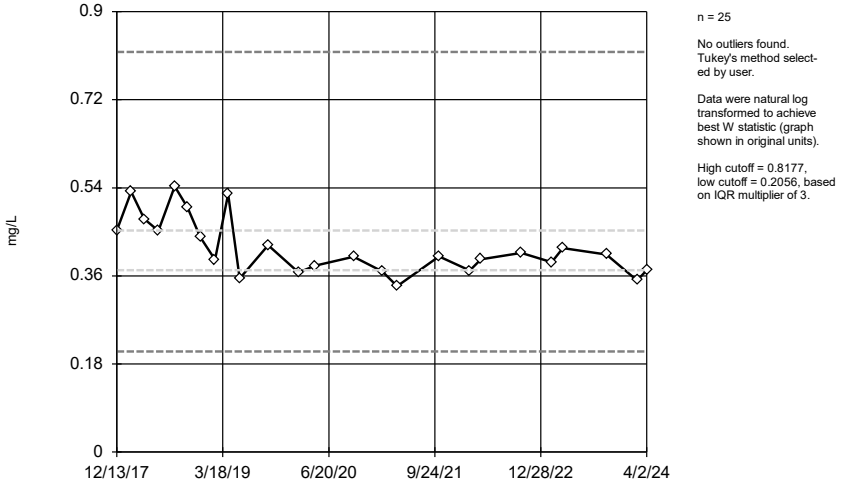
Tukey's Outlier Screening

MW-1612



n = 25

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.8177, low cutoff = 0.2056, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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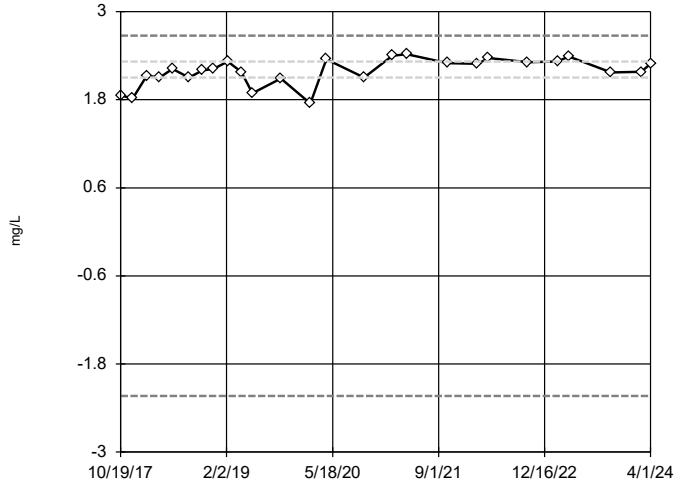
Tukey's Outlier Screening

MW-1601 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.675, low cutoff = -2.235, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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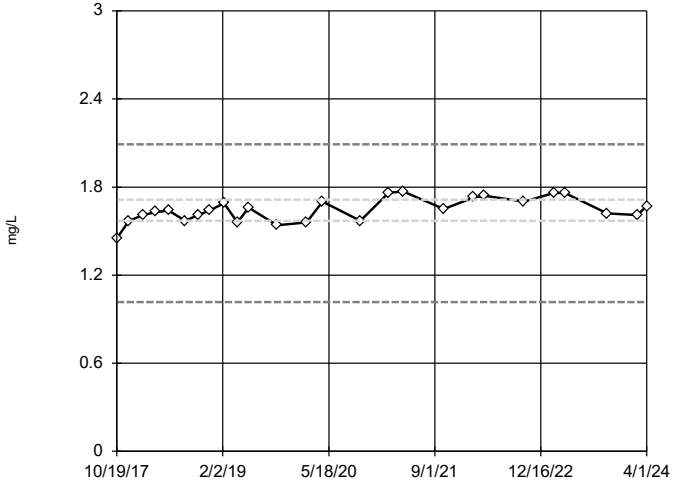
Tukey's Outlier Screening

MW-1602 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.091, low cutoff = 1.017, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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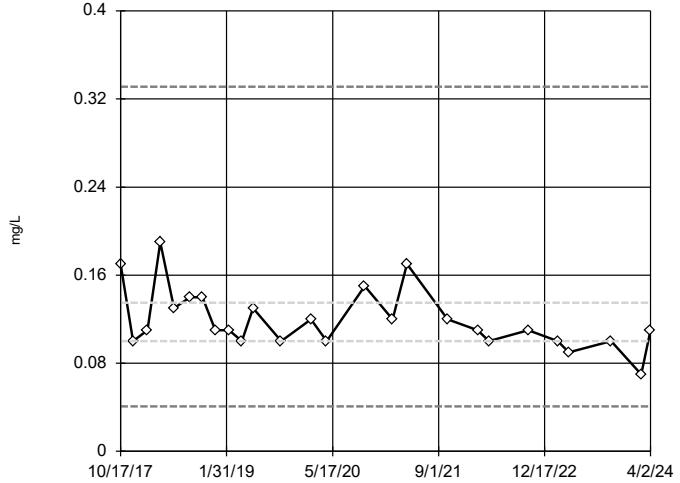
Tukey's Outlier Screening

MW-1603



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3312, low cutoff = 0.04073, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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Tukey's Outlier Screening

MW-1604

n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7116, low cutoff = 0.09483, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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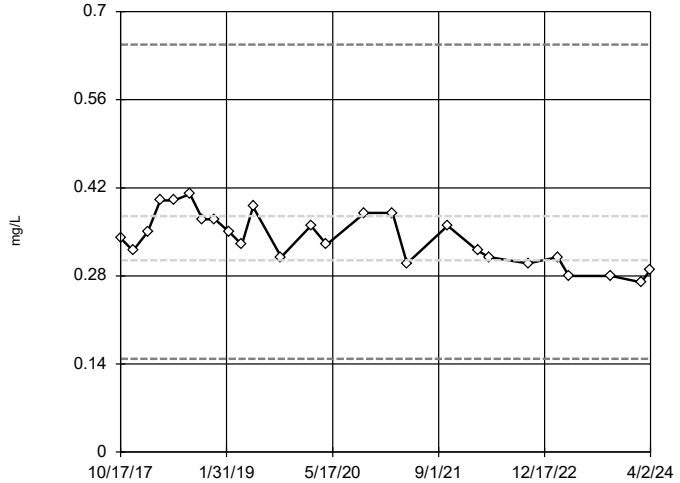
Tukey's Outlier Screening

MW-1605



n = 26

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.6475, low cutoff = 0.1481, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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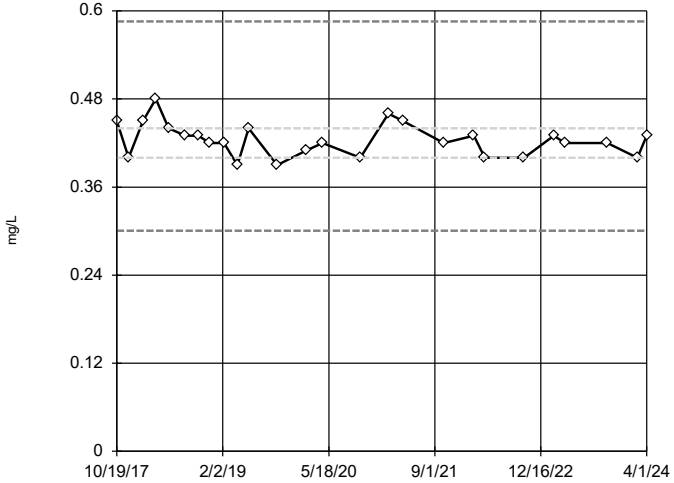
Tukey's Outlier Screening

MW-1608 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.5856, low cutoff = 0.3005, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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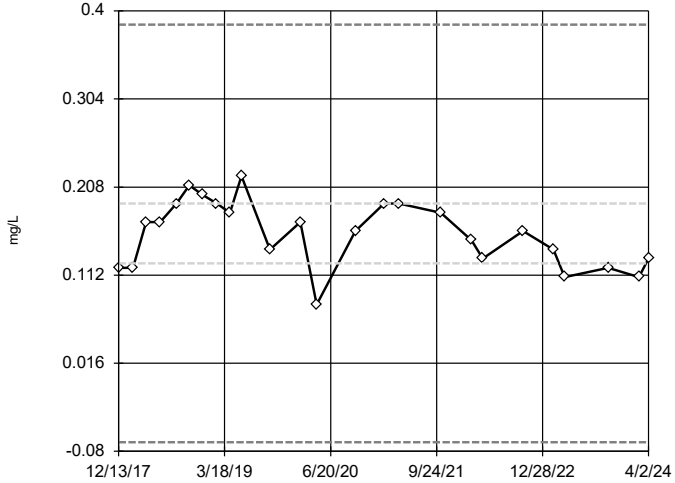
Tukey's Outlier Screening

MW-1612



n = 25

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.385, low cutoff = -0.07, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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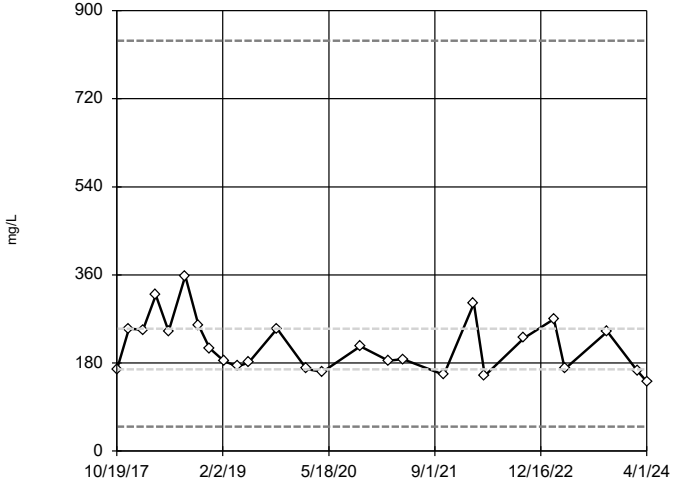
Tukey's Outlier Screening

MW-1601 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 838.8, low cutoff = 49.78, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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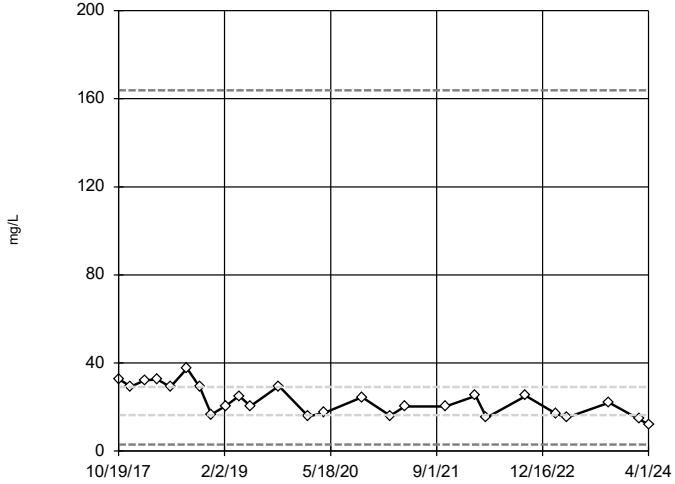
Tukey's Outlier Screening

MW-1602 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 163.8, low cutoff = 2.919, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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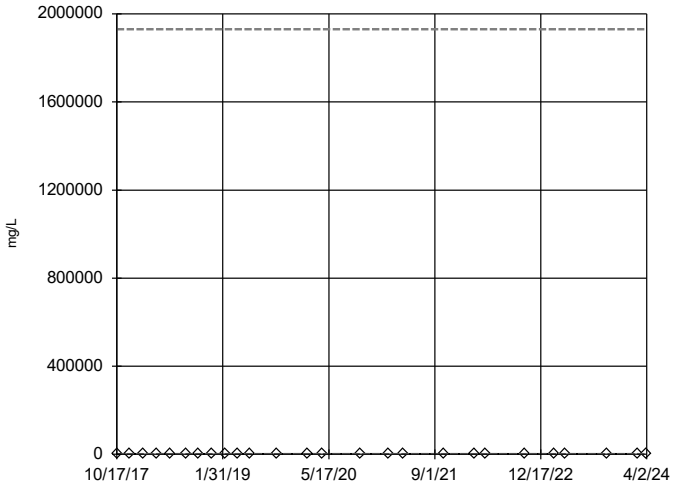
Tukey's Outlier Screening

MW-1603



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1929957, low cutoff = 0.000006261, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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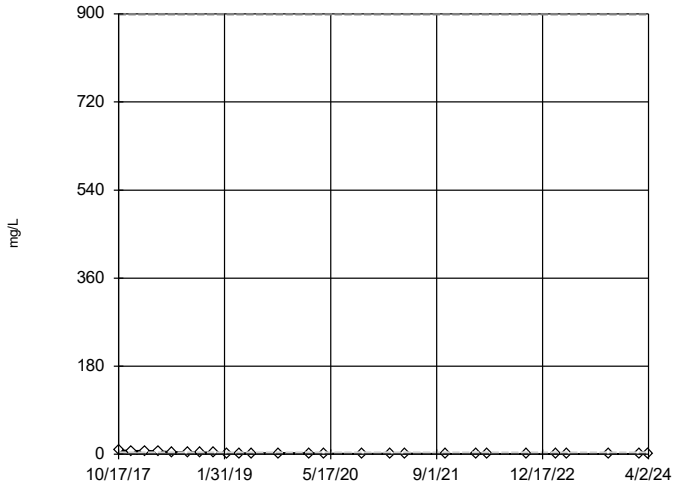
Tukey's Outlier Screening

MW-1604



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 899.6, low cutoff = 0.00249, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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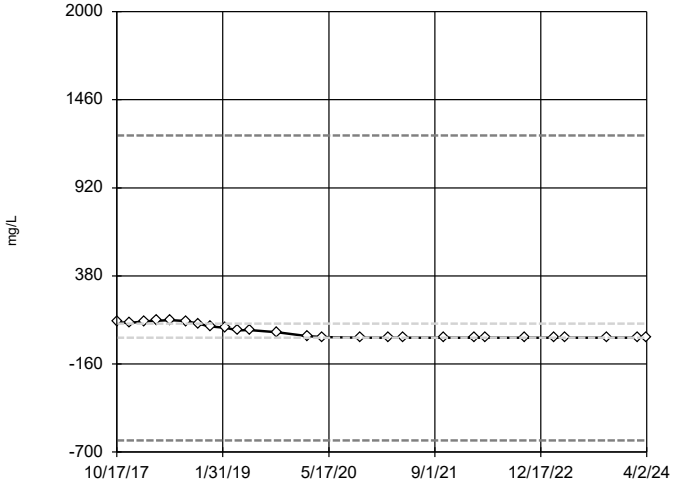
Tukey's Outlier Screening

MW-1605



n = 26

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1241, low cutoff = -628.2, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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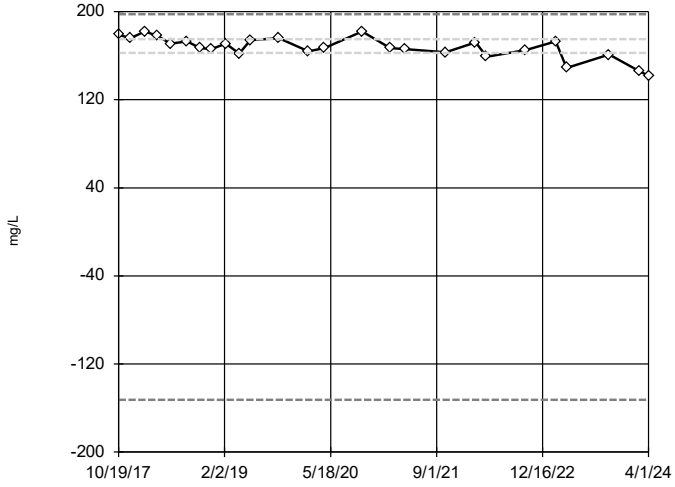
Tukey's Outlier Screening

MW-1608 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

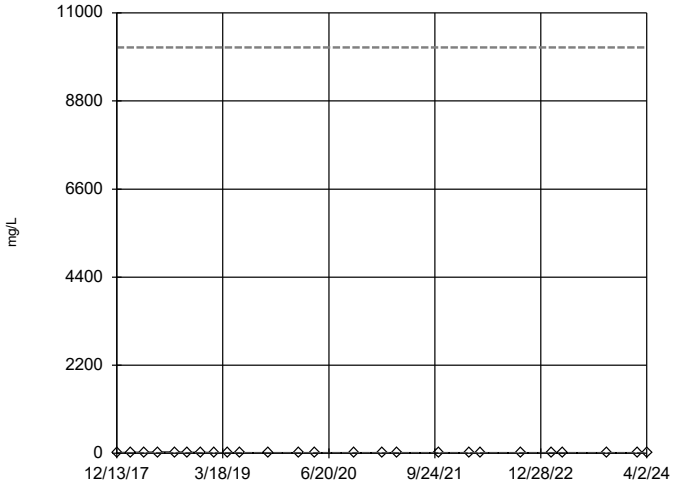
High cutoff = 197.7, low cutoff = -152.4, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Tukey's Outlier Screening

MW-1612



n = 25

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 10140, low cutoff = 0.0004048, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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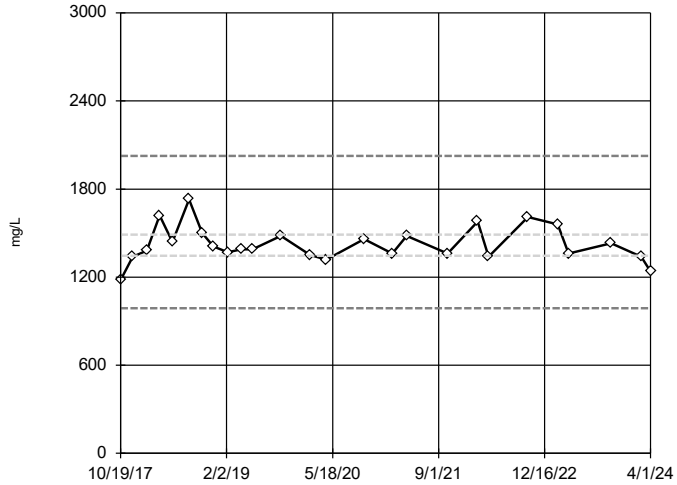
Tukey's Outlier Screening

MW-1601 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2026, low cutoff = 989.3, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

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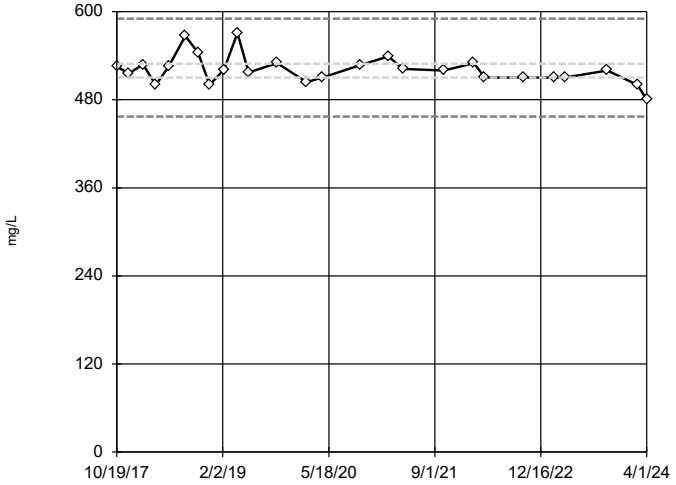
Tukey's Outlier Screening

MW-1602 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 590.3, low cutoff = 457, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

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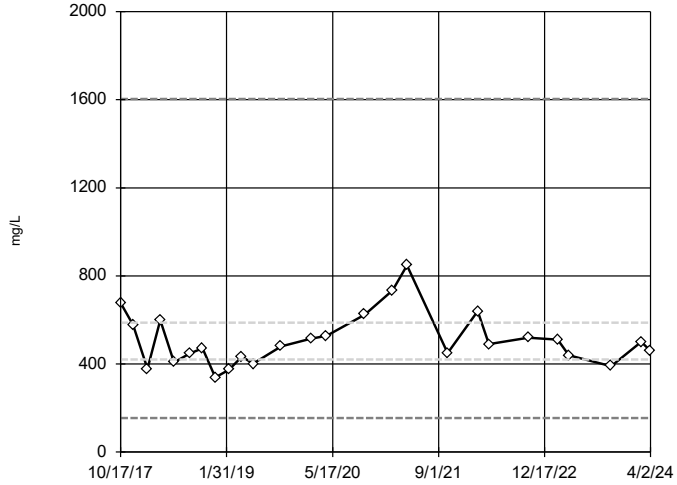
Tukey's Outlier Screening

MW-1603



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1603, low cutoff = 154.3, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

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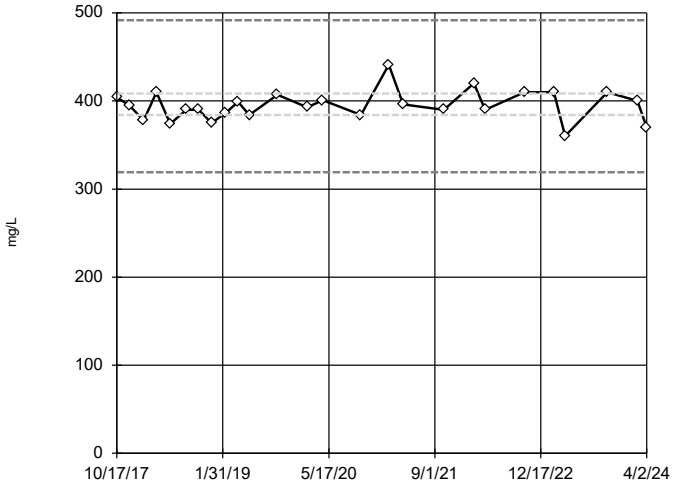
Tukey's Outlier Screening

MW-1604



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 491.8, low cutoff = 319, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O

Clinch River Client: AEP Data: Clinch River Pond 1

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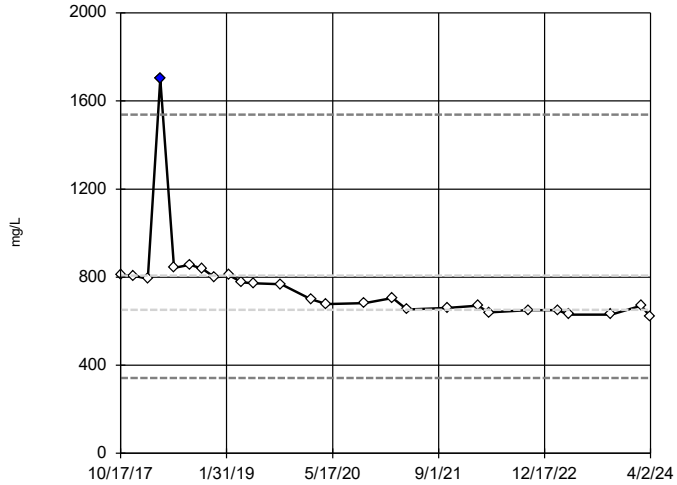
Tukey's Outlier Screening

MW-1605



n = 26

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1538, low cutoff = 342.2, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O

Clinch River Client: AEP Data: Clinch River Pond 1

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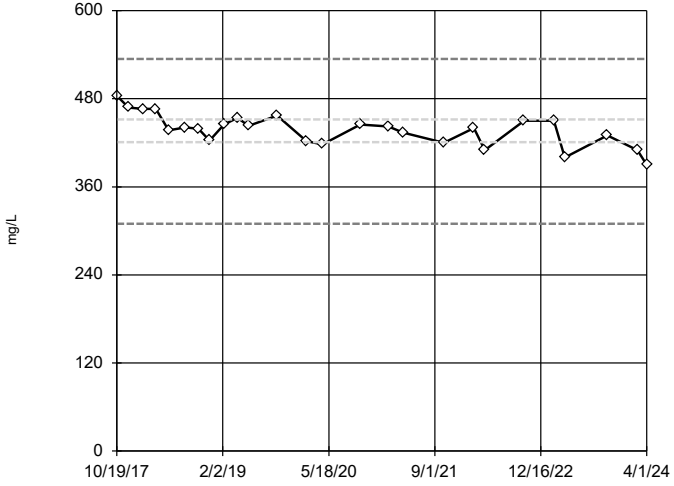
Tukey's Outlier Screening

MW-1608 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 534.3, low cutoff = 309.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O

Clinch River Client: AEP Data: Clinch River Pond 1

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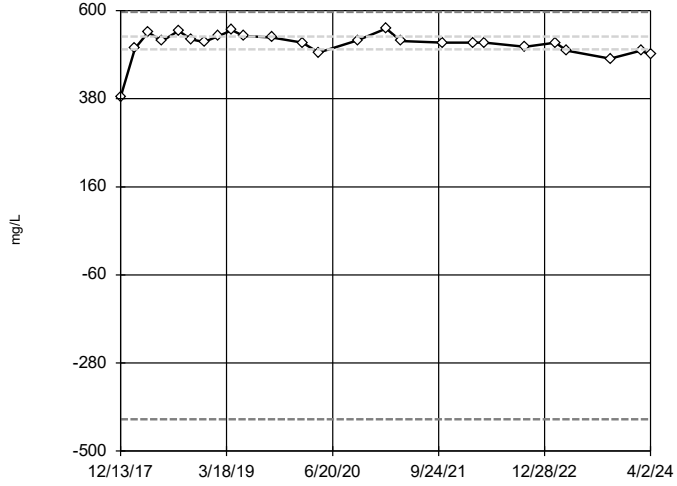
Tukey's Outlier Screening

MW-1612



n = 25

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 596.8, low cutoff = -420.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:23 PM View: Chattanooga Shale - Pond 1 O

Clinch River Client: AEP Data: Clinch River Pond 1

Tukey's Outlier Test - Chattanooga Shale Upgradient - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 3:42 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Combined Radium 226 and 228 (pCi/L)	**MW-1601,MW-1602,M...**	**Yes**	**0.012,15.74**	**NP**	**NaN**	**81**	**1.213**	**1.958**	**ln(x)**	**ShapiroFrancia**

Tukey's Outlier Test - Chattanooga Shale Upgradient - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 3:42 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.0001155	0.0001251	ln(x)	ShapiroFrancia
Arsenic total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.004825	0.006031	ln(x)	ShapiroFrancia
Barium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.1074	0.07288	x^(1/3)	ShapiroFrancia
Beryllium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.0002975	0.0001692	ln(x)	ShapiroFrancia
Cadmium total (mg/L)	MW-1601,MW-1602,M...	n/a	n/a	NP	NaN	81	0.0001327	0.00005785	unknown	ShapiroFrancia
Calcium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	3.349	2.076	normal	ShapiroFrancia
Chloride total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	11.8	10.37	ln(x)	ShapiroFrancia
Chromium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.000374	0.0003184	ln(x)	ShapiroFrancia
Cobalt total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.0001064	0.00009927	ln(x)	ShapiroFrancia
Combined Radium 226 and 228 (pCi/L)	**MW-1601,MW-1602,M...**	**Yes**	**0.012,15.74**	**NP**	**NaN**	**81**	**1.213**	**1.958**	**ln(x)**	**ShapiroFrancia**
Fluoride total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	1.423	0.7524	x^2	ShapiroFrancia
Lead total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.0005856	0.0006767	ln(x)	ShapiroFrancia
Lithium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.05226	0.03379	ln(x)	ShapiroFrancia
Mercury total (mg/L)	MW-1601,MW-1602,M...	n/a	n/a	NP	NaN	81	0.0009204	0.0002606	unknown	ShapiroFrancia
Molybdenum total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.003073	0.004099	ln(x)	ShapiroFrancia
pH [field] (std.units)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	8.381	0.4011	x^6	ShapiroFrancia
Selenium total (mg/L)	MW-1601,MW-1602,M...	No	n/a	NP	NaN	81	0.002395	0.001948	ln(x)	ShapiroFrancia
Thallium total (mg/L)	MW-1601,MW-1602,M...	n/a	n/a	NP	NaN	81	0.001327	0.0006011	unknown	ShapiroFrancia

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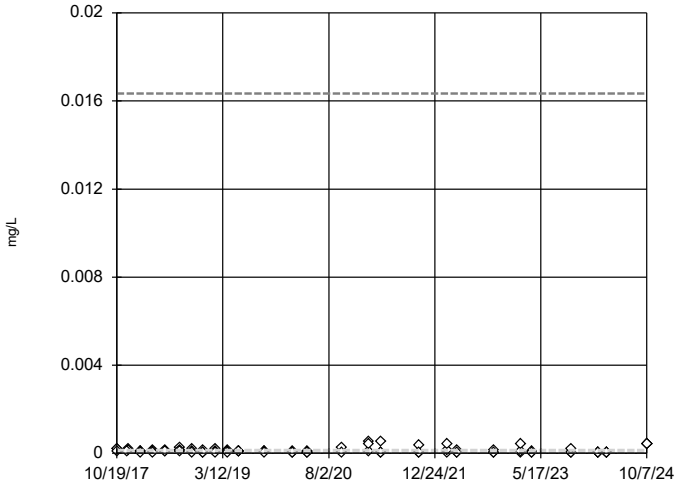
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01633, low cutoff = 2.7e-7, based on IQR multiplier of 3.

Constituent: Antimony total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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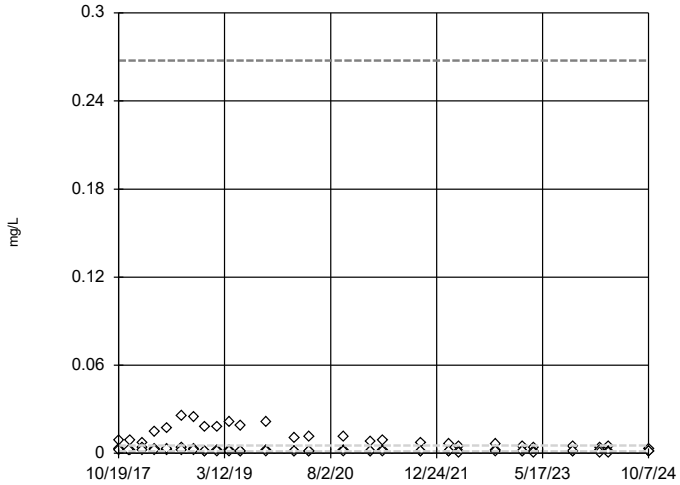
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2675, low cutoff = 0.00002808, based on IQR multiplier of 3.

Constituent: Arsenic total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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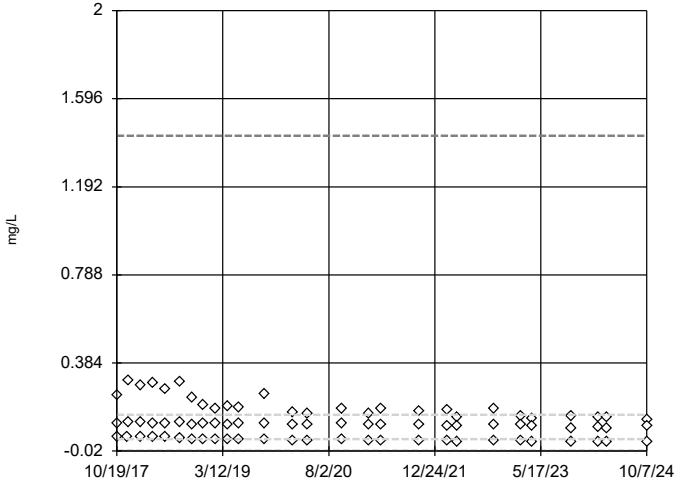
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.426, low cutoff = -0.01989, based on IQR multiplier of 3.

Constituent: Barium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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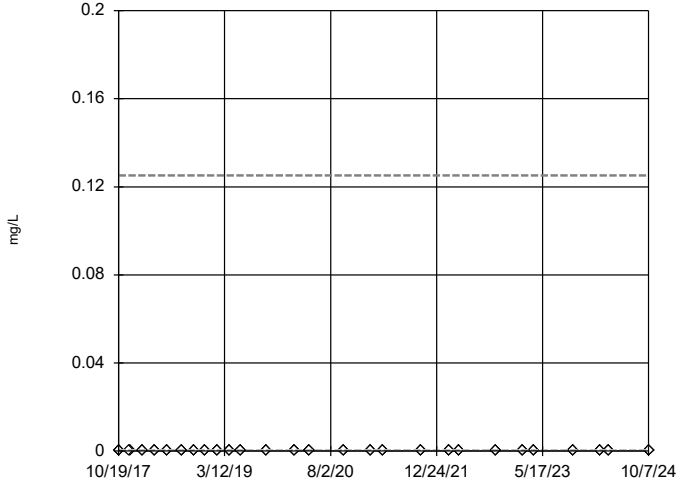
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1251, low cutoff = 1.9e-7, based on IQR multiplier of 3.

Constituent: Beryllium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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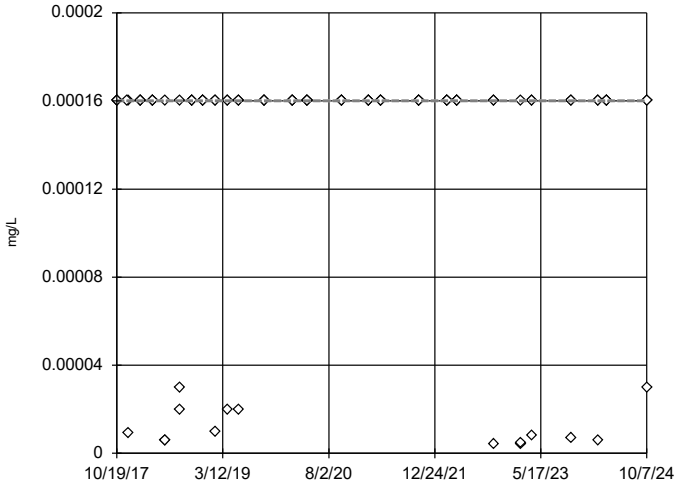
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradien

Clinch River Client: AEP Data: Clinch River Pond 1

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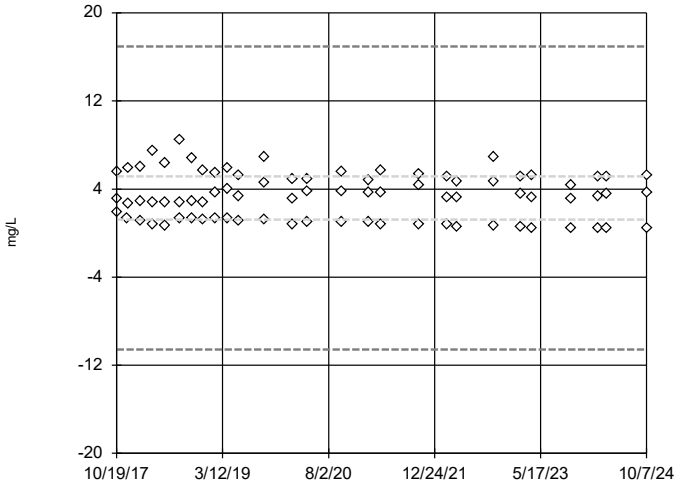
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 16.94, low cutoff = -10.58, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient

Clinch River Client: AEP Data: Clinch River Pond 1

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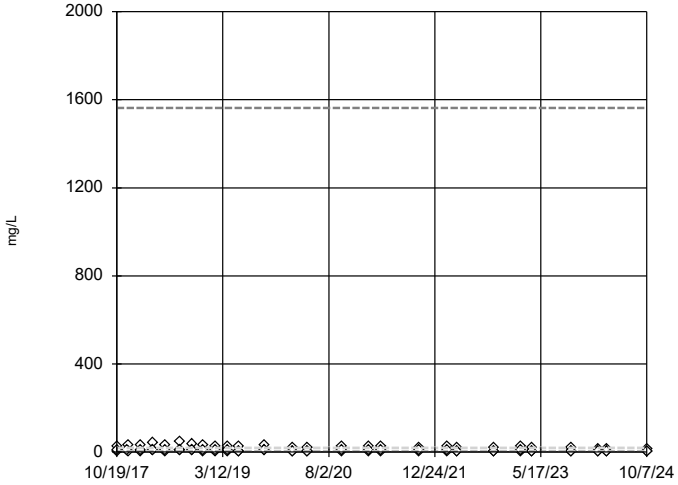
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1563, low cutoff = 0.05769, based on IQR multiplier of 3.

Constituent: Chloride total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient

Clinch River Client: AEP Data: Clinch River Pond 1

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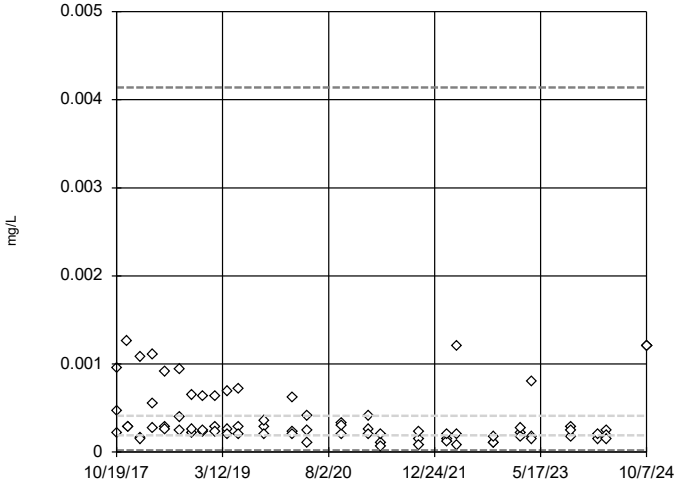
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00414, low cutoff = 0.00001884, based on IQR multiplier of 3.

Constituent: Chromium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradie

Clinch River Client: AEP Data: Clinch River Pond 1

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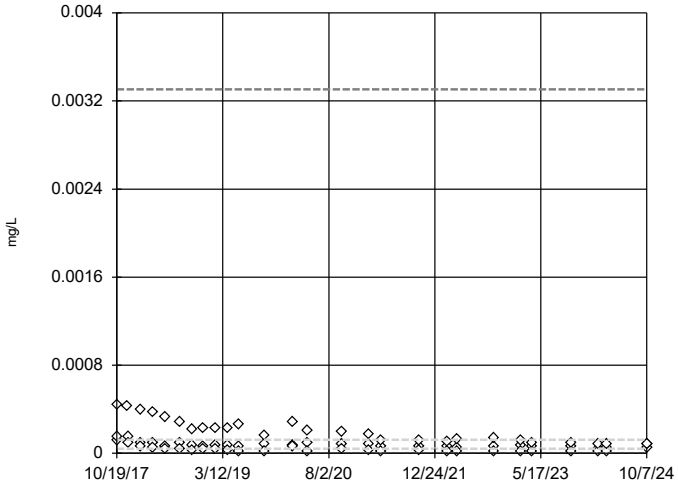
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.003307, low cutoff = 0.000001556, based on IQR multiplier of 3.

Constituent: Cobalt total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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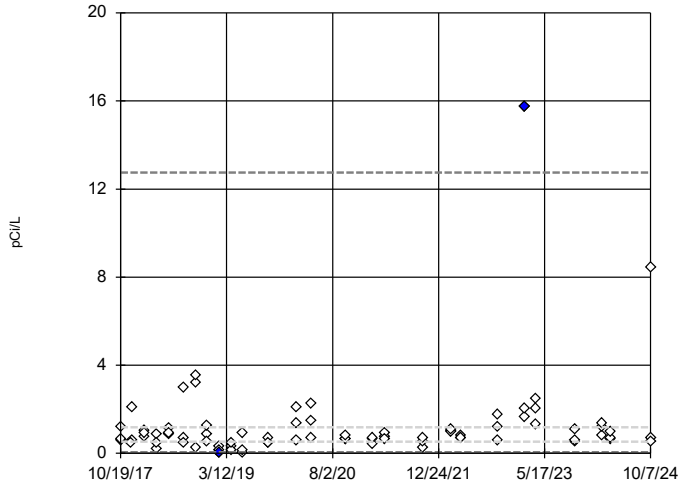
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 12.75, low cutoff = 0.04941, based on IQR multiplier of 3.

Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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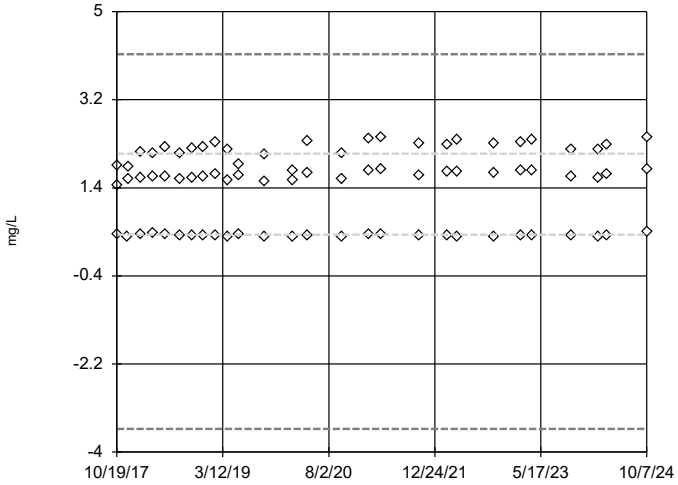
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found.
Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.13, low cutoff = -3.529, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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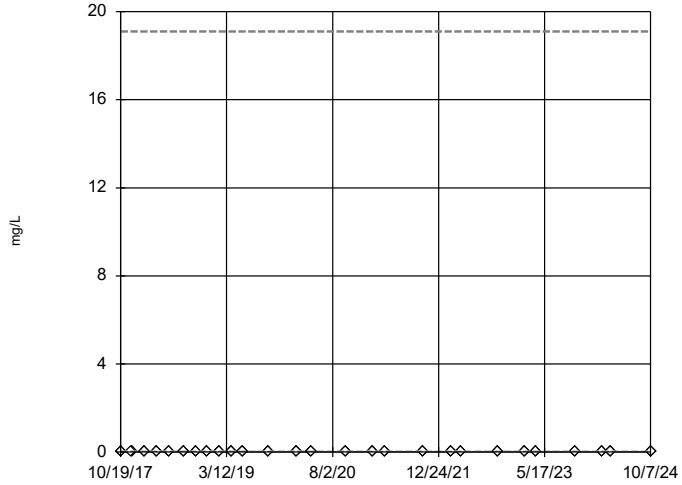
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 19.11, low cutoff = 5.9e-9, based on IQR multiplier of 3.

Constituent: Lead total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient Out
Clinch River Client: AEP Data: Clinch River Pond 1

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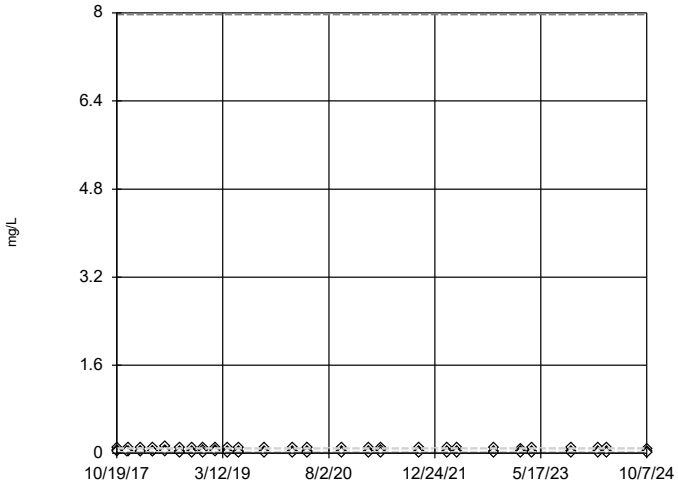
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 7.979, low cutoff = 0.0002348, based on IQR multiplier of 3.

Constituent: Lithium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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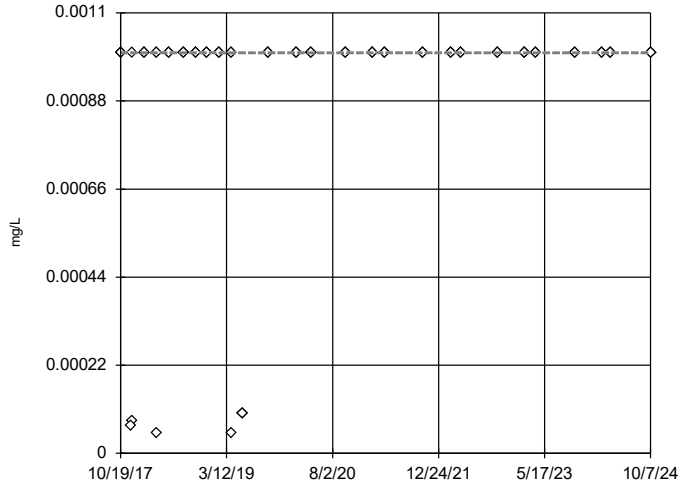
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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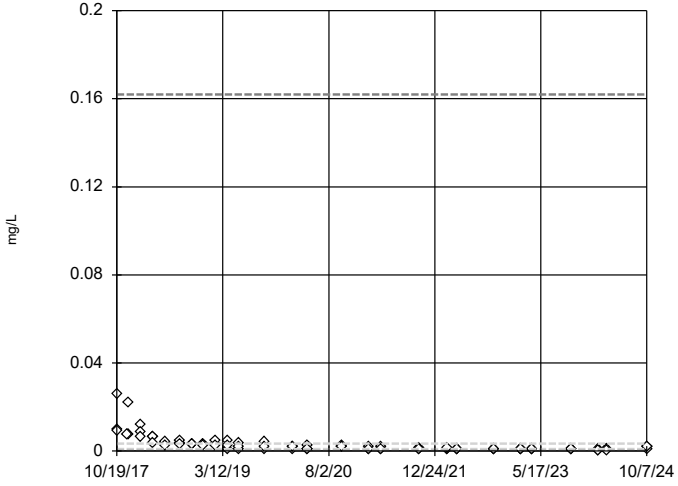
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1619, low cutoff = 0.00002009, based on IQR multiplier of 3.

Constituent: Molybdenum total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgrad
Clinch River Client: AEP Data: Clinch River Pond 1

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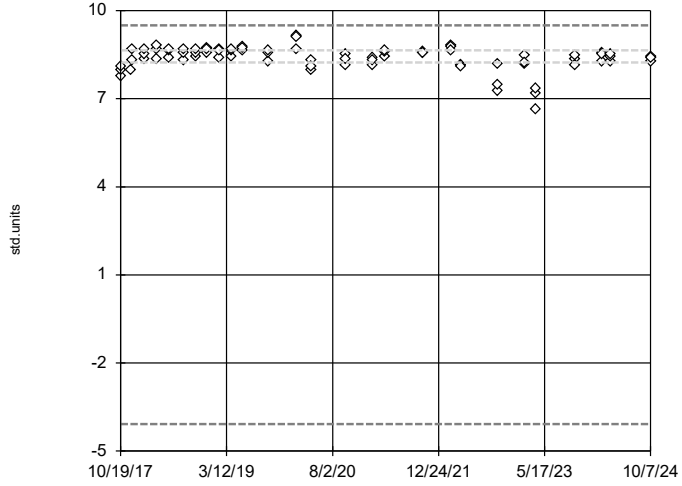
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.498, low cutoff = -4.084, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

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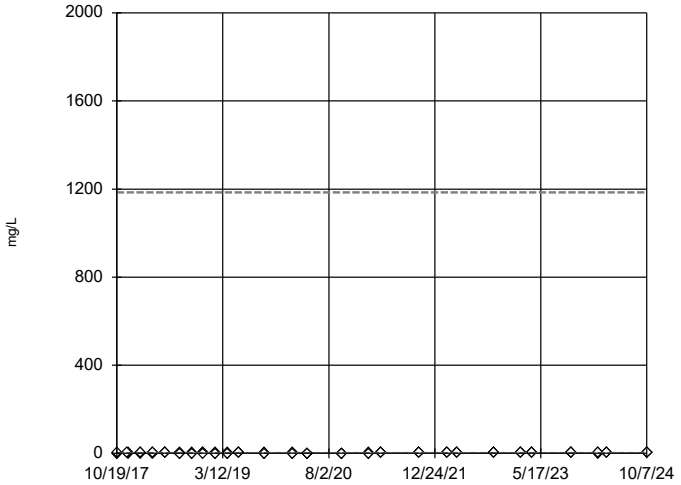
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1185, low cutoff = 2.0e-10, based on IQR multiplier of 3.

Constituent: Selenium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient

Clinch River Client: AEP Data: Clinch River Pond 1

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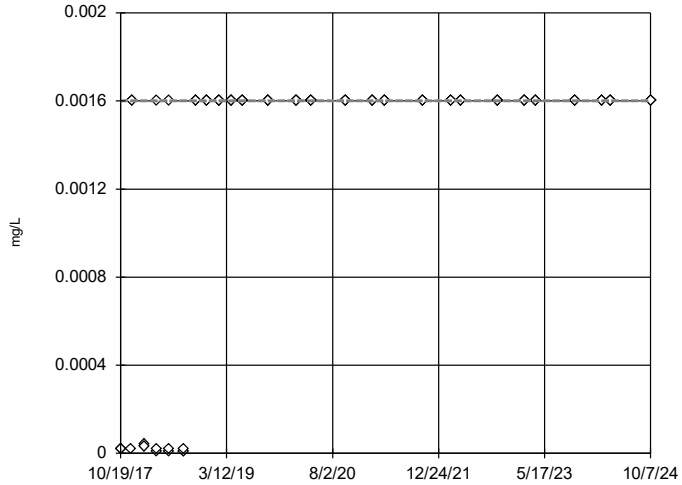
Tukey's Outlier Screening, Pooled Background

MW-1601,MW-1602,MW-1608



n = 81

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium total Analysis Run 2/3/2025 3:41 PM View: Chattanooga Shale - Pond 1 Upgradient

Clinch River Client: AEP Data: Clinch River Pond 1

Outlier Summary - Rome Limestone

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 10:33 AM

	MW-1607 Total Dissolved Solids (mg/L)
10/18/2017	468 (o)
12/12/2017	417 (o)

Tukey's Outlier Test - Rome Limestone - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 10:18 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Total Dissolved Solids (mg/L)	**MW-1607**	**Yes**	**468,417**	**10/18/2017,12/12/2017**	**NP**	**NaN**	**26**	**296.5**	**45.94**	**ln(x)**	**ShapiroWilk**

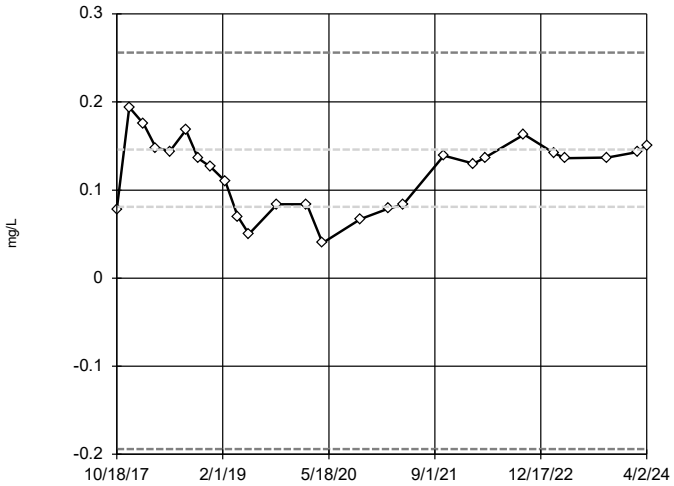
Tukey's Outlier Test - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 10:18 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron total (mg/L)	MW-1606	No	n/a	n/a	NP	NaN	26	0.1197	0.04081	x^2	ShapiroWilk
Boron total (mg/L)	MW-1607	No	n/a	n/a	NP	NaN	26	0.1225	0.02296	ln(x)	ShapiroWilk
Boron total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	26	0.04392	0.02692	sqrt(x)	ShapiroWilk
Calcium total (mg/L)	MW-1606	No	n/a	n/a	NP	NaN	26	56.7	3.894	x^4	ShapiroWilk
Calcium total (mg/L)	MW-1607	No	n/a	n/a	NP	NaN	26	45.59	3.461	ln(x)	ShapiroWilk
Calcium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	26	70.62	6.405	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1606	No	n/a	n/a	NP	NaN	26	0.2015	0.03402	normal	ShapiroWilk
Fluoride total (mg/L)	MW-1607	No	n/a	n/a	NP	NaN	26	0.2223	0.02372	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	26	0.2527	0.03194	ln(x)	ShapiroWilk
pH [field] (std.units)	MW-1606	No	n/a	n/a	NP	NaN	26	7.077	0.1742	x^6	ShapiroWilk
pH [field] (std.units)	MW-1607	No	n/a	n/a	NP	NaN	26	7.785	0.2855	x^6	ShapiroWilk
pH [field] (std.units)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	26	7.338	0.3267	x^6	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1606	No	n/a	n/a	NP	NaN	26	337.1	20.85	x^2	ShapiroWilk
Total Dissolved Solids (mg/L)	**MW-1607**	**Yes**	**468,417**	**10/18/2017,12/12/2017**	**NP**	**NaN**	**26**	**296.5**	**45.94**	**ln(x)**	**ShapiroWilk**
Total Dissolved Solids (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	26	288.5	25.39	ln(x)	ShapiroWilk

Tukey's Outlier Screening

MW-1606



n = 26

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2561, low cutoff = -0.1942, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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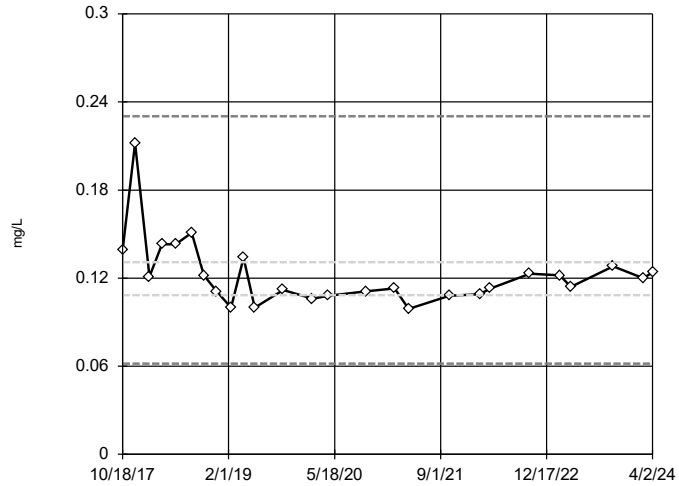
Tukey's Outlier Screening

MW-1607



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2303, low cutoff = 0.06169, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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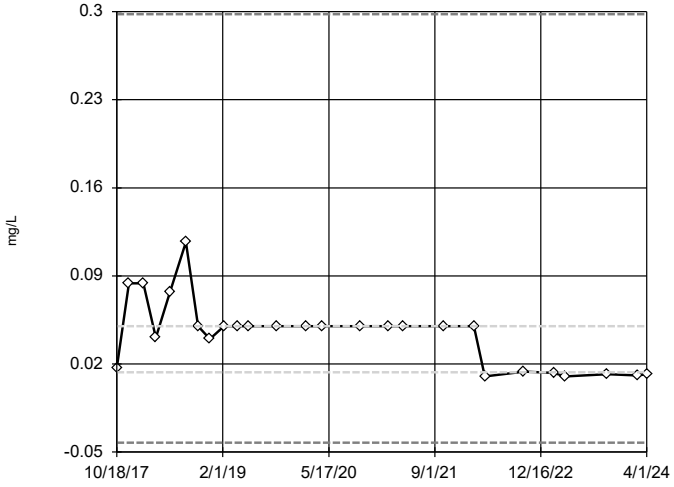
Tukey's Outlier Screening

MW-1609 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.298, low cutoff = -0.04249, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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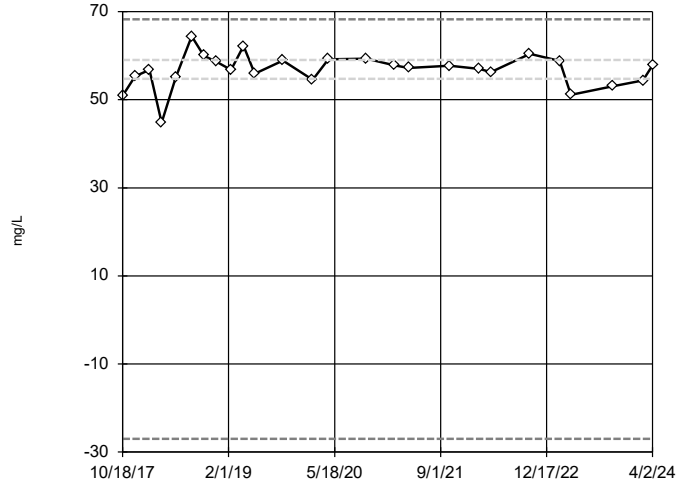
Tukey's Outlier Screening

MW-1606



n = 26

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 68.23, low cutoff = -26.99, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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Tukey's Outlier Screening

MW-1607

n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 71.41, low cutoff = 29.1, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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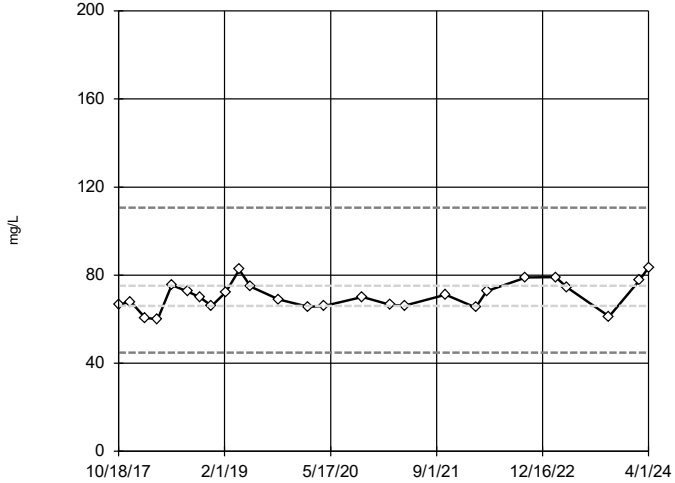
Tukey's Outlier Screening

MW-1609 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 110.7, low cutoff = 44.85, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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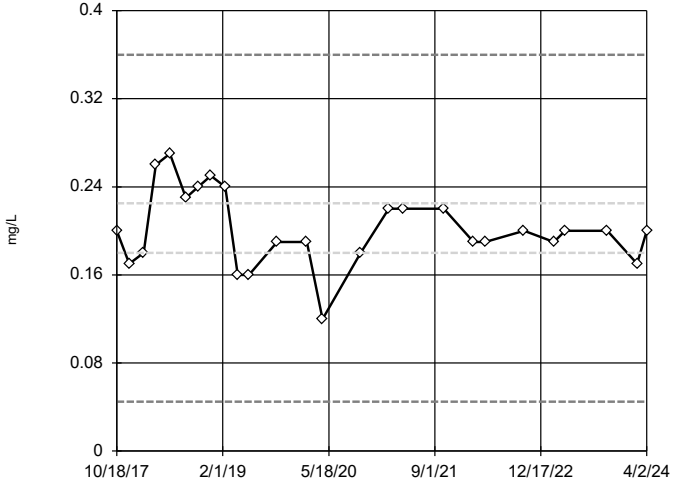
Tukey's Outlier Screening

MW-1606



n = 26

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.36, low cutoff = 0.045, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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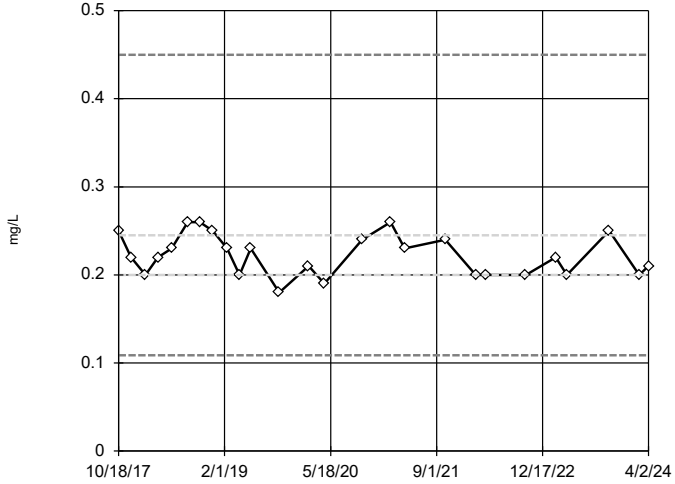
Tukey's Outlier Screening

MW-1607



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.45, low cutoff = 0.1089, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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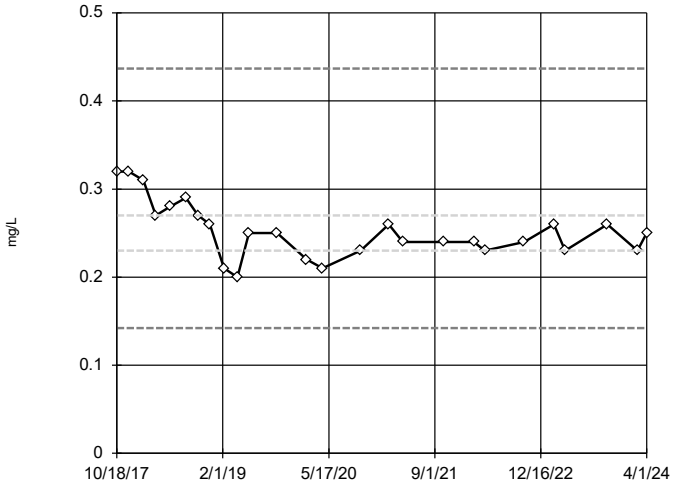
Tukey's Outlier Screening

MW-1609 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.4368, low cutoff = 0.1422, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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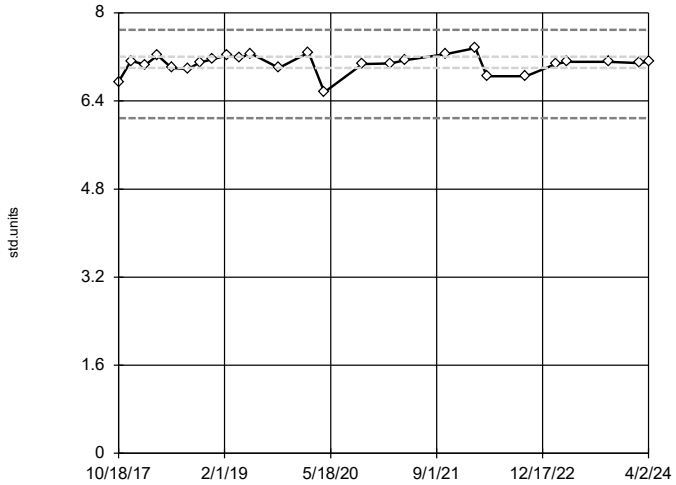
Tukey's Outlier Screening

MW-1606



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 7.69, low cutoff = 6.086, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 1/29/2025 10:15 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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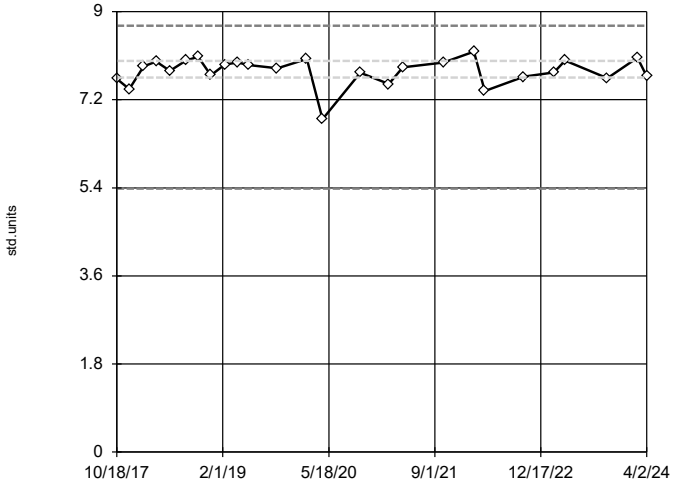
Tukey's Outlier Screening

MW-1607



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.711, low cutoff = 5.384, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 1/29/2025 10:16 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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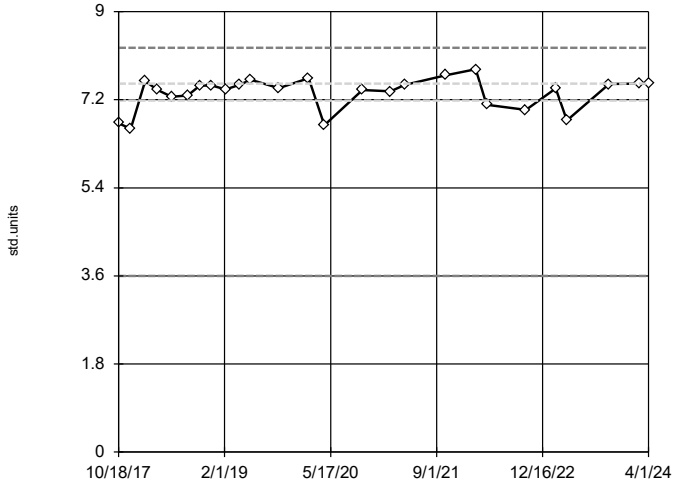
Tukey's Outlier Screening

MW-1609 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.259, low cutoff = 3.599, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 1/29/2025 10:16 AM View: Rome Limestone - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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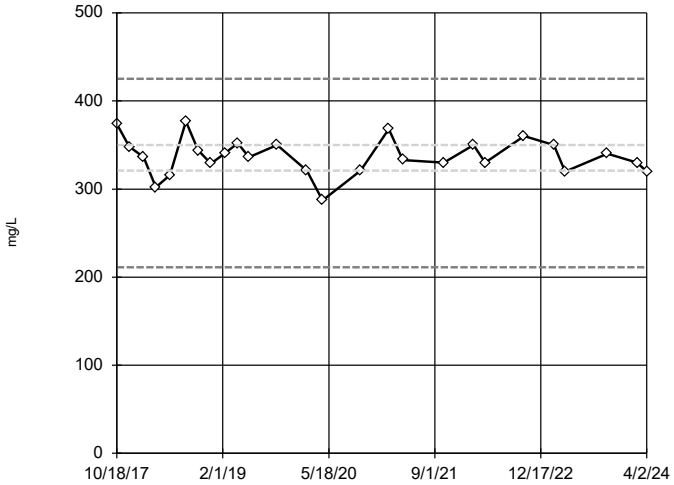
Tukey's Outlier Screening

MW-1606



n = 26

No outliers found.
Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 425.3, low cutoff = 211.3, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:16 AM View: Rome Limestone - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

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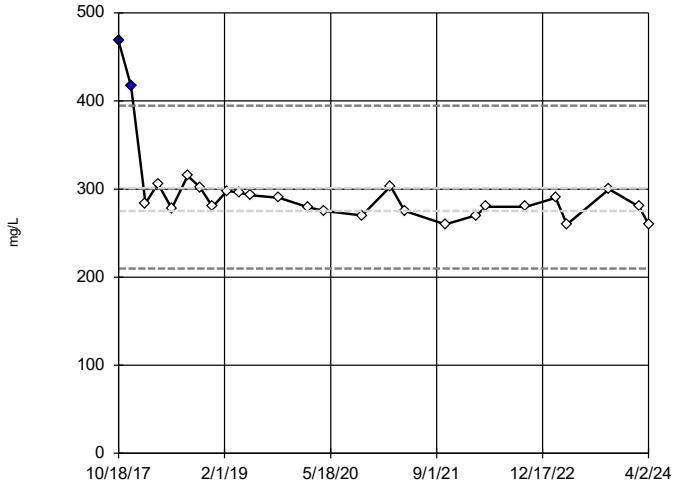
Tukey's Outlier Screening

MW-1607



n = 26

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 394.7, low cutoff = 209.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:16 AM View: Rome Limestone - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

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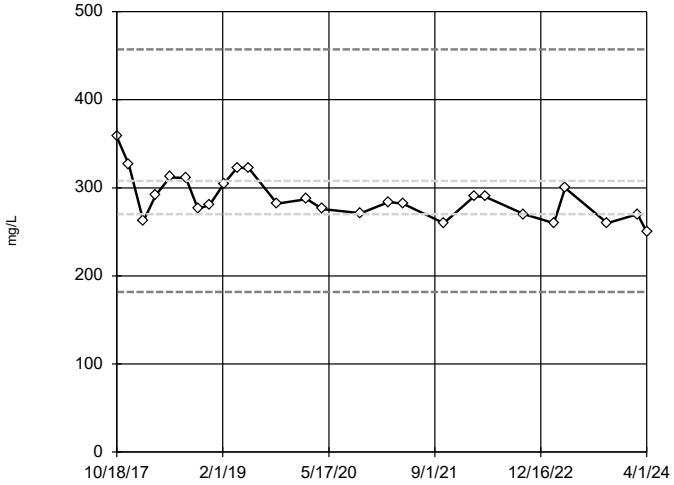
Tukey's Outlier Screening

MW-1609 (bg)



n = 26

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 457.1, low cutoff = 181.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:16 AM View: Rome Limestone - Pond 1 O
Clinch River Client: AEP Data: Clinch River Pond 1

Tukey's Outlier Test - Rome Limestone Upgradient - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:27 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Chloride total (mg/L)	**MW-1609 (bg)**	**Yes**	**4.1**	**10/18/2017**	**NP**	**NaN**	**27**	**1.556**	**0.7405**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - Rome Limestone Upgradient - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:27 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.00008919	0.0001342	ln(x)	ShapiroWilk
Arsenic total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.0002056	0.0002362	ln(x)	ShapiroWilk
Barium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.3916	0.04616	ln(x)	ShapiroWilk
Beryllium total (mg/L)	MW-1609 (bg)	n/a	n/a	n/a	NP	NaN	27	0.0003853	0.00007621	unknown	ShapiroWilk
Cadmium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.0000407	0.00005841	ln(x)	ShapiroWilk
Chloride total (mg/L)	**MW-1609 (bg)**	**Yes**	**4.1**	**10/18/2017**	**NP**	**NaN**	**27**	**1.556**	**0.7405**	**ln(x)**	**ShapiroWilk**
Chromium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.0002821	0.0003363	ln(x)	ShapiroWilk
Cobalt total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.0002438	0.0002853	x^(1/3)	ShapiroWilk
Combined Radium 226 and 228 (pCi/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	2.019	1.036	ln(x)	ShapiroWilk
Fluoride total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.253	0.03136	ln(x)	ShapiroWilk
Lead total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.0003868	0.0002659	x^(1/3)	ShapiroWilk
Lithium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.003656	0.003828	ln(x)	ShapiroWilk
Mercury total (mg/L)	MW-1609 (bg)	n/a	n/a	n/a	NP	NaN	27	0.0009667	0.0001732	unknown	ShapiroWilk
Molybdenum total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.00142	0.001491	ln(x)	ShapiroWilk
Selenium total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	0.001727	0.001924	ln(x)	ShapiroWilk
Sulfate total (mg/L)	MW-1609 (bg)	No	n/a	n/a	NP	NaN	27	15.74	2.869	ln(x)	ShapiroWilk
Thallium total (mg/L)	MW-1609 (bg)	n/a	n/a	n/a	NP	NaN	27	0.00131	0.00062	unknown	ShapiroWilk

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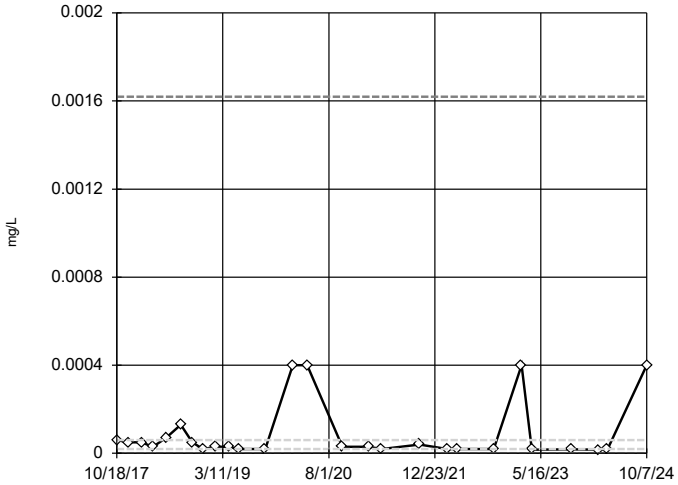
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00162, low cutoff = 7.4e-7, based on IQR multiplier of 3.

Constituent: Antimony total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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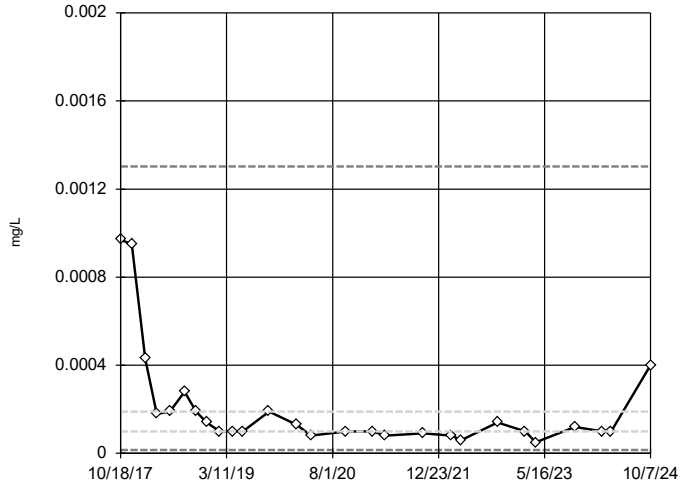
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001303, low cutoff = 0.00001458, based on IQR multiplier of 3.

Constituent: Arsenic total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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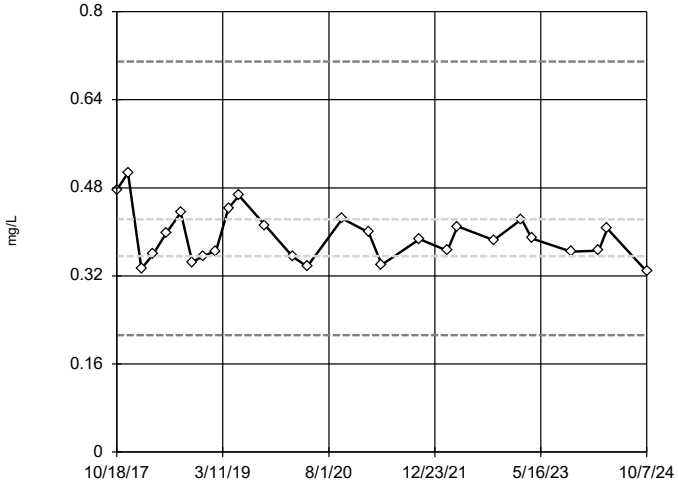
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7096, low cutoff = 0.2122, based on IQR multiplier of 3.

Constituent: Barium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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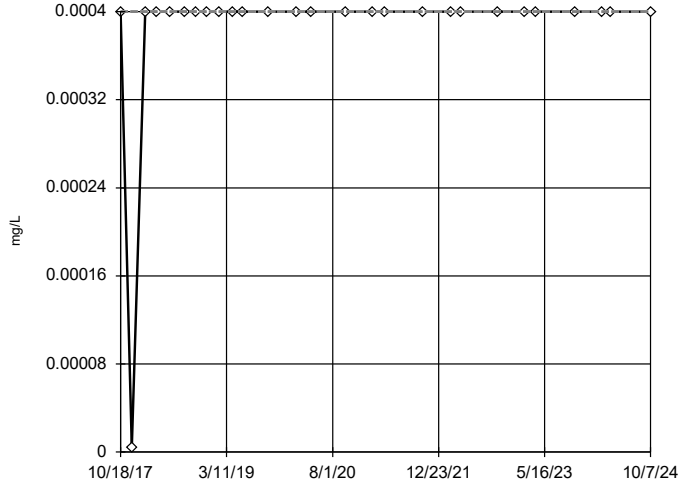
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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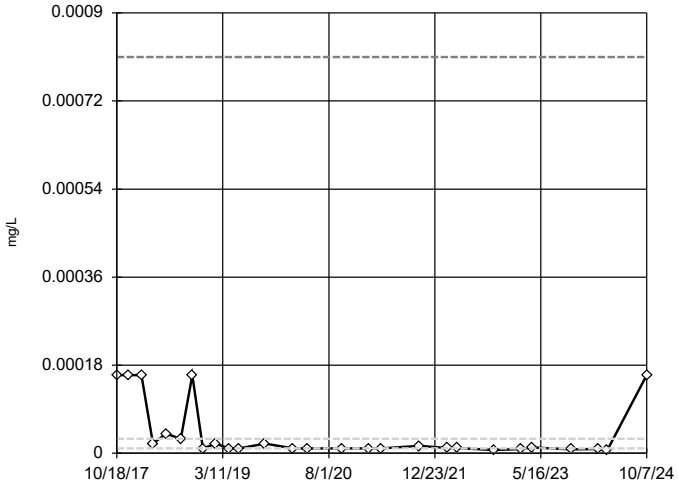
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00081, low cutoff = 3.7e-7, based on IQR multiplier of 3.

Constituent: Cadmium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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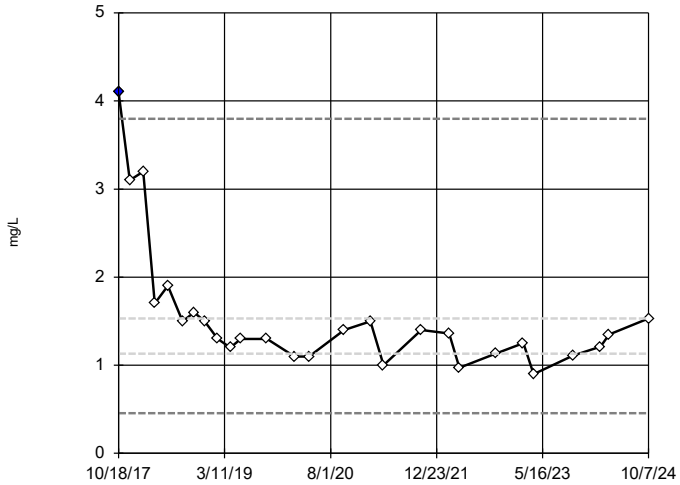
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3.798, low cutoff = 0.4552, based on IQR multiplier of 3.

Constituent: Chloride total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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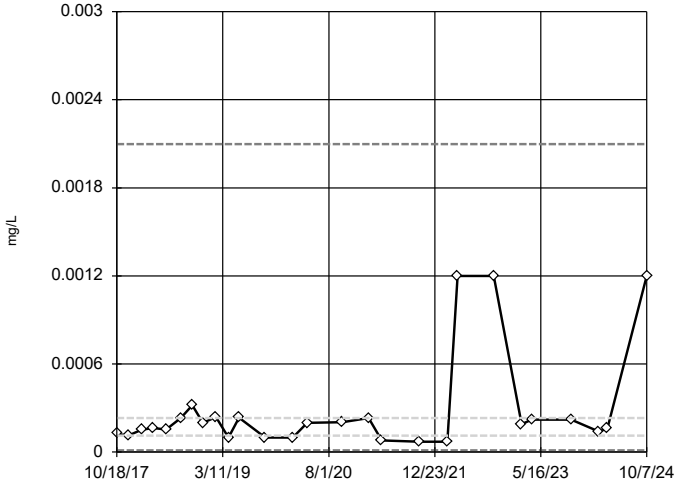
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002098, low cutoff = 0.00001244, based on IQR multiplier of 3.

Constituent: Chromium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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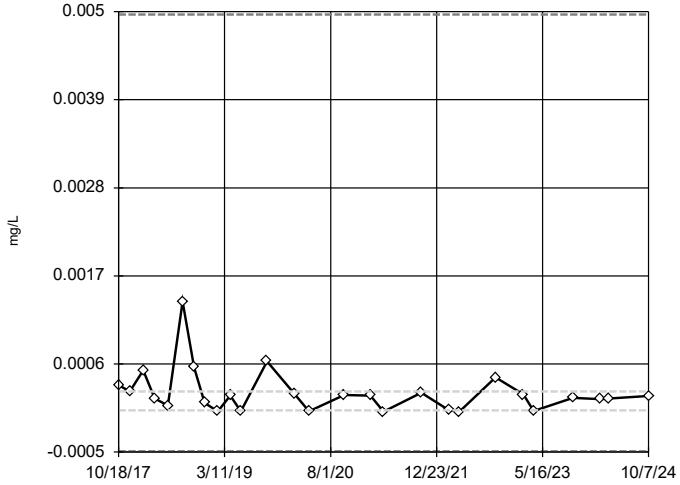
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.004964, low cutoff = -0.0004912, based on IQR multiplier of 3.

Constituent: Cobalt total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient Ou
Clinch River Client: AEP Data: Clinch River Pond 1

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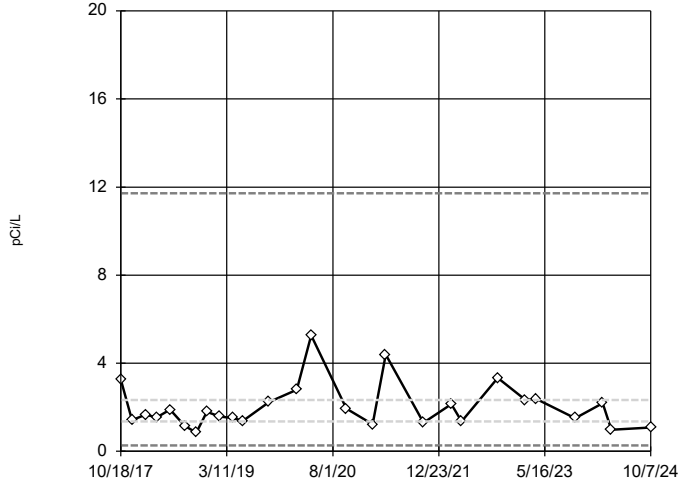
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 11.72, low cutoff = 0.2705, based on IQR multiplier of 3.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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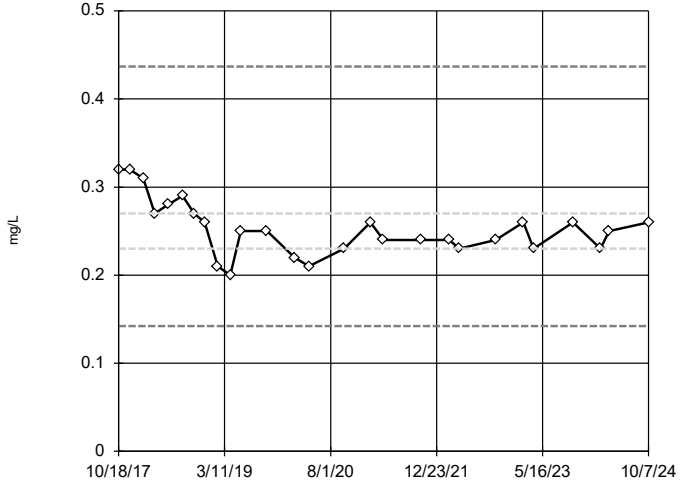
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.4368, low cutoff = 0.1422, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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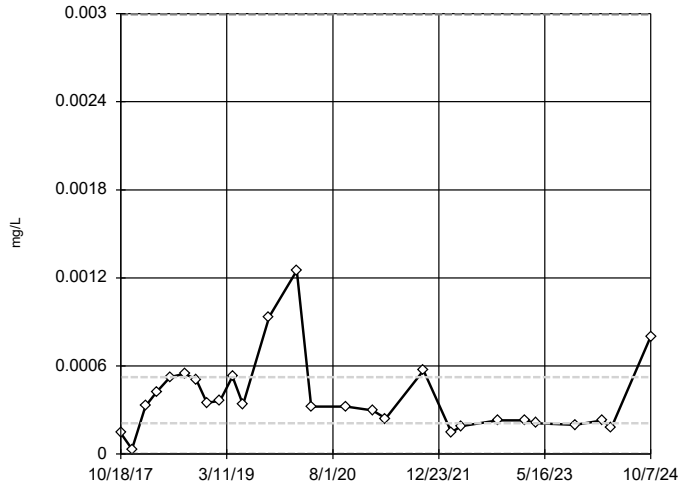
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002996, low cutoff = -6.9e-8, based on IQR multiplier of 3.

Constituent: Lead total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

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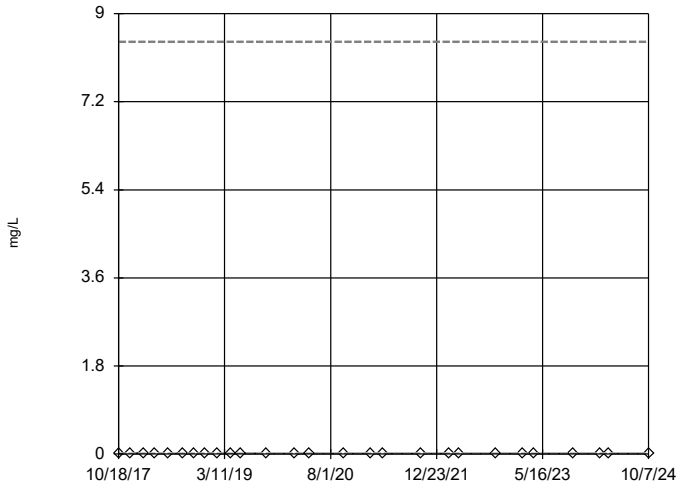
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.426, low cutoff = 9.8e-7, based on IQR multiplier of 3.

Constituent: Lithium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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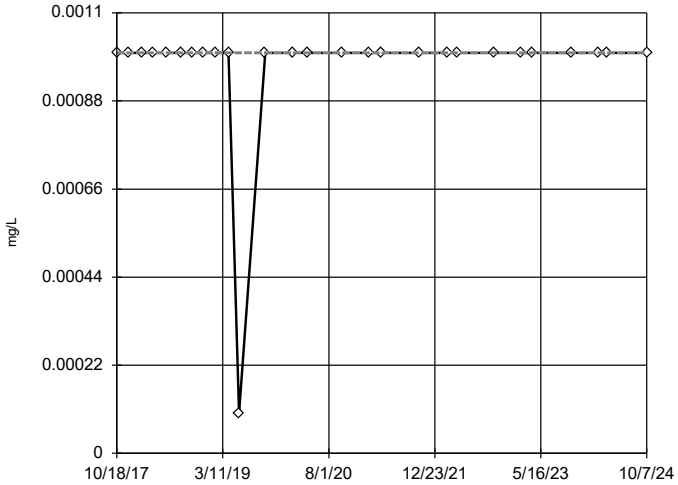
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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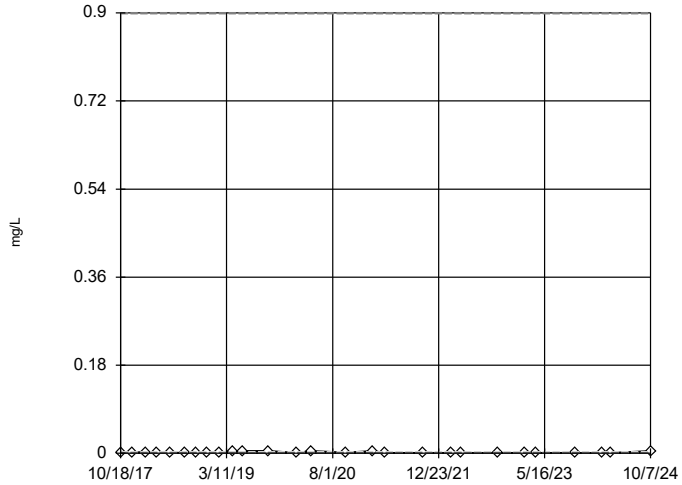
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.8996, low cutoff = 7.4e-7, based on IQR multiplier of 3.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradi
Clinch River Client: AEP Data: Clinch River Pond 1

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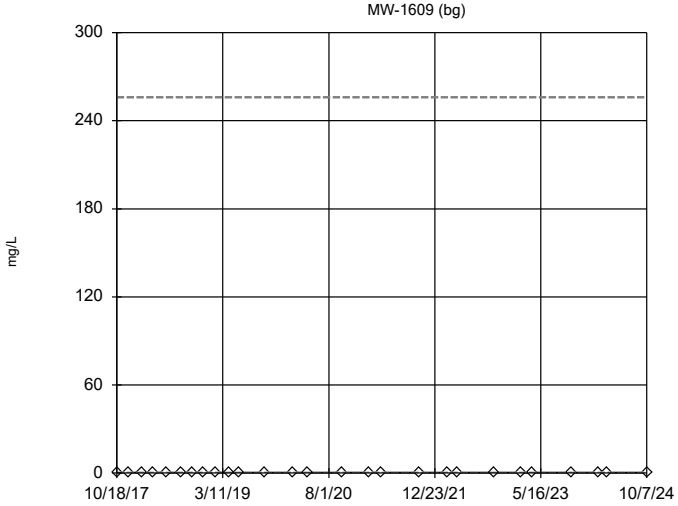
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 256, low cutoff = 1.6e-9, based on IQR multiplier of 3.

Constituent: Selenium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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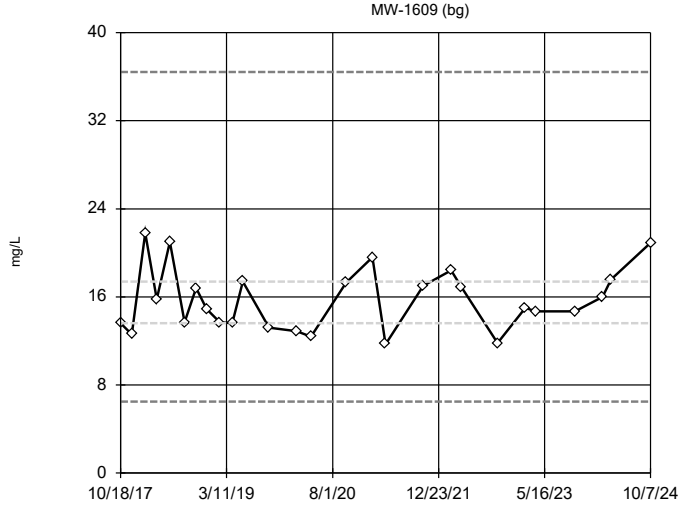
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 36.44, low cutoff = 6.494, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient O
Clinch River Client: AEP Data: Clinch River Pond 1

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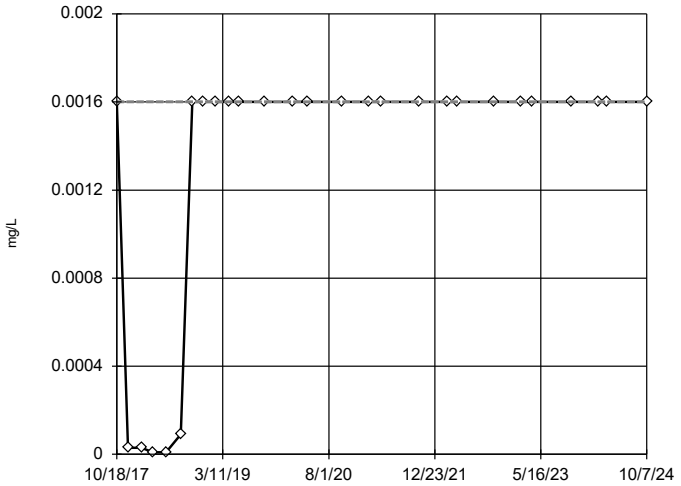
Tukey's Outlier Screening

MW-1609 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium total Analysis Run 1/29/2025 3:25 PM View: Rome Limestone - Pond 1 Upgradient Clinch River Client: AEP Data: Clinch River Pond 1

Outlier Summary - Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:06 PM

	MW-1611 Arsenic total (mg/L)	MW-1611 Cobalt total (mg/L)	MW-1611 Lead total (mg/L)	MW-1611 Molybdenum total (mg/L)
10/19/2017		0.000311 (o)	0.00105 (o)	0.038 (o)
2/13/2018	0.0365 (o)			
4/10/2018	0.0395 (o)			
6/11/2018	0.0275 (o)			

Tukey's Outlier Test - Dumps Fault - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:09 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Fluoride total (mg/L)	**MW-1610**	**Yes**	**0.35**	**10/7/2020**	**NP**	**NaN**	**26**	**0.2058**	**0.03711**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - Dumps Fault - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:09 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron total (mg/L)	MW-1610	No	n/a	n/a	NP	NaN	26	0.05027	0.02898	ln(x)	ShapiroWilk
Boron total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	0.5722	0.06521	x^(1/3)	ShapiroWilk
Calcium total (mg/L)	MW-1610	No	n/a	n/a	NP	NaN	26	33.87	4.704	x^6	ShapiroWilk
Calcium total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	43.49	35.31	ln(x)	ShapiroWilk
Chloride total (mg/L)	MW-1610	No	n/a	n/a	NP	NaN	26	10.52	0.9701	ln(x)	ShapiroWilk
Chloride total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	36.24	37.42	ln(x)	ShapiroWilk
Fluoride total (mg/L)	**MW-1610**	**Yes**	**0.35**	**10/7/2020**	**NP**	**NaN**	**26**	**0.2058**	**0.03711**	**ln(x)**	**ShapiroWilk**
Fluoride total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	0.9908	0.1731	x^4	ShapiroWilk
pH [field] (std.units)	MW-1610	No	n/a	n/a	NP	NaN	26	7.554	0.3122	x^3	ShapiroWilk
pH [field] (std.units)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	7.718	0.2692	x^6	ShapiroWilk
Sulfate total (mg/L)	MW-1610	No	n/a	n/a	NP	NaN	26	33.44	14.62	x^3	ShapiroWilk
Sulfate total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	372.8	527	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1610	No	n/a	n/a	NP	NaN	26	240.8	16.98	x^4	ShapiroWilk
Total Dissolved Solids (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	26	1089	859.8	ln(x)	ShapiroWilk

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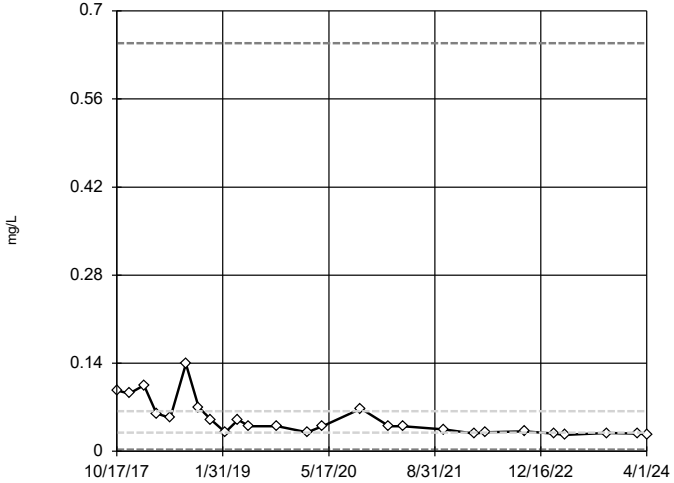
Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.6487, low cutoff = 0.002904, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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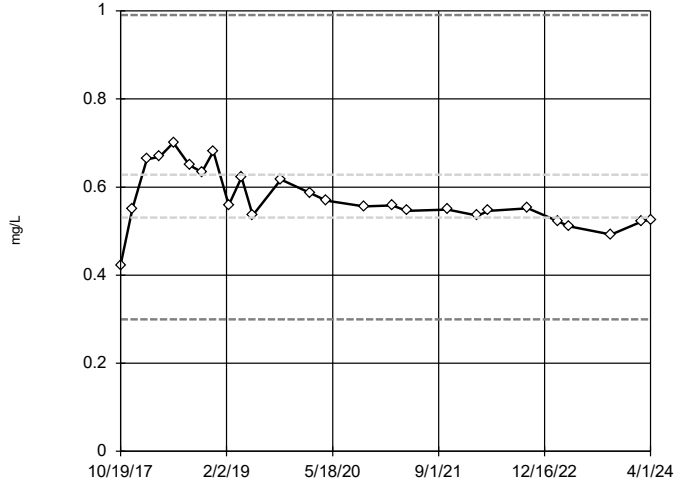
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.9905, low cutoff = 0.2995, based on IQR multiplier of 3.

Constituent: Boron total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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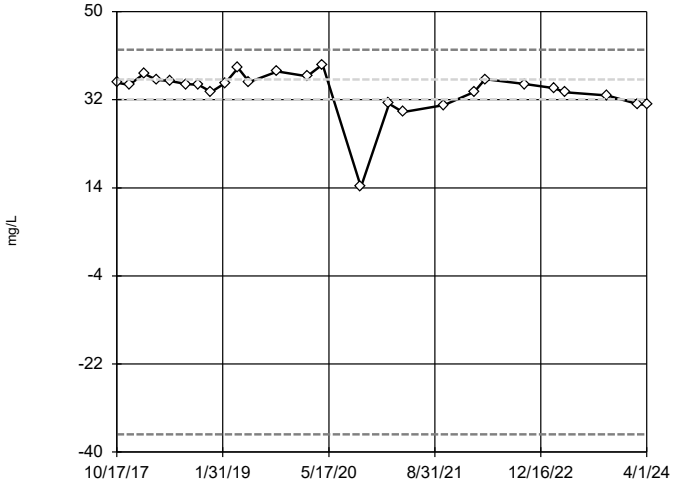
Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 42.19, low cutoff = -36.37, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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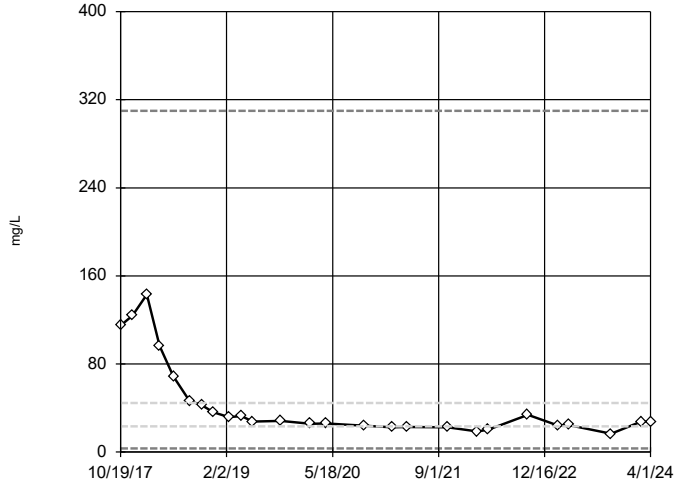
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 309.8, low cutoff = 3.357, based on IQR multiplier of 3.

Constituent: Calcium total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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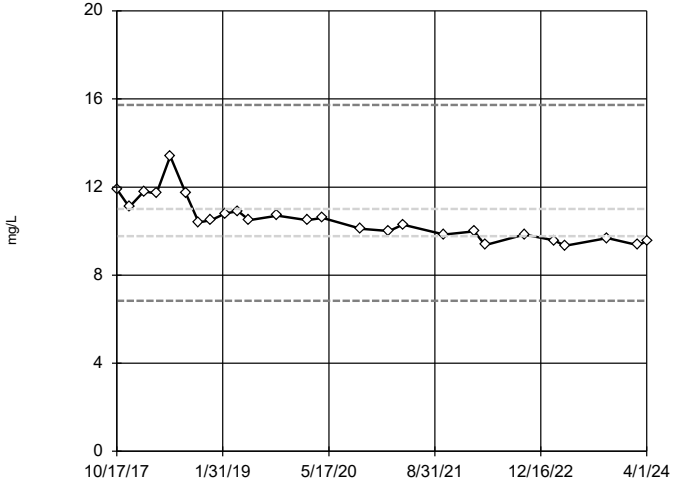
Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 15.72, low cutoff = 6.831, based on IQR multiplier of 3.

Constituent: Chloride total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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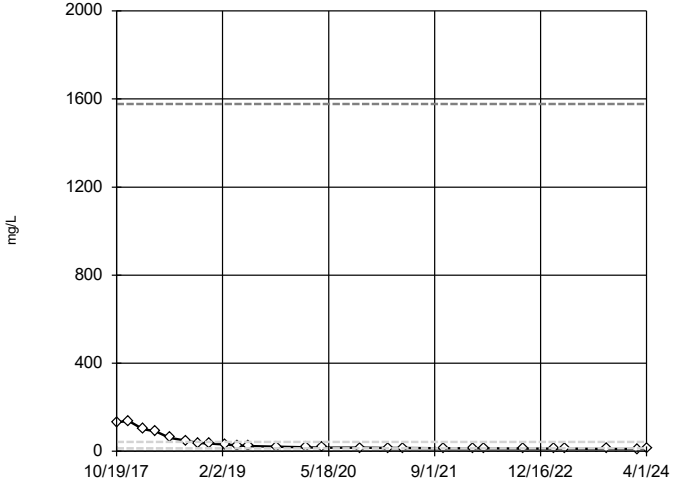
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1577, low cutoff = 0.3604, based on IQR multiplier of 3.

Constituent: Chloride total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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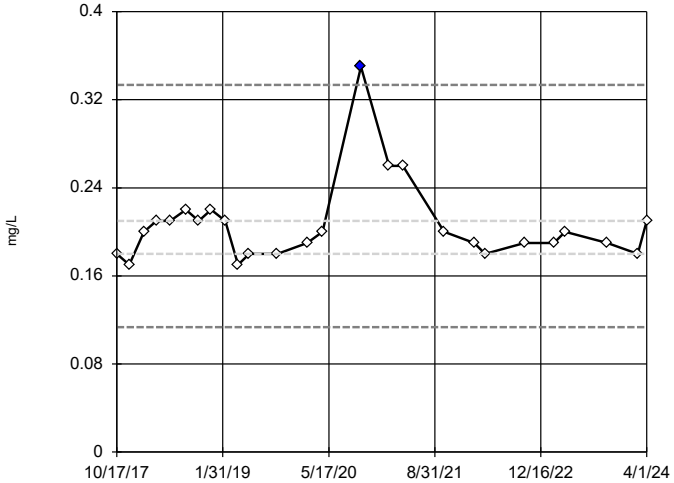
Tukey's Outlier Screening

MW-1610



n = 26

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3335, low cutoff = 0.1134, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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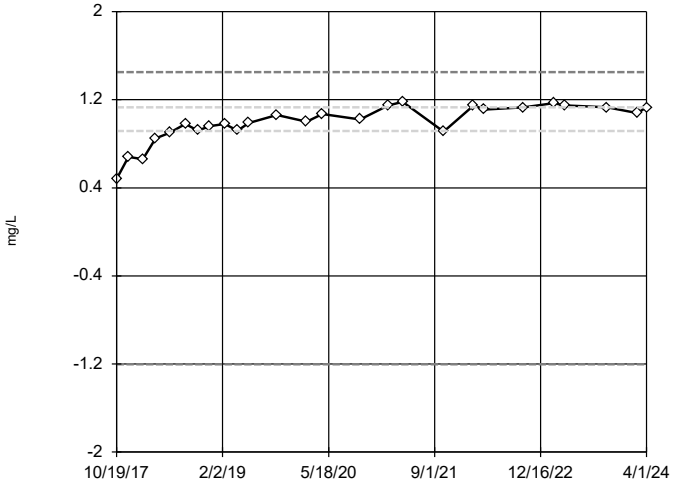
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.45, low cutoff = -1.202, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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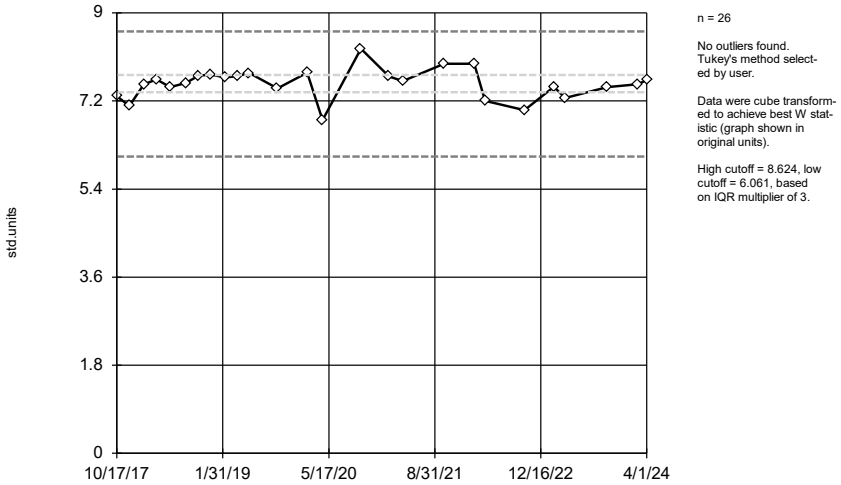
Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.624, low cutoff = 6.061, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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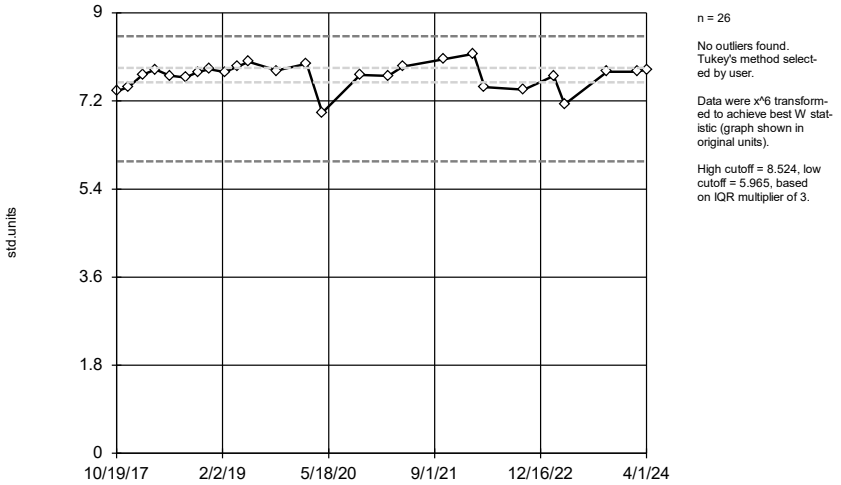
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.524, low cutoff = 5.965, based on IQR multiplier of 3.

Constituent: pH [field] Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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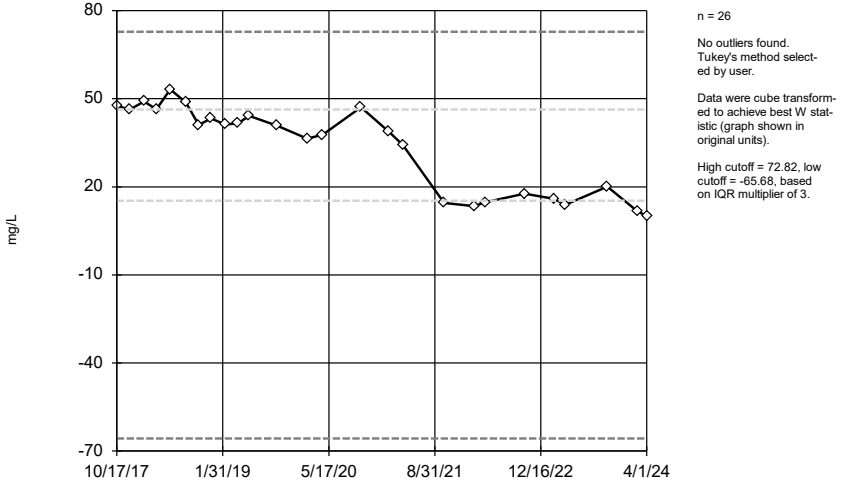
Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 72.82, low cutoff = -65.68, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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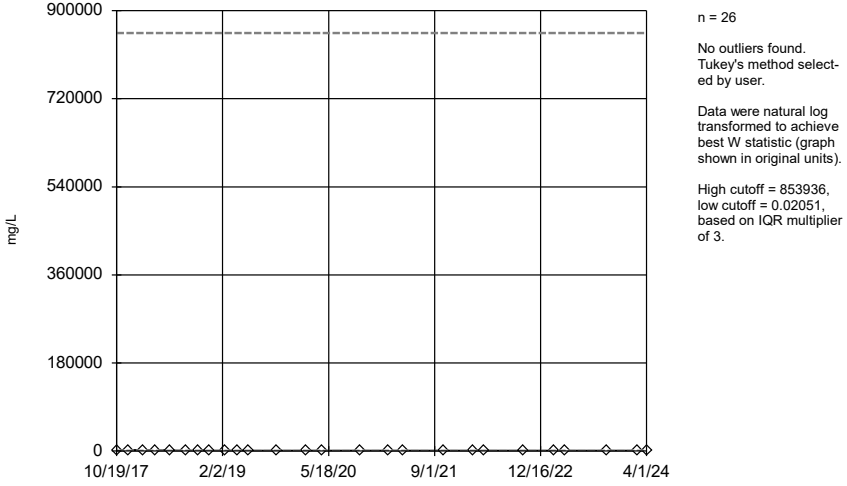
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

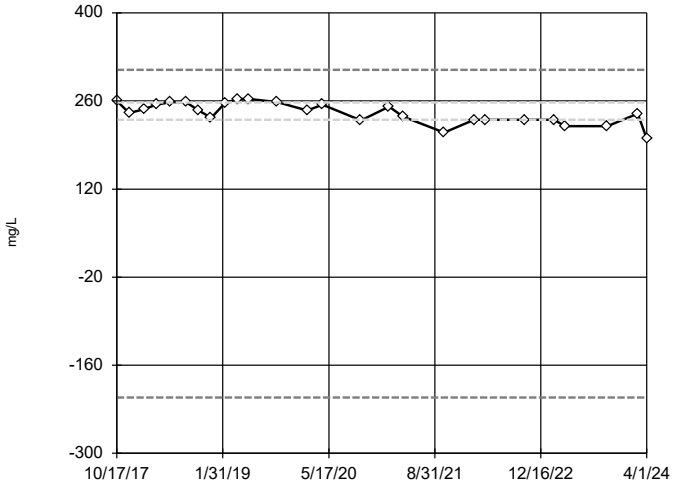
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 853936, low cutoff = 0.02051, based on IQR multiplier of 3.

Constituent: Sulfate total Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

Tukey's Outlier Screening

MW-1610



n = 26

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 309.6, low cutoff = -211.4, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

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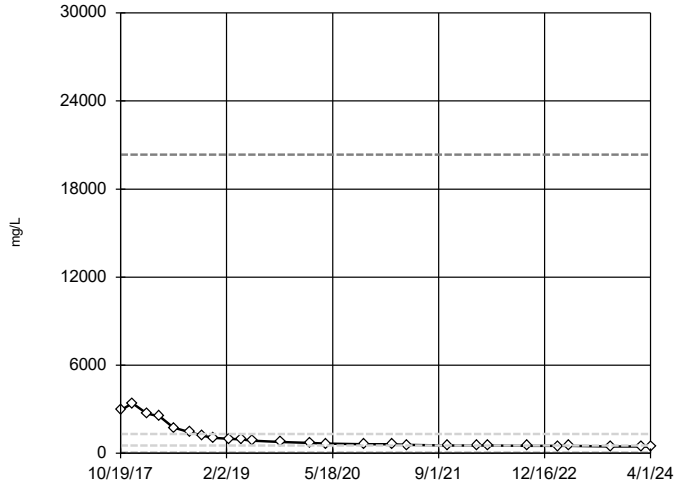
Tukey's Outlier Screening

MW-1611 (bg)



n = 26

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 20347, low cutoff = 34.35, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:07 PM View: Dumps Fault - Pond 1 Outliers

Clinch River Client: AEP Data: Clinch River Pond 1

Tukey's Outlier Test - Dumps Fault Upgradient - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:31 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Combined Radium 226 and 228 (pCi/L)	**MW-1611 (bg)**	**Yes**	**2.62**	**4/3/2023**	**NP**	**NaN**	**27**	**0.7777**	**0.614**	**normal**	**ShapiroWilk**
Molybdenum total (mg/L)	**MW-1611 (bg)**	**Yes**	**0.038**	**10/19/2017**	**NP**	**NaN**	**27**	**0.003543**	**0.006967**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - Dumps Fault Upgradient - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:31 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.0002401	0.0003057	ln(x)	ShapiroWilk
Arsenic total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.01154	0.009449	ln(x)	ShapiroWilk
Barium total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.1545	0.09401	ln(x)	ShapiroWilk
Beryllium total (mg/L)	MW-1611 (bg)	n/a	n/a	n/a	NP	NaN	27	0.0003276	0.0001549	unknown	ShapiroWilk
Cadmium total (mg/L)	MW-1611 (bg)	n/a	n/a	n/a	NP	NaN	27	0.0001544	0.00002887	unknown	ShapiroWilk
Chromium total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.0003743	0.0002726	ln(x)	ShapiroWilk
Cobalt total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.00005341	0.00006231	ln(x)	ShapiroWilk
Combined Radium 226 and 228 (pCi/L)	**MW-1611 (bg)**	**Yes**	**2.62**	**4/3/2023**	**NP**	**NaN**	**27**	**0.7777**	**0.614**	**normal**	**ShapiroWilk**
Fluoride total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	1	0.1764	x^4	ShapiroWilk
Lead total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.0009168	0.0007444	ln(x)	ShapiroWilk
Lithium total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.07834	0.02687	ln(x)	ShapiroWilk
Mercury total (mg/L)	MW-1611 (bg)	n/a	n/a	n/a	NP	NaN	27	0.0009659	0.0001771	unknown	ShapiroWilk
Molybdenum total (mg/L)	**MW-1611 (bg)**	**Yes**	**0.038**	**10/19/2017**	**NP**	**NaN**	**27**	**0.003543**	**0.006967**	**ln(x)**	**ShapiroWilk**
Selenium total (mg/L)	MW-1611 (bg)	No	n/a	n/a	NP	NaN	27	0.001668	0.00197	ln(x)	ShapiroWilk
Thallium total (mg/L)	MW-1611 (bg)	n/a	n/a	n/a	NP	NaN	27	0.001429	0.0004923	unknown	ShapiroWilk

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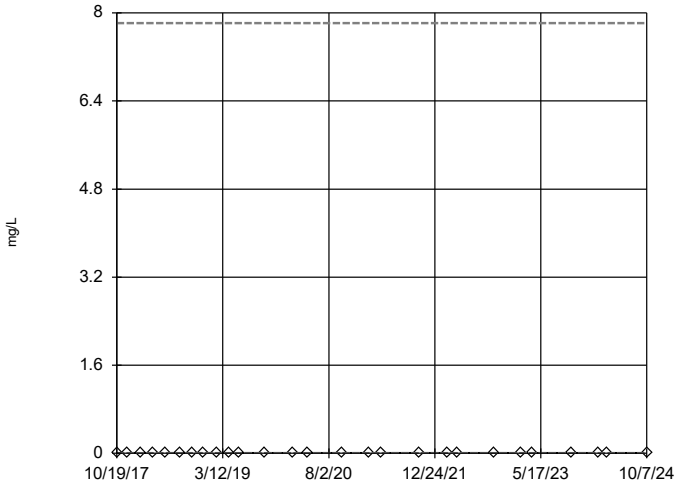
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 7.813, low cutoff = 1.3e-9, based on IQR multiplier of 3.

Constituent: Antimony total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

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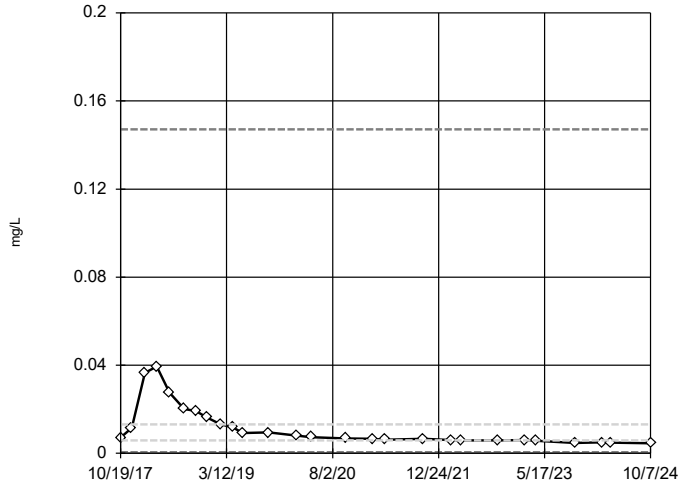
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1471, low cutoff = 0.0005304, based on IQR multiplier of 3.

Constituent: Arsenic total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlie
Clinch River Client: AEP Data: Clinch River Pond 1

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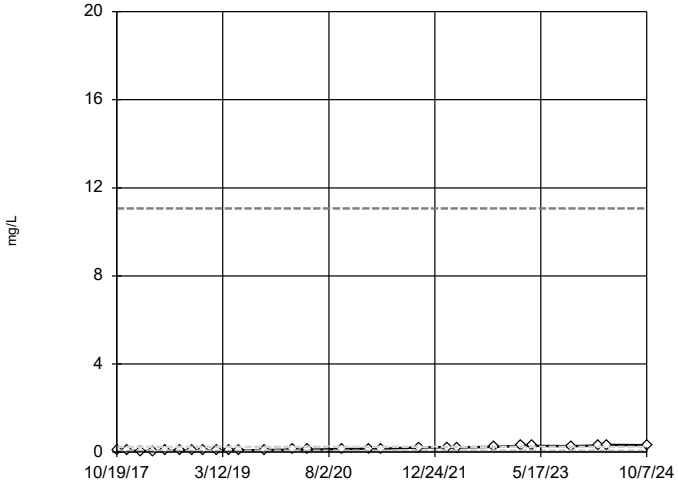
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 11.06, low cutoff = 0.001524, based on IQR multiplier of 3.

Constituent: Barium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlier
Clinch River Client: AEP Data: Clinch River Pond 1

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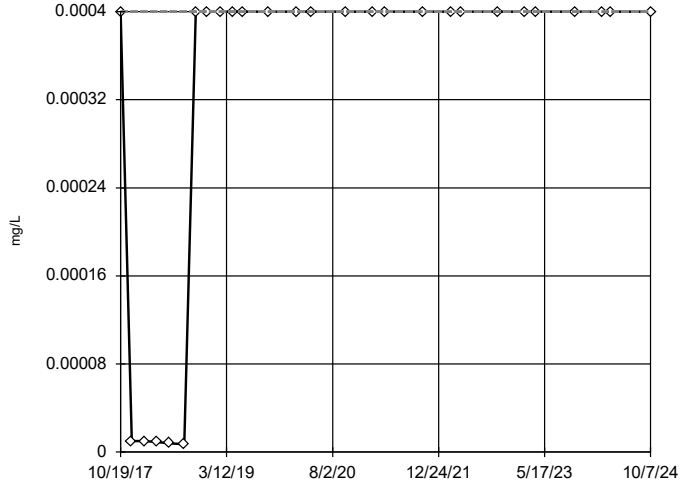
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

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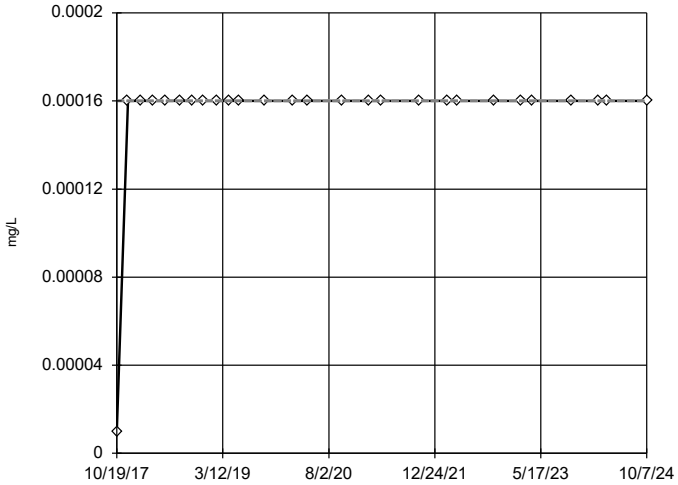
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outl
Clinch River Client: AEP Data: Clinch River Pond 1

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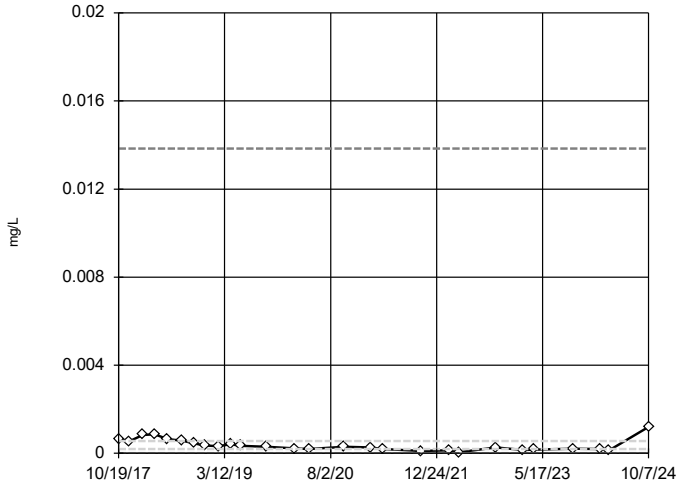
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01383, low cutoff = 0.000007623, based on IQR multiplier of 3.

Constituent: Chromium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Out
Clinch River Client: AEP Data: Clinch River Pond 1

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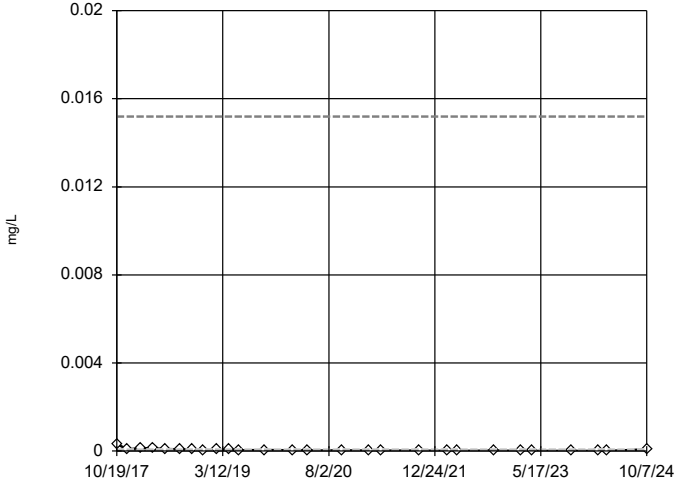
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01519, low cutoff = 6.5e-8, based on IQR multiplier of 3.

Constituent: Cobalt total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlier
Clinch River Client: AEP Data: Clinch River Pond 1

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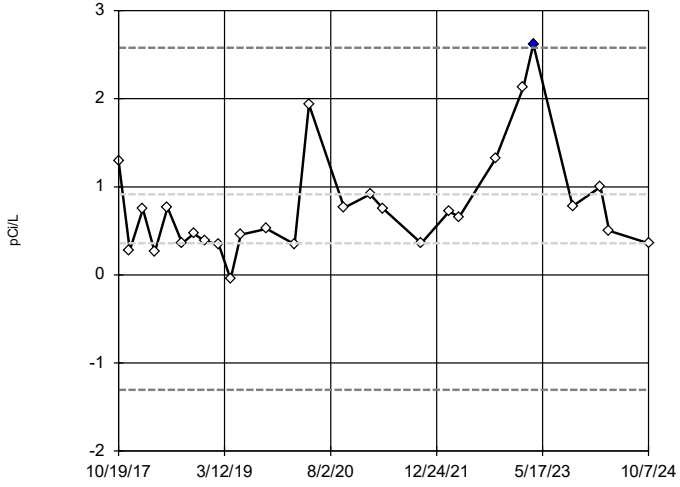
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

Outlier is drawn as solid. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 2.58, low cutoff = -1.305, based on IQR multiplier of 3.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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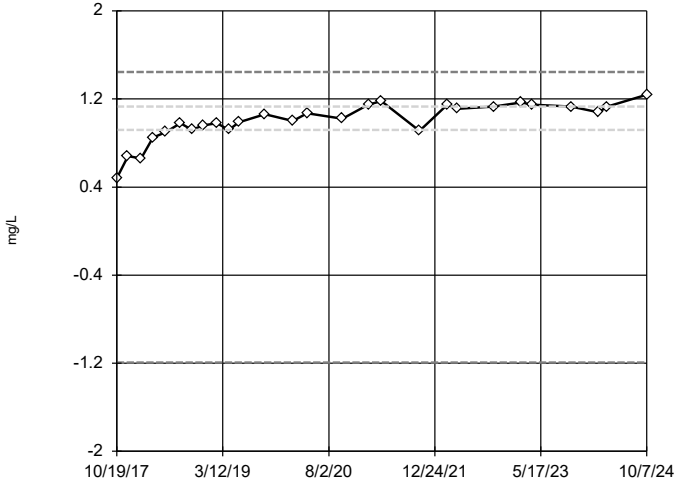
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.446, low cutoff = -1.193, based on IQR multiplier of 3.

Constituent: Fluoride total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlie
Clinch River Client: AEP Data: Clinch River Pond 1

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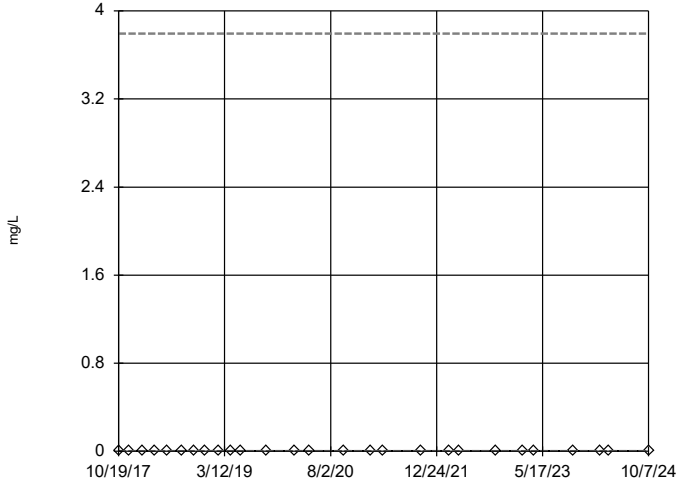
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3.793, low cutoff = 5.1e-8, based on IQR multiplier of 3.

Constituent: Lead total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outliers
Clinch River Client: AEP Data: Clinch River Pond 1

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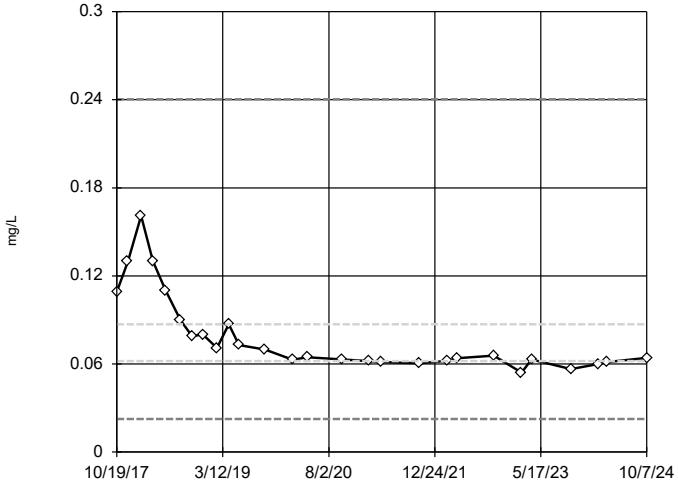
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2404, low cutoff = 0.02244, based on IQR multiplier of 3.

Constituent: Lithium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlier
Clinch River Client: AEP Data: Clinch River Pond 1

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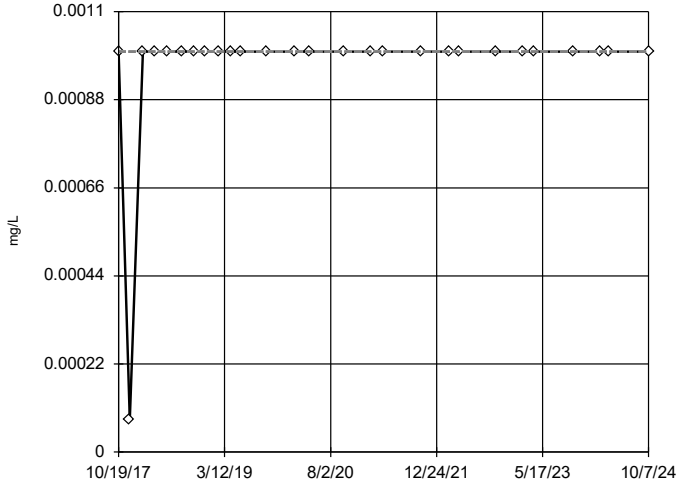
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outlie
Clinch River Client: AEP Data: Clinch River Pond 1

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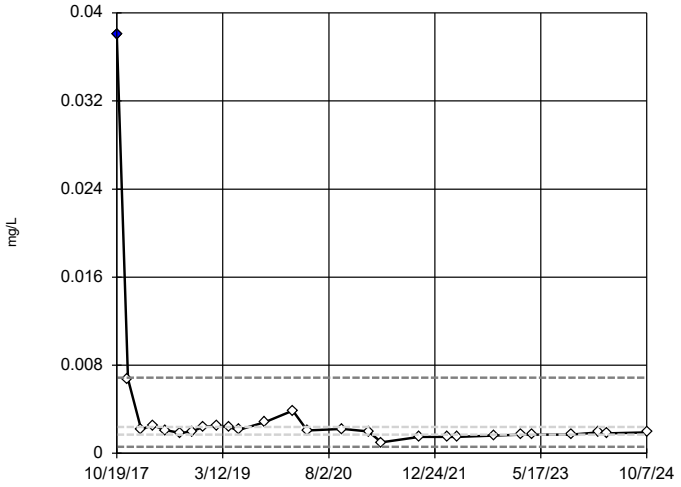
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.006866, low cutoff = 0.0005967, based on IQR multiplier of 3.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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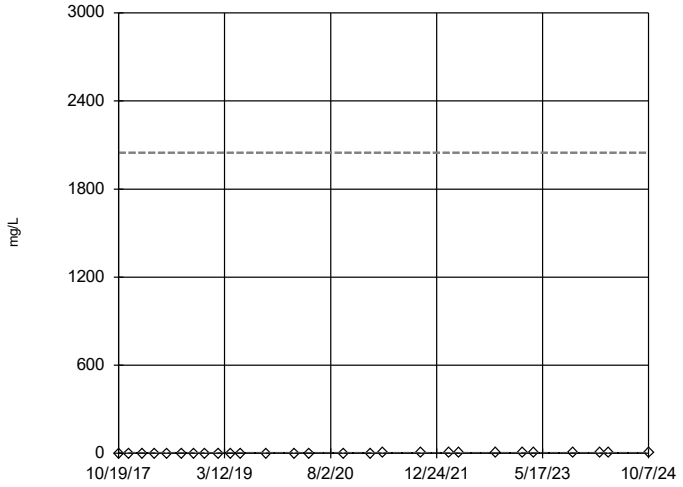
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2048, low cutoff = 9.8e-11, based on IQR multiplier of 3.

Constituent: Selenium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

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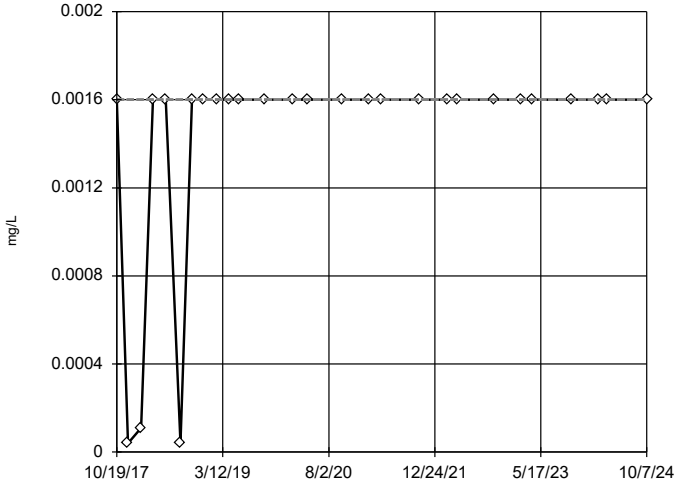
Tukey's Outlier Screening

MW-1611 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium total Analysis Run 1/29/2025 3:31 PM View: Dumps Fault - Pond 1 Upgradient Outli
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE D.

Welch's t-test/Mann-Whitney - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/28/2025, 3:36 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Fluoride total (mg/L)	**MW-1605**	**-3.538**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	**MW-1603**	**-3.173**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	**MW-1608 (bg)**	**-2.621**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1612**	**-3.116**	**Yes**	**0.01**	**Yes**	**Mann-W**

Welch's t-test/Mann-Whitney - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/28/2025, 3:36 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron total (mg/L)	MW-1601 (bg)	-0.4262	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1602 (bg)	-1.644	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1603	-2.009	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1604	-0.4565	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1605	-1.826	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1608 (bg)	1.218	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1612	-0.9862	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1601 (bg)	1.219	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1602 (bg)	1.403	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1603	-2.569	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1604	1.314	No	0.01	No	Mann-W
Fluoride total (mg/L)	**MW-1605**	**-3.538**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride total (mg/L)	MW-1608 (bg)	-0.8949	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1612	-2.493	No	0.01	No	Mann-W
Sulfate total (mg/L)	MW-1601 (bg)	-0.7305	No	0.01	No	Mann-W
Sulfate total (mg/L)	MW-1602 (bg)	-2.161	No	0.01	No	Mann-W
Sulfate total (mg/L)	**MW-1603**	**-3.173**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	MW-1604	-1.311	No	0.01	No	Mann-W
Sulfate total (mg/L)	MW-1605	-1.377	No	0.01	No	Mann-W
Sulfate total (mg/L)	**MW-1608 (bg)**	**-2.621**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	MW-1612	0.8894	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1601 (bg)	-0.2134	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1602 (bg)	-2.446	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1603	-0.5782	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1604	0.3665	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1605	-2.461	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1608 (bg)	-1.644	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	**MW-1612**	**-3.116**	**Yes**	**0.01**	**Yes**	**Mann-W**

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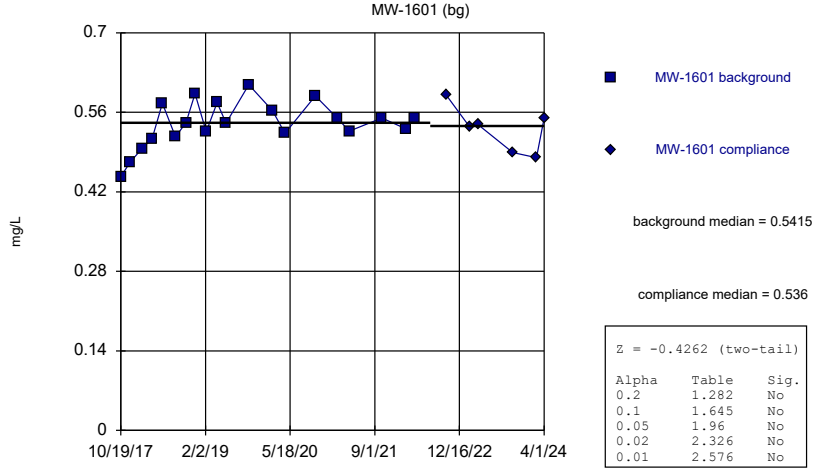
Mann-Whitney (Wilcoxon Rank Sum)

MW-1601 (bg)



background median = 0.5415

compliance median = 0.536

Z = -0.4262 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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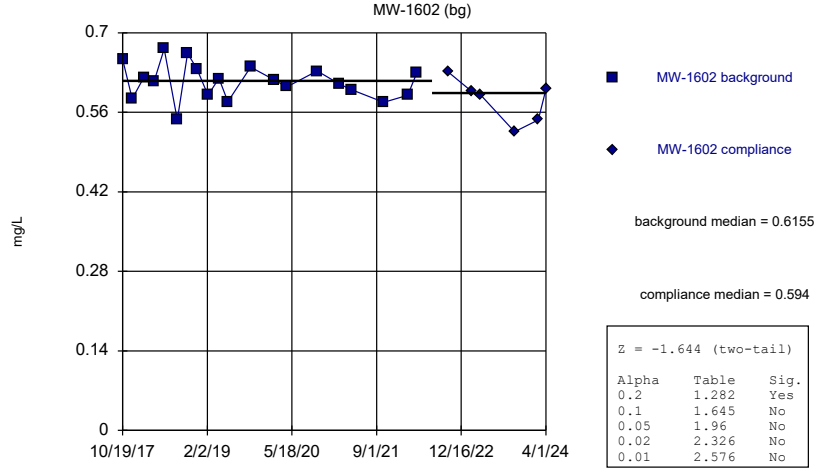
Mann-Whitney (Wilcoxon Rank Sum)

MW-1602 (bg)



background median = 0.6155

compliance median = 0.594

Z = -1.644 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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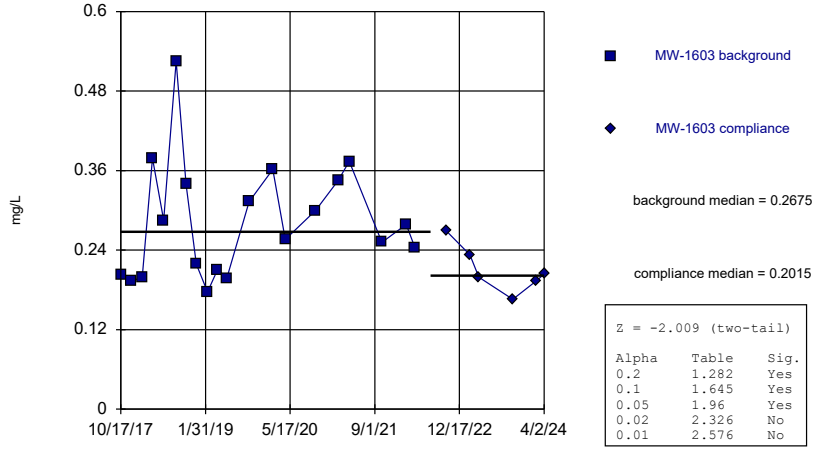
Mann-Whitney (Wilcoxon Rank Sum)

MW-1603



background median = 0.2675

compliance median = 0.2015

Z = -2.009 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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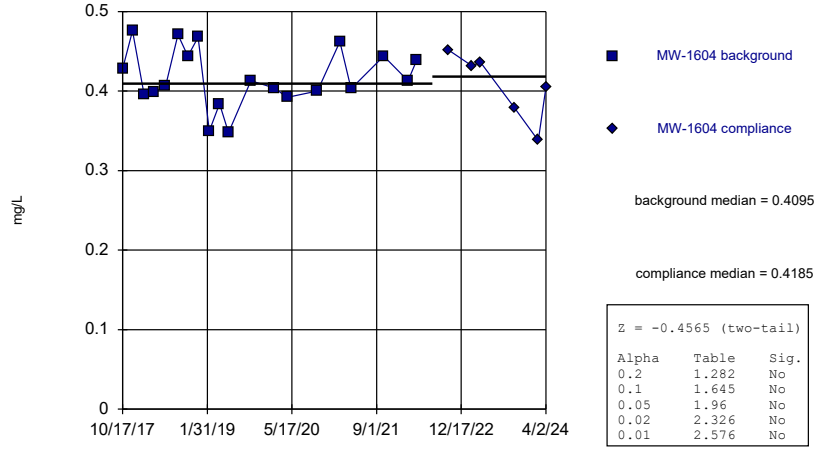
Mann-Whitney (Wilcoxon Rank Sum)

MW-1604



background median = 0.4095

compliance median = 0.4185

Z = -0.4565 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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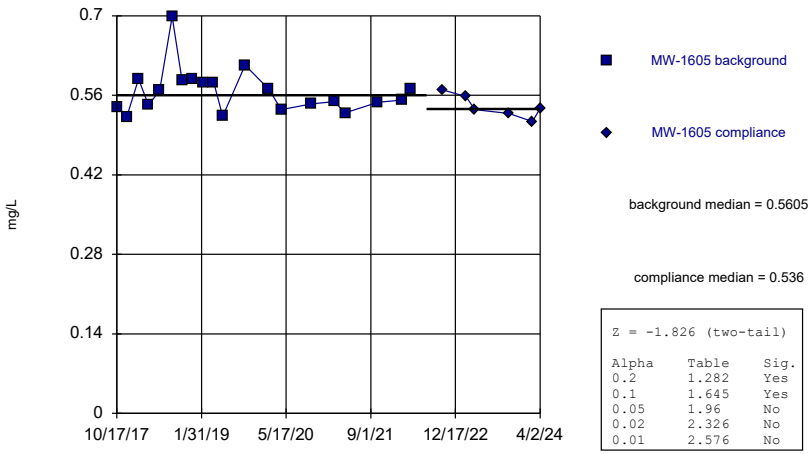
Mann-Whitney (Wilcoxon Rank Sum)

MW-1605



background median = 0.5605

compliance median = 0.536

Z = -1.826 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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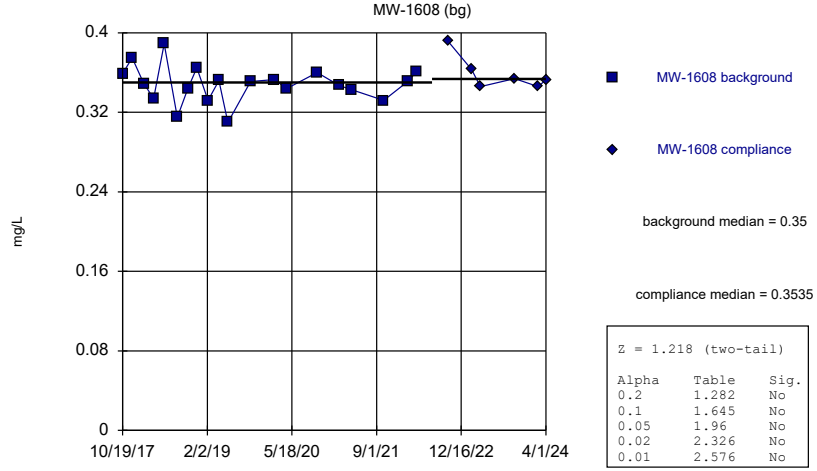
Mann-Whitney (Wilcoxon Rank Sum)

MW-1608 (bg)



background median = 0.35

compliance median = 0.3535

Z = 1.218 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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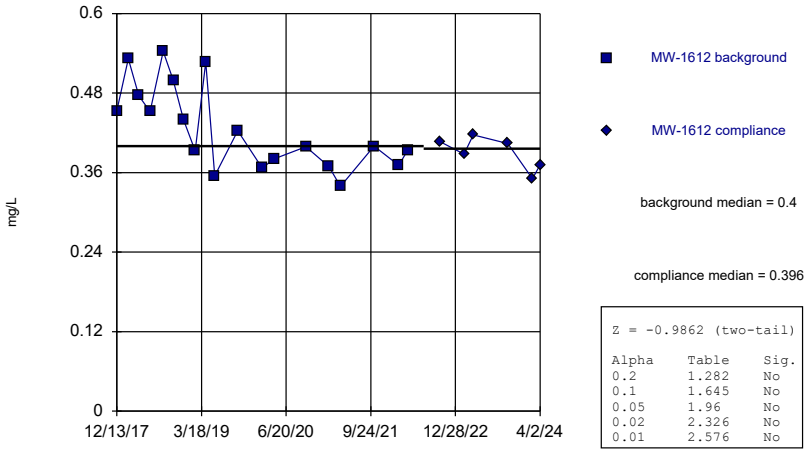
Mann-Whitney (Wilcoxon Rank Sum)

MW-1612



background median = 0.4

compliance median = 0.396

Z = -0.9862 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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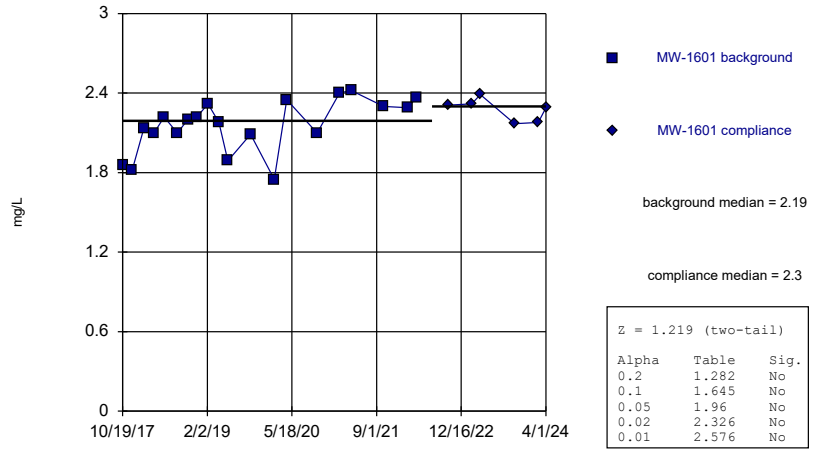
Mann-Whitney (Wilcoxon Rank Sum)

MW-1601 (bg)



background median = 2.19

compliance median = 2.3

Z = 1.219 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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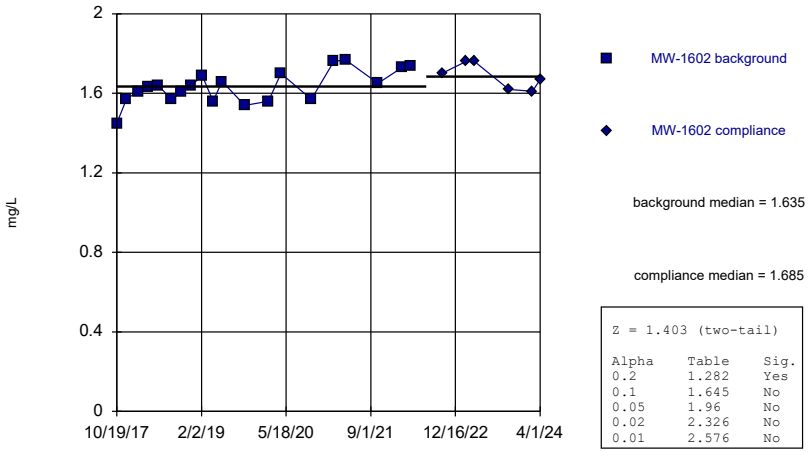
Mann-Whitney (Wilcoxon Rank Sum)

MW-1602 (bg)



Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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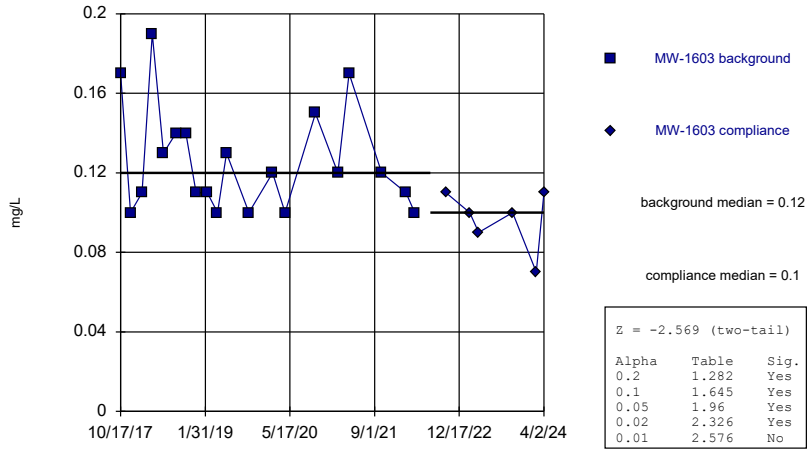
Mann-Whitney (Wilcoxon Rank Sum)

MW-1603



Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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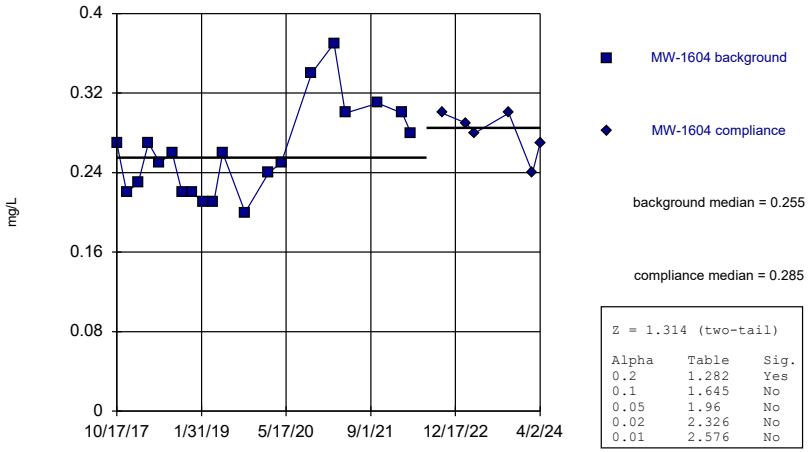
Mann-Whitney (Wilcoxon Rank Sum)

MW-1604



Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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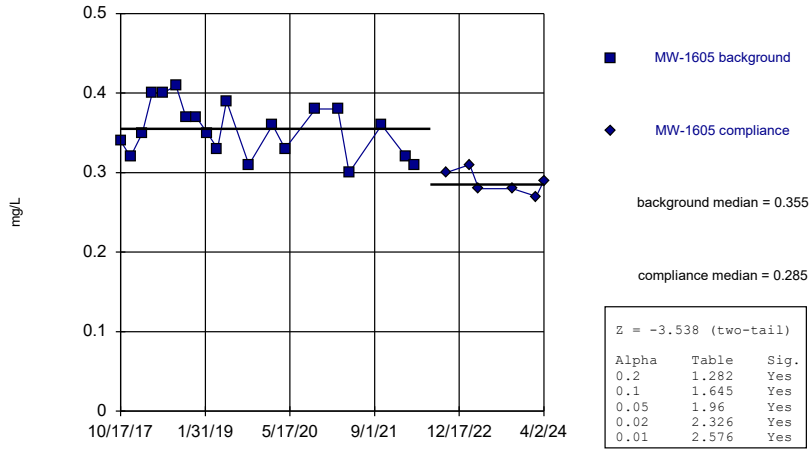
Mann-Whitney (Wilcoxon Rank Sum)

MW-1605



Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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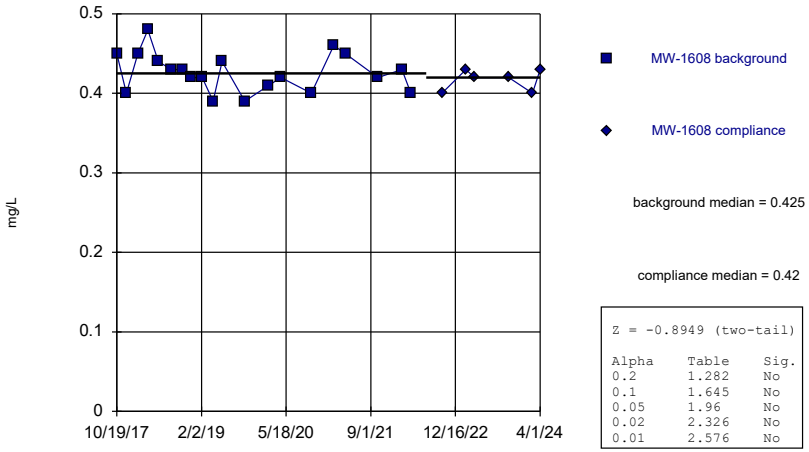
Mann-Whitney (Wilcoxon Rank Sum)

MW-1608 (bg)



background median = 0.425

compliance median = 0.42

Z = -0.8949 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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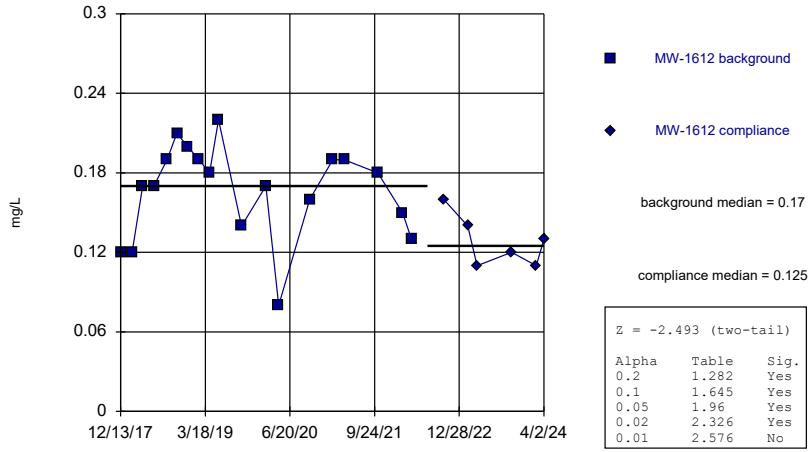
Mann-Whitney (Wilcoxon Rank Sum)

MW-1612



background median = 0.17

compliance median = 0.125

Z = -2.493 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/28/2025 3:35 PM View: Chattanooga Shale - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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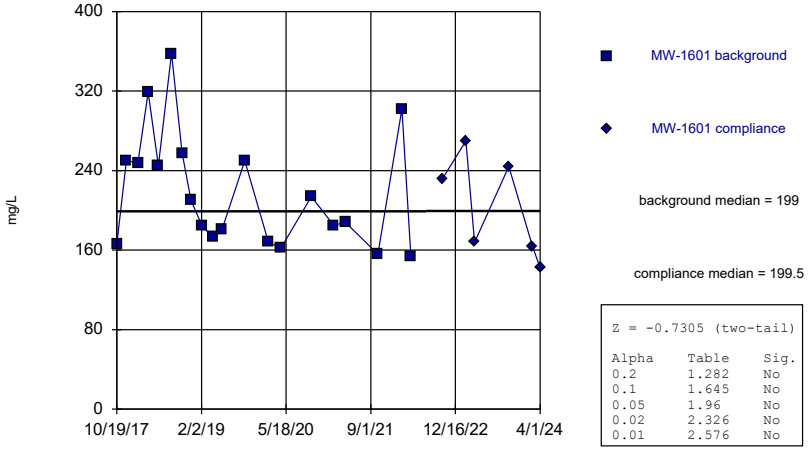
Mann-Whitney (Wilcoxon Rank Sum)

MW-1601 (bg)



background median = 199

compliance median = 199.5

Z = -0.7305 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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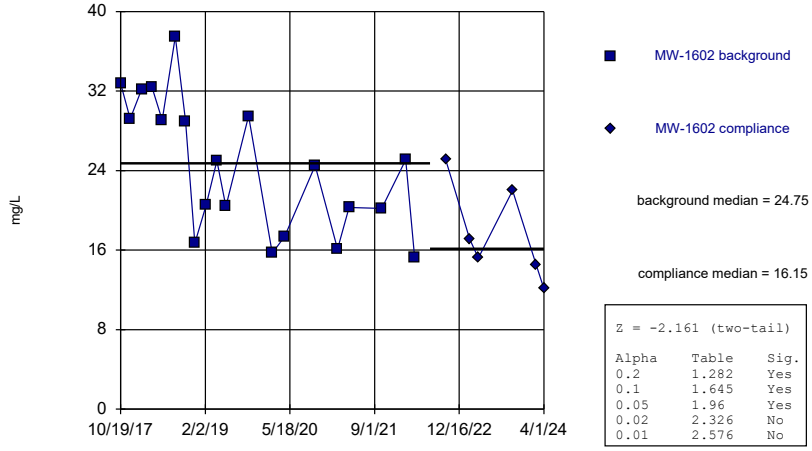
Mann-Whitney (Wilcoxon Rank Sum)

MW-1602 (bg)



background median = 24.75

compliance median = 16.15

Z = -2.161 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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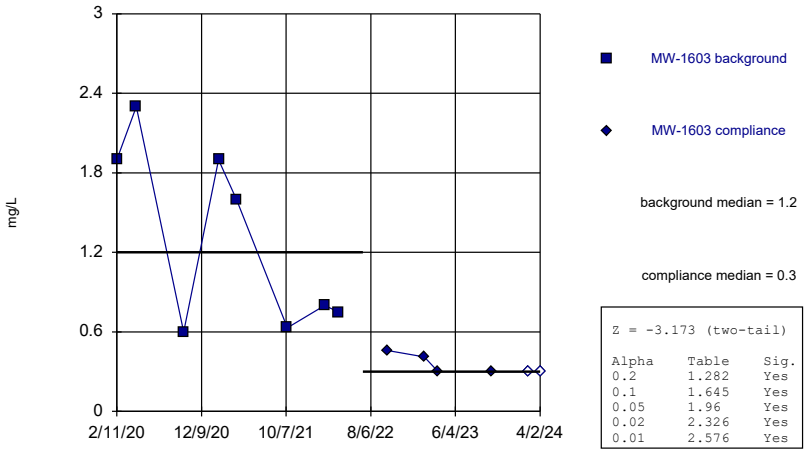
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

MW-1603



Z = -3.173 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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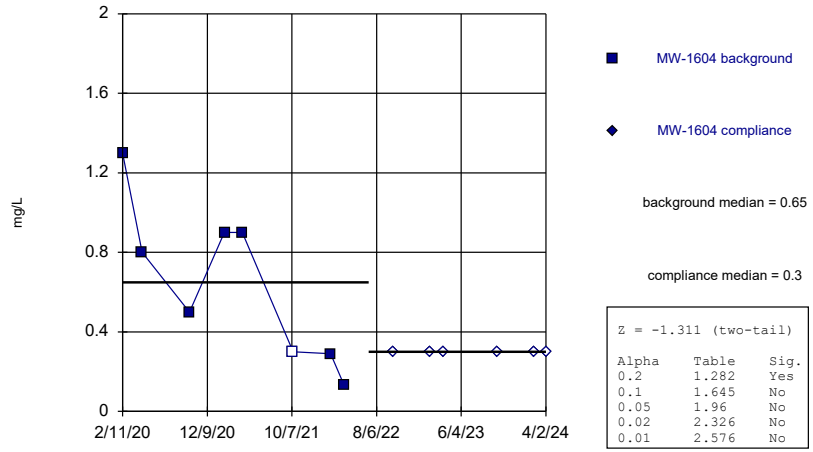
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

MW-1604



Z = -1.311 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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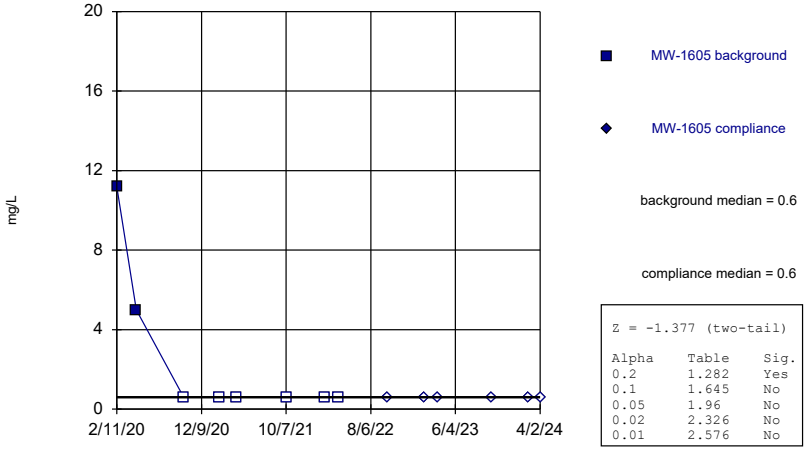
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

MW-1605



Z = -1.377 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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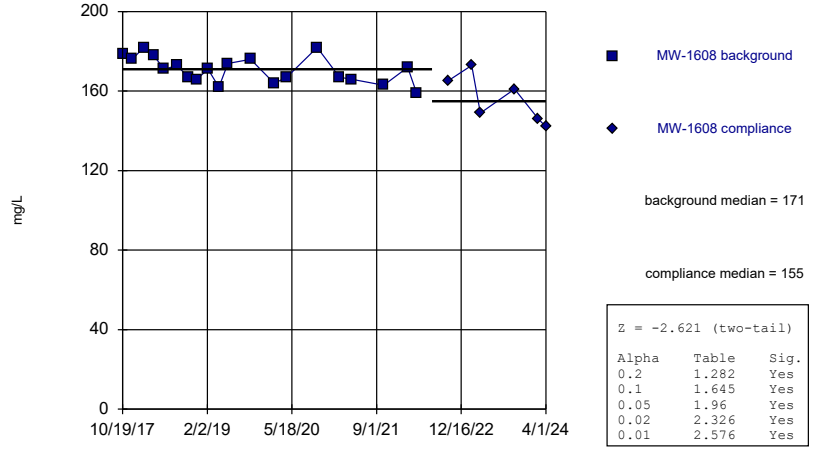
Mann-Whitney (Wilcoxon Rank Sum)

MW-1608 (bg)



Z = -2.621 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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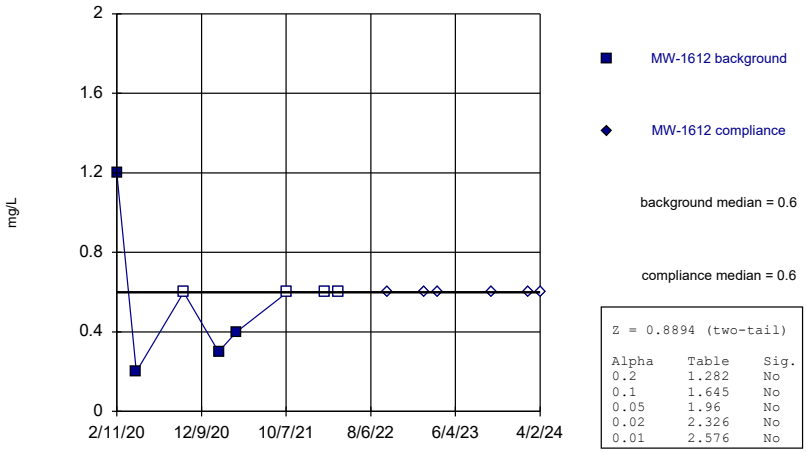
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

MW-1612



Z = 0.8894 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate total Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 Mann-Whitn
Clinch River Client: AEP Data: Clinch River Pond 1

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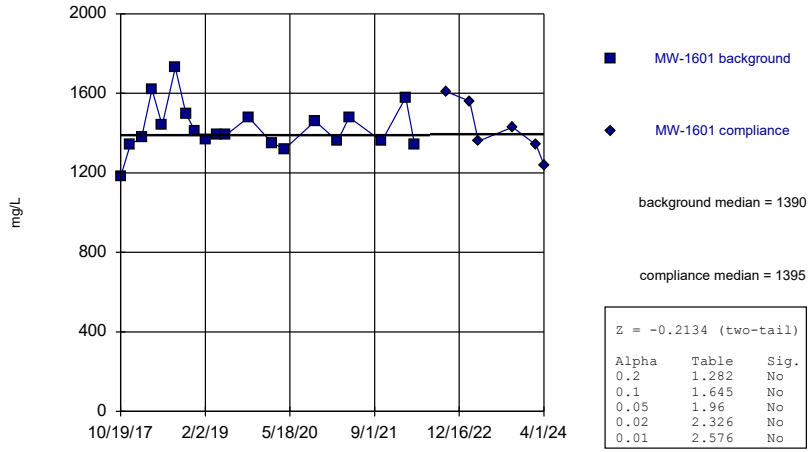
Mann-Whitney (Wilcoxon Rank Sum)

MW-1601 (bg)



Z = -0.2134 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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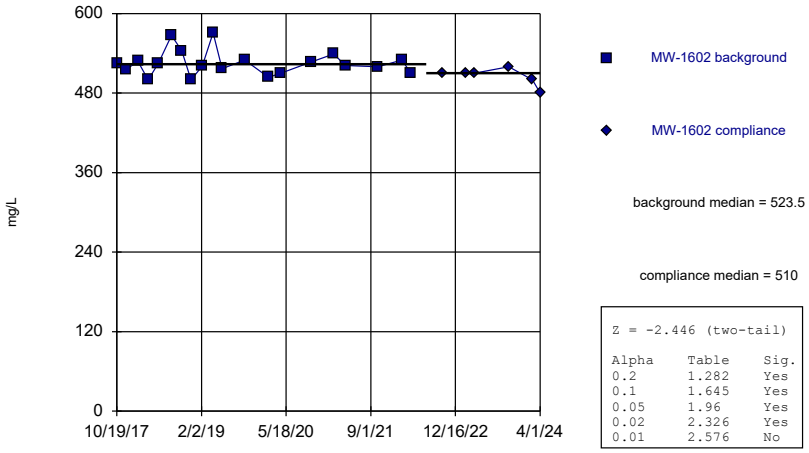
Mann-Whitney (Wilcoxon Rank Sum)

MW-1602 (bg)



Z = -2.446 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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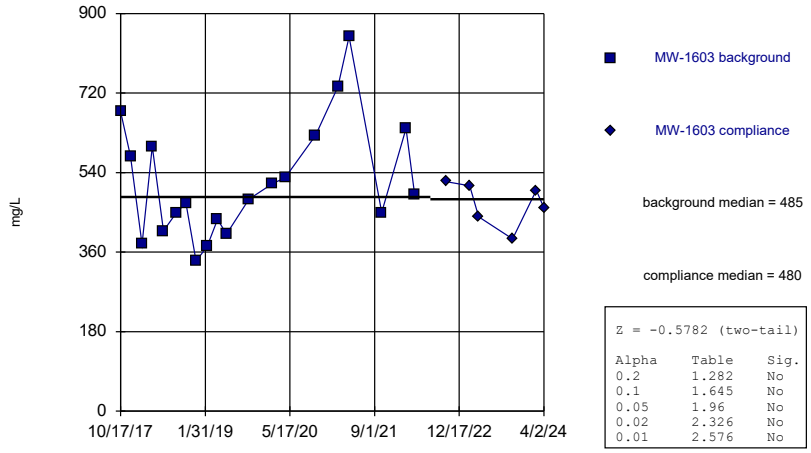
Mann-Whitney (Wilcoxon Rank Sum)

MW-1603



Z = -0.5782 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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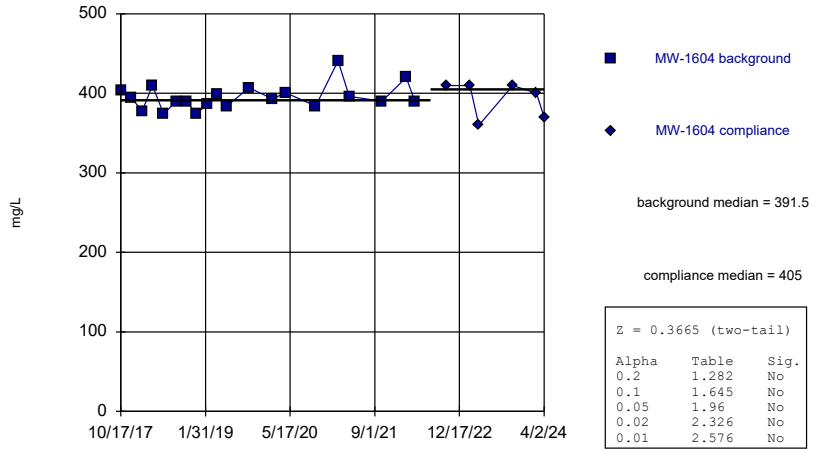
Mann-Whitney (Wilcoxon Rank Sum)

MW-1604



Z = 0.3665 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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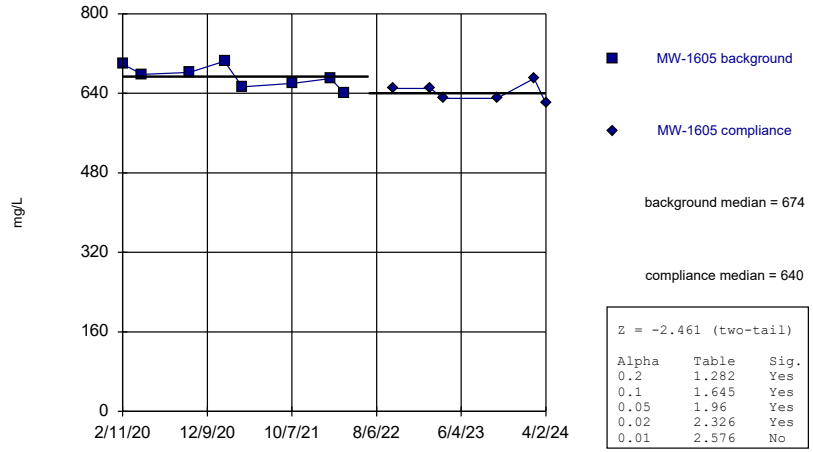
Mann-Whitney (Wilcoxon Rank Sum)

MW-1605



Z = -2.461 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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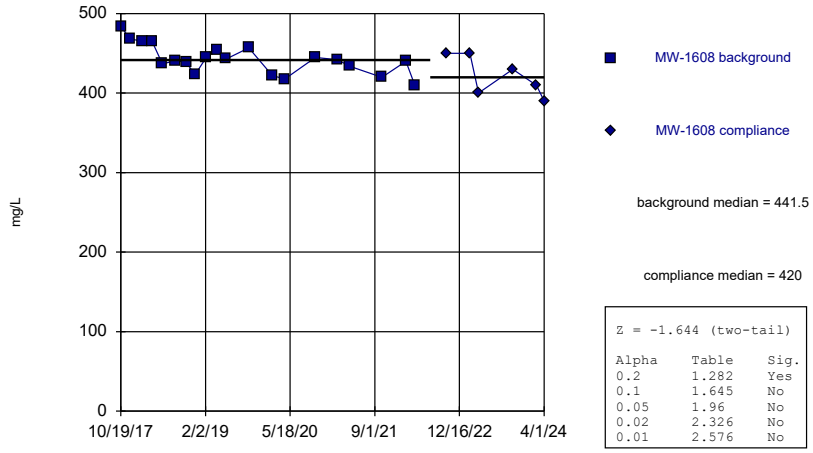
Mann-Whitney (Wilcoxon Rank Sum)

MW-1608 (bg)



Z = -1.644 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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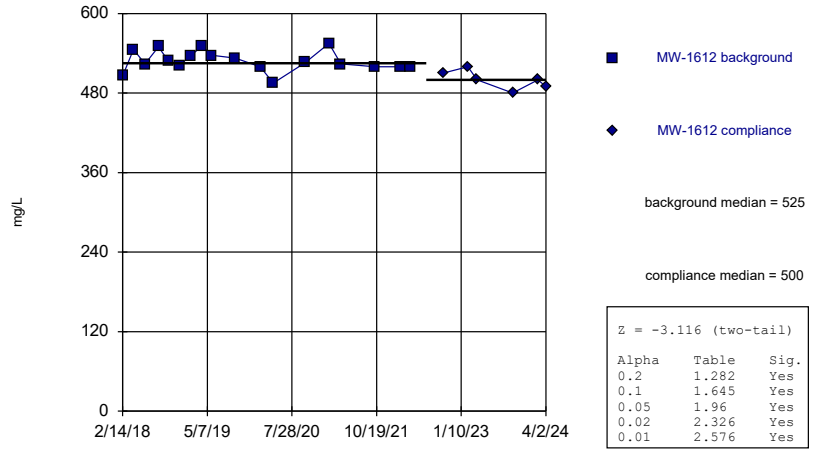
Mann-Whitney (Wilcoxon Rank Sum)

MW-1612



Z = -3.116 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Total Dissolved Solids Analysis Run 1/28/2025 3:36 PM View: Chattanooga Shale - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

Welch's t-test/Mann-Whitney - Rome Limestone - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 10:57 AM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron total (mg/L)	**MW-1609 (bg)**	**-3.483**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium total (mg/L)	**MW-1607**	**-3.135**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1609 (bg)**	**-2.59**	**Yes**	**0.01**	**Yes**	**Mann-W**

Welch's t-test/Mann-Whitney - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 10:57 AM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron total (mg/L)	MW-1606	1.796	No	0.01	No	Mann-W
Boron total (mg/L)	MW-1607	1.157	No	0.01	No	Mann-W
Boron total (mg/L)	**MW-1609 (bg)**	**-3.483**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium total (mg/L)	MW-1606	-0.6088	No	0.01	No	Mann-W
Calcium total (mg/L)	**MW-1607**	**-3.135**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium total (mg/L)	MW-1609 (bg)	2.16	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1606	-0.4295	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1607	-1.111	No	0.01	No	Mann-W
Fluoride total (mg/L)	MW-1609 (bg)	-0.5512	No	0.01	No	Mann-W
pH [field] (std.units)	MW-1606	-0.7008	No	0.01	No	Mann-W
pH [field] (std.units)	MW-1607	-0.2435	No	0.01	No	Mann-W
pH [field] (std.units)	MW-1609 (bg)	0.03045	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1606	-0.2744	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	MW-1607	-0.8699	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	**MW-1609 (bg)**	**-2.59**	**Yes**	**0.01**	**Yes**	**Mann-W**

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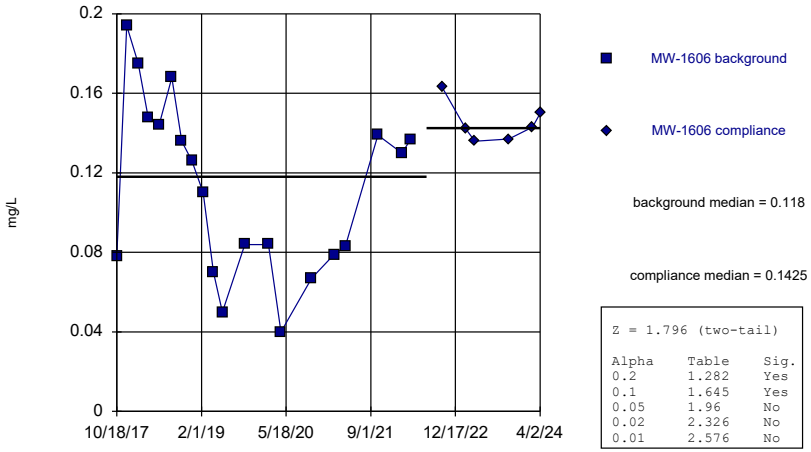
Mann-Whitney (Wilcoxon Rank Sum)

MW-1606



background median = 0.118

compliance median = 0.1425

Z = 1.796 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whitne
Clinch River Client: AEP Data: Clinch River Pond 1

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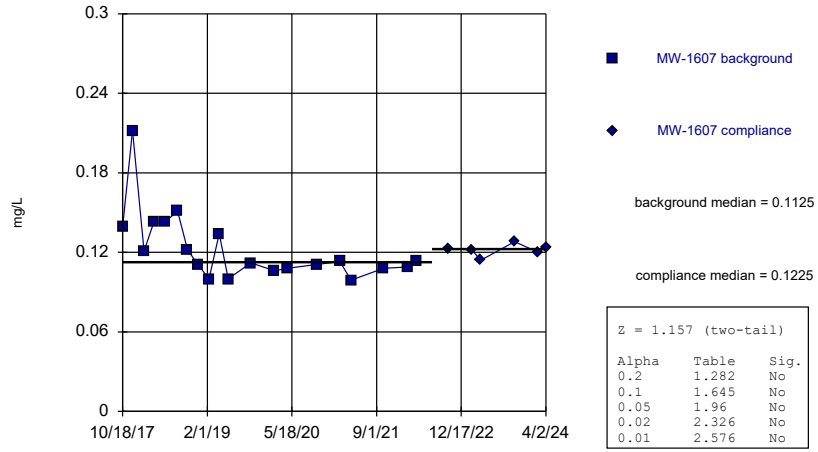
Mann-Whitney (Wilcoxon Rank Sum)

MW-1607



background median = 0.1125

compliance median = 0.1225

Z = 1.157 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Boron total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whitne
Clinch River Client: AEP Data: Clinch River Pond 1

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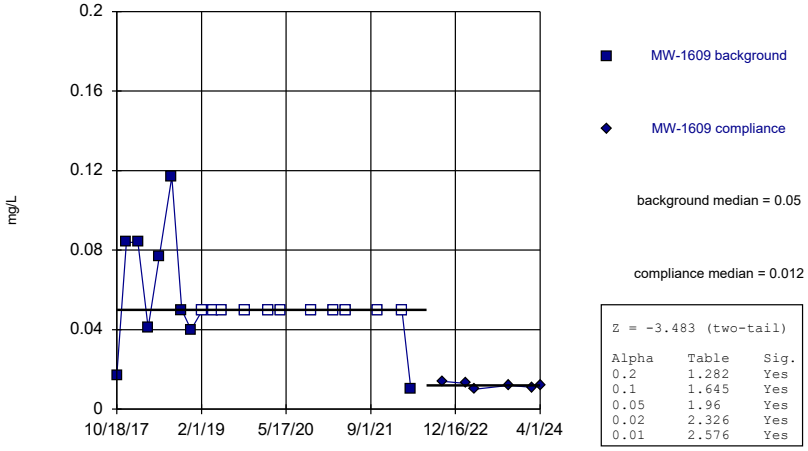
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

MW-1609 (bg)



background median = 0.05

compliance median = 0.012

Z = -3.483 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Boron total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whitne
Clinch River Client: AEP Data: Clinch River Pond 1

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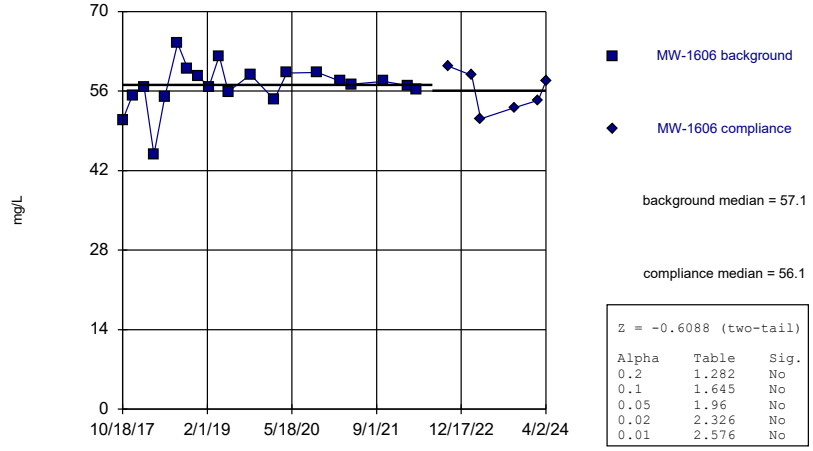
Mann-Whitney (Wilcoxon Rank Sum)

MW-1606



background median = 57.1

compliance median = 56.1

Z = -0.6088 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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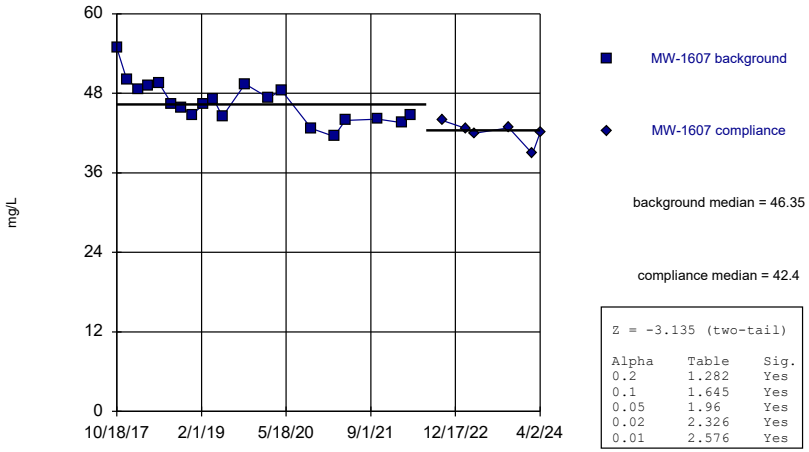
Mann-Whitney (Wilcoxon Rank Sum)

MW-1607



background median = 46.35

compliance median = 42.4

Z = -3.135 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Calcium total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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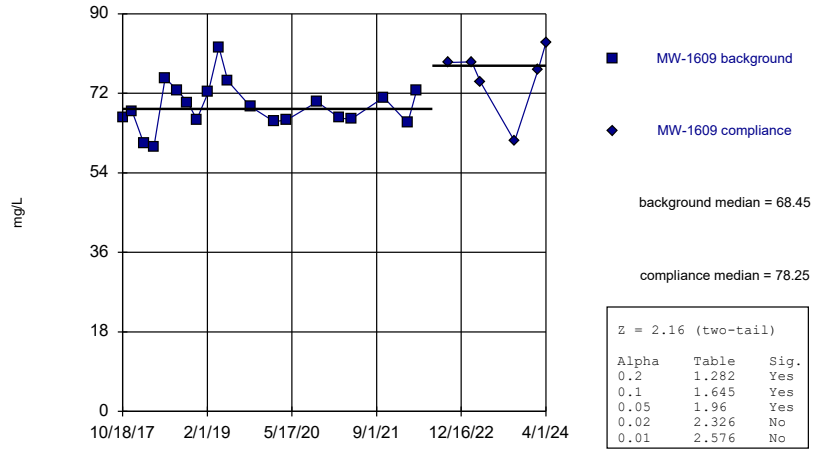
Mann-Whitney (Wilcoxon Rank Sum)

MW-1609 (bg)



background median = 68.45

compliance median = 78.25

Z = 2.16 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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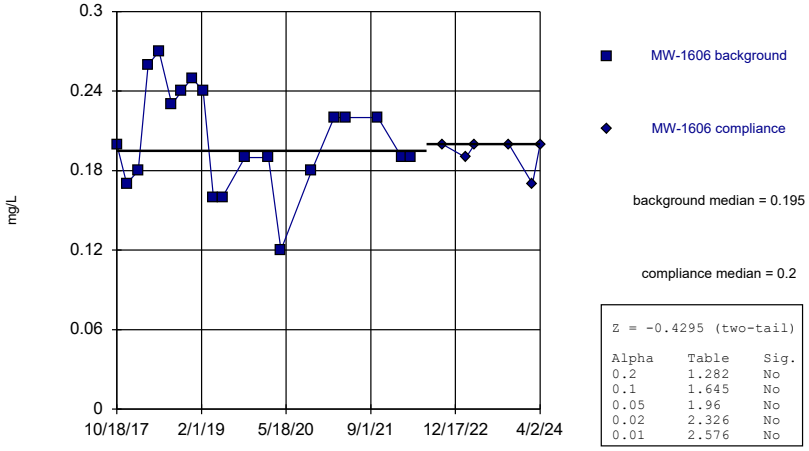
Mann-Whitney (Wilcoxon Rank Sum)

MW-1606



background median = 0.195

compliance median = 0.2

Z = -0.4295 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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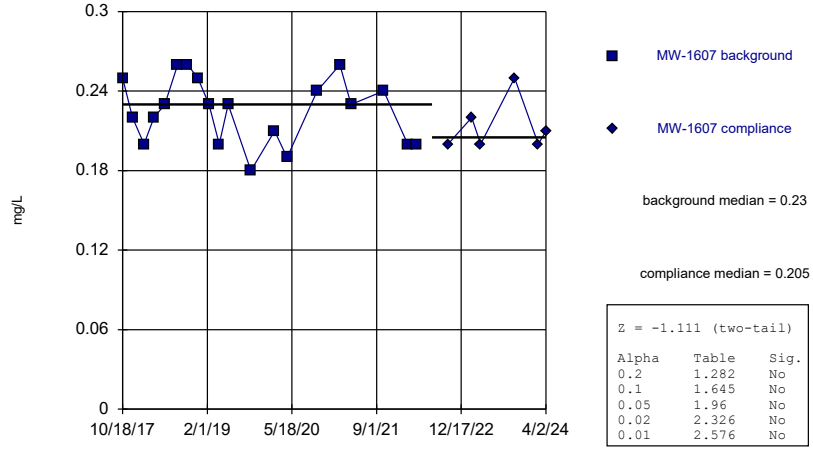
Mann-Whitney (Wilcoxon Rank Sum)

MW-1607



background median = 0.23

compliance median = 0.205

Z = -1.111 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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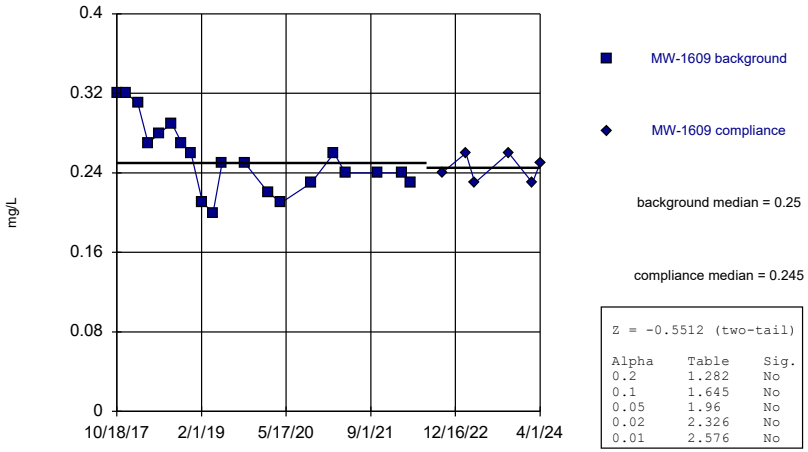
Mann-Whitney (Wilcoxon Rank Sum)

MW-1609 (bg)



background median = 0.25

compliance median = 0.245

Z = -0.5512 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whit
Clinch River Client: AEP Data: Clinch River Pond 1

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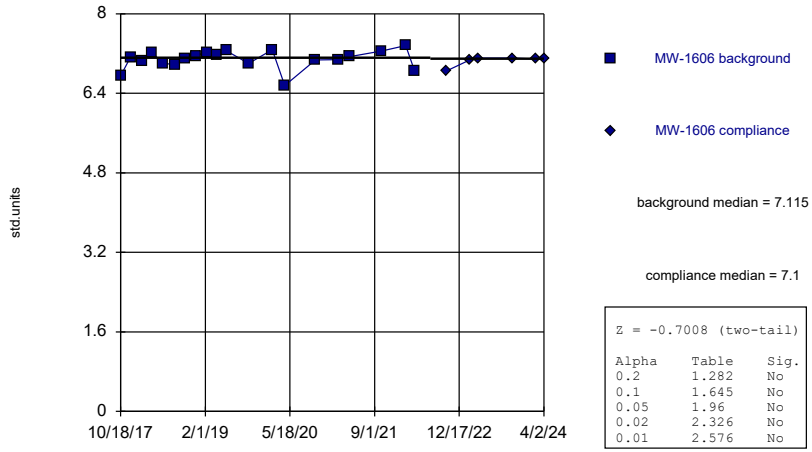
Mann-Whitney (Wilcoxon Rank Sum)

MW-1606



background median = 7.115

compliance median = 7.1

Z = -0.7008 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH [field] Analysis Run 1/29/2025 10:53 AM View: Rome Limestone - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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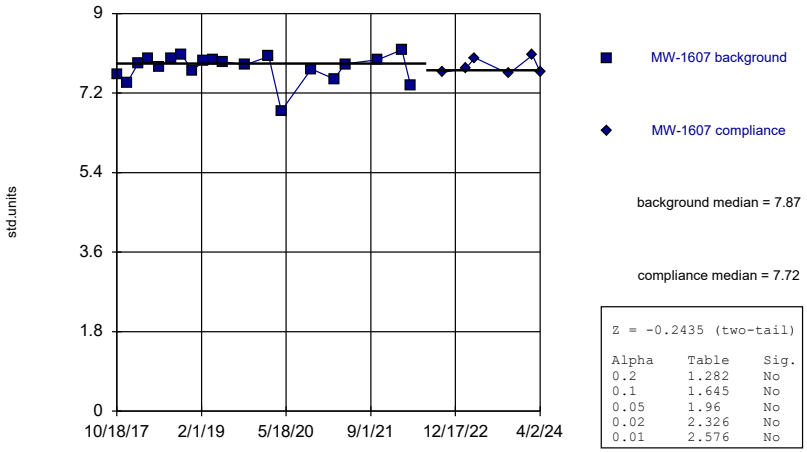
Mann-Whitney (Wilcoxon Rank Sum)

MW-1607



background median = 7.87

compliance median = 7.72

Z = -0.2435 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH [field] Analysis Run 1/29/2025 10:54 AM View: Rome Limestone - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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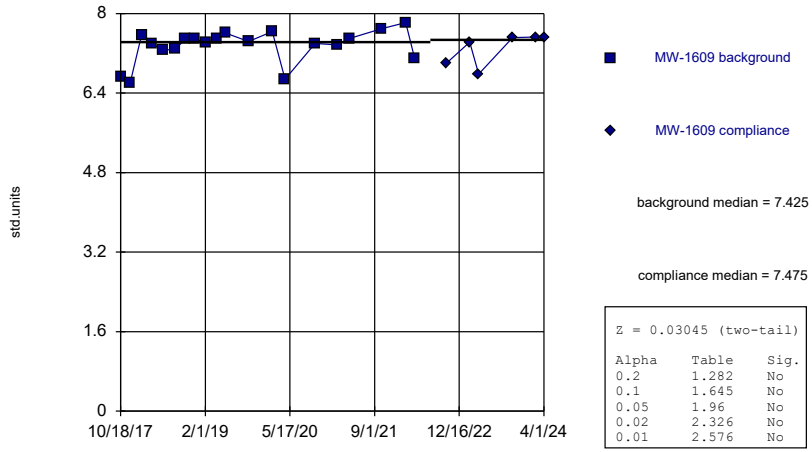
Mann-Whitney (Wilcoxon Rank Sum)

MW-1609 (bg)



background median = 7.425

compliance median = 7.475

Z = 0.03045 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH [field] Analysis Run 1/29/2025 10:54 AM View: Rome Limestone - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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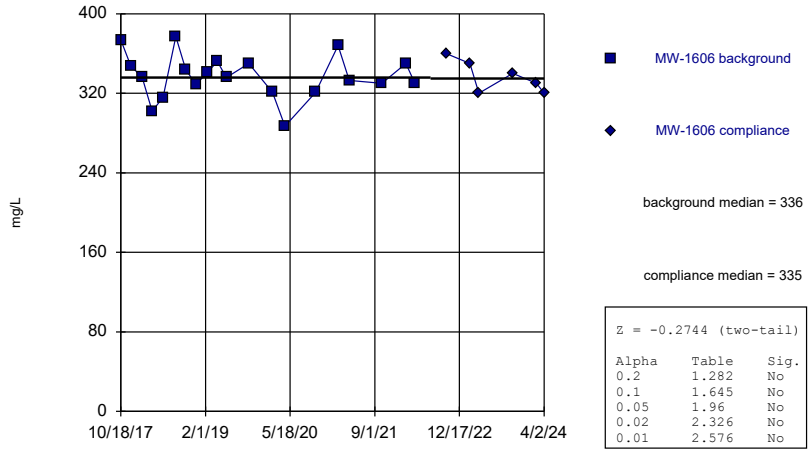
Mann-Whitney (Wilcoxon Rank Sum)

MW-1606



background median = 336

compliance median = 335

Z = -0.2744 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:54 AM View: Rome Limestone - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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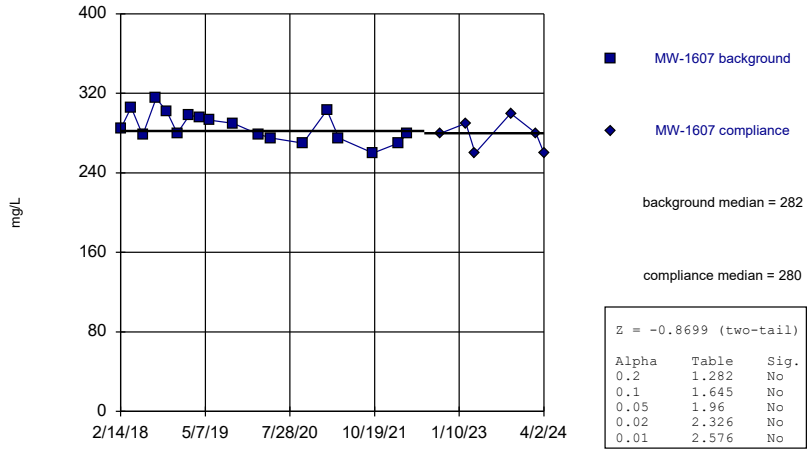
Mann-Whitney (Wilcoxon Rank Sum)

MW-1607



background median = 282

compliance median = 280

Z = -0.8699 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:54 AM View: Rome Limestone - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

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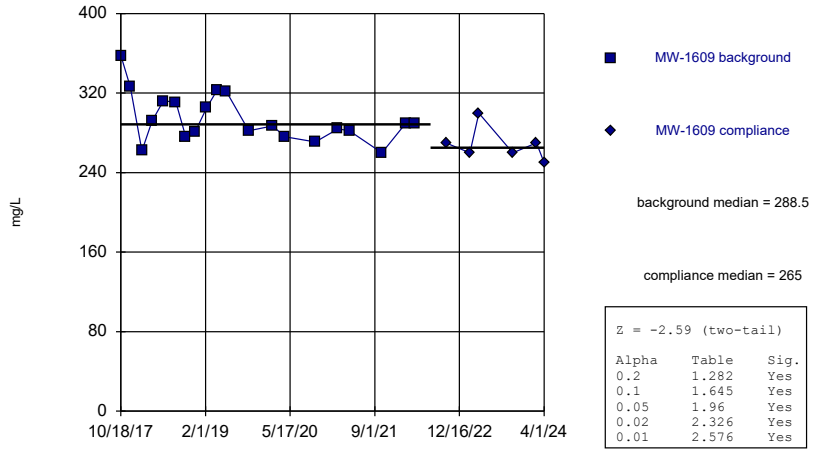
Mann-Whitney (Wilcoxon Rank Sum)

MW-1609 (bg)



background median = 288.5

compliance median = 265

Z = -2.59 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 10:54 AM View: Rome Limestone - Pond 1 M
Clinch River Client: AEP Data: Clinch River Pond 1

Welch's t-test/Mann-Whitney - Dumps Fault - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:18 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron total (mg/L)	**MW-1610**	**-3.333**	**Yes**	**0.01**	**Yes**	**Mann-W**
Boron total (mg/L)	**MW-1611 (bg)**	**-2.952**	**Yes**	**0.01**	**Yes**	**Mann-W**
Chloride total (mg/L)	**MW-1610**	**-3.412**	**Yes**	**0.01**	**Yes**	**Mann-W**
Chloride total (mg/L)	**MW-1611 (bg)**	**-3.163**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride total (mg/L)	**MW-1611 (bg)**	**2.652**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	**MW-1610**	**-3.073**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	**MW-1611 (bg)**	**-3.163**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1610**	**-2.839**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1611 (bg)**	**-3.177**	**Yes**	**0.01**	**Yes**	**Mann-W**

Welch's t-test/Mann-Whitney - Dumps Fault - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:18 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron total (mg/L)	**MW-1610**	**-3.333**	**Yes**	**0.01**	**Yes**	**Mann-W**
Boron total (mg/L)	**MW-1611 (bg)**	**-2.952**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium total (mg/L)	MW-1610	-1.948	No	0.01	No	Mann-W
Calcium total (mg/L)	MW-1611 (bg)	1.488	No	0.01	No	Mann-W
Chloride total (mg/L)	**MW-1610**	**-3.412**	**Yes**	**0.01**	**Yes**	**Mann-W**
Chloride total (mg/L)	**MW-1611 (bg)**	**-3.163**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride total (mg/L)	MW-1610	-0.8012	No	0.01	No	Mann-W
Fluoride total (mg/L)	**MW-1611 (bg)**	**2.652**	**Yes**	**0.01**	**Yes**	**Mann-W**
pH [field] (std.units)	MW-1610	-1.796	No	0.01	No	Mann-W
pH [field] (std.units)	MW-1611 (bg)	-1.066	No	0.01	No	Mann-W
Sulfate total (mg/L)	**MW-1610**	**-3.073**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate total (mg/L)	**MW-1611 (bg)**	**-3.163**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1610**	**-2.839**	**Yes**	**0.01**	**Yes**	**Mann-W**
Total Dissolved Solids (mg/L)	**MW-1611 (bg)**	**-3.177**	**Yes**	**0.01**	**Yes**	**Mann-W**

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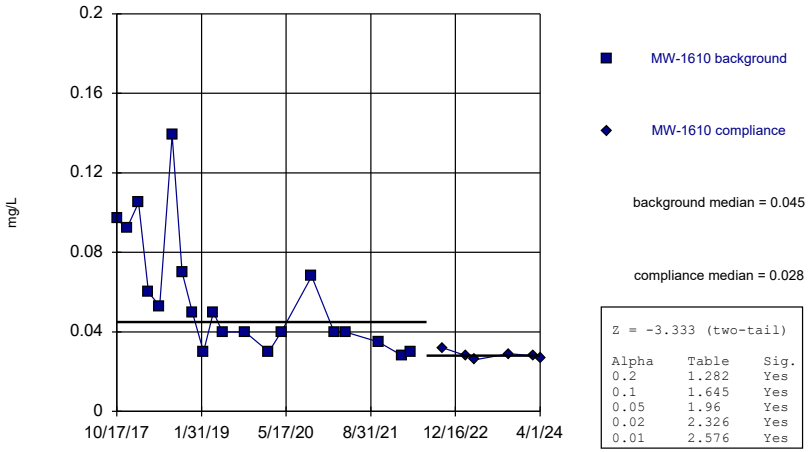
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -3.333 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Boron total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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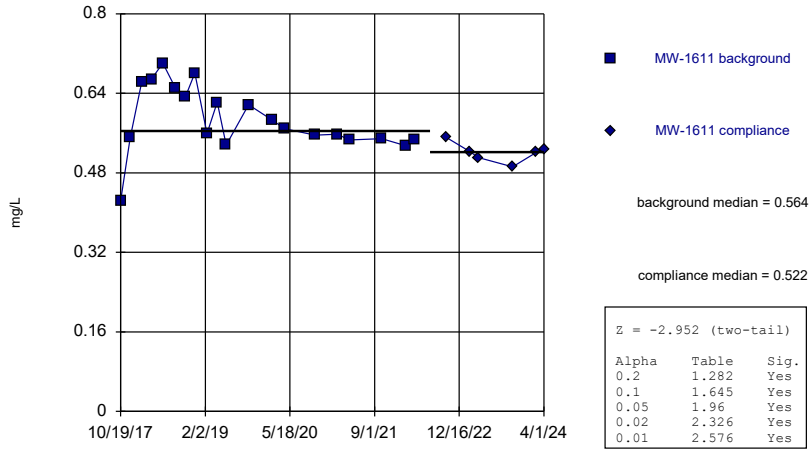
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = -2.952 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Boron total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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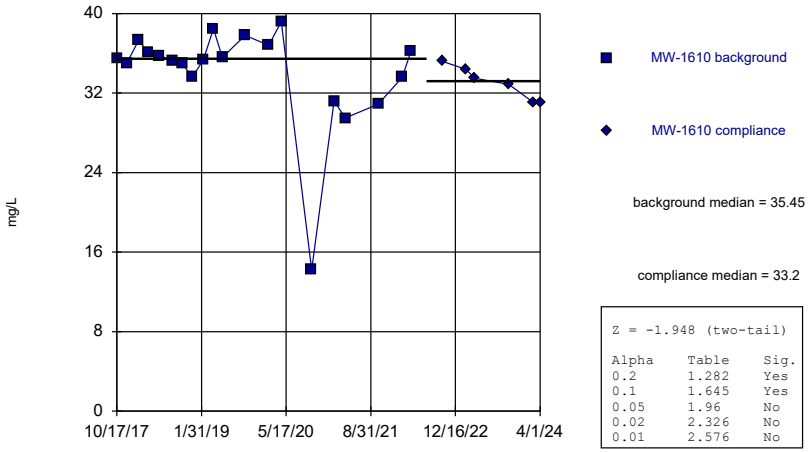
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -1.948 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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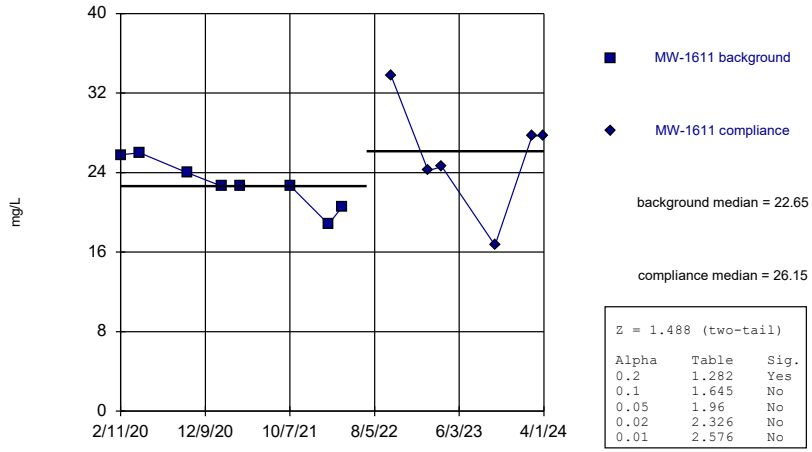
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = 1.488 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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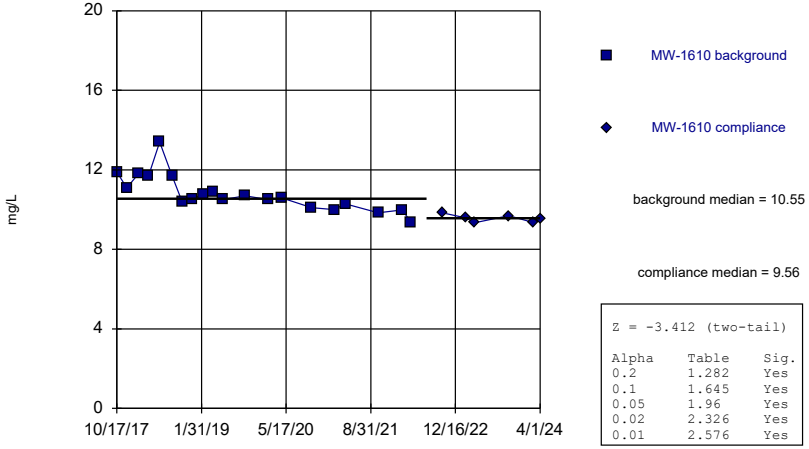
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -3.412 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Chloride total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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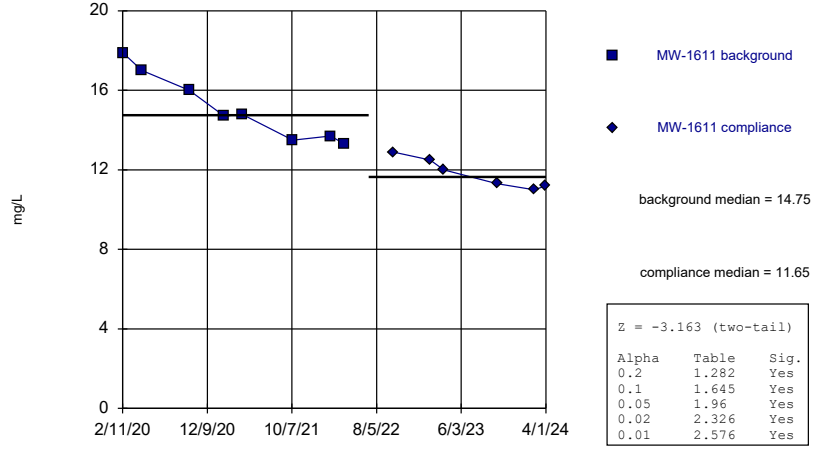
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = -3.163 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Chloride total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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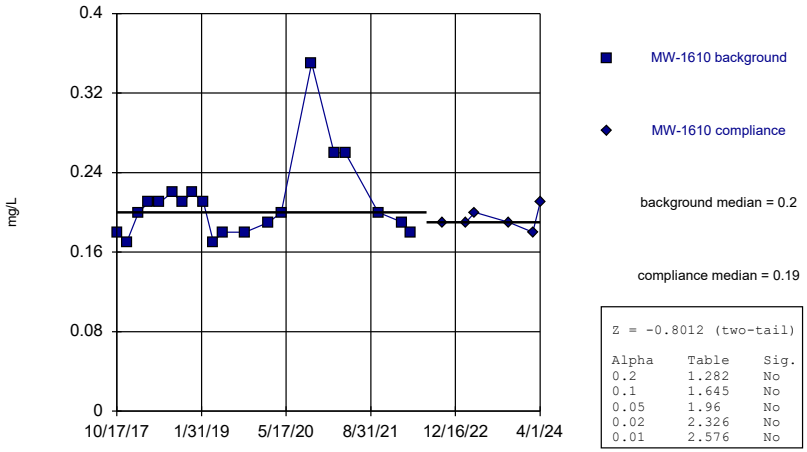
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -0.8012 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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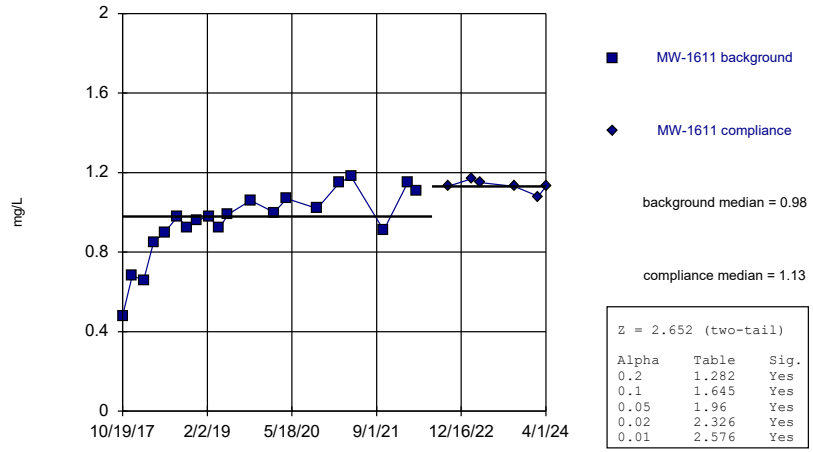
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = 2.652 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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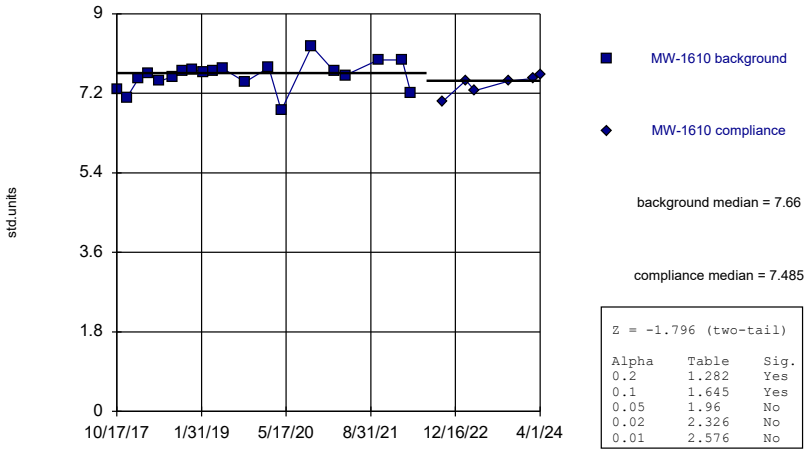
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -1.796 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH [field] Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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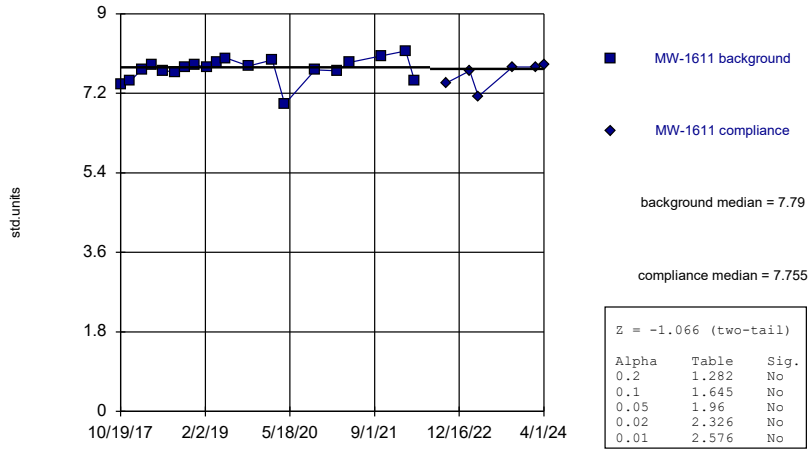
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = -1.066 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH [field] Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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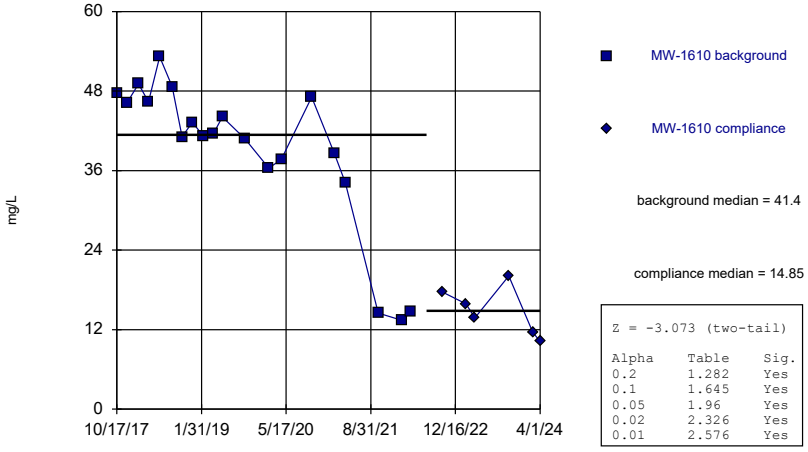
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610



Z = -3.073 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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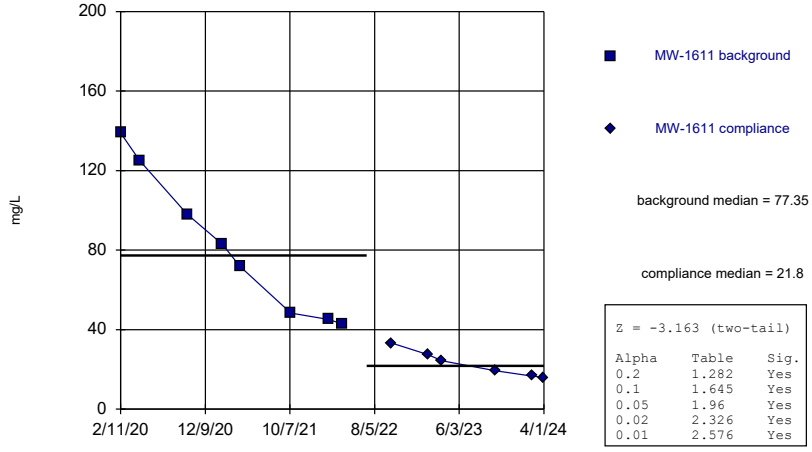
Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Z = -3.163 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate total Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Whitney
Clinch River Client: AEP Data: Clinch River Pond 1

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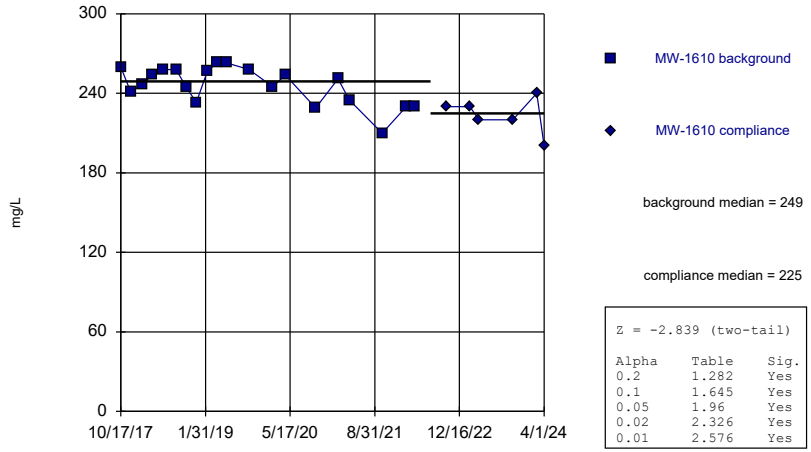
Mann-Whitney (Wilcoxon Rank Sum)

MW-1610

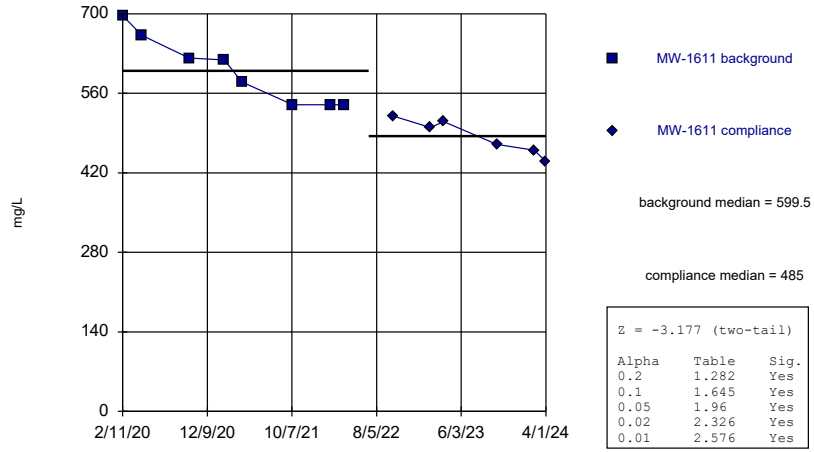


Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Mann-Whitney (Wilcoxon Rank Sum)

MW-1611 (bg)



Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:15 PM View: Dumps Fault - Pond 1 Mann-Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE E.

Intrawell Prediction Limits - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 8:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron total (mg/L)	MW-1601	0.6133	n/a	n/a	1 future	n/a	26	0.5375	0.03961	0	None	No	0.00188	Param Intra 1 of 2
Boron total (mg/L)	MW-1602	0.6742	n/a	n/a	1 future	n/a	26	0.6068	0.03517	0	None	No	0.00188	Param Intra 1 of 2
Boron total (mg/L)	MW-1603	0.4308	n/a	n/a	1 future	n/a	26	0.5103	0.07624	0	None	sqrt(x)	0.00188	Param Intra 1 of 2
Boron total (mg/L)	MW-1604	0.4865	n/a	n/a	1 future	n/a	26	0.4147	0.03748	0	None	No	0.00188	Param Intra 1 of 2
Boron total (mg/L)	MW-1605	0.699	n/a	n/a	1 future	n/a	26	n/a	n/a	0	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Boron total (mg/L)	MW-1608	0.3861	n/a	n/a	1 future	n/a	26	0.3508	0.01846	0	None	No	0.00188	Param Intra 1 of 2
Boron total (mg/L)	MW-1612	0.5305	n/a	n/a	1 future	n/a	25	0.4181	0.05843	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1601	2.535	n/a	n/a	1 future	n/a	26	2.183	0.1837	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1602	1.801	n/a	n/a	1 future	n/a	26	1.645	0.08135	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1603	0.1714	n/a	n/a	1 future	n/a	26	0.1192	0.02727	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1604	0.3454	n/a	n/a	1 future	n/a	26	0.265	0.04198	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1605	0.4174	n/a	n/a	1 future	n/a	26	0.3388	0.04102	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1608	0.4673	n/a	n/a	1 future	n/a	26	0.4242	0.02248	0	None	No	0.00188	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1612	0.2265	n/a	n/a	1 future	n/a	25	0.1572	0.036	0	None	No	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1601	323	n/a	n/a	1 future	n/a	26	215	56.41	0	None	No	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1602	36.13	n/a	n/a	1 future	n/a	26	22.88	6.918	0	None	No	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1603	3.486	n/a	n/a	1 future	n/a	14	-0.3844	0.7582	14.29	None	ln(x)	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1604	1.171	n/a	n/a	1 future	n/a	14	0.4584	0.3308	50	Kaplan-Meier	No	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1605	11.2	n/a	n/a	1 future	n/a	14	n/a	n/a	85.71	n/a	n/a	0.008612	NP Intra (NDs) 1 of 2
Sulfate total (mg/L)	MW-1608	186.9	n/a	n/a	1 future	n/a	26	167.3	10.19	0	None	No	0.00188	Param Intra 1 of 2
Sulfate total (mg/L)	MW-1612	1.2	n/a	n/a	1 future	n/a	14	n/a	n/a	71.43	n/a	n/a	0.008612	NP Intra (NDs) 1 of 2
Total Dissolved Solids (mg/L)	MW-1601	1658	n/a	n/a	1 future	n/a	26	1424	122.2	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1602	558.3	n/a	n/a	1 future	n/a	26	520.6	19.68	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1603	739.2	n/a	n/a	1 future	n/a	26	509.1	120.1	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1604	427.7	n/a	n/a	1 future	n/a	26	394.9	17.15	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1605	715.2	n/a	n/a	1 future	n/a	14	659.8	25.72	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1608	480.2	n/a	n/a	1 future	n/a	26	437.8	22.13	0	None	No	0.00188	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1612	559.3	n/a	n/a	1 future	n/a	24	521.4	19.58	0	None	No	0.00188	Param Intra 1 of 2

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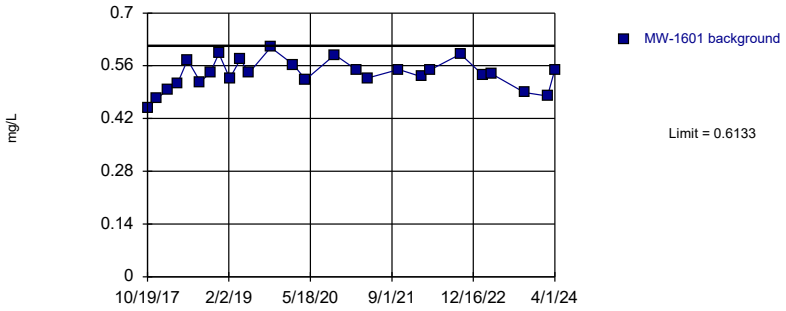
Prediction Limit

Intrawell Parametric, MW-1601 (bg)



Background Data Summary: Mean=0.5375, Std. Dev.=0.03961, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9773, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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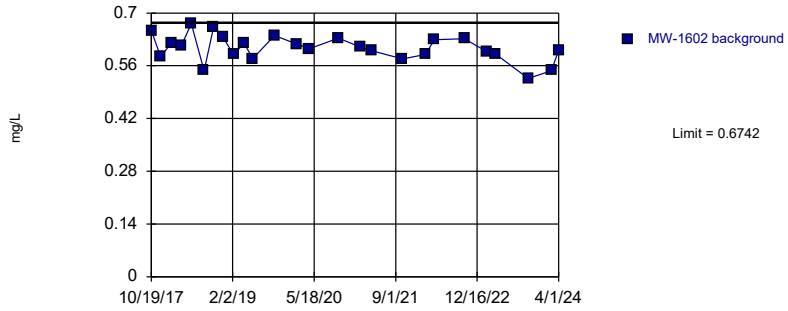
Prediction Limit

Intrawell Parametric, MW-1602 (bg)



Background Data Summary: Mean=0.6068, Std. Dev.=0.03517, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9777, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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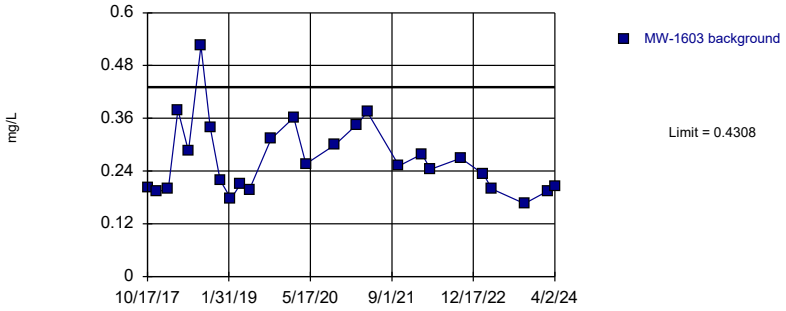
Prediction Limit

Intrawell Parametric, MW-1603



Background Data Summary (based on square root transformation): Mean=0.5103, Std. Dev.=0.07624, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9199, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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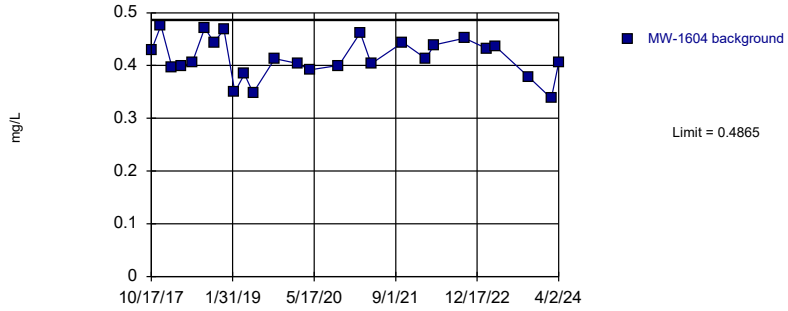
Prediction Limit

Intrawell Parametric, MW-1604



Background Data Summary: Mean=0.4147, Std. Dev.=0.03748, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9619, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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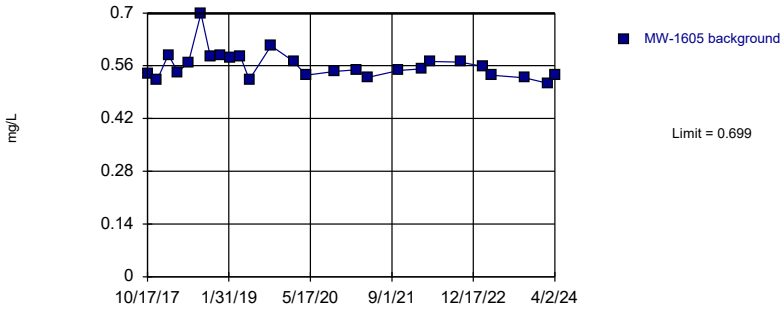
Prediction Limit

Intrawell Non-parametric, MW-1605



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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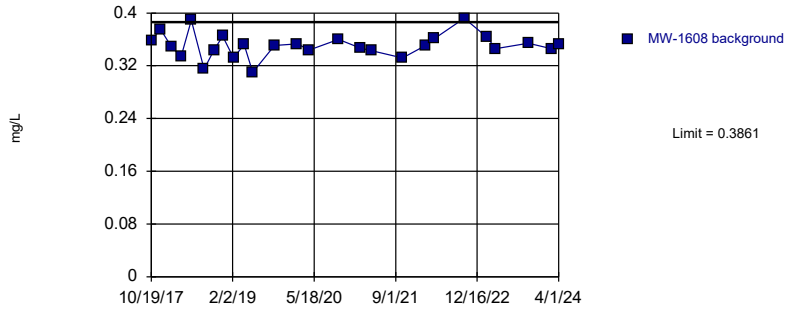
Prediction Limit

Intrawell Parametric, MW-1608 (bg)



Background Data Summary: Mean=0.3508, Std. Dev.=0.01846, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9518, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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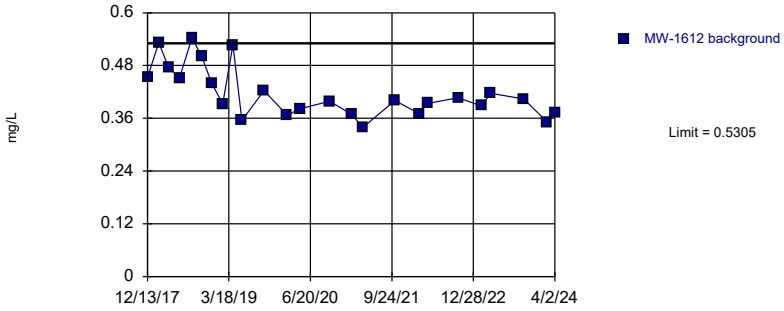
Prediction Limit

Intrawell Parametric, MW-1612



Background Data Summary: Mean=0.4181, Std. Dev.=0.05843, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9033, critical = 0.888. Kappa = 1.924 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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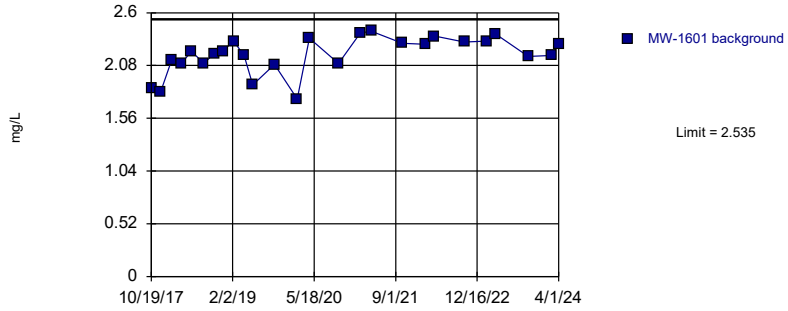
Prediction Limit

Intrawell Parametric, MW-1601 (bg)



Background Data Summary: Mean=2.183, Std. Dev.=0.1837, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9024, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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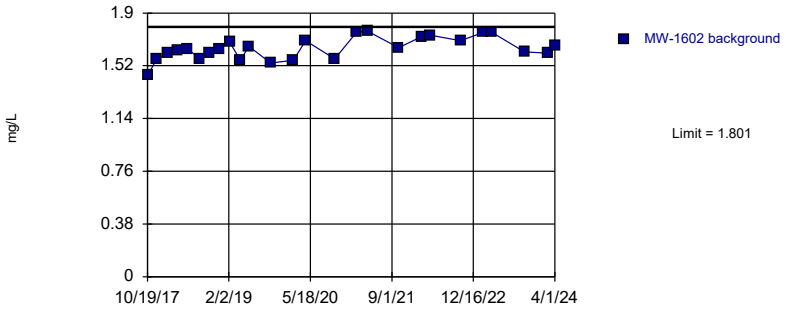
Prediction Limit

Intrawell Parametric, MW-1602 (bg)



Background Data Summary: Mean=1.645, Std. Dev.=0.08135, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9588, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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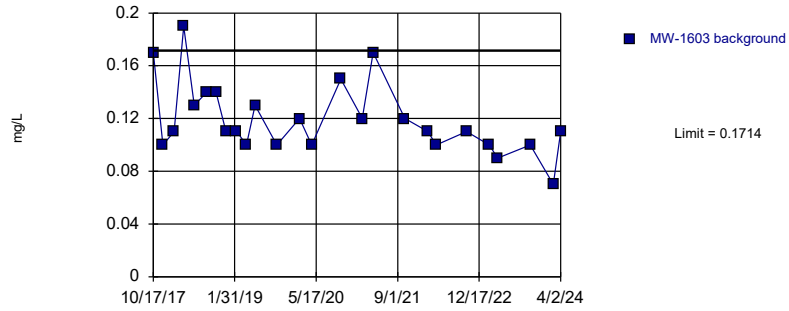
Prediction Limit

Intrawell Parametric, MW-1603



Background Data Summary: Mean=0.1192, Std. Dev.=0.02727, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9013, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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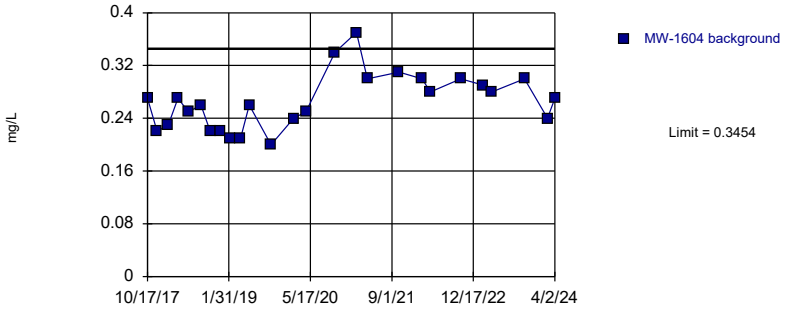
Prediction Limit

Intrawell Parametric, MW-1604



Background Data Summary: Mean=0.265, Std. Dev.=0.04198, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9607, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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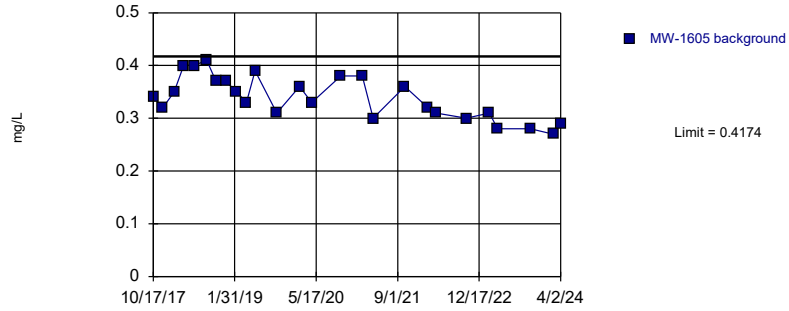
Prediction Limit

Intrawell Parametric, MW-1605



Background Data Summary: Mean=0.3388, Std. Dev.=0.04102, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9595, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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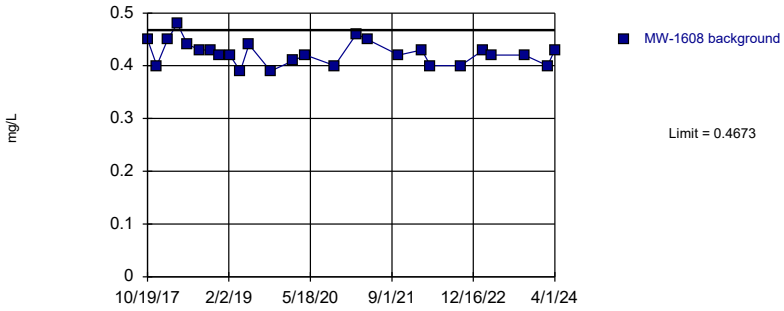
Prediction Limit

Intrawell Parametric, MW-1608 (bg)



Background Data Summary: Mean=0.4242, Std. Dev.=0.02248, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9501, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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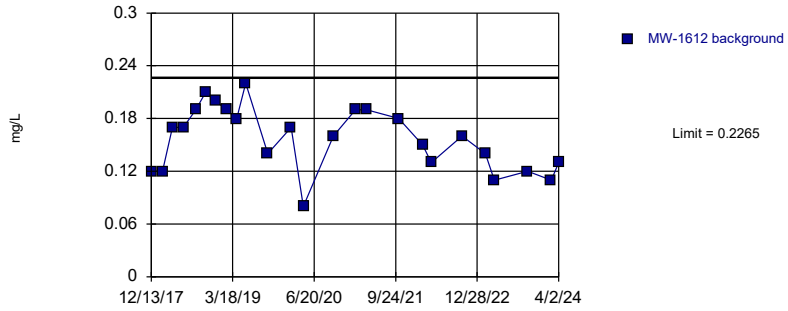
Prediction Limit

Intrawell Parametric, MW-1612



Background Data Summary: Mean=0.1572, Std. Dev.=0.036, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9677, critical = 0.888. Kappa = 1.924 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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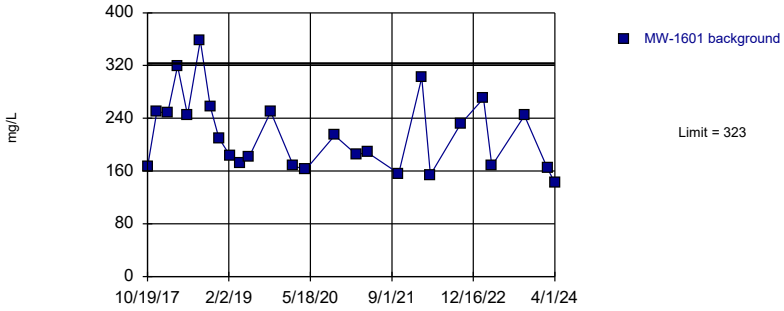
Prediction Limit

Intrawell Parametric, MW-1601 (bg)



Background Data Summary: Mean=215, Std. Dev.=56.41, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9119, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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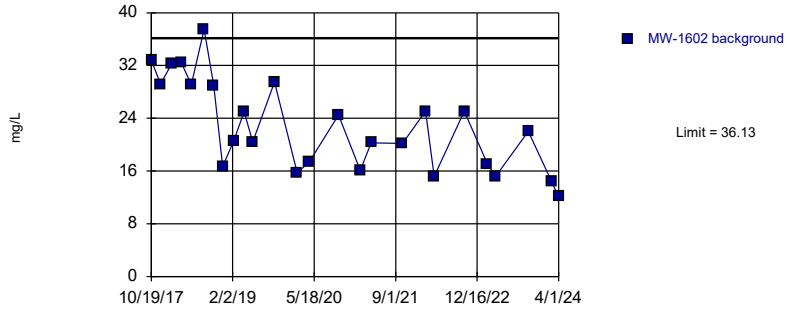
Prediction Limit

Intrawell Parametric, MW-1602 (bg)



Background Data Summary: Mean=22.88, Std. Dev.=6.918, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.946, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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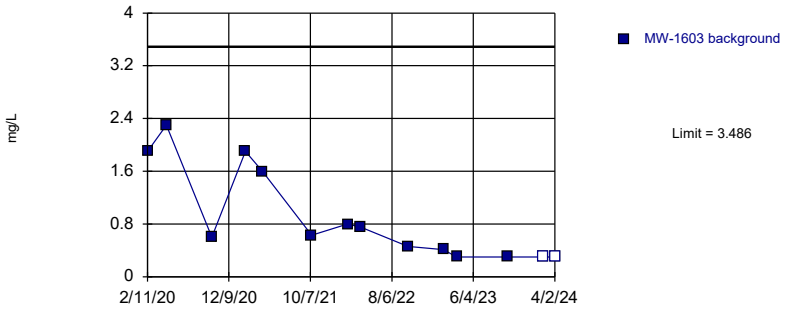
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-1603



Background Data Summary (based on natural log transformation): Mean=-0.3844, Std. Dev.=0.7582, n=14, 14.29% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8751, critical = 0.874. Kappa = 2.154 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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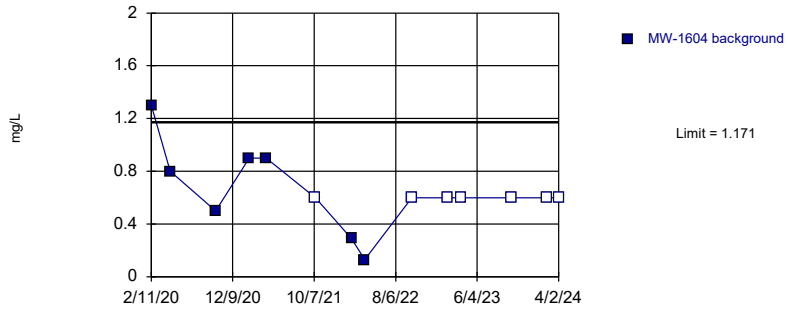
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-1604



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.4584, Std. Dev.=0.3308, n=14, 50% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8962, critical = 0.874. Kappa = 2.154 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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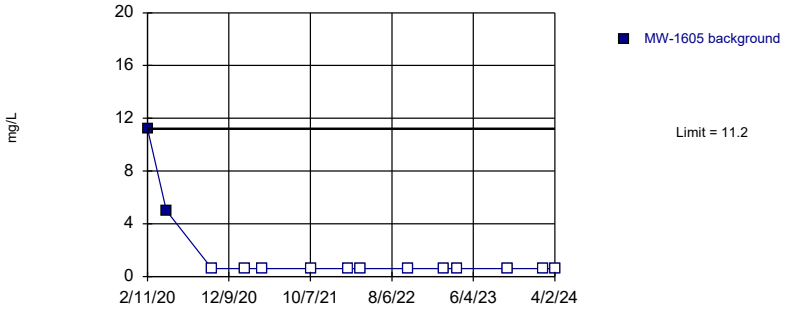
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-1605



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 85.71% NDs. Well-constituent pair annual alpha = 0.01715. Individual comparison alpha = 0.008612 (1 of 2). Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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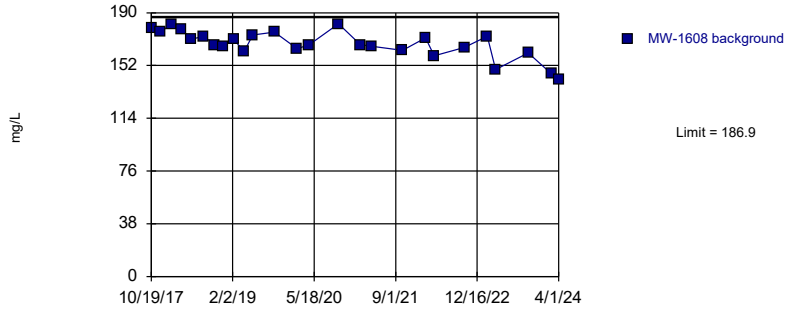
Prediction Limit

Intrawell Parametric, MW-1608 (bg)



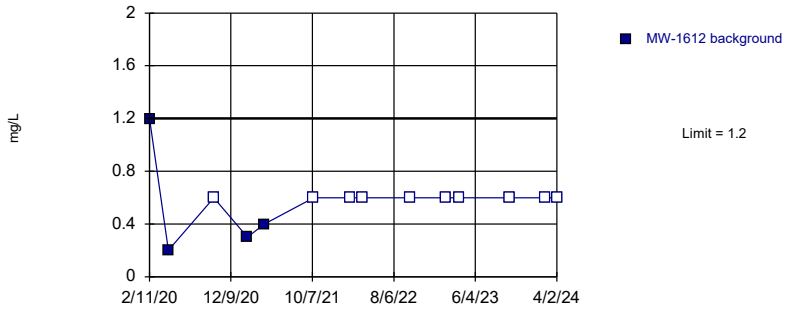
Background Data Summary: Mean=167.3, Std. Dev.=10.19, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9278, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-1612



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 71.43% NDs. Well-constituent pair annual alpha = 0.01715. Individual comparison alpha = 0.008612 (1 of 2). Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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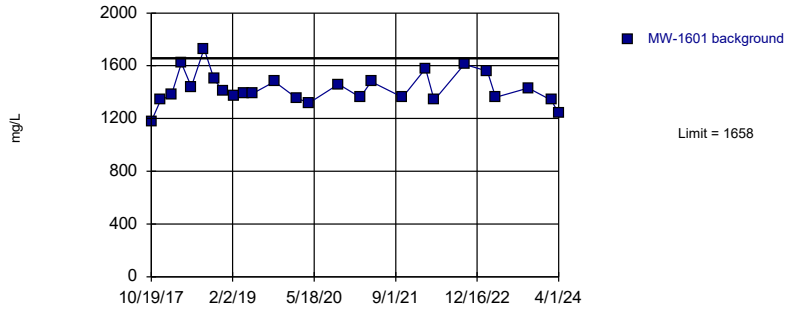
Prediction Limit

Intrawell Parametric, MW-1601 (bg)



Background Data Summary: Mean=1424, Std. Dev.=122.2, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9524, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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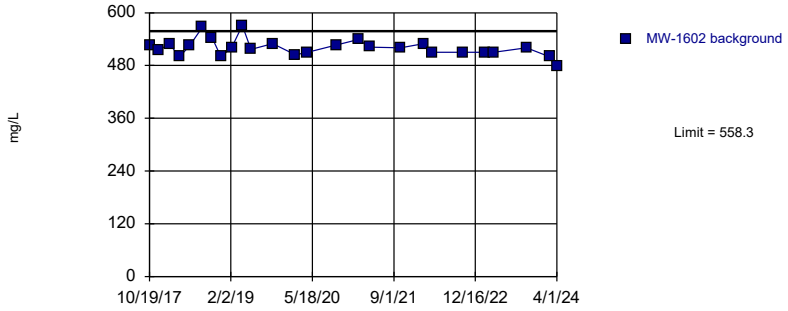
Prediction Limit

Intrawell Parametric, MW-1602 (bg)



Background Data Summary: Mean=520.6, Std. Dev.=19.68, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9291, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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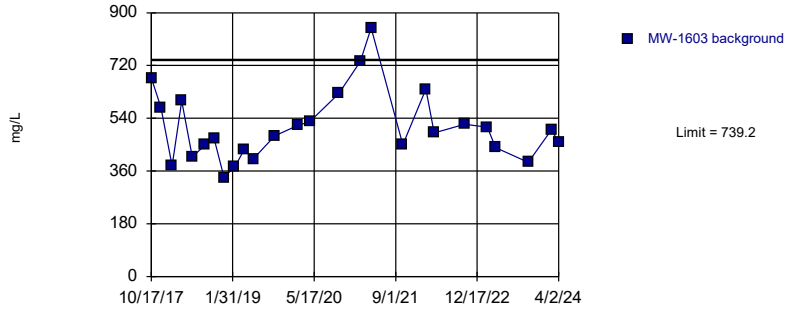
Prediction Limit

Intrawell Parametric, MW-1603



Background Data Summary: Mean=509.1, Std. Dev.=120.1, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9223, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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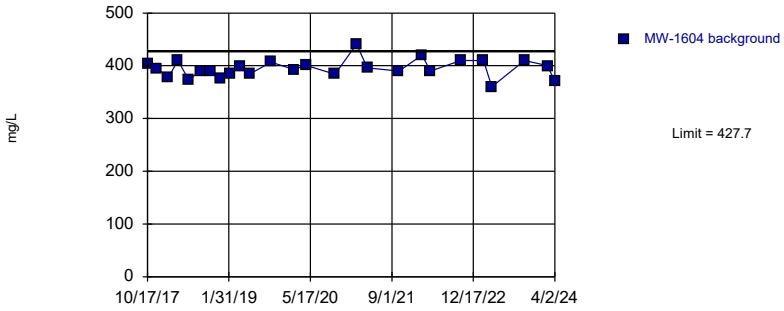
Prediction Limit

Intrawell Parametric, MW-1604



Background Data Summary: Mean=394.9, Std. Dev.=17.15, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9769, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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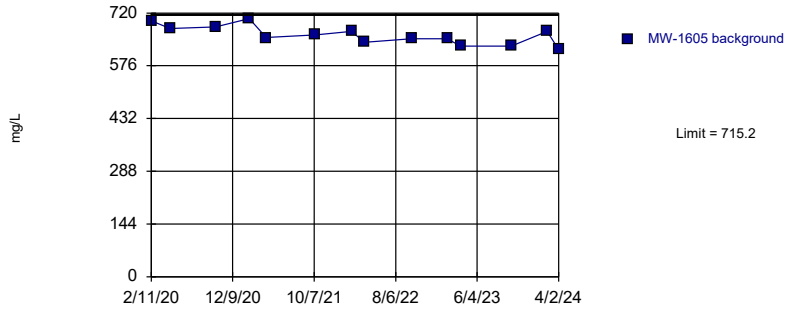
Prediction Limit

Intrawell Parametric, MW-1605



Background Data Summary: Mean=659.8, Std. Dev.=25.72, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9683, critical = 0.874. Kappa = 2.154 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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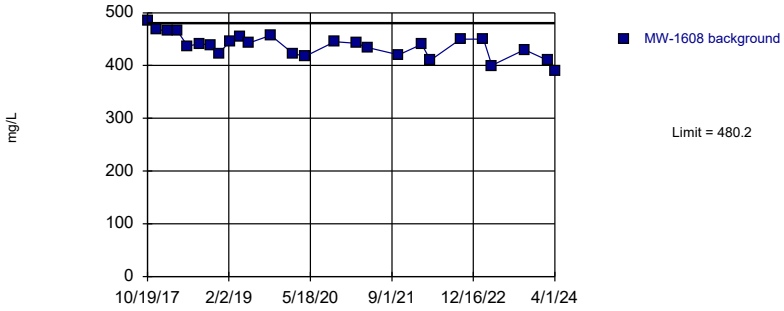
Prediction Limit

Intrawell Parametric, MW-1608 (bg)



Background Data Summary: Mean=437.8, Std. Dev.=22.13, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9862, critical = 0.891. Kappa = 1.915 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

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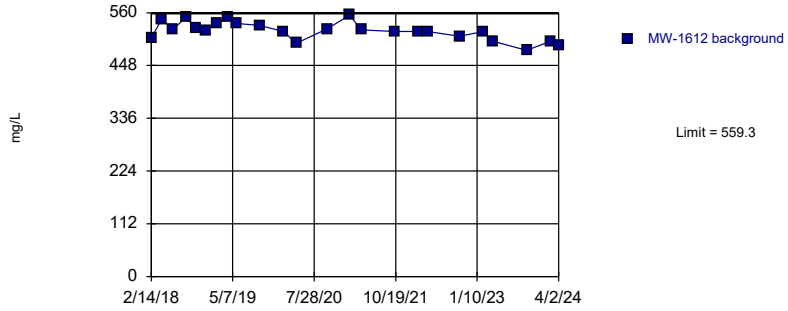
Prediction Limit

Intrawell Parametric, MW-1612



Background Data Summary: Mean=521.4, Std. Dev.=19.58, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9676, critical = 0.884. Kappa = 1.937 (c=7, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 8:36 AM View: Chattanooga Shale - Pond 1 In
Clinch River Client: AEP Data: Clinch River Pond 1

Intrawell Prediction Limits - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 11:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron total (mg/L)	MW-1606	0.1891	n/a	n/a	1 future	n/a	26	0.1197	0.04081	0	None	No	0.003756	Param Intra 1 of 2
Boron total (mg/L)	MW-1607	0.212	n/a	n/a	1 future	n/a	26	n/a	n/a	0	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Boron total (mg/L)	MW-1609	0.117	n/a	n/a	1 future	n/a	26	n/a	n/a	42.31	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Calcium total (mg/L)	MW-1606	63.32	n/a	n/a	1 future	n/a	26	56.7	3.894	0	None	No	0.003756	Param Intra 1 of 2
Calcium total (mg/L)	MW-1607	51.48	n/a	n/a	1 future	n/a	26	45.59	3.461	0	None	No	0.003756	Param Intra 1 of 2
Calcium total (mg/L)	MW-1609	81.52	n/a	n/a	1 future	n/a	26	70.62	6.405	0	None	No	0.003756	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1606	0.2594	n/a	n/a	1 future	n/a	26	0.2015	0.03402	0	None	No	0.003756	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1607	0.2627	n/a	n/a	1 future	n/a	26	0.2223	0.02372	0	None	No	0.003756	Param Intra 1 of 2
Fluoride total (mg/L)	MW-1609	0.307	n/a	n/a	1 future	n/a	26	0.2527	0.03194	0	None	No	0.003756	Param Intra 1 of 2
pH [field] (std.units)	MW-1606	7.374	6.781	n/a	1 future	n/a	26	7.077	0.1742	0	None	No	0.001878	Param Intra 1 of 2
pH [field] (std.units)	MW-1607	8.228	7.306	n/a	1 future	n/a	26	473.5	49.1	0	None	x^3	0.001878	Param Intra 1 of 2
pH [field] (std.units)	MW-1609	7.829	6.774	n/a	1 future	n/a	26	2932	485.6	0	None	x^4	0.001878	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1606	372.6	n/a	n/a	1 future	n/a	26	337.1	20.85	0	None	No	0.003756	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1607	310.4	n/a	n/a	1 future	n/a	24	284.3	15.16	0	None	No	0.003756	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1609	331.7	n/a	n/a	1 future	n/a	26	288.5	25.39	0	None	No	0.003756	Param Intra 1 of 2

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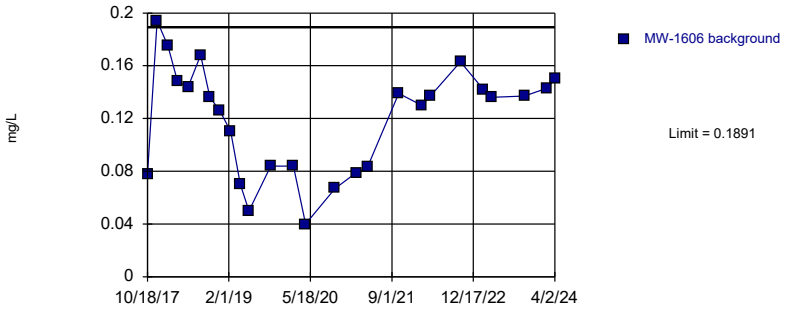
Prediction Limit

Intrawell Parametric, MW-1606



Background Data Summary: Mean=0.1197, Std. Dev.=0.04081, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.939, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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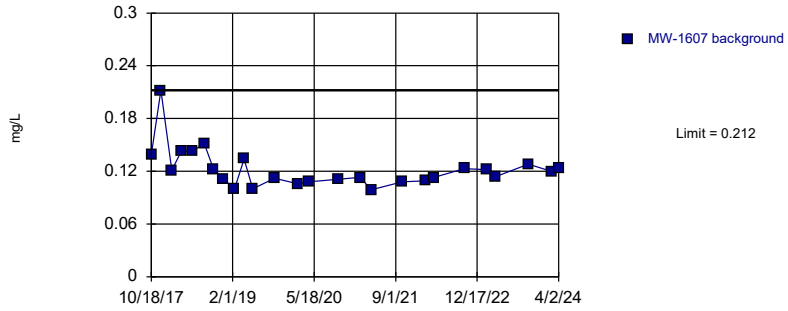
Prediction Limit

Intrawell Non-parametric, MW-1607



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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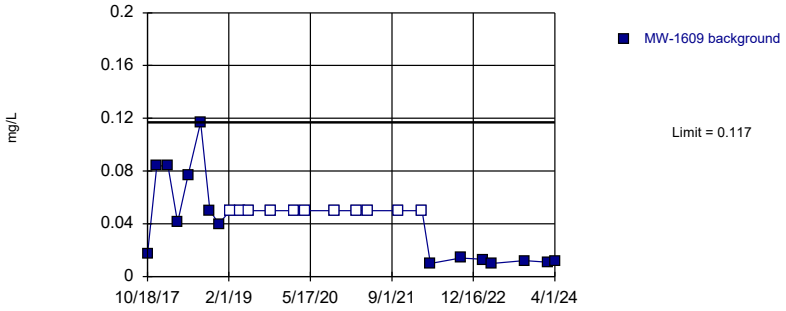
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-1609 (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 42.31% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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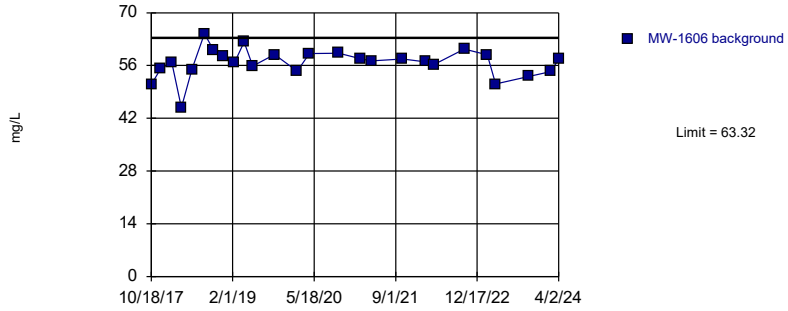
Prediction Limit

Intrawell Parametric, MW-1606



Background Data Summary: Mean=56.7, Std. Dev.=3.894, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9379, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Calcium total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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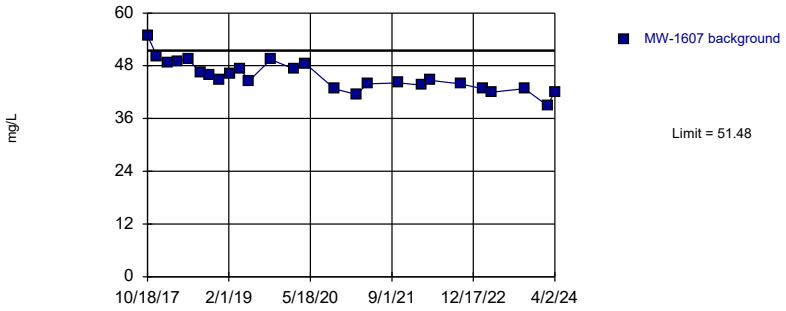
Prediction Limit

Intrawell Parametric, MW-1607



Background Data Summary: Mean=45.59, Std. Dev.=3.461, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9652, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Calcium total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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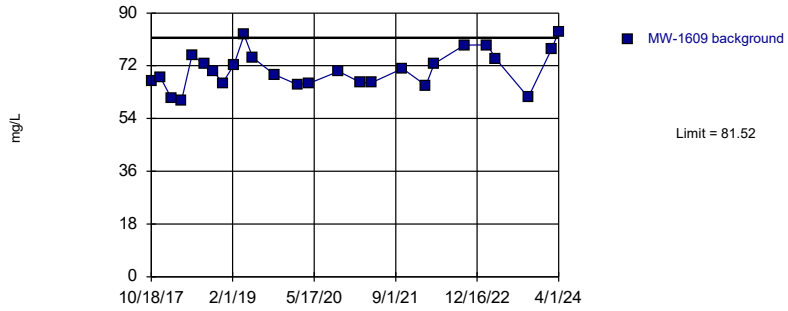
Prediction Limit

Intrawell Parametric, MW-1609 (bg)



Background Data Summary: Mean=70.62, Std. Dev.=6.405, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9649, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Calcium total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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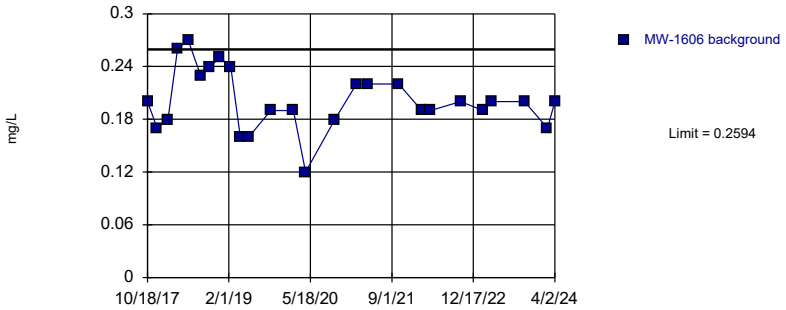
Prediction Limit

Intrawell Parametric, MW-1606



Background Data Summary: Mean=0.2015, Std. Dev.=0.03402, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9712, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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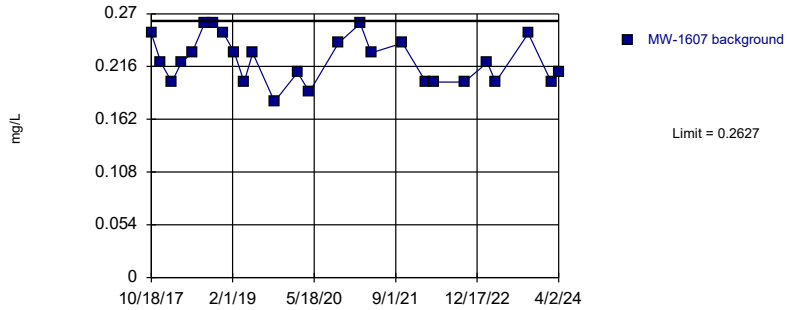
Prediction Limit

Intrawell Parametric, MW-1607



Background Data Summary: Mean=0.2223, Std. Dev.=0.02372, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9296, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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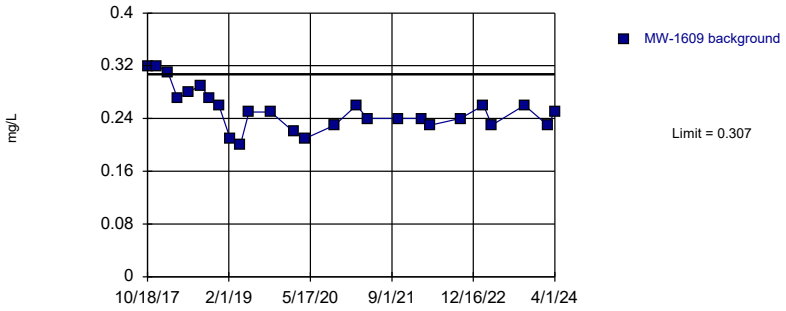
Prediction Limit

Intrawell Parametric, MW-1609 (bg)



Background Data Summary: Mean=0.2527, Std. Dev.=0.03194, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9422, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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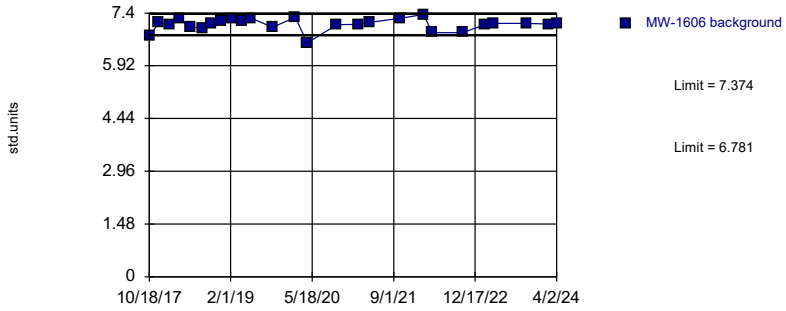
Prediction Limit

Intrawell Parametric, MW-1606



Background Data Summary: Mean=7.077, Std. Dev.=0.1742, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9133, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: pH [field] Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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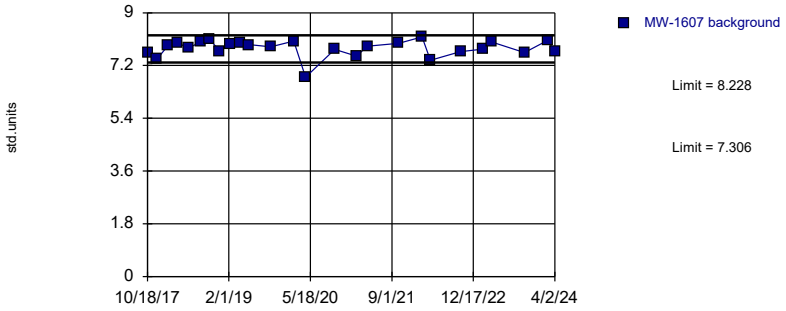
Prediction Limit

Intrawell Parametric, MW-1607



Background Data Summary (based on cube transformation): Mean=473.5, Std. Dev.=49.1, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9075, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: pH [field] Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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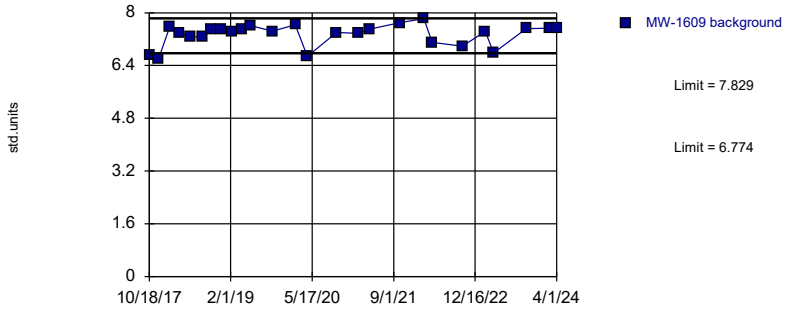
Prediction Limit

Intrawell Parametric, MW-1609 (bg)



Background Data Summary (based on x^4 transformation): Mean=2932, Std. Dev.=485.6, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8943, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: pH [field] Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Intrawell
Clinch River Client: AEP Data: Clinch River Pond 1

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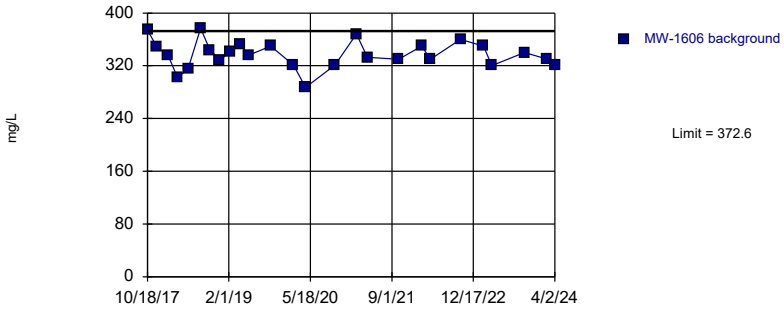
Prediction Limit

Intrawell Parametric, MW-1606



Background Data Summary: Mean=337.1, Std. Dev.=20.85, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9778, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Int
Clinch River Client: AEP Data: Clinch River Pond 1

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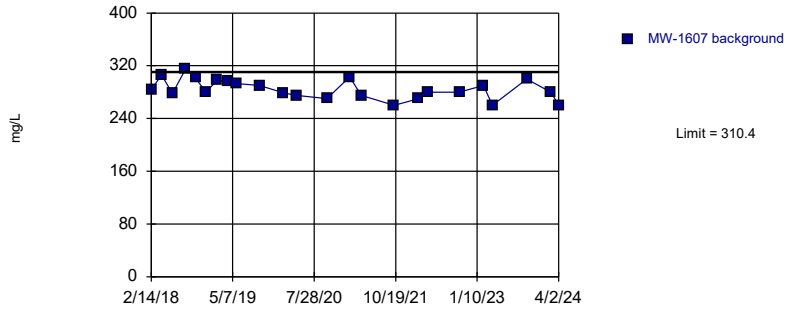
Prediction Limit

Intrawell Parametric, MW-1607



Background Data Summary: Mean=284.3, Std. Dev.=15.16, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9629, critical = 0.884. Kappa = 1.719 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Int
Clinch River Client: AEP Data: Clinch River Pond 1

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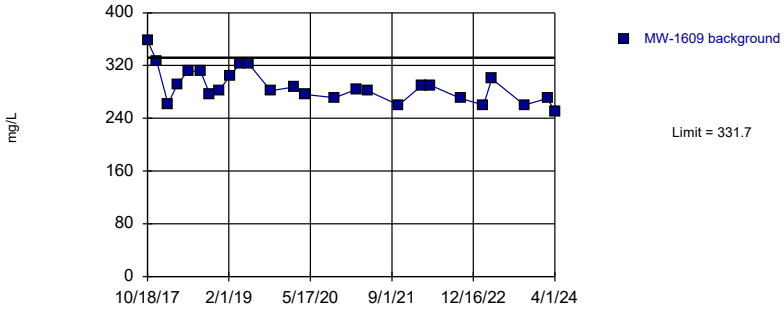
Prediction Limit

Intrawell Parametric, MW-1609 (bg)



Background Data Summary: Mean=288.5, Std. Dev.=25.39, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9427, critical = 0.891. Kappa = 1.701 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 11:01 AM View: Rome Limestone - Pond 1 Int
Clinch River Client: AEP Data: Clinch River Pond 1

Intrawell Prediction Limits - Dumps Fault - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 2:27 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg	NBg	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron total (mg/L)	MW-1610	0.139	n/a	n/a	1 future	n/a	26	n/a	n/a	n/a	0	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Boron total (mg/L)	MW-1611	0.6688	n/a	n/a	1 future	n/a	26	0.5722	0.06521	0	None	No	0.007498	Param Intra 1 of 2	
Calcium total (mg/L)	MW-1610	38.71	n/a	n/a	1 future	n/a	26	40718	11655	0	None	x^3	0.007498	Param Intra 1 of 2	
Calcium total (mg/L)	MW-1611	30.94	n/a	n/a	1 future	n/a	14	24.13	4.191	0	None	No	0.007498	Param Intra 1 of 2	
Chloride total (mg/L)	MW-1610	11.96	n/a	n/a	1 future	n/a	26	10.52	0.9701	0	None	No	0.007498	Param Intra 1 of 2	
Chloride total (mg/L)	MW-1611	17.21	n/a	n/a	1 future	n/a	14	13.7	2.157	0	None	No	0.007498	Param Intra 1 of 2	
Fluoride total (mg/L)	MW-1610	0.35	n/a	n/a	1 future	n/a	26	n/a	n/a	0	n/a	n/a	0.002667	NP Intra (normality) 1 of 2	
Fluoride total (mg/L)	MW-1611	1.21	n/a	n/a	1 future	n/a	26	1.01	0.3065	0	None	x^2	0.007498	Param Intra 1 of 2	
pH [field] (std.units)	MW-1610	8.017	7.092	n/a	1 future	n/a	26	7.554	0.3122	0	None	No	0.003749	Param Intra 1 of 2	
pH [field] (std.units)	MW-1611	8.117	7.319	n/a	1 future	n/a	26	7.718	0.2692	0	None	No	0.003749	Param Intra 1 of 2	
Sulfate total (mg/L)	MW-1610	49.96	n/a	n/a	1 future	n/a	26	56674	45900	0	None	x^3	0.007498	Param Intra 1 of 2	
Sulfate total (mg/L)	MW-1611	128.4	n/a	n/a	1 future	n/a	14	7.076	2.616	0	None	sqrt(x)	0.007498	Param Intra 1 of 2	
Total Dissolved Solids (mg/L)	MW-1610	266	n/a	n/a	1 future	n/a	26	240.8	16.98	0	None	No	0.007498	Param Intra 1 of 2	
Total Dissolved Solids (mg/L)	MW-1611	675.1	n/a	n/a	1 future	n/a	14	550	76.91	0	None	No	0.007498	Param Intra 1 of 2	

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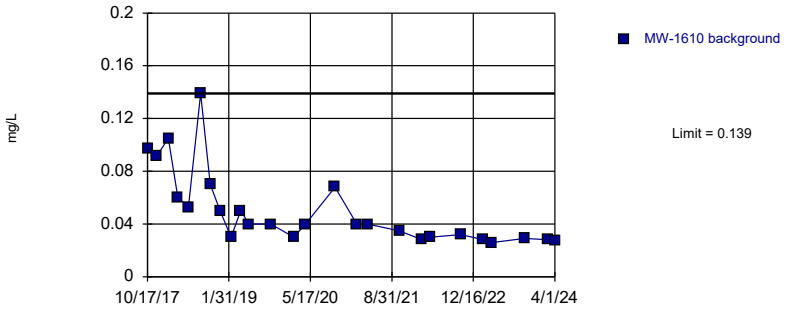
Prediction Limit

Intrawell Non-parametric, MW-1610



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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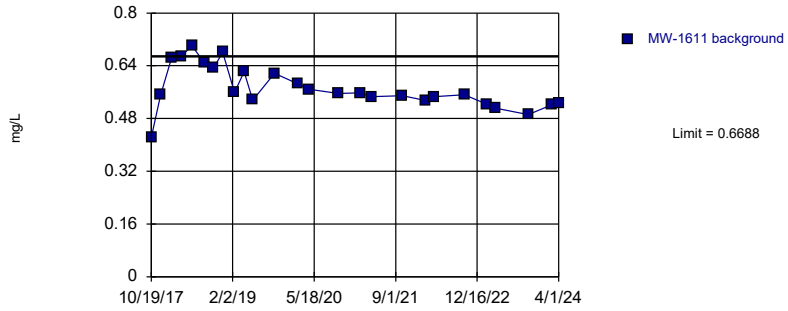
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary: Mean=0.5722, Std. Dev.=0.06521, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9441, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Boron total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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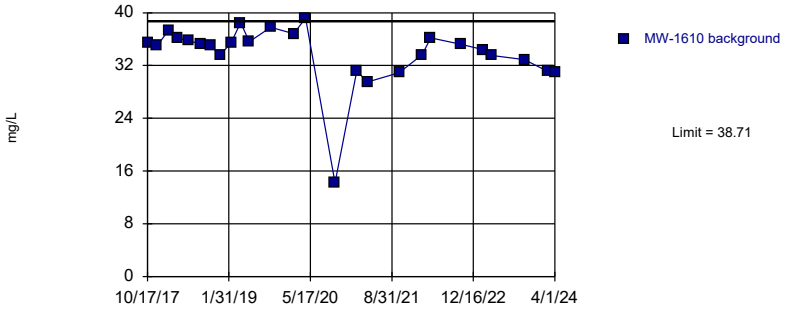
Prediction Limit

Intrawell Parametric, MW-1610



Background Data Summary (based on cube transformation): Mean=40718, Std. Dev.=11655, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9166, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Calcium total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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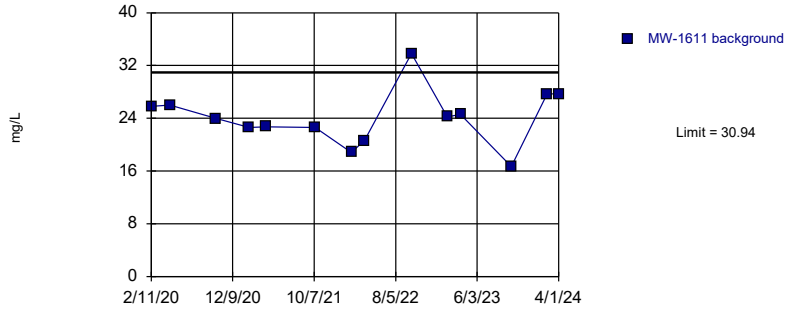
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary: Mean=24.13, Std. Dev.=4.191, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9634, critical = 0.874. Kappa = 1.626 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Calcium total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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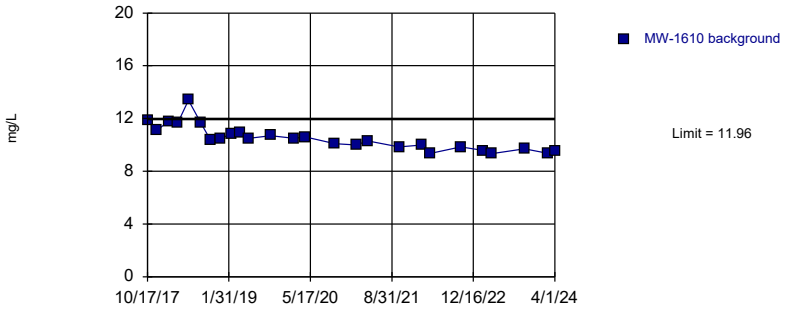
Prediction Limit

Intrawell Parametric, MW-1610



Background Data Summary: Mean=10.52, Std. Dev.=0.9701, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9087, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Chloride total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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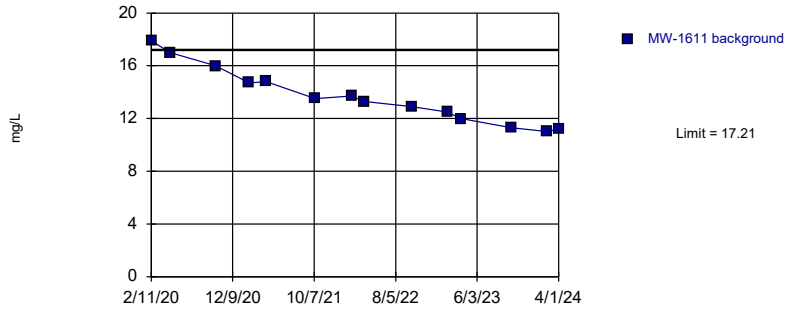
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary: Mean=13.7, Std. Dev.=2.157, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9407, critical = 0.874. Kappa = 1.626 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Chloride total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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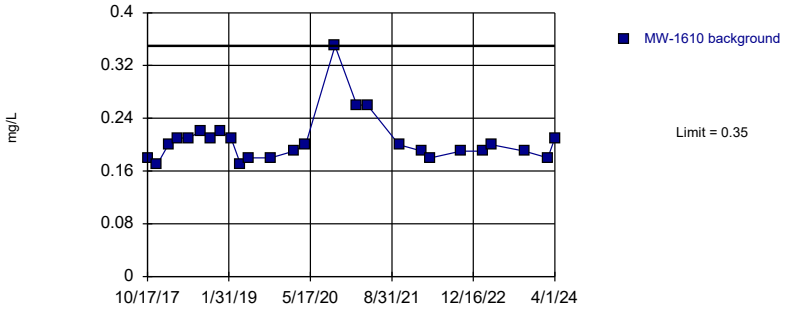
Prediction Limit

Intrawell Non-parametric, MW-1610



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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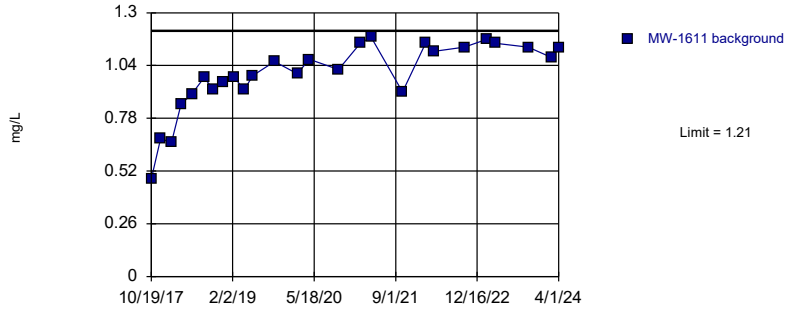
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary (based on square transformation): Mean=1.01, Std. Dev.=0.3065, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9141, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Fluoride total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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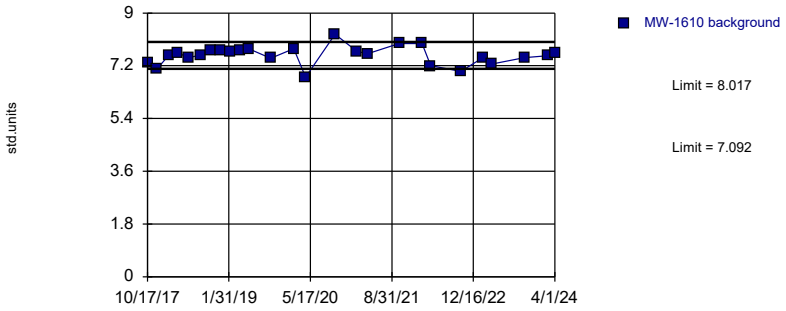
Prediction Limit

Intrawell Parametric, MW-1610



Background Data Summary: Mean=7.554, Std. Dev.=0.3122, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.969, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: pH [field] Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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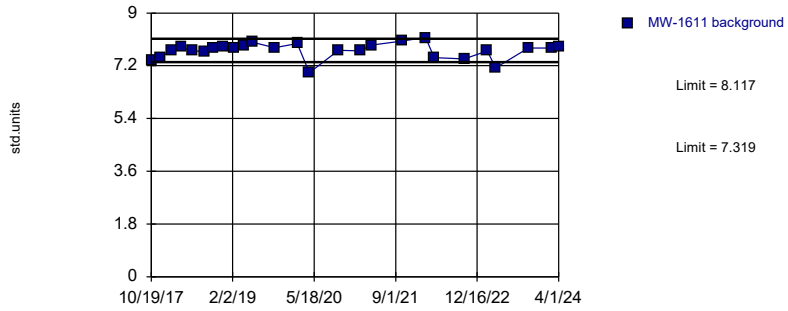
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary: Mean=7.718, Std. Dev.=0.2692, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9007, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: pH [field] Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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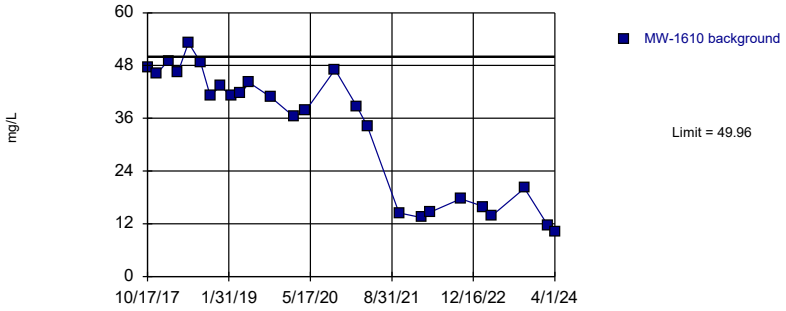
Prediction Limit

Intrawell Parametric, MW-1610



Background Data Summary (based on cube transformation): Mean=56674, Std. Dev.=45900, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9016, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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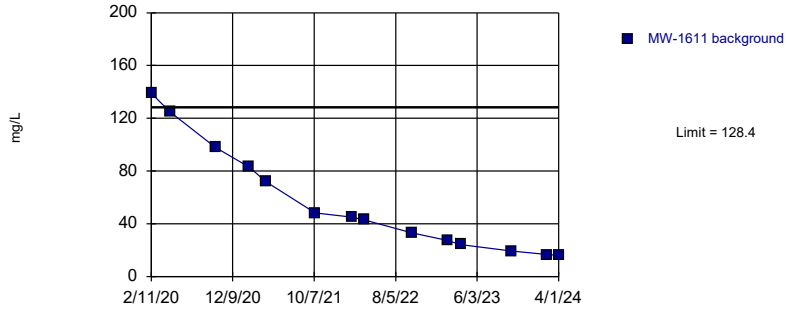
Prediction Limit

Intrawell Parametric, MW-1611 (bg)

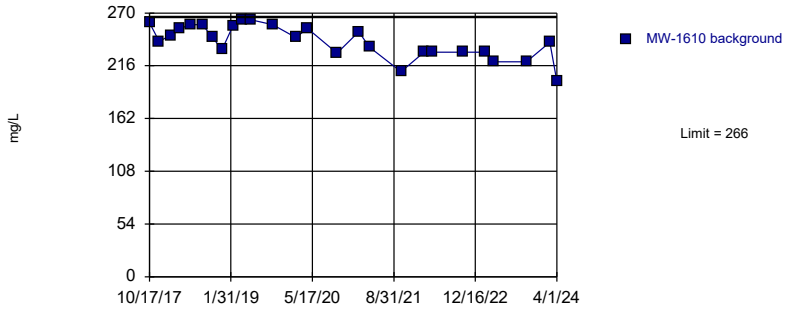


Background Data Summary (based on square root transformation): Mean=7.076, Std. Dev.=2.616, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.921, critical = 0.874. Kappa = 1.626 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Sulfate total Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

Prediction Limit

Intrawell Parametric, MW-1610



Background Data Summary: Mean=240.8, Std. Dev.=16.98, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.891. Kappa = 1.482 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

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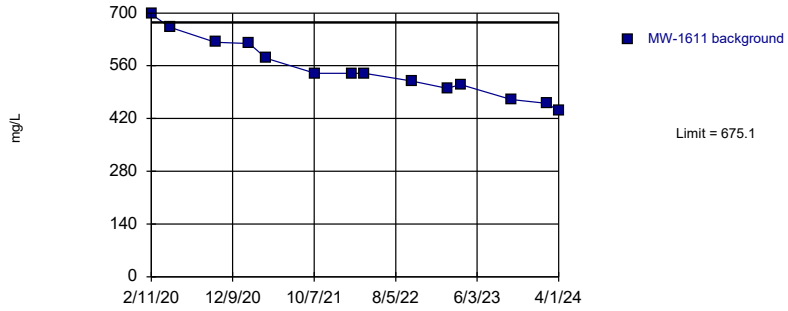
Prediction Limit

Intrawell Parametric, MW-1611 (bg)



Background Data Summary: Mean=550, Std. Dev.=76.91, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9547, critical = 0.874. Kappa = 1.626 (c=7, w=1, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 1/29/2025 2:23 PM View: Dumps Fault - Pond 1 PLs
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE F.

Trend Tests - Chattanooga Shale Upgradient Wells - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 8:45 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Calcium total (mg/L)	**MW-1601 (bg)**	**-0.1755**	**-142**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
Calcium total (mg/L)	**MW-1608 (bg)**	**-0.1591**	**-243**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
Chloride total (mg/L)	**MW-1601 (bg)**	**-2.284**	**-185**	**-111**	**Yes**	**25**	**0**	**n/a**	**0.01**	**NP**
Chloride total (mg/L)	**MW-1608 (bg)**	**-0.4954**	**-245**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**

Trend Tests - Chattanooga Shale Upgradient Wells - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 8:45 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Calcium total (mg/L)	**MW-1601 (bg)**	**-0.1755**	**-142**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
Calcium total (mg/L)	MW-1602 (bg)	0.1152	113	124	No	27	0	n/a	0.01	NP
Calcium total (mg/L)	**MW-1608 (bg)**	**-0.1591**	**-243**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
Chloride total (mg/L)	**MW-1601 (bg)**	**-2.284**	**-185**	**-111**	**Yes**	**25**	**0**	**n/a**	**0.01**	**NP**
Chloride total (mg/L)	MW-1602 (bg)	-0.1335	-100	-124	No	27	0	n/a	0.01	NP
Chloride total (mg/L)	**MW-1608 (bg)**	**-0.4954**	**-245**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
pH [field] (std.units)	MW-1601 (bg)	-0.009513	-25	-124	No	27	0	n/a	0.01	NP
pH [field] (std.units)	MW-1602 (bg)	-0.03342	-101	-124	No	27	0	n/a	0.01	NP
pH [field] (std.units)	MW-1608 (bg)	-0.04549	-115	-124	No	27	0	n/a	0.01	NP

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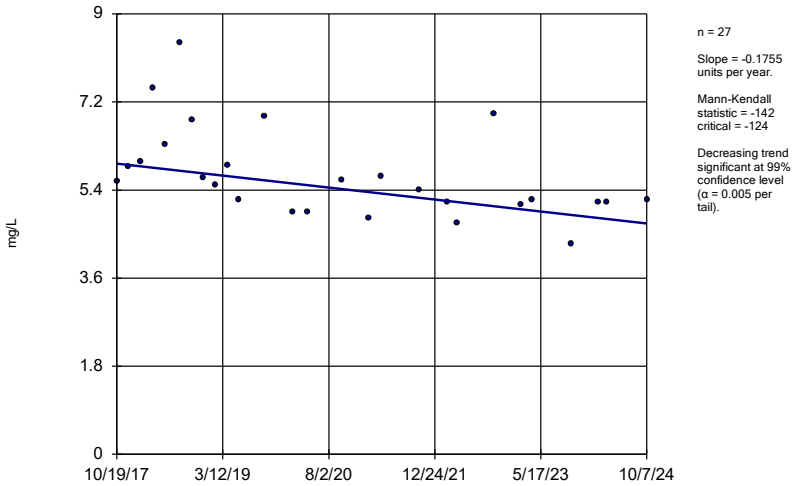
Sen's Slope Estimator

MW-1601 (bg)



n = 27

Slope = -0.1755 units per year.

Mann-Kendall statistic = -142 critical = -124

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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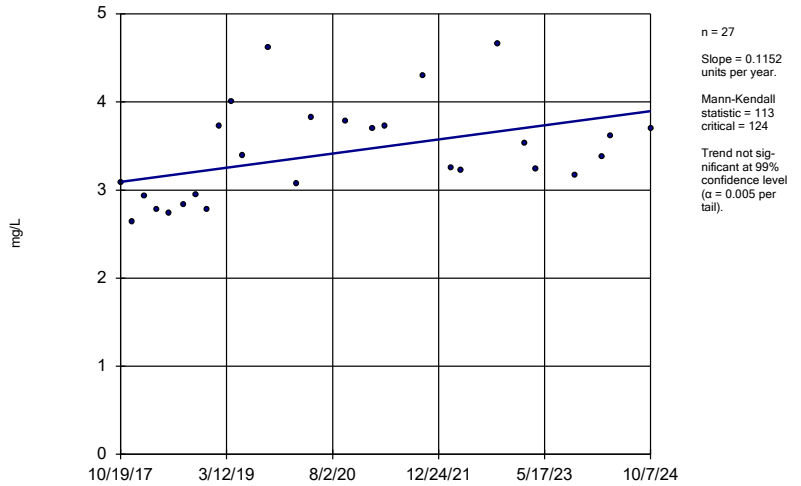
Sen's Slope Estimator

MW-1602 (bg)



n = 27

Slope = 0.1152 units per year.

Mann-Kendall statistic = 113 critical = 124

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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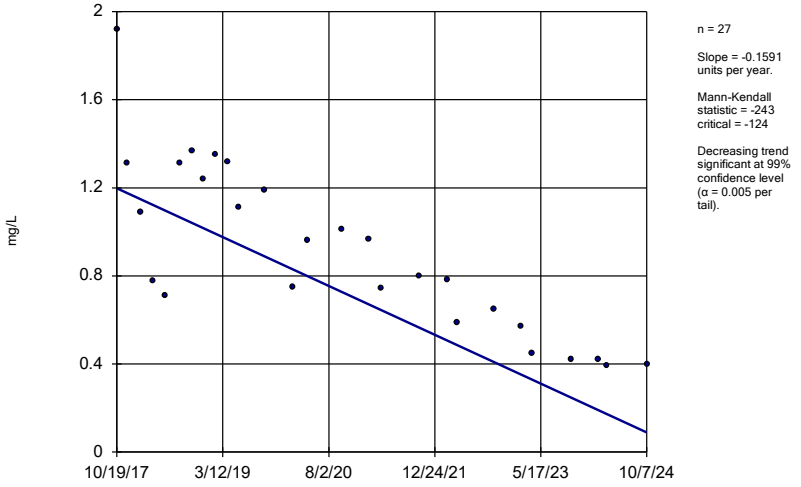
Sen's Slope Estimator

MW-1608 (bg)



n = 27

Slope = -0.1591 units per year.

Mann-Kendall statistic = -243 critical = -124

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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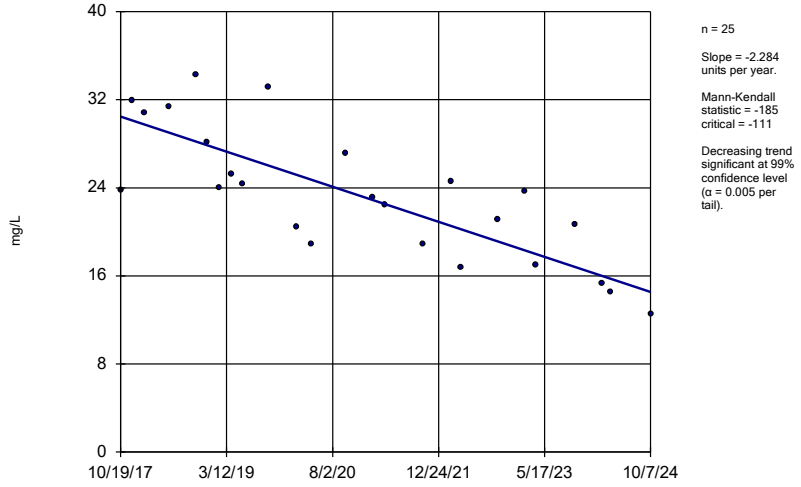
Sen's Slope Estimator

MW-1601 (bg)



n = 25

Slope = -2.284 units per year.

Mann-Kendall statistic = -185 critical = -111

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradien
Clinch River Client: AEP Data: Clinch River Pond 1

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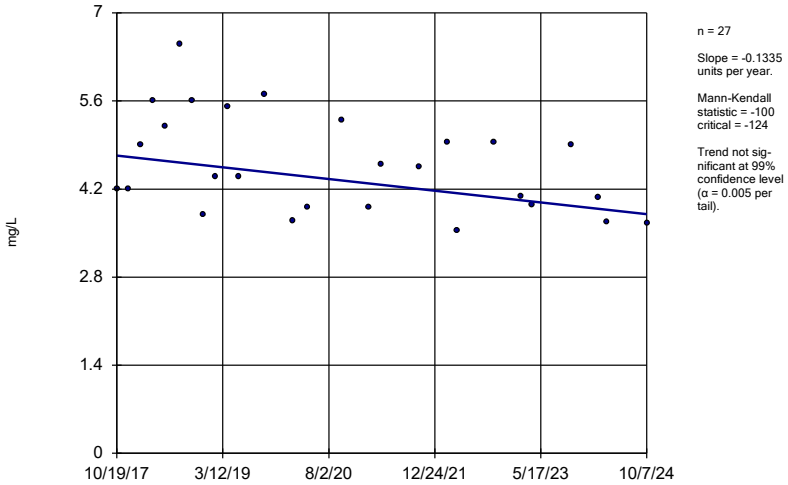
Sen's Slope Estimator

MW-1602 (bg)



n = 27

Slope = -0.1335 units per year.

Mann-Kendall statistic = -100 critical = -124

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradien
Clinch River Client: AEP Data: Clinch River Pond 1

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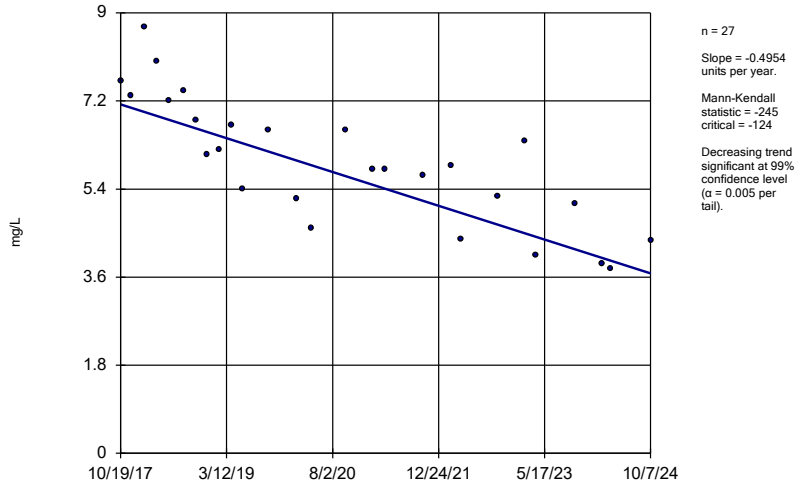
Sen's Slope Estimator

MW-1608 (bg)



n = 27

Slope = -0.4954 units per year.

Mann-Kendall statistic = -245 critical = -124

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride total Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradien
Clinch River Client: AEP Data: Clinch River Pond 1

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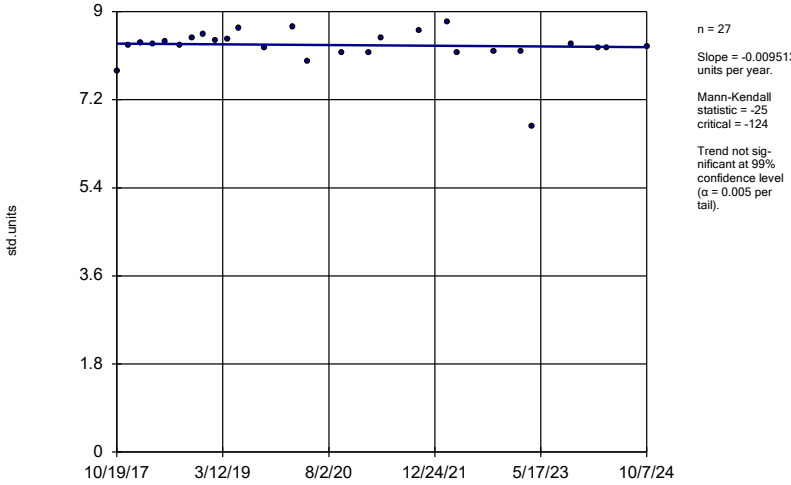
Sen's Slope Estimator

MW-1601 (bg)



n = 27

Slope = -0.009513 units per year.

Mann-Kendall statistic = -25 critical = -124

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH [field] Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient Tre
Clinch River Client: AEP Data: Clinch River Pond 1

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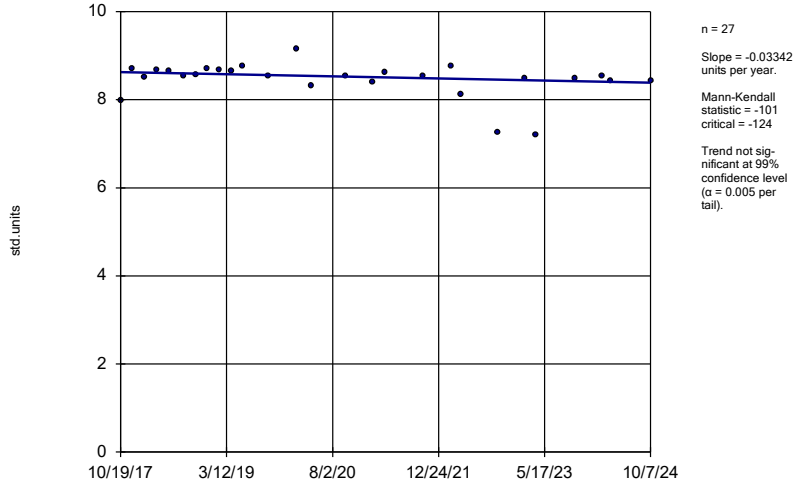
Sen's Slope Estimator

MW-1602 (bg)



n = 27

Slope = -0.03342 units per year.

Mann-Kendall statistic = -101 critical = -124

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH [field] Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient Tre
Clinch River Client: AEP Data: Clinch River Pond 1

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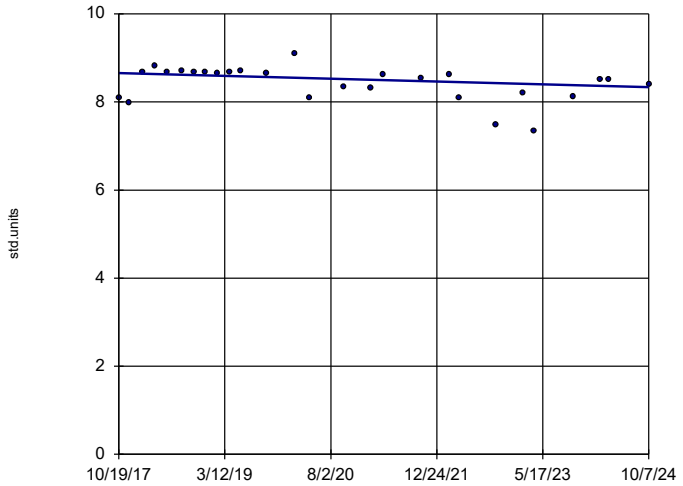
Sen's Slope Estimator

MW-1608 (bg)



n = 27

Slope = -0.04549 units per year.

Mann-Kendall statistic = -115
critical = -124

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH [field] Analysis Run 1/29/2025 8:43 AM View: Chattanooga Shale - Pond 1 Upgradient Tre
Clinch River Client: AEP Data: Clinch River Pond 1

Trend Tests - Rome Limestone Upgradient Wells - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 11:03 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Chloride total (mg/L)	**MW-1609 (bg)**	**-0.1117**	**-167**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**

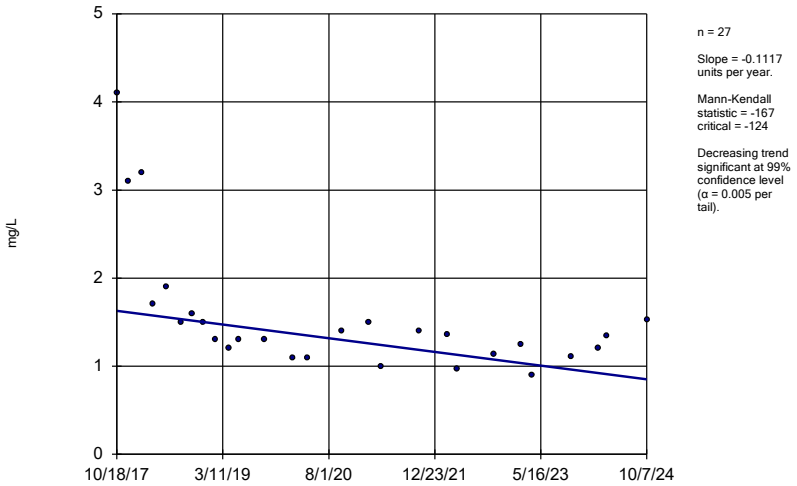
Trend Tests - Rome Limestone Upgradient Wells - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 11:03 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Chloride total (mg/L)	**MW-1609 (bg)**	**-0.1117**	**-167**	**-124**	**Yes**	**27**	**0**	**n/a**	**0.01**	**NP**
Sulfate total (mg/L)	MW-1609 (bg)	0.1189	20	124	No	27	0	n/a	0.01	NP

Sen's Slope Estimator

MW-1609 (bg)



n = 27

Slope = -0.1117 units per year.

Mann-Kendall statistic = -167
critical = -124

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride total Analysis Run 1/29/2025 11:03 AM View: Rome Limestone - Pond 1 Upgradient
Clinch River Client: AEP Data: Clinch River Pond 1

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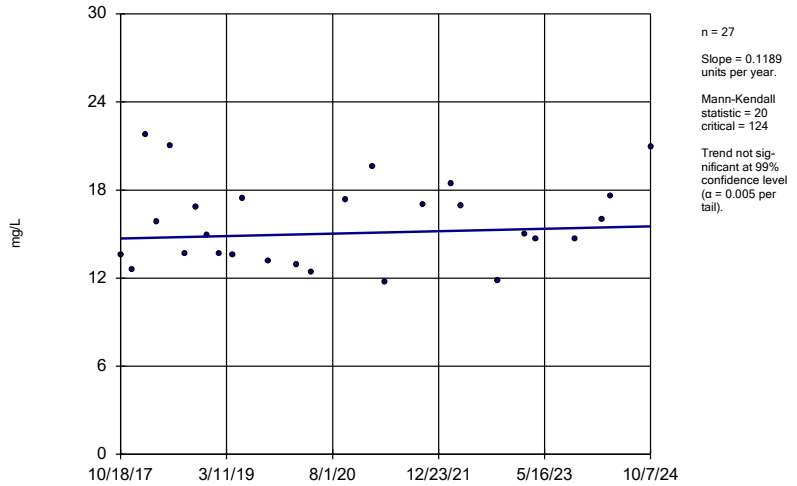
Sen's Slope Estimator

MW-1609 (bg)



n = 27

Slope = 0.1189 units per year.

Mann-Kendall statistic = 20
critical = 124

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate total Analysis Run 1/29/2025 11:03 AM View: Rome Limestone - Pond 1 Upgradient T
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE G.

Interwell Prediction Limits - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 8:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Calcium total (mg/L)	n/a	8.42	n/a	n/a	4 future	n/a	81	n/a	n/a	0	n/a	n/a	0.0002935	NP Inter (normality) 1 of 2
Chloride total (mg/L)	n/a	34.3	n/a	n/a	4 future	n/a	79	n/a	n/a	0	n/a	n/a	0.0003086	NP Inter (normality) 1 of 2
pH [field] (std.units)	n/a	9.14	6.65	n/a	4 future	n/a	81	n/a	n/a	0	n/a	n/a	0.000587	NP Inter (normality) 1 of 2

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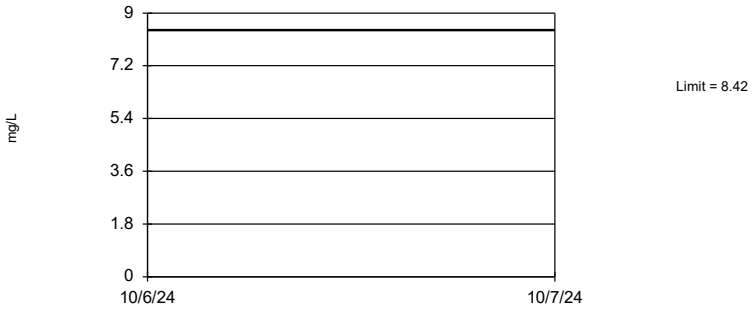
Prediction Limit

Interwell Non-parametric



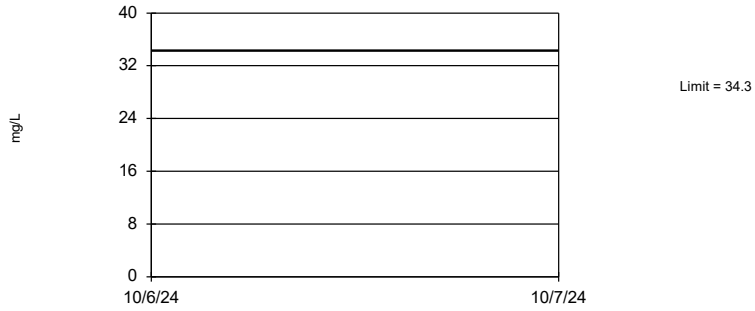
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. Annual per-constituent alpha = 0.002346. Individual comparison alpha = 0.0002935 (1 of 2). Assumes 4 future values.

Constituent: Calcium total Analysis Run 1/29/2025 8:46 AM View: Chattanooga Shale - Pond 1 Interwell
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



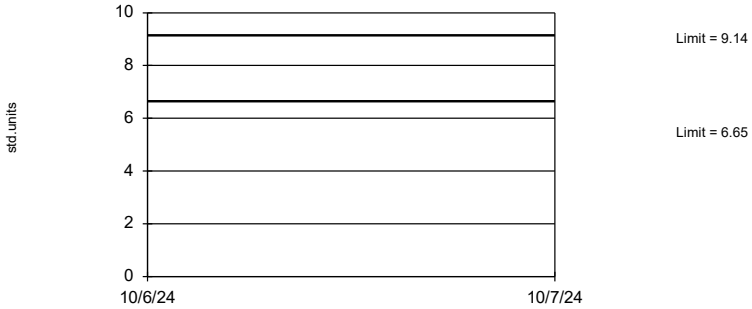
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 79 background values. Annual per-constituent alpha = 0.002466. Individual comparison alpha = 0.0003086 (1 of 2). Assumes 4 future values.

Constituent: Chloride total Analysis Run 1/29/2025 8:46 AM View: Chattanooga Shale - Pond 1 Interwell
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 81 background values. Annual per-constituent alpha = 0.004691. Individual comparison alpha = 0.000587 (1 of 2). Assumes 4 future values.

Constituent: pH [field] Analysis Run 1/29/2025 8:46 AM View: Chattanooga Shale - Pond 1 Interwell
Clinch River Client: AEP Data: Clinch River Pond 1

Interwell Prediction Limits - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 11:06 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Chloride total (mg/L)	n/a	4.1	n/a	n/a	2 future	n/a	27	n/a	n/a	0	n/a	n/a	0.002475	NP Inter (normality) 1 of 2
Sulfate total (mg/L)	n/a	20.6	n/a	n/a	2 future	n/a	27	15.74	2.869	0	None	No	0.003756	Param Inter 1 of 2

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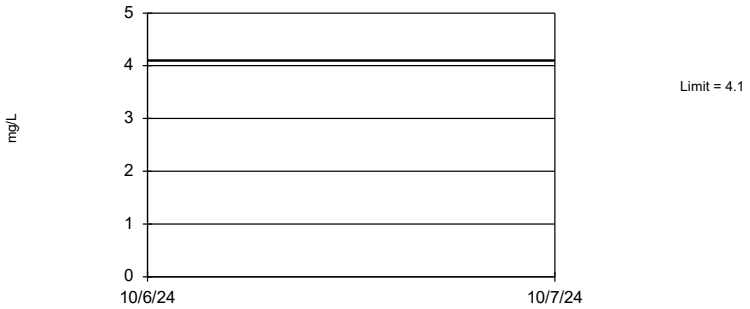
Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. Annual per-constituent alpha = 0.009865. Individual comparison alpha = 0.002475 (1 of 2). Assumes 2 future values.

Constituent: Chloride total Analysis Run 1/29/2025 11:06 AM View: Rome Limestone - Pond 1 Interwell
Clinch River Client: AEP Data: Clinch River Pond 1

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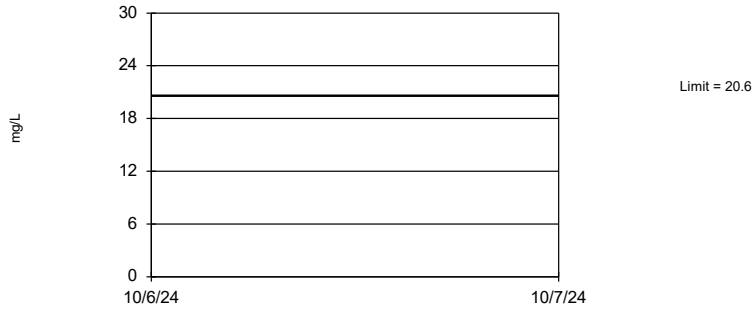
Prediction Limit

Interwell Parametric



Background Data Summary: Mean=15.74, Std. Dev.=2.869, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.941, critical = 0.894. Kappa = 1.694 (c=7, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.003756. Assumes 2 future values.

Constituent: Sulfate total Analysis Run 1/29/2025 11:06 AM View: Rome Limestone - Pond 1 Interwell
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE H.

Upper Tolerance Limits - Chattanooga Shale

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 4:01 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0004929	81	-9.551	0.9871	7.407	None	ln(x)	0.05	Inter
Arsenic total (mg/L)	0.0115	72	n/a	n/a	0	n/a	n/a	0.02489	NP Inter(normality)
Barium total (mg/L)	0.306	81	n/a	n/a	0	n/a	n/a	0.01569	NP Inter(normality)
Beryllium total (mg/L)	0.0004	81	n/a	n/a	72.84	n/a	n/a	0.01569	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	81	n/a	n/a	81.48	n/a	n/a	0.01569	NP Inter(NDs)
Chromium total (mg/L)	0.00126	81	n/a	n/a	4.938	n/a	n/a	0.01569	NP Inter(normality)
Cobalt total (mg/L)	0.0004159	81	-9.523	0.8866	1.235	None	ln(x)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	2.628	79	0.9246	0.2318	0	None	x^(1/3)	0.05	Inter
Fluoride total (mg/L)	2.44	81	n/a	n/a	0	n/a	n/a	0.01569	NP Inter(normality)
Lead total (mg/L)	0.0016	81	n/a	n/a	29.63	n/a	n/a	0.01569	NP Inter(normality)
Lithium total (mg/L)	0.118	81	n/a	n/a	1.235	n/a	n/a	0.01569	NP Inter(normality)
Mercury total (mg/L)	0.001	81	n/a	n/a	91.36	n/a	n/a	0.01569	NP Inter(NDs)
Molybdenum total (mg/L)	0.0257	81	n/a	n/a	2.469	n/a	n/a	0.01569	NP Inter(normality)
Selenium total (mg/L)	0.004	81	n/a	n/a	59.26	n/a	n/a	0.01569	NP Inter(NDs)
Thallium total (mg/L)	0.0016	81	n/a	n/a	82.72	n/a	n/a	0.01569	NP Inter(NDs)

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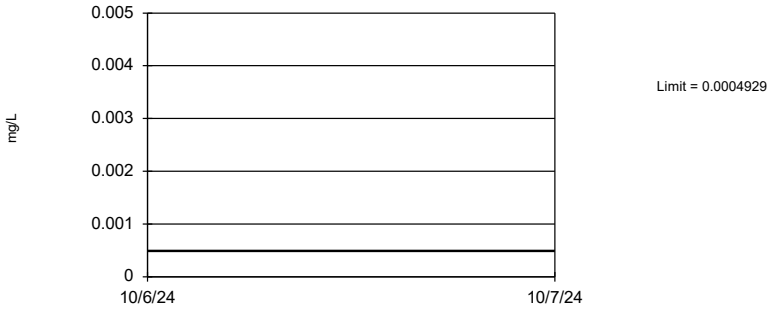
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-9.551, Std. Dev.=0.9871, n=81, 7.407% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9796, critical = 0.958. Report alpha = 0.05.

Constituent: Antimony total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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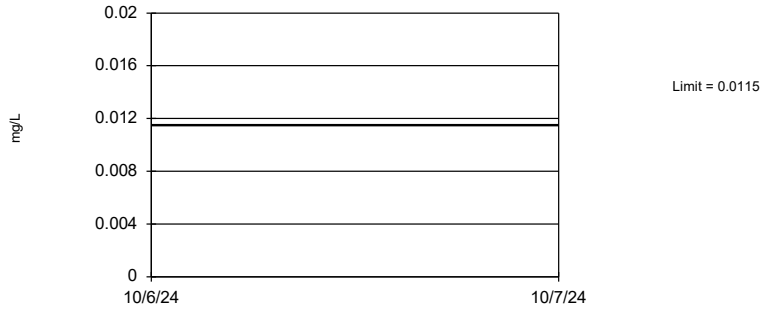
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 72 background values. 93.95% coverage at alpha=0.01; 95.9% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.02489.

Constituent: Arsenic total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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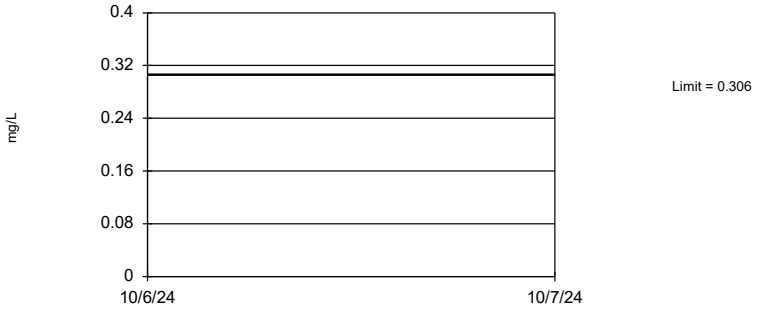
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Barium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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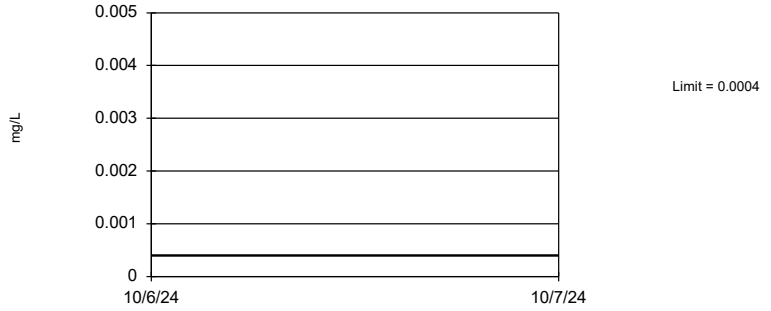
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 72.84% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Beryllium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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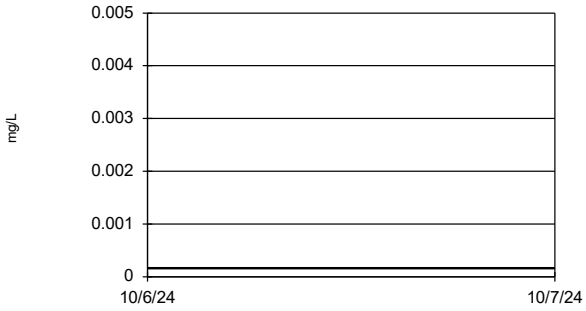
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 81.48% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Cadmium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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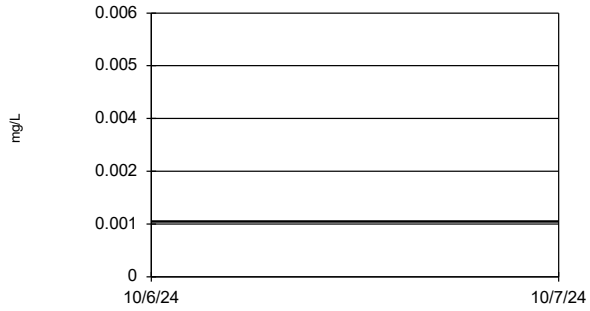
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 4.938% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Chromium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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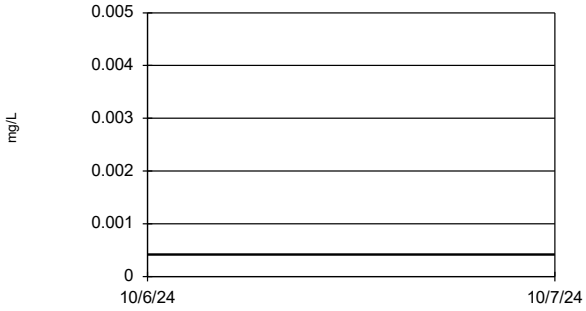
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-9.523, Std. Dev.=0.8866, n=81, 1.235% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9855, critical = 0.958. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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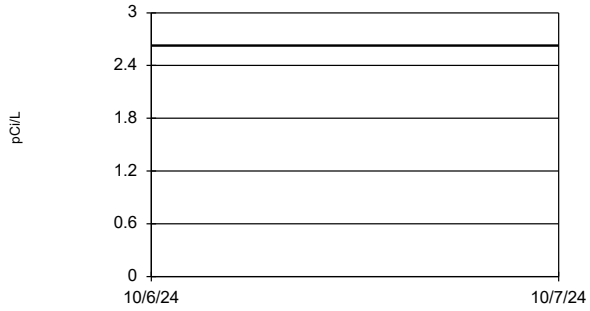
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.9246, Std. Dev.=0.2318, n=79. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.959, critical = 0.957. Report alpha = 0.05.

Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Fluoride total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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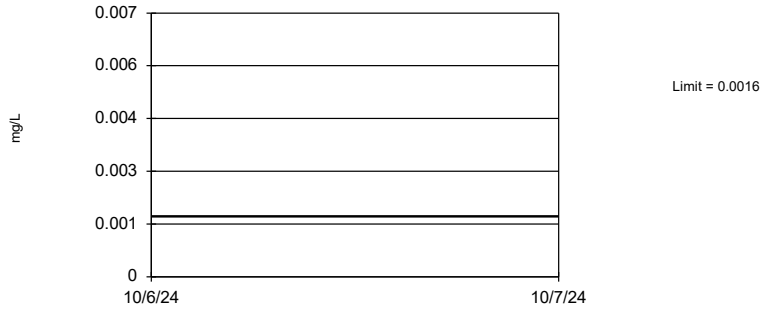
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 29.63% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Lead total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 1.235% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Lithium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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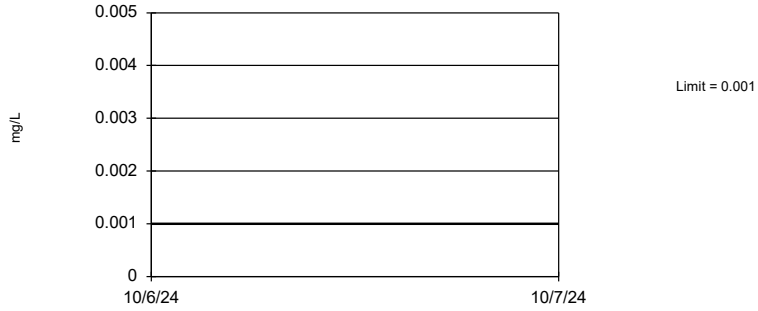
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 91.36% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Mercury total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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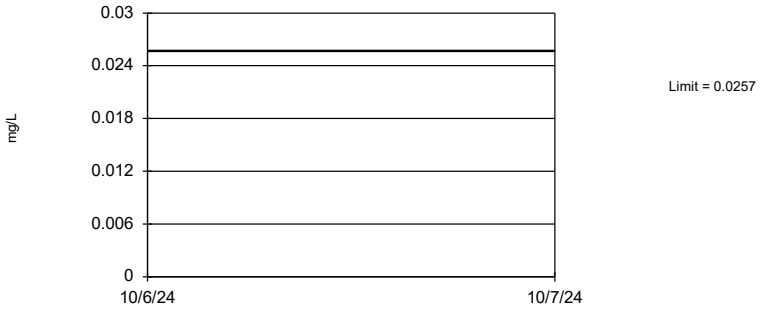
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 2.469% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Molybdenum total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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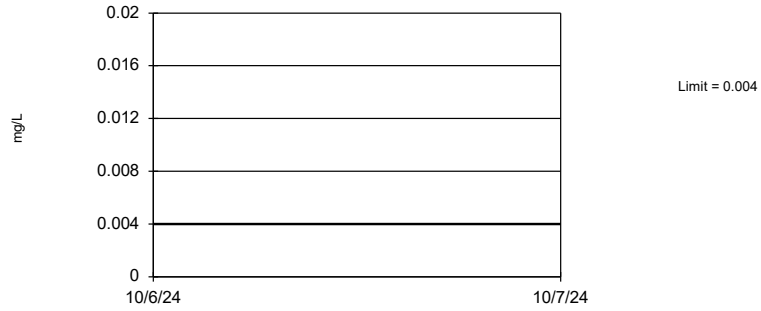
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 59.26% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Selenium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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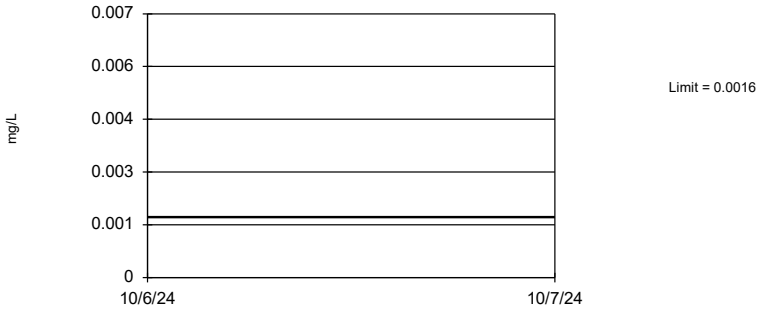
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 82.72% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Thallium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

Upper Tolerance Limits - Rome Limestone

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:29 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0004	27	n/a	n/a	14.81	n/a	n/a	0.2503	NP Inter(normality)
Arsenic total (mg/L)	0.00097	27	n/a	n/a	3.704	n/a	n/a	0.2503	NP Inter(normality)
Barium total (mg/L)	0.496	27	0.3916	0.04616	0	None	No	0.05	Inter
Beryllium total (mg/L)	0.0004	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	27	n/a	n/a	18.52	n/a	n/a	0.2503	NP Inter(normality)
Chromium total (mg/L)	0.0012	27	n/a	n/a	11.11	n/a	n/a	0.2503	NP Inter(normality)
Cobalt total (mg/L)	0.001022	27	0.01337	0.008219	11.11	None	sqrt(x)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	4.526	27	1.384	0.3286	0	None	sqrt(x)	0.05	Inter
Fluoride total (mg/L)	0.3239	27	0.253	0.03136	0	None	No	0.05	Inter
Lead total (mg/L)	0.001076	27	0.01869	0.006234	3.704	None	sqrt(x)	0.05	Inter
Lithium total (mg/L)	0.01	27	n/a	n/a	22.22	n/a	n/a	0.2503	NP Inter(normality)
Mercury total (mg/L)	0.001	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Molybdenum total (mg/L)	0.004	27	n/a	n/a	22.22	n/a	n/a	0.2503	NP Inter(normality)
Selenium total (mg/L)	0.004	27	n/a	n/a	40.74	n/a	n/a	0.2503	NP Inter(normality)
Thallium total (mg/L)	0.0016	27	n/a	n/a	81.48	n/a	n/a	0.2503	NP Inter(NDs)

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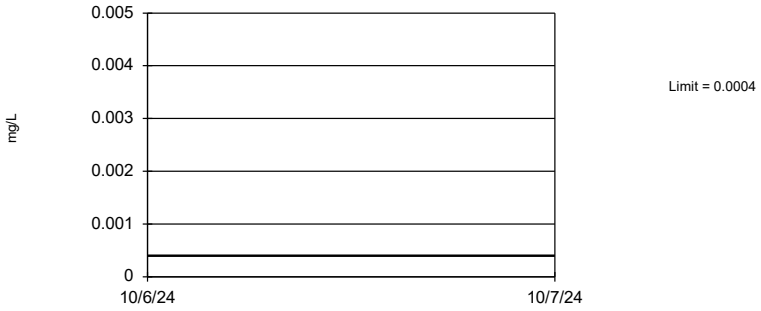
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 14.81% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Antimony total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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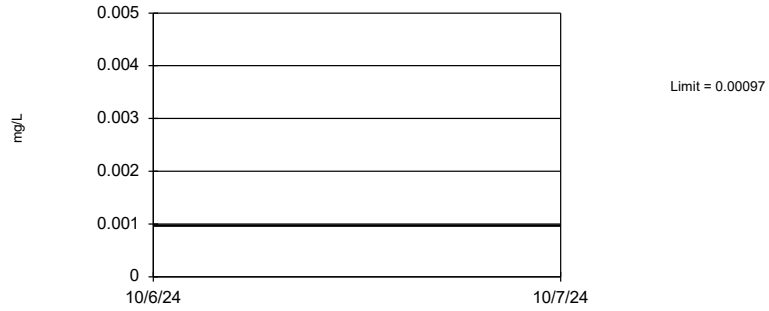
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 3.704% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Arsenic total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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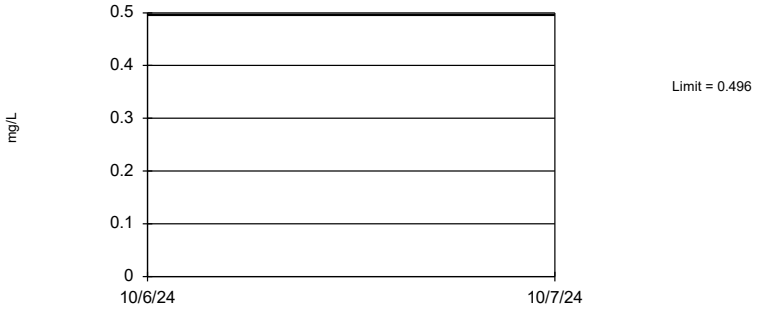
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary: Mean=0.3916, Std. Dev.=0.04616, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.894. Report alpha = 0.05.

Constituent: Barium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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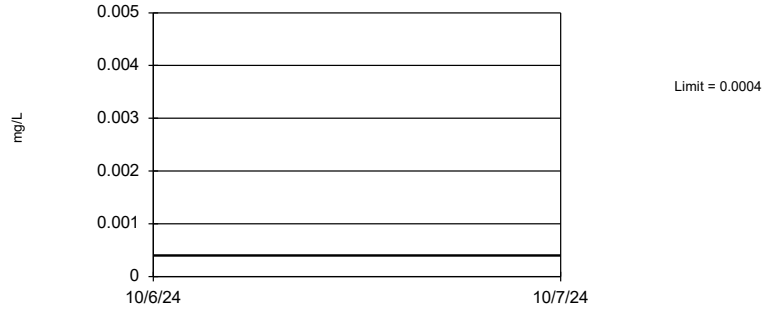
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Beryllium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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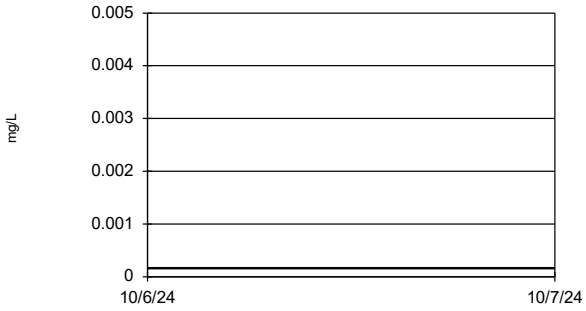
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 18.52% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Cadmium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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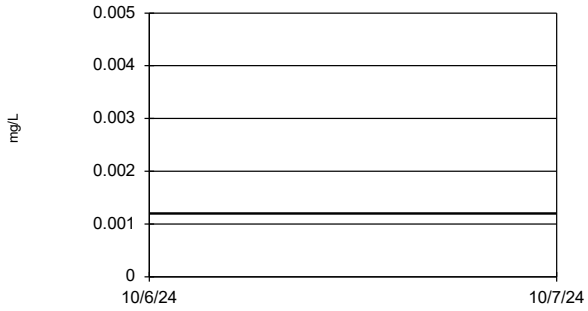
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 11.11% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Chromium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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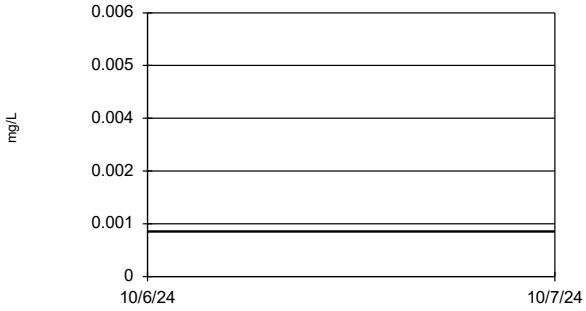
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=0.01337, Std. Dev.=0.008219, n=27, 11.11% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9163, critical = 0.894. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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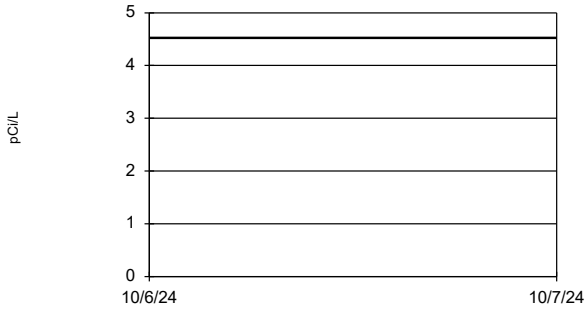
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=1.384, Std. Dev.=0.3286, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.913, critical = 0.894. Report alpha = 0.05.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Parametric

95% coverage. Background Data Summary: Mean=0.253, Std. Dev.=0.03136, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9437, critical = 0.894. Report alpha = 0.05.

Constituent: Fluoride total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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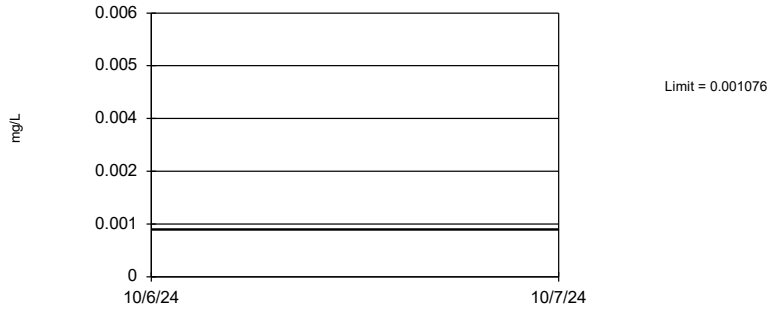
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=0.01869, Std. Dev.=0.006234, n=27, 3.704% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9503, critical = 0.894. Report alpha = 0.05.

Constituent: Lead total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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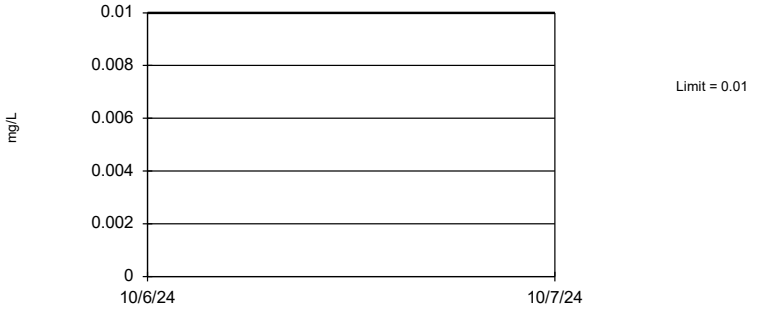
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 22.22% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Lithium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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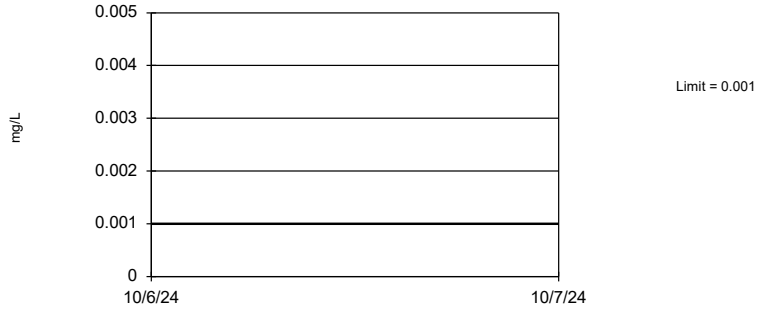
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Mercury total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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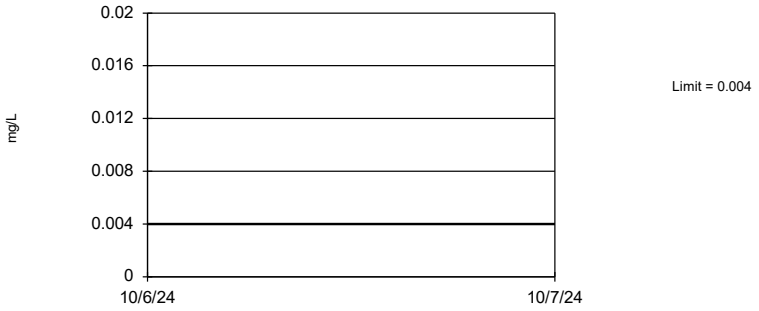
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 22.22% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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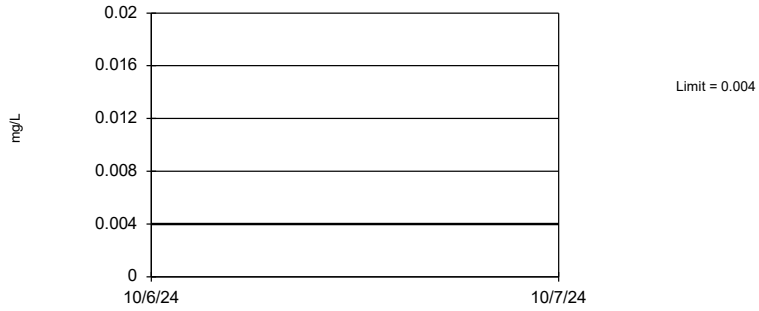
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Selenium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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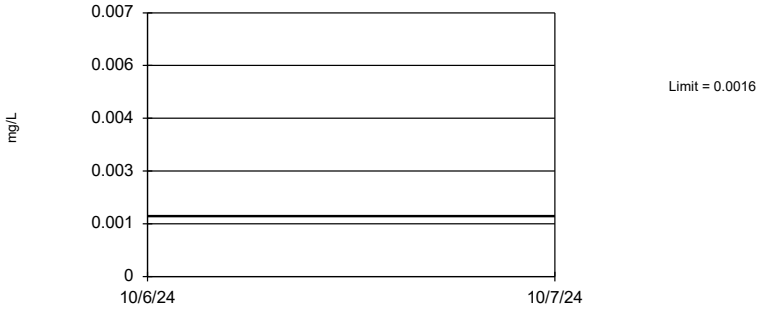
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Thallium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

Upper Tolerance Limits - Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:50 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0008	27	n/a	n/a	18.52	n/a	n/a	0.2503	NP Inter(normality)
Arsenic total (mg/L)	0.02161	24	-4.851	0.4402	0	None	ln(x)	0.05	Inter
Barium total (mg/L)	0.4424	27	0.5148	0.1092	0	None	x^(1/3)	0.05	Inter
Beryllium total (mg/L)	0.0004	27	n/a	n/a	81.48	n/a	n/a	0.2503	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Chromium total (mg/L)	0.001092	27	0.01825	0.006537	3.704	None	sqrt(x)	0.05	Inter
Cobalt total (mg/L)	0.0001587	26	0.03265	0.009433	3.846	None	x^(1/3)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	2.62	27	n/a	n/a	0	n/a	n/a	0.2503	NP Inter(normality)
Fluoride total (mg/L)	1.322	27	1.03	0.3172	0	None	x^2	0.05	Inter
Lead total (mg/L)	0.0016	26	n/a	n/a	53.85	n/a	n/a	0.2635	NP Inter(NDs)
Lithium total (mg/L)	0.161	27	n/a	n/a	0	n/a	n/a	0.2503	NP Inter(normality)
Mercury total (mg/L)	0.001	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Molybdenum total (mg/L)	0.00676	26	n/a	n/a	0	n/a	n/a	0.2635	NP Inter(normality)
Selenium total (mg/L)	0.004	27	n/a	n/a	40.74	n/a	n/a	0.2503	NP Inter(normality)
Thallium total (mg/L)	0.0016	27	n/a	n/a	88.89	n/a	n/a	0.2503	NP Inter(NDs)

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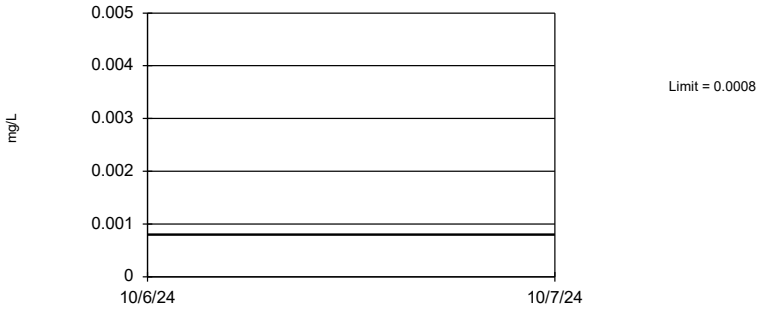
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 18.52% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Antimony total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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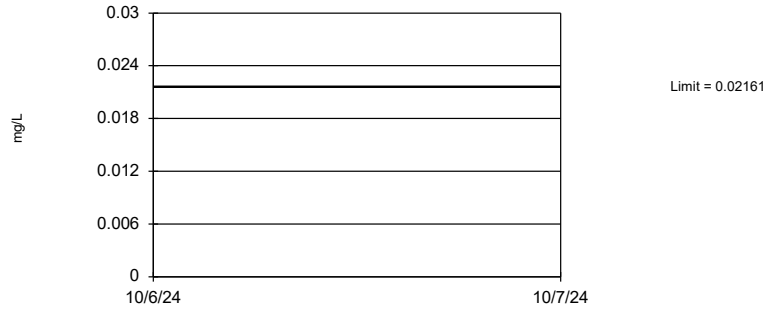
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-4.851, Std. Dev.=0.4402, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8971, critical = 0.884. Report alpha = 0.05.

Constituent: Arsenic total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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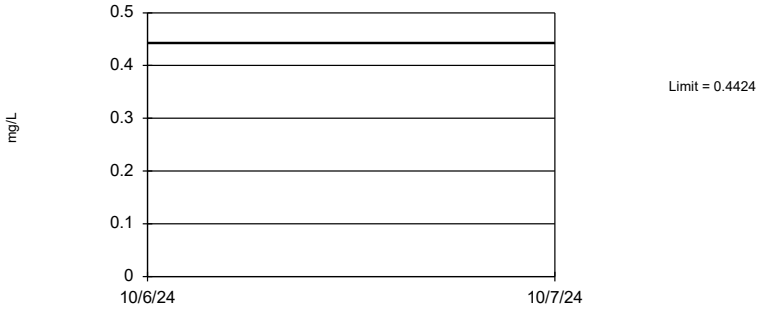
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.5148, Std. Dev.=0.1092, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.894. Report alpha = 0.05.

Constituent: Barium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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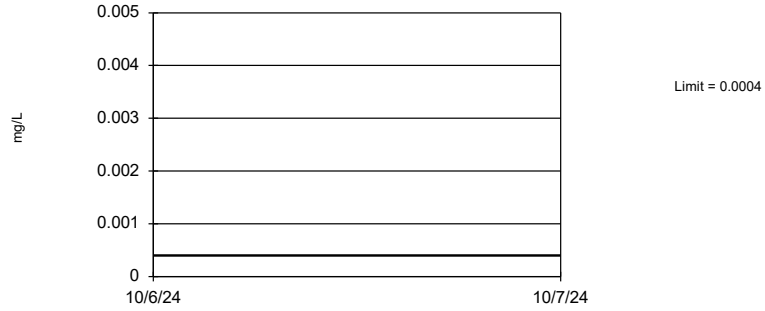
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Beryllium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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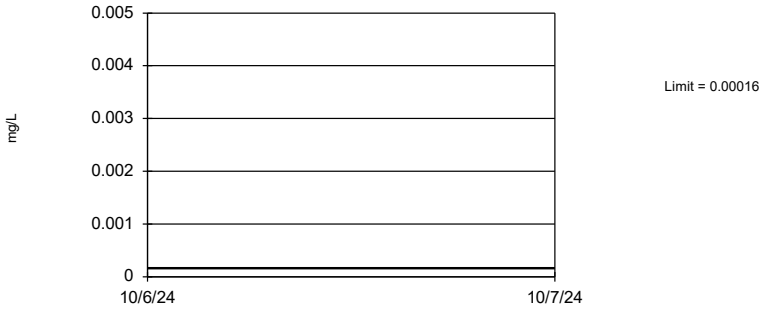
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Cadmium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Parametric

95% coverage. Background Data Summary (based on square root transformation): Mean=0.01825, Std. Dev.=0.006537, n=27, 3.704% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9539, critical = 0.894. Report alpha = 0.05.

Constituent: Chromium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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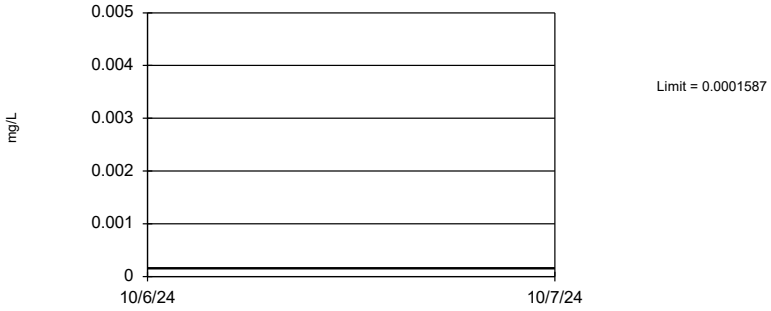
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.03265, Std. Dev.=0.009433, n=26, 3.846% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8983, critical = 0.891. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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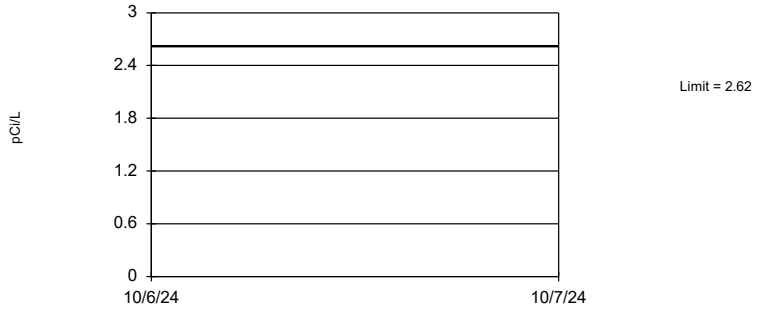
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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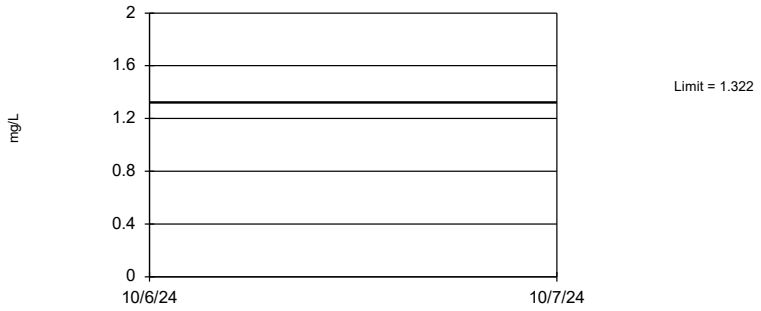
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square transformation): Mean=1.03, Std. Dev.=0.3172, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9406, critical = 0.894. Report alpha = 0.05.

Constituent: Fluoride total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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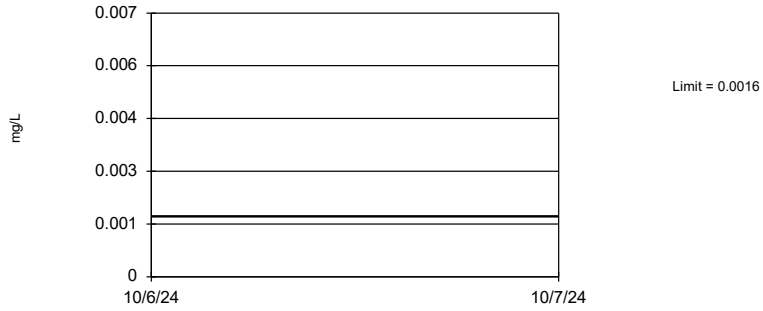
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 26 background values. 53.85% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Lead total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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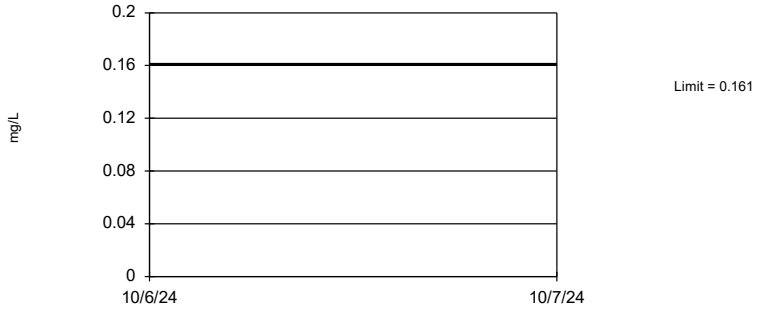
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Lithium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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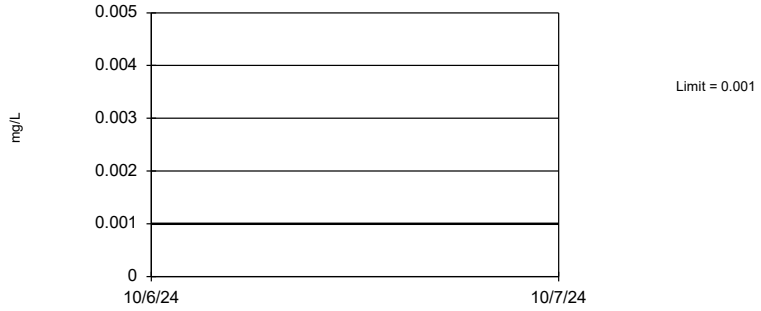
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Mercury total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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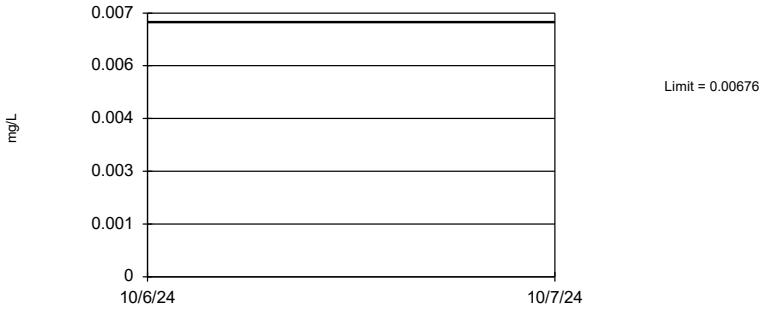
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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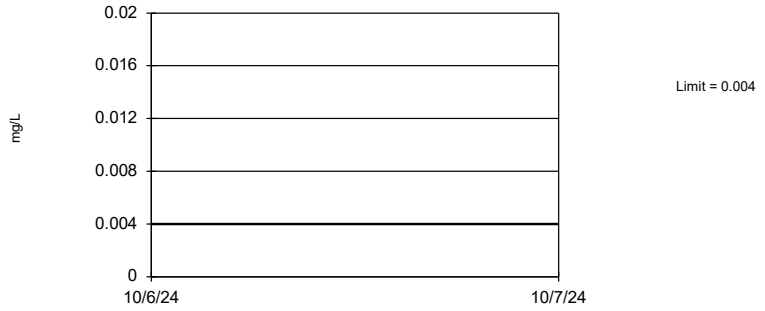
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Selenium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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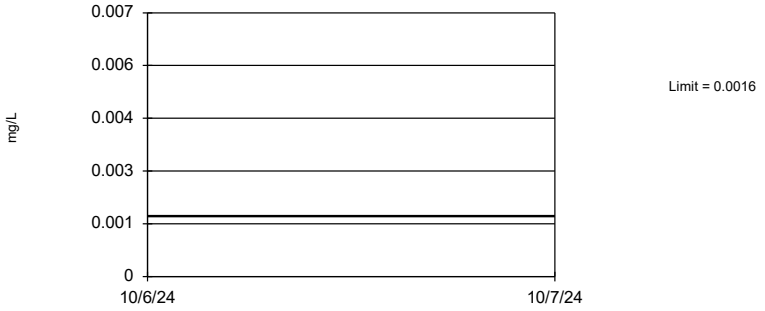
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Thallium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE I.

CLINCH RIVER GWPS - CHATTANOOGA SHALE				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.00049	0.006
Arsenic, Total (mg/L)	0.01		0.0115	0.0115
Barium, Total (mg/L)	2		0.31	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.0013	0.1
Cobalt, Total (mg/L)		0.006	0.00042	0.006
Combined Radium, Total (pCi/L)	5		2.63	5
Fluoride, Total (mg/L)	4		2.44	4
Lead, Total (mg/L)		0.015	0.0016	0.015
Lithium, Total (mg/L)		0.04	0.118	0.118
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.026	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**Grey cell indicates background is higher than MCL or CCR Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

CLINCH RIVER GWPS - ROME LIMESTONE				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0004	0.006
Arsenic, Total (mg/L)	0.01		0.00097	0.01
Barium, Total (mg/L)	2		0.5	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.0012	0.1
Cobalt, Total (mg/L)		0.006	0.00102	0.006
Combined Radium, Total (pCi/L)	5		4.53	5
Fluoride, Total (mg/L)	4		0.33	4
Lead, Total (mg/L)		0.015	0.0011	0.015
Lithium, Total (mg/L)		0.04	0.01	0.04
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.004	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

CLINCH RIVER GWPS - DUMPS FAULT				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0008	0.006
Arsenic, Total (mg/L)	0.01		0.0216	0.0216
Barium, Total (mg/L)	2		0.44	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.00109	0.1
Cobalt, Total (mg/L)		0.006	0.00016	0.006
Combined Radium, Total (pCi/L)	5		2.62	5
Fluoride, Total (mg/L)	4		1.32	4
Lead, Total (mg/L)		0.015	0.0016	0.015
Lithium, Total (mg/L)		0.04	0.161	0.161
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.0068	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**Grey cell indicates background is higher than MCL or CCR Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

FIGURE J.

Confidence Intervals - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 4:07 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Barium total (mg/L)	**MW-1603**	**2.798**	**2.277**	**2**	**Yes**	**27**	**2.537**	**0.5462**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1604**	**3.232**	**3.061**	**2**	**Yes**	**27**	**3.146**	**0.1791**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1605**	**2.393**	**2.207**	**2**	**Yes**	**12**	**2.3**	**0.1191**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1612**	**2.373**	**2.122**	**2**	**Yes**	**26**	**2.248**	**0.2578**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1605**	**0.1994**	**0.1882**	**0.118**	**Yes**	**27**	**0.1938**	**0.0117**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 4:07 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1603	0.000063580	.00003523	0.006	No	27	0.00004941	0.00002971	14.81	None	No	0.01	Param.
Antimony total (mg/L)	MW-1604	0.00012	0.00003	0.006	No	27	0.000119	0.0001431	14.81	None	No	0.01	NP (normality)
Antimony total (mg/L)	MW-1605	0.0001115	0.00003977	0.006	No	27	0.0001177	0.0001342	14.81	None	ln(x)	0.01	Param.
Antimony total (mg/L)	MW-1612	0.0003	0.00003	0.006	No	26	0.00023	0.0003235	23.08	None	No	0.01	NP (normality)
Arsenic total (mg/L)	MW-1603	0.002711	0.002161	0.012	No	27	0.002436	0.0005763	0	None	No	0.01	Param.
Arsenic total (mg/L)	MW-1604	0.003013	0.002028	0.012	No	27	0.002599	0.001084	0	None	sqrt(x)	0.01	Param.
Arsenic total (mg/L)	MW-1605	0.003591	0.00189	0.012	No	27	0.00274	0.001784	0	None	No	0.01	Param.
Arsenic total (mg/L)	MW-1612	0.0009109	0.0004274	0.012	No	26	0.0008742	0.0008785	0	None	ln(x)	0.01	Param.
Barium total (mg/L)	**MW-1603**	**2.798**	**2.277**	**2**	**Yes**	**27**	**2.537**	**0.5462**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1604**	**3.232**	**3.061**	**2**	**Yes**	**27**	**3.146**	**0.1791**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1605**	**2.393**	**2.207**	**2**	**Yes**	**12**	**2.3**	**0.1191**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1612**	**2.373**	**2.122**	**2**	**Yes**	**26**	**2.248**	**0.2578**	**0**	**None**	**No**	**0.01**	**Param.**
Beryllium total (mg/L)	MW-1603	0.0004	0.00001	0.004	No	27	0.0002696	0.0001879	66.67	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1604	0.0004	0.000007	0.004	No	27	0.0003708	0.0001052	92.59	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1605	0.0004	0.00001	0.004	No	27	0.0003563	0.0001261	88.89	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1612	0.0004	0.000045	0.004	No	26	0.000341	0.0001413	84.62	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1605	0.00016	0.00002	0.005	No	27	0.0001493	0.00003872	92.59	None	No	0.01	NP (NDs)
Chromium total (mg/L)	MW-1603	0.000233	0.00018	0.1	No	27	0.0002442	0.0002073	3.704	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1604	0.0002928	0.0001404	0.1	No	27	0.0002887	0.0003539	3.704	None	ln(x)	0.01	Param.
Chromium total (mg/L)	MW-1605	0.0002769	0.0001615	0.1	No	27	0.000252	0.0002063	3.704	None	ln(x)	0.01	Param.
Chromium total (mg/L)	MW-1612	0.00023	0.00019	0.1	No	26	0.0002448	0.000209	3.846	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1603	0.0004292	0.0002371	0.006	No	27	0.000356	0.0002157	0	None	sqrt(x)	0.01	Param.
Cobalt total (mg/L)	MW-1604	0.0005741	0.0003048	0.006	No	27	0.0004394	0.0002823	0	None	No	0.01	Param.
Cobalt total (mg/L)	MW-1605	0.000309	0.00004	0.006	No	27	0.0001582	0.000138	0	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1612	0.0001817	0.0001085	0.006	No	26	0.0001523	0.00008276	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1603	1.628	0.9871	5	No	27	1.307	0.6713	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1604	1.568	1.086	5	No	27	1.327	0.5057	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1605	2.122	1.134	5	No	27	1.703	1.213	0	None	No	0.01	NP (normality)
Combined Radium 226 and 228 (pCi/L)	MW-1612	2.186	1.519	5	No	26	1.852	0.6845	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1603	0.1343	0.1068	4	No	27	0.1219	0.03	0	None	sqrt(x)	0.01	Param.
Fluoride total (mg/L)	MW-1604	0.2873	0.2468	4	No	27	0.267	0.0425	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1605	0.3585	0.32	4	No	27	0.3393	0.04028	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1612	0.1749	0.1405	4	No	26	0.1577	0.03536	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1603	0.0016	0.000038	0.015	No	27	0.001248	0.0006704	77.78	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1604	0.0016	0.000068	0.015	No	27	0.001194	0.0006996	74.07	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1605	0.0016	0.000051	0.015	No	27	0.0009688	0.0007759	59.26	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1612	0.0016	0.000331	0.015	No	26	0.001193	0.0006866	73.08	None	No	0.01	NP (NDs)
Lithium total (mg/L)	MW-1603	0.07636	0.05813	0.118	No	27	0.06724	0.0191	0	None	No	0.01	Param.
Lithium total (mg/L)	MW-1604	0.08034	0.07285	0.118	No	27	0.07659	0.007852	0	None	No	0.01	Param.
Lithium total (mg/L)	**MW-1605**	**0.1994**	**0.1882**	**0.118**	**Yes**	**27**	**0.1938**	**0.0117**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	MW-1612	0.1281	0.1129	0.118	No	26	0.1193	0.01889	3.846	None	x^2	0.01	Param.
Mercury total (mg/L)	MW-1603	0.001	0.00006	0.002	No	27	0.0009652	0.0001809	96.3	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1604	0.001	0.00006	0.002	No	27	0.0009652	0.0001809	96.3	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1612	0.001	0.00006	0.002	No	26	0.0009638	0.0001843	96.15	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1603	0.001032	0.0004641	0.1	No	27	0.000997	0.001002	3.704	None	ln(x)	0.01	Param.
Molybdenum total (mg/L)	MW-1604	0.00157	0.0003	0.1	No	27	0.00119	0.001427	18.52	None	No	0.01	NP (normality)
Molybdenum total (mg/L)	MW-1605	0.002424	0.0008058	0.1	No	27	0.002128	0.002312	3.704	None	x^(1/3)	0.01	Param.
Molybdenum total (mg/L)	MW-1612	0.001186	0.0004521	0.1	No	26	0.0009512	0.0008619	11.54	None	sqrt(x)	0.01	Param.
Selenium total (mg/L)	MW-1603	0.00011	0.00007	0.05	No	27	0.0008063	0.001552	18.52	None	No	0.01	NP (normality)
Selenium total (mg/L)	MW-1604	0.004	0.00005	0.05	No	27	0.001951	0.002012	48.15	None	No	0.01	NP (normality)
Selenium total (mg/L)	MW-1605	0.004	0.00007	0.05	No	27	0.002686	0.001894	66.67	None	No	0.01	NP (NDs)
Selenium total (mg/L)	MW-1612	0.004	0.00005	0.05	No	26	0.002631	0.001919	65.38	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1603	0.0016	0.00002	0.002	No	27	0.001306	0.0006286	81.48	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1604	0.0016	0.00002	0.002	No	27	0.001365	0.0005747	85.19	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1605	0.0016	0.00002	0.002	No	27	0.001365	0.0005738	85.19	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1612	0.0016	0.00003	0.002	No	26	0.001356	0.0005832	84.62	None	No	0.01	NP (NDs)

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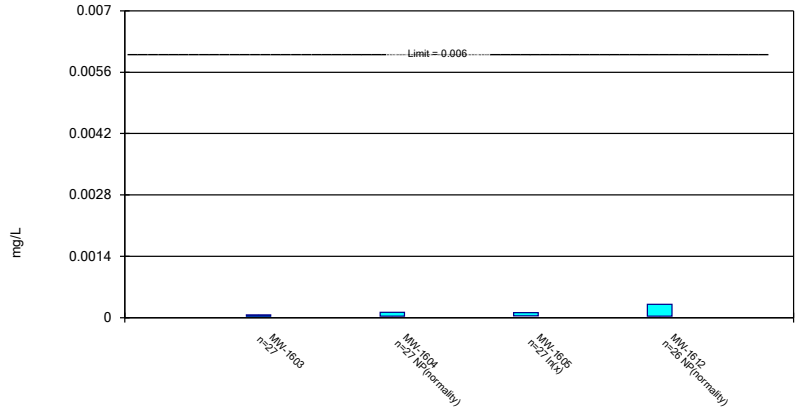
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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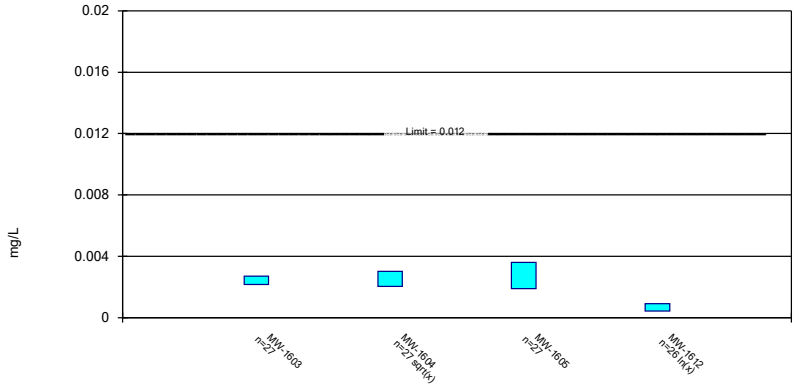
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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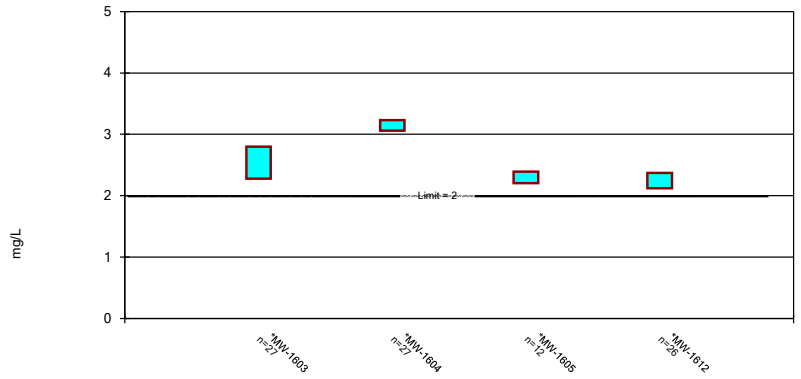
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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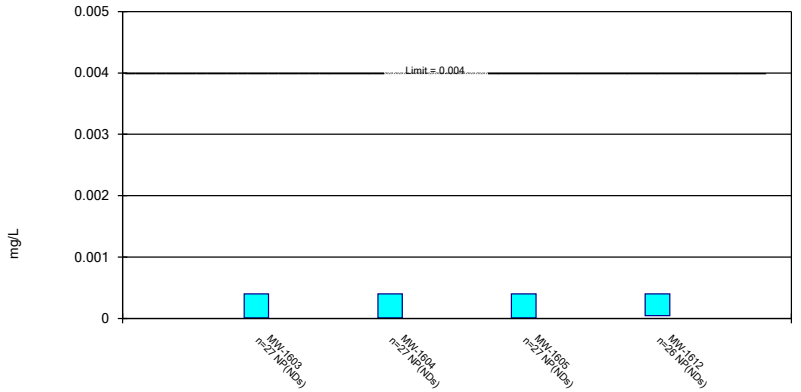
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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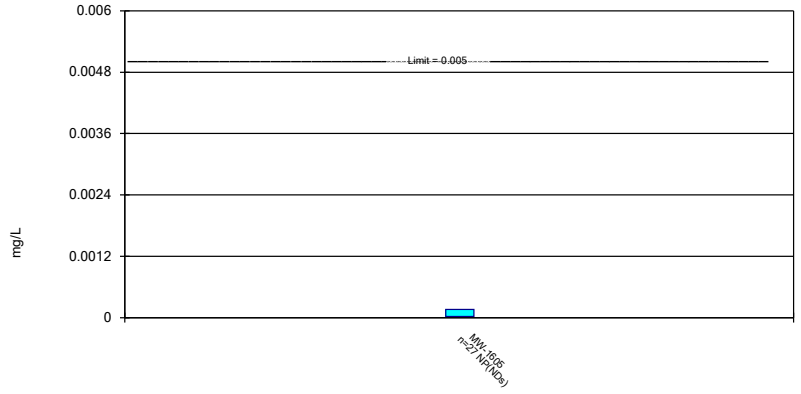
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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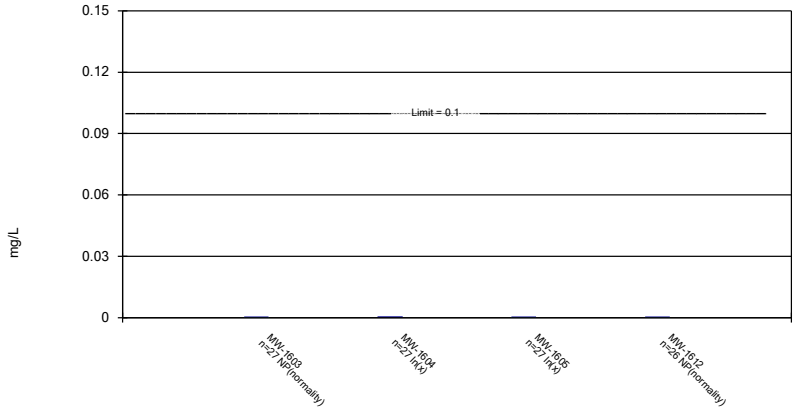
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confiden
Clinch River Client: AEP Data: Clinch River Pond 1

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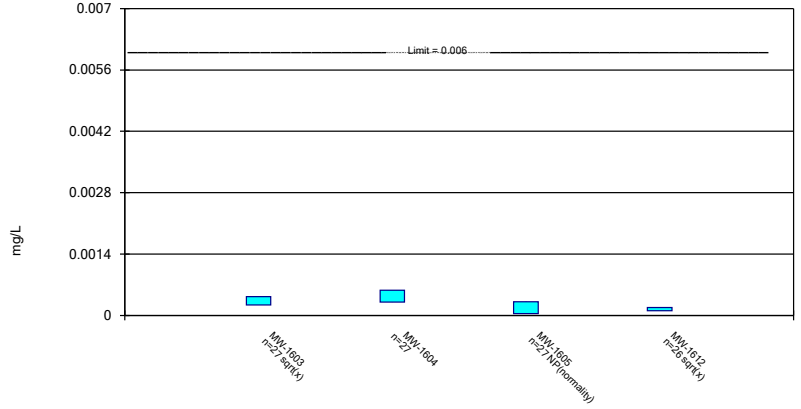
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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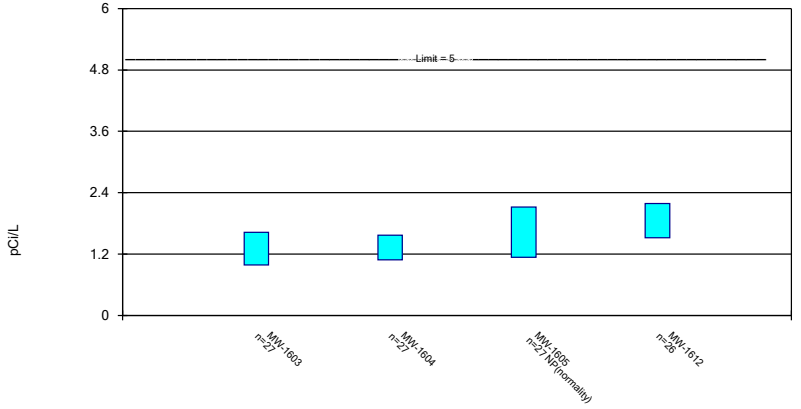
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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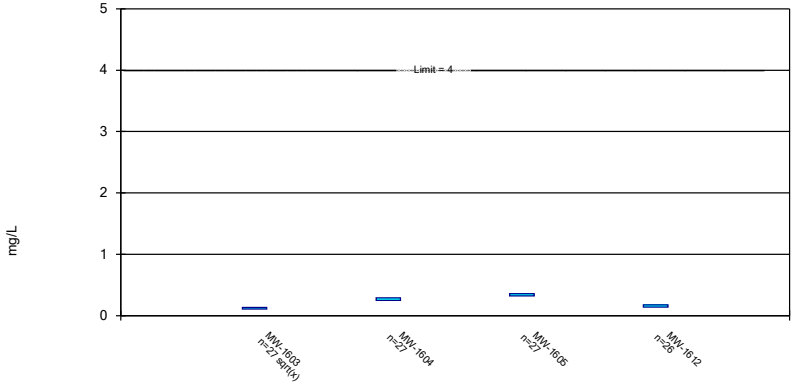
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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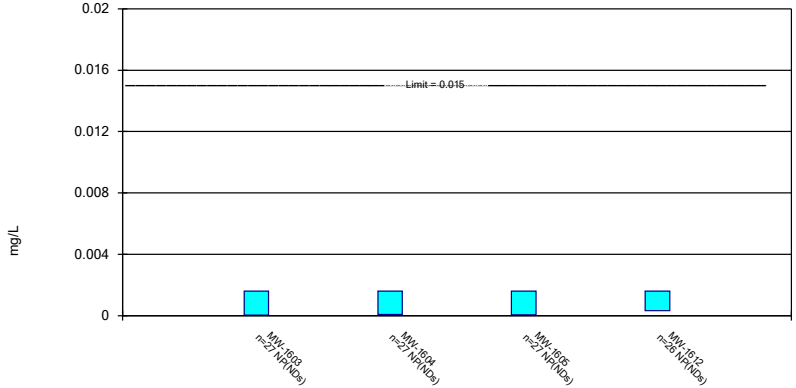
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence Int
Clinch River Client: AEP Data: Clinch River Pond 1

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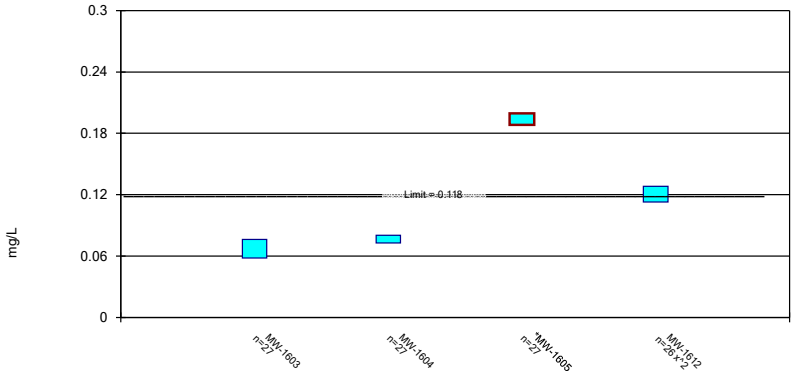
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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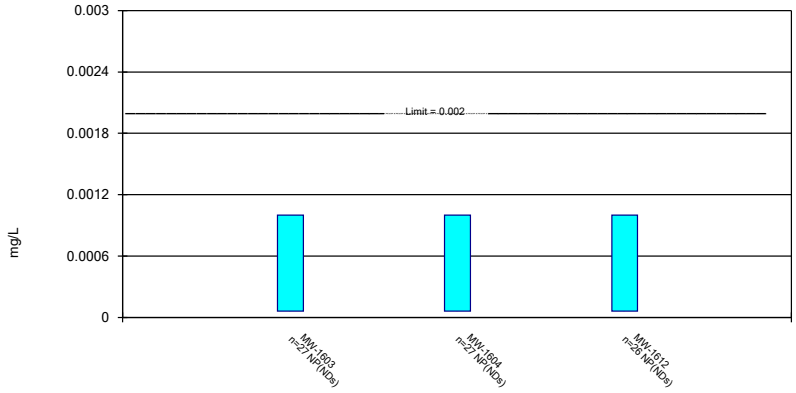
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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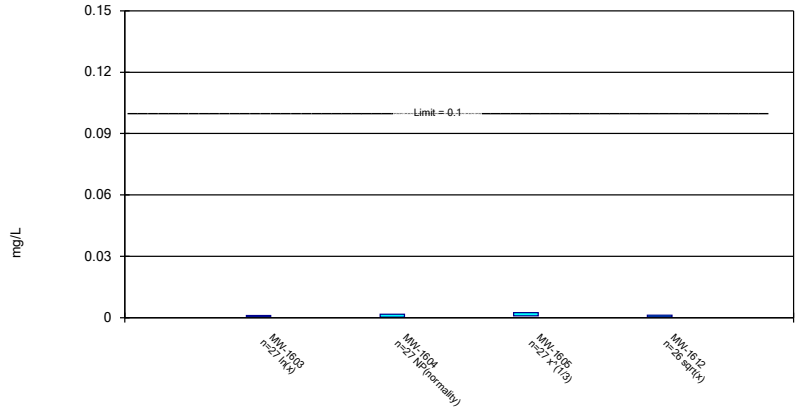
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confid
Clinch River Client: AEP Data: Clinch River Pond 1

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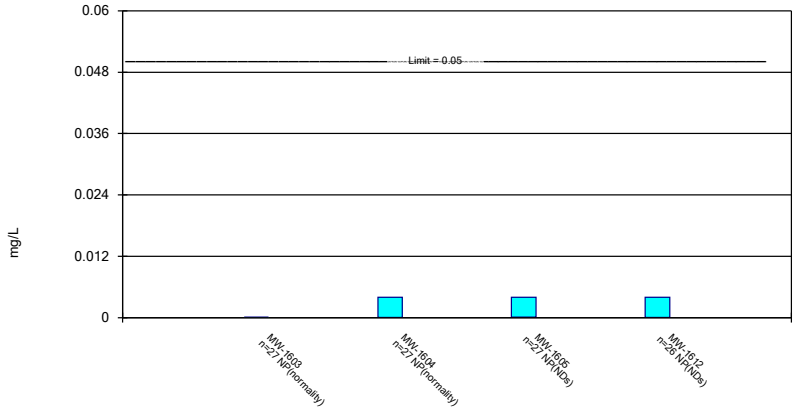
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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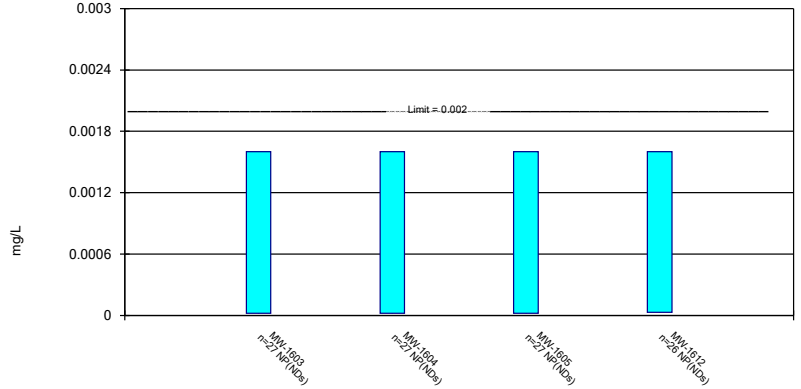
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 2/3/2025 4:06 PM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals - Rome Limestone - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt total (mg/L)	**MW-1607**	**0.01032**	**0.008462**	**0.006**	**Yes**	**27**	**0.009389**	**0.001943**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1606**	**0.08657**	**0.06873**	**0.04**	**Yes**	**27**	**0.07506**	**0.0222**	**0**	**None**	**x^2**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1607**	**0.1308**	**0.1214**	**0.04**	**Yes**	**27**	**0.1261**	**0.009837**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum total (mg/L)	**MW-1607**	**0.1475**	**0.1305**	**0.1**	**Yes**	**27**	**0.139**	**0.01788**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1606	0.0008	0.00003	0.006	No	27	0.0003835	0.0003857	44.44	None	No	0.01	NP (normality)
Antimony total (mg/L)	MW-1607	0.00005	0.00003	0.006	No	27	0.00006648	0.000098	7.407	None	No	0.01	NP (normality)
Arsenic total (mg/L)	MW-1606	0.008564	0.006405	0.01	No	27	0.007611	0.002343	0	None	sqrt(x)	0.01	Param.
Arsenic total (mg/L)	MW-1607	0.00146	0.00101	0.01	No	27	0.001474	0.001	0	None	No	0.01	NP (normality)
Barium total (mg/L)	MW-1606	0.1149	0.1052	2	No	27	0.11	0.01017	0	None	No	0.01	Param.
Barium total (mg/L)	MW-1607	0.0731	0.0668	2	No	27	0.07301	0.01475	0	None	No	0.01	NP (normality)
Beryllium total (mg/L)	MW-1606	0.0004	0.000009	0.004	No	27	0.0002551	0.0001926	62.96	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1607	0.0004	0.000005	0.004	No	27	0.0003854	0.00007602	96.3	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1606	0.00016	0.00001	0.005	No	27	0.00006963	0.00007105	37.04	None	No	0.01	NP (normality)
Cadmium total (mg/L)	MW-1607	0.0001411	0.00008861	0.005	No	27	0.0001149	0.00005502	0	None	No	0.01	Param.
Chromium total (mg/L)	MW-1606	0.0002712	0.0001781	0.1	No	27	0.0002448	0.0001378	0	None	ln(x)	0.01	Param.
Chromium total (mg/L)	MW-1607	0.0002484	0.0001397	0.1	No	27	0.0002268	0.0001822	7.407	None	ln(x)	0.01	Param.
Cobalt total (mg/L)	MW-1606	0.005355	0.004422	0.006	No	27	0.004889	0.0009782	0	None	No	0.01	Param.
Cobalt total (mg/L)	**MW-1607**	**0.01032**	**0.008462**	**0.006**	**Yes**	**27**	**0.009389**	**0.001943**	**0**	**None**	**No**	**0.01**	**Param.**
Combined Radium 226 and 228 (pCi/L)	MW-1606	2.25	1.427	5	No	27	1.946	1.066	0	None	x^(1/3)	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1607	1.433	0.8946	5	No	27	1.164	0.5642	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1606	0.2182	0.1862	4	No	27	0.2022	0.03355	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1607	0.2333	0.2111	4	No	27	0.2222	0.02326	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1606	0.0006224	0.0004284	0.015	No	27	0.0005254	0.0002033	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1607	0.0005407	0.0003871	0.015	No	27	0.0004639	0.000161	0	None	No	0.01	Param.
Lithium total (mg/L)	**MW-1606**	**0.08657**	**0.06873**	**0.04**	**Yes**	**27**	**0.07506**	**0.0222**	**0**	**None**	**x^2**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1607**	**0.1308**	**0.1214**	**0.04**	**Yes**	**27**	**0.1261**	**0.009837**	**0**	**None**	**No**	**0.01**	**Param.**
Mercury total (mg/L)	MW-1606	0.001	0.00006	0.002	No	27	0.0009652	0.0001809	96.3	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1607	0.001	0.00008	0.002	No	27	0.0009659	0.0001771	96.3	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1606	0.0692	0.05262	0.1	No	27	0.06091	0.01737	0	None	No	0.01	Param.
Molybdenum total (mg/L)	**MW-1607**	**0.1475**	**0.1305**	**0.1**	**Yes**	**27**	**0.139**	**0.01788**	**0**	**None**	**No**	**0.01**	**Param.**
Selenium total (mg/L)	MW-1606	0.0002	0.00007	0.05	No	27	0.0009552	0.001659	22.22	None	No	0.01	NP (normality)
Selenium total (mg/L)	MW-1607	0.0003	0.0001	0.05	No	27	0.0004415	0.0006754	14.81	None	No	0.01	NP (normality)
Thallium total (mg/L)	MW-1606	0.0016	0.00005	0.002	No	27	0.001024	0.0007648	62.96	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1607	0.0016	0.0001	0.002	No	27	0.001196	0.0006968	74.07	None	No	0.01	NP (NDs)

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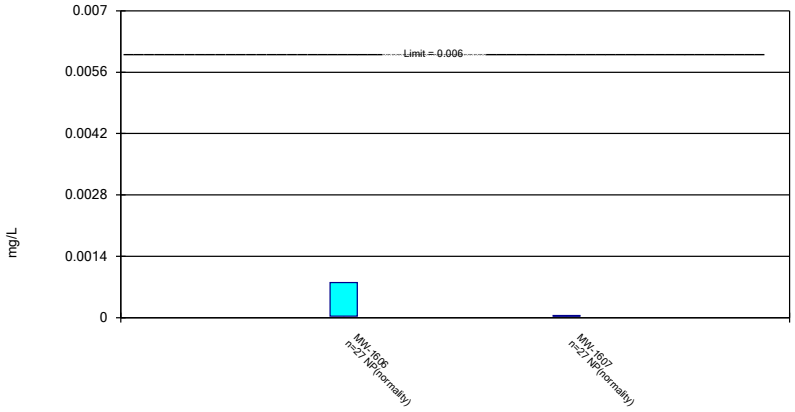
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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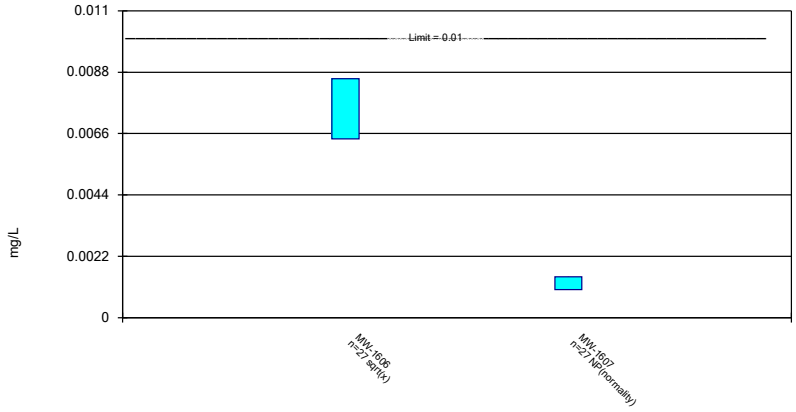
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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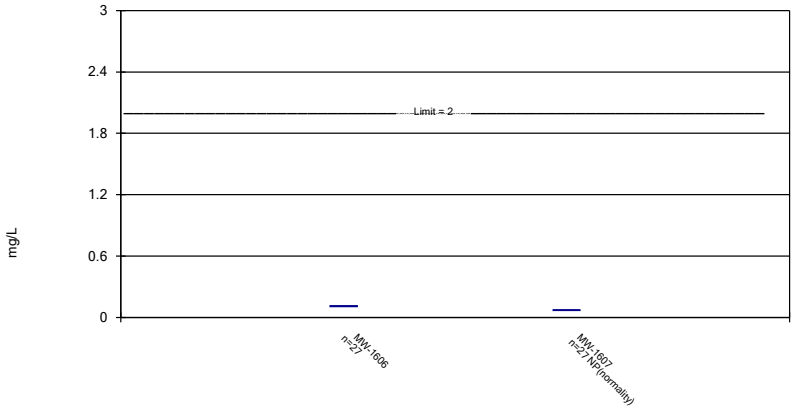
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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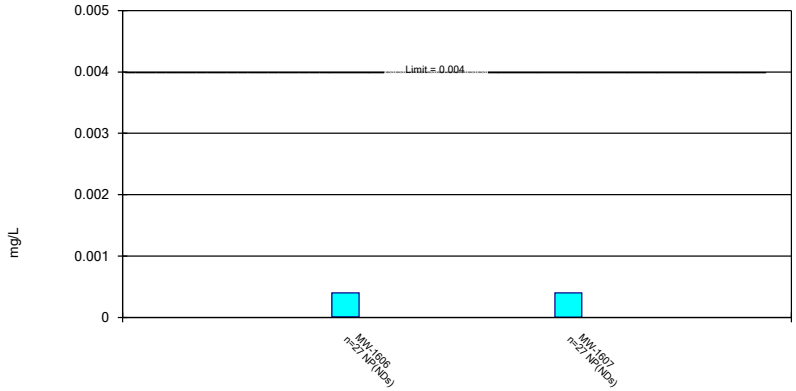
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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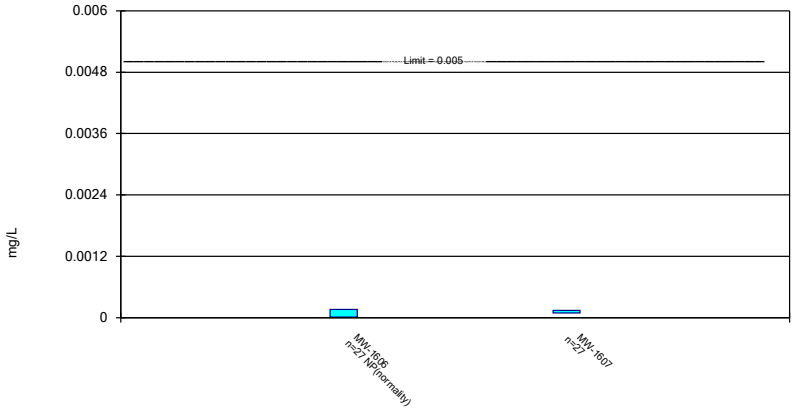
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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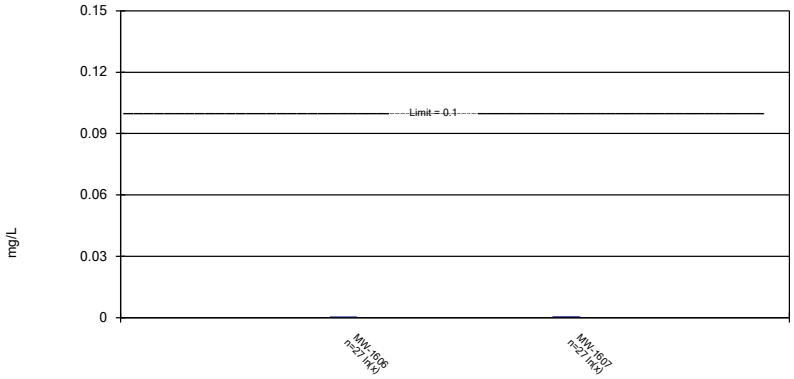
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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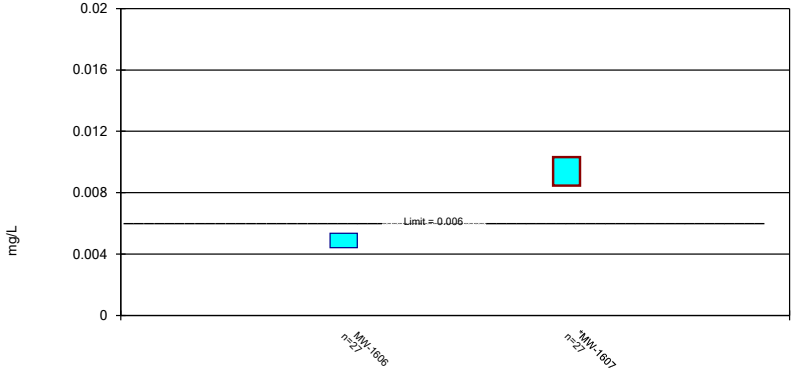
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence Int
Clinch River Client: AEP Data: Clinch River Pond 1

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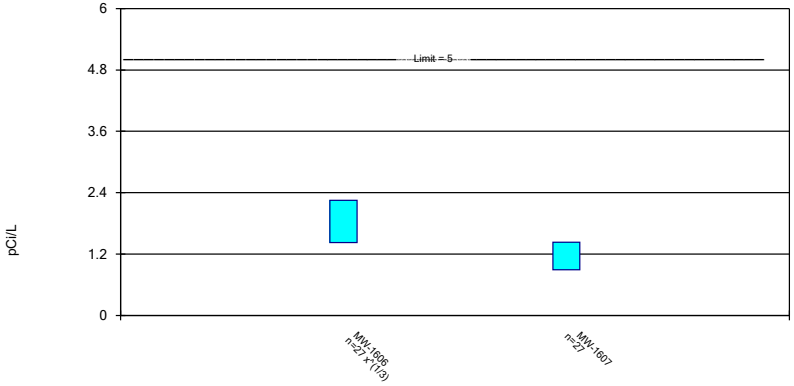
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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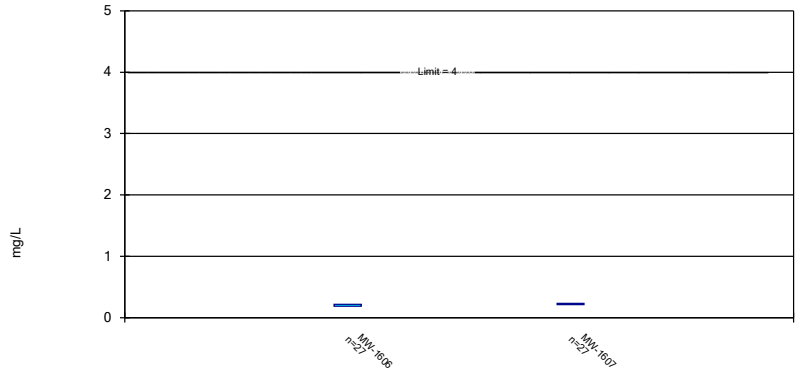
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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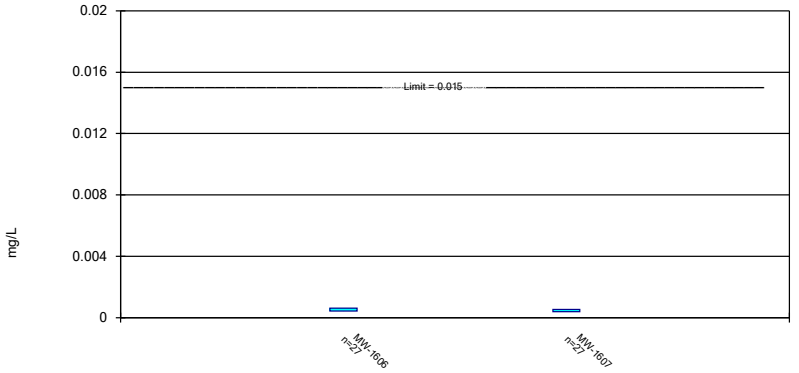
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence Inter
Clinch River Client: AEP Data: Clinch River Pond 1

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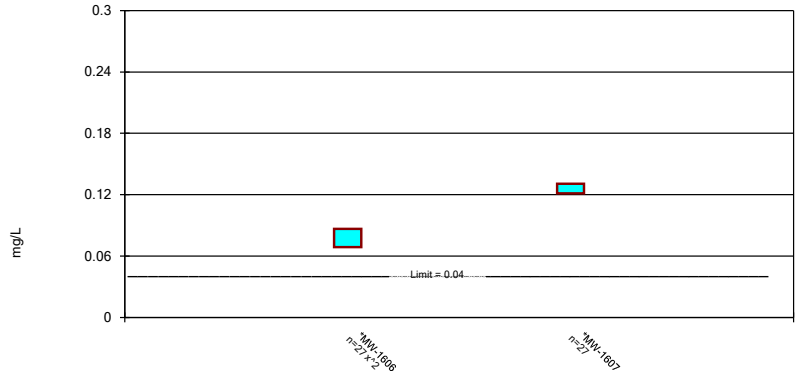
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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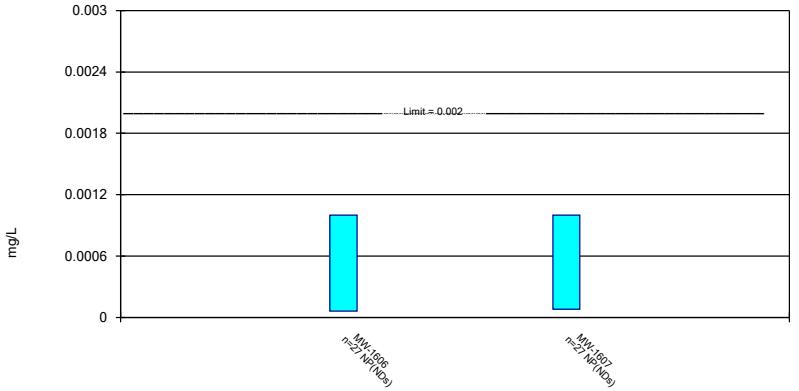
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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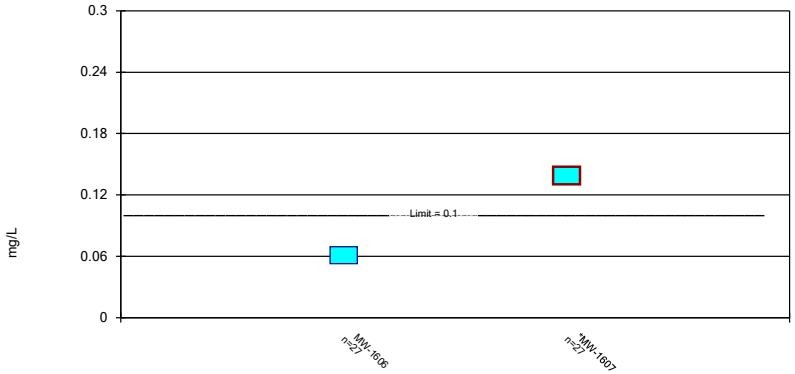
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confide
Clinch River Client: AEP Data: Clinch River Pond 1

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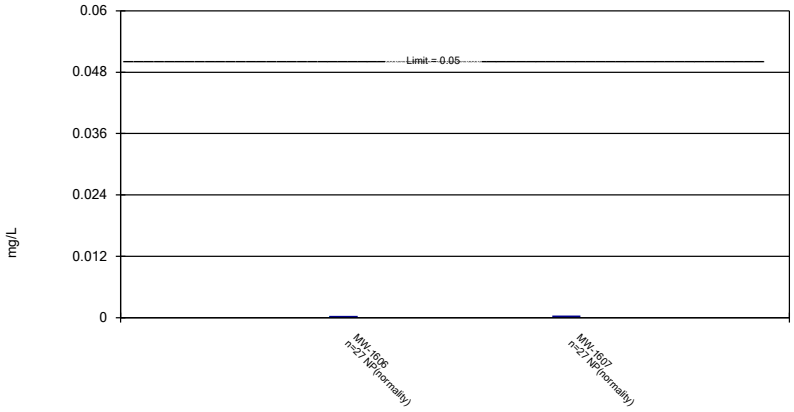
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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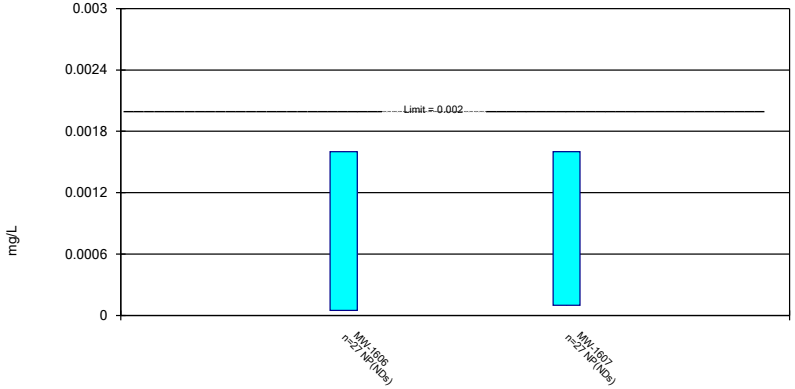
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 1/29/2025 3:41 PM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals - Dumps Fault - All Results (No Significant)

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:57 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1610	0.0002237	0.00007781	0.006	No	27	0.0002597	0.0003794	7.407	None	ln(x)	0.01	Param.
Arsenic total (mg/L)	MW-1610	0.00161	0.00114	0.022	No	27	0.001505	0.0009381	0	None	No	0.01	NP (normality)
Barium total (mg/L)	MW-1610	0.2714	0.2288	2	No	27	0.2501	0.04466	0	None	No	0.01	Param.
Beryllium total (mg/L)	MW-1610	0.0004	0.000007	0.004	No	27	0.0003414	0.0001431	85.19	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1610	0.00016	0.00001	0.005	No	27	0.00006704	0.00006803	33.33	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1610	0.000262	0.00018	0.1	No	27	0.0002777	0.0002259	3.704	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1610	0.006484	0.005198	0.006	No	18	0.005841	0.001063	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1610	1.421	0.8479	5	No	27	1.134	0.6007	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1610	0.21	0.18	4	No	27	0.2059	0.0364	0	None	No	0.01	NP (normality)
Lead total (mg/L)	MW-1610	0.005973	0.002253	0.015	No	27	0.004832	0.004506	0	None	sqrt(x)	0.01	Param.
Lithium total (mg/L)	MW-1610	0.166	0.1388	0.161	No	10	0.1524	0.01523	0	None	No	0.01	Param.
Mercury total (mg/L)	MW-1610	0.001	0.00006	0.002	No	27	0.0009652	0.0001809	96.3	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1610	0.1008	0.0802	0.1	No	10	0.09051	0.01156	0	None	No	0.01	Param.
Selenium total (mg/L)	MW-1610	0.00041	0.0001573	0.05	No	27	0.0004385	0.0005791	11.11	None	ln(x)	0.01	Param.
Thallium total (mg/L)	MW-1610	0.0016	0.00003	0.002	No	27	0.001191	0.000705	74.07	None	No	0.01	NP (NDs)

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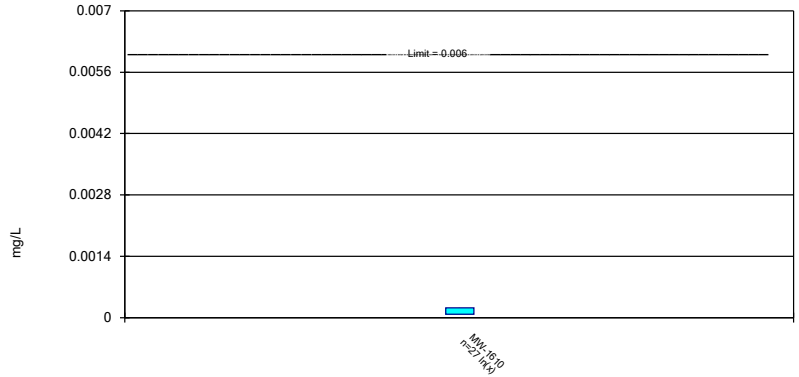
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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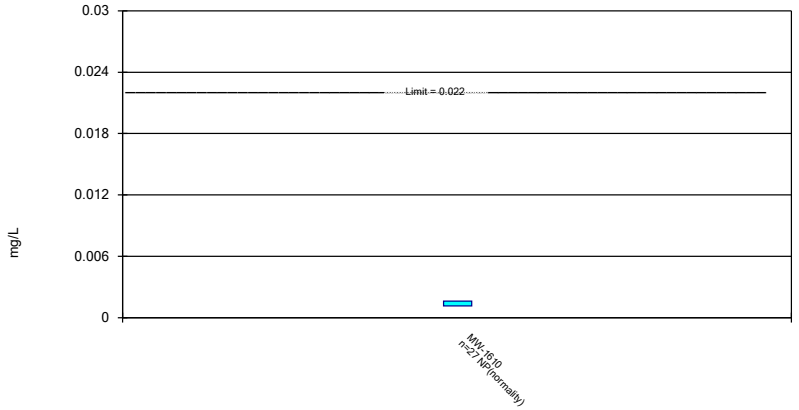
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

Constituent: Barium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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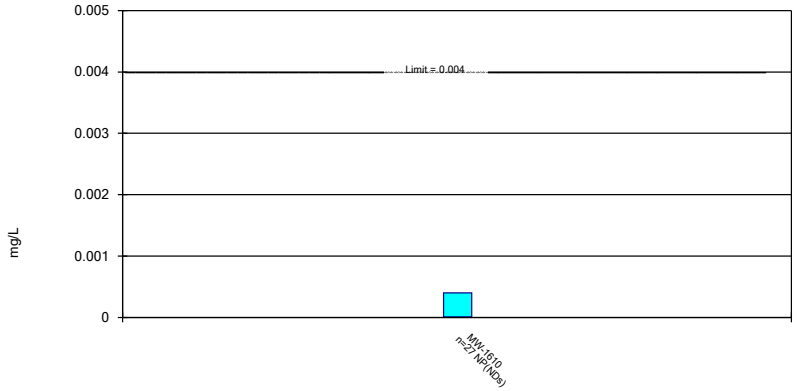
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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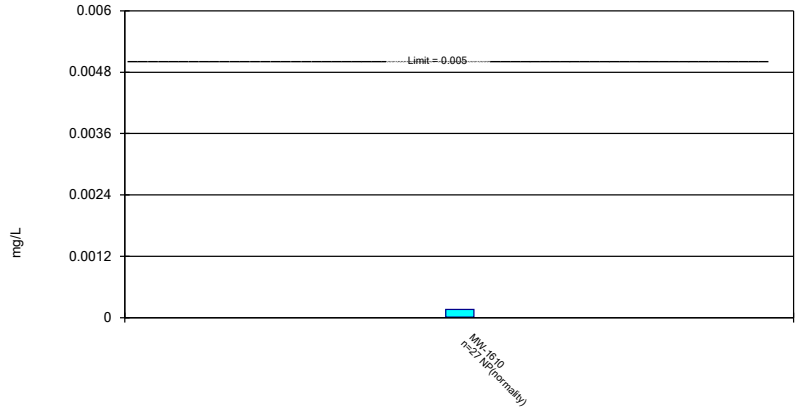
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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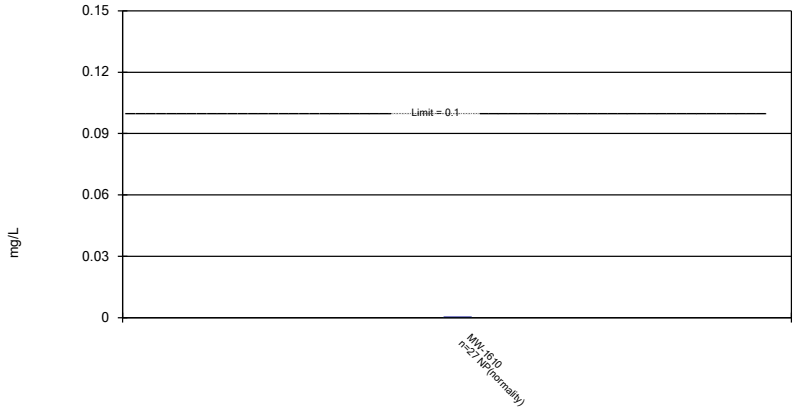
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Int
Clinch River Client: AEP Data: Clinch River Pond 1

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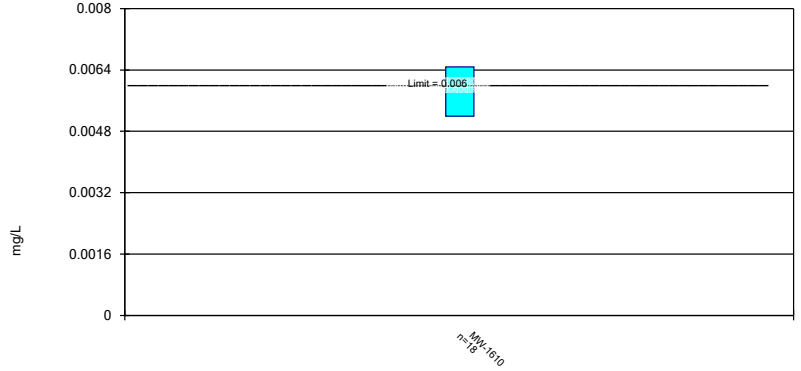
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interva
Clinch River Client: AEP Data: Clinch River Pond 1

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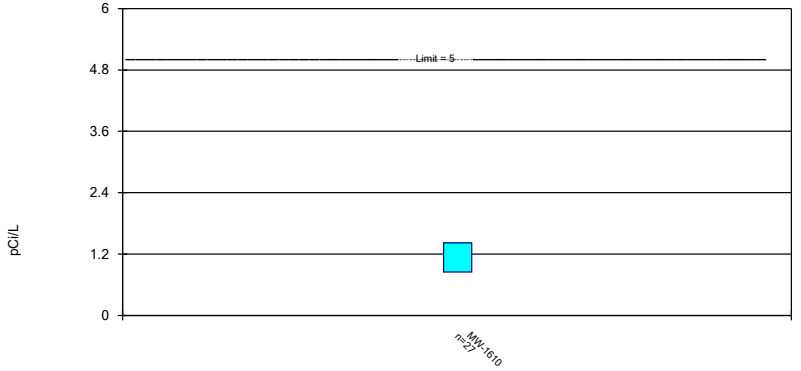
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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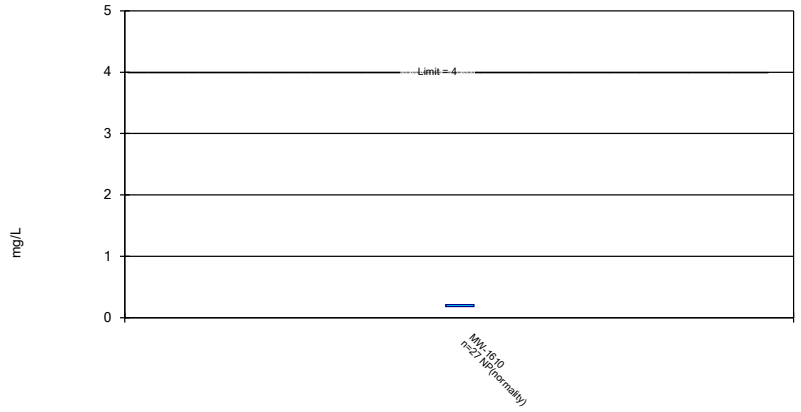
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Fluoride total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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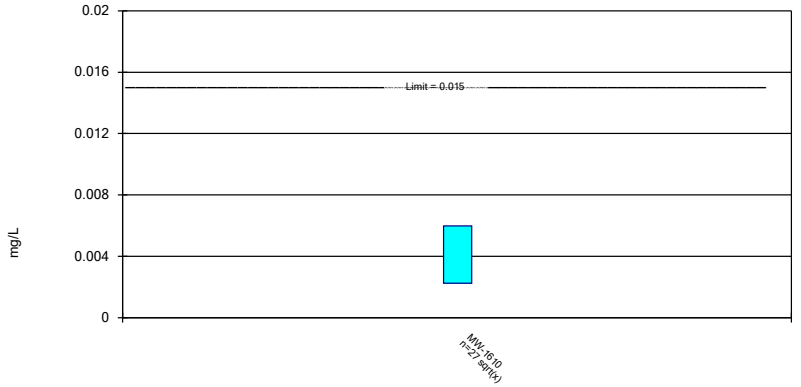
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Intervals
Clinch River Client: AEP Data: Clinch River Pond 1

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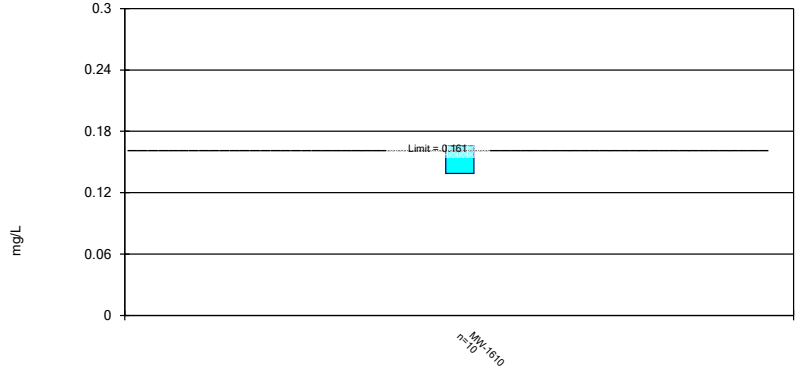
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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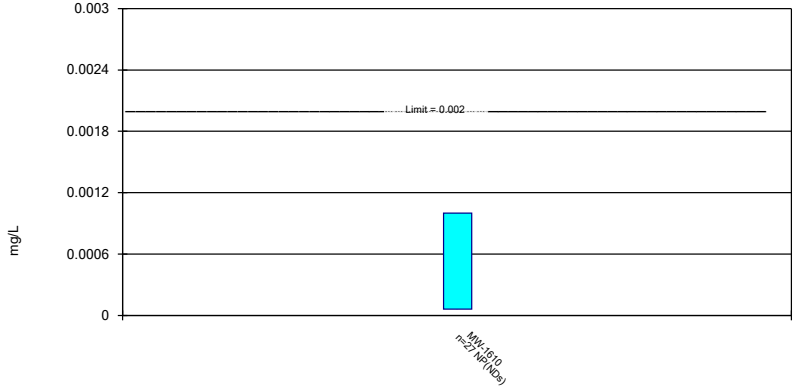
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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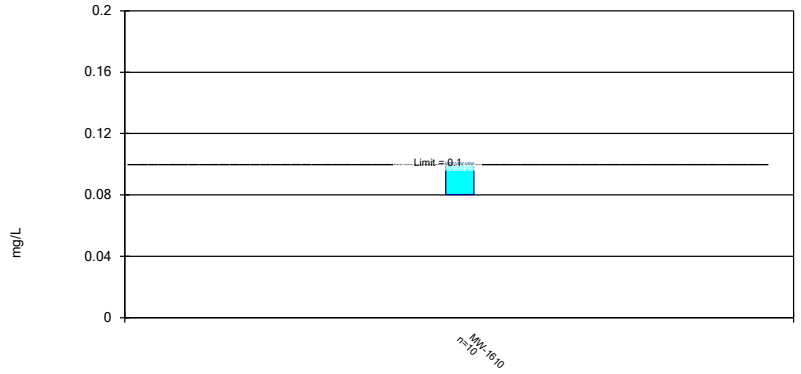
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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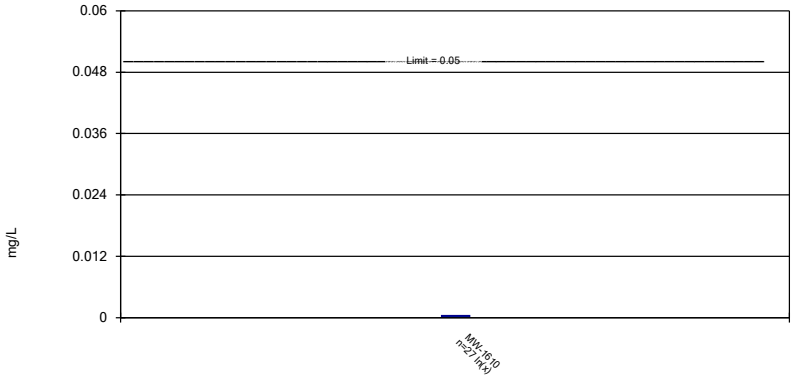
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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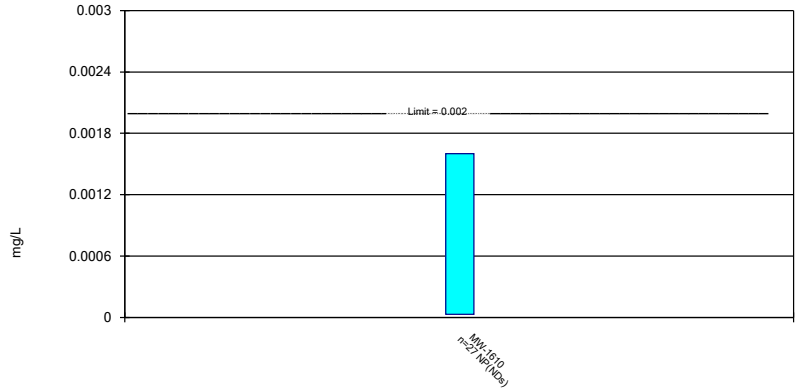
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 1/29/2025 3:54 PM View: Dumps Fault - Pond 1 Confidence Inter
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE K.

Appendix IV Trend Tests - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:21 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	**MW-1601 (bg)**	**-0.0201**	**-257**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1602 (bg)**	**-0.00301**	**-244**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1603**	**0.1589**	**161**	**96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1605**	**0.1865**	**162**	**96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1608 (bg)**	**-0.003213**	**-301**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1612**	**0.06518**	**97**	**90**	**Yes**	**26**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1602 (bg)**	**-0.001094**	**-137**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1608 (bg)**	**-0.0007604**	**-181**	**-96**	**Yes**	**27**	**3.704**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:21 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	**MW-1601 (bg)**	**-0.0201**	**-257**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1602 (bg)**	**-0.00301**	**-244**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1603**	**0.1589**	**161**	**96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	MW-1604	-0.03177	-90	-96	No	27	0	n/a	0.05	NP
Barium total (mg/L)	**MW-1605**	**0.1865**	**162**	**96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1608 (bg)**	**-0.003213**	**-301**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1612**	**0.06518**	**97**	**90**	**Yes**	**26**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	MW-1601 (bg)	-0.001166	-90	-96	No	27	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1602 (bg)**	**-0.001094**	**-137**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	MW-1605	-0.001426	-67	-96	No	27	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1608 (bg)**	**-0.0007604**	**-181**	**-96**	**Yes**	**27**	**3.704**	**n/a**	**0.05**	**NP**

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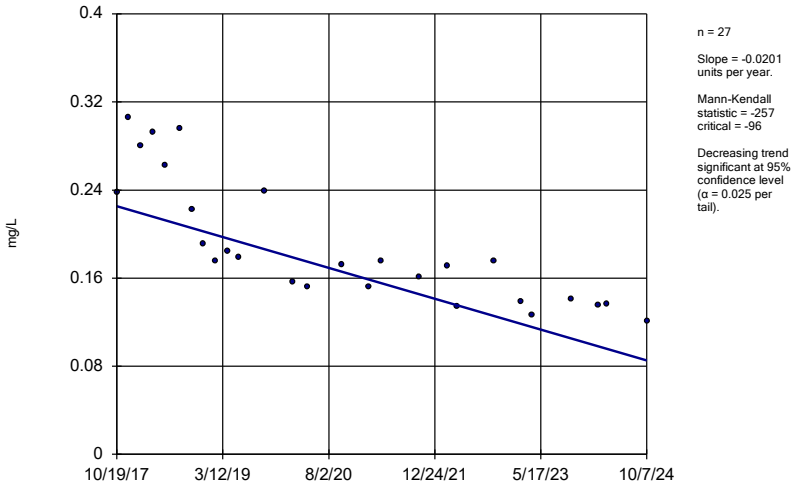
Sen's Slope Estimator

MW-1601 (bg)



n = 27

Slope = -0.0201 units per year.

Mann-Kendall statistic = -257 critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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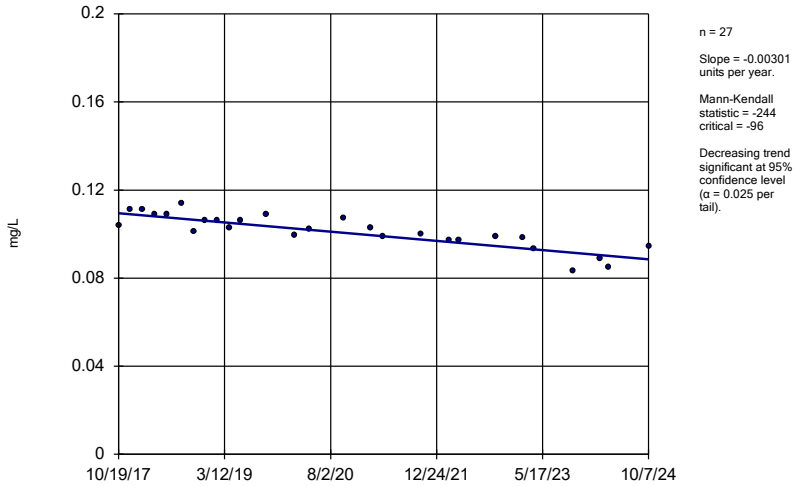
Sen's Slope Estimator

MW-1602 (bg)



n = 27

Slope = -0.00301 units per year.

Mann-Kendall statistic = -244 critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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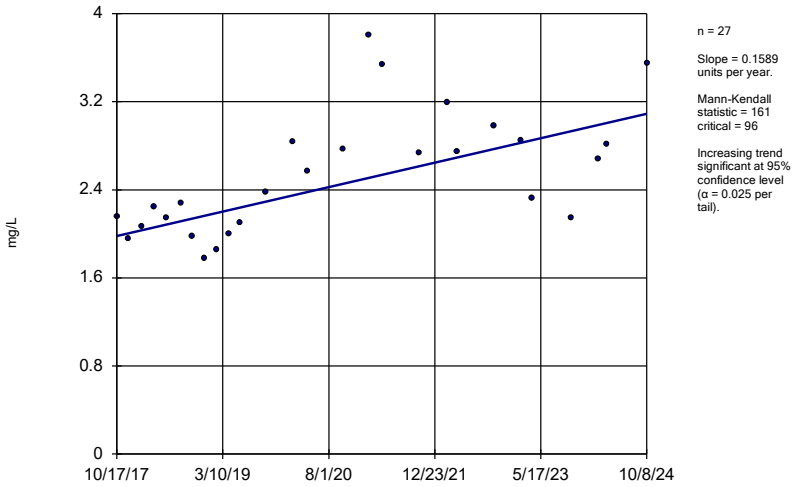
Sen's Slope Estimator

MW-1603



n = 27

Slope = 0.1589 units per year.

Mann-Kendall statistic = 161 critical = 96

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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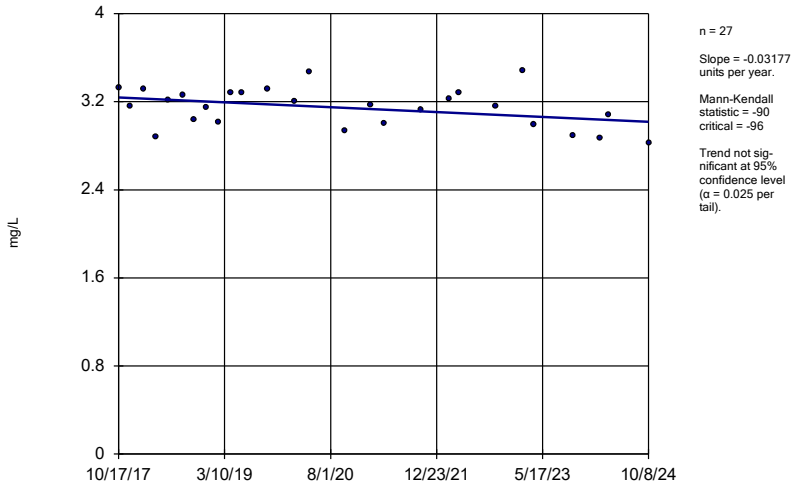
Sen's Slope Estimator

MW-1604



n = 27

Slope = -0.03177 units per year.

Mann-Kendall statistic = -90 critical = -96

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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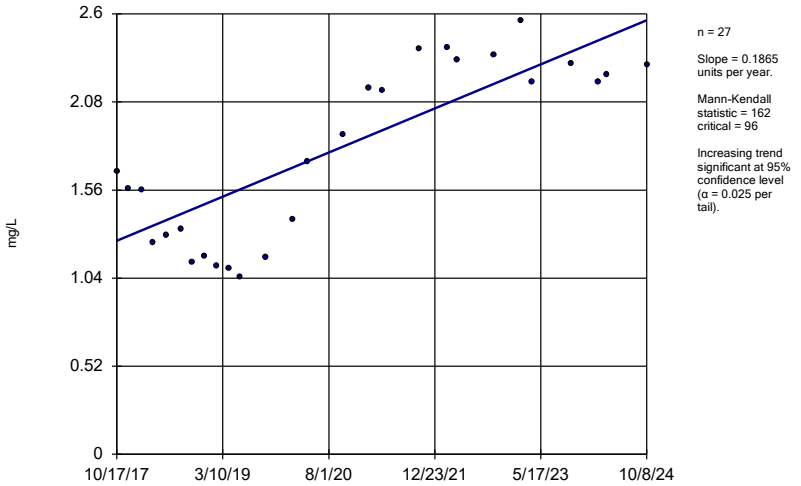
Sen's Slope Estimator

MW-1605



n = 27

Slope = 0.1865 units per year.

Mann-Kendall statistic = 162 critical = 96

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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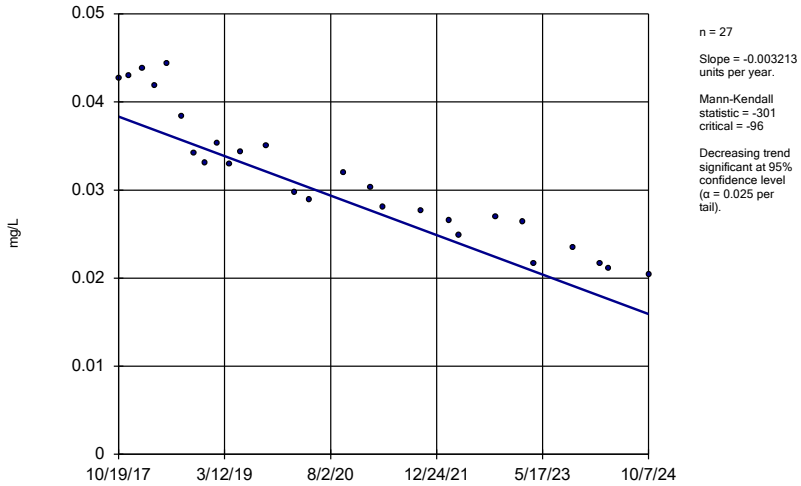
Sen's Slope Estimator

MW-1608 (bg)



n = 27

Slope = -0.003213 units per year.

Mann-Kendall statistic = -301 critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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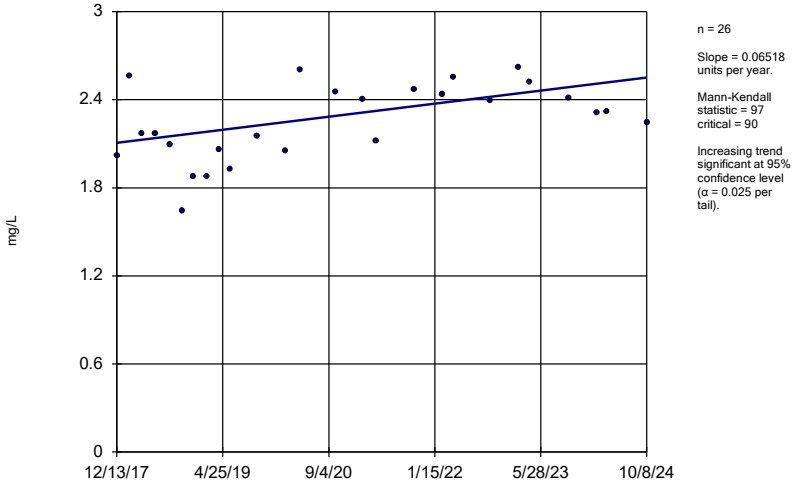
Sen's Slope Estimator

MW-1612



n = 26

Slope = 0.06518 units per year.

Mann-Kendall statistic = 97 critical = 90

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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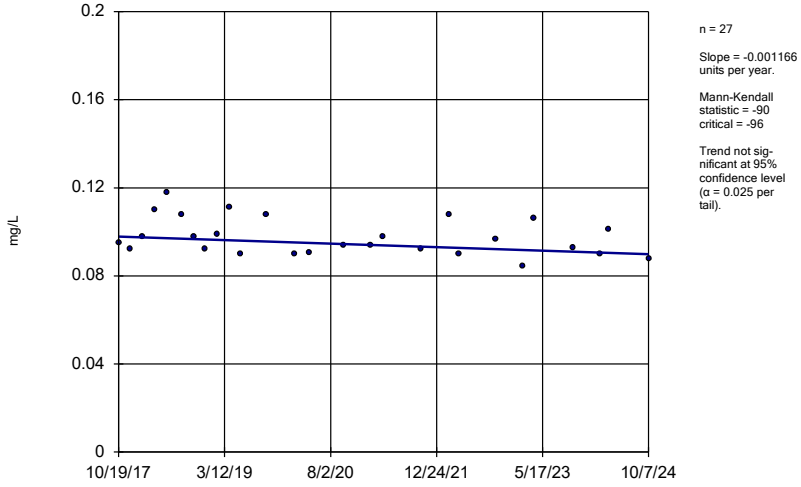
Sen's Slope Estimator

MW-1601 (bg)



n = 27

Slope = -0.001166 units per year.

Mann-Kendall statistic = -90 critical = -96

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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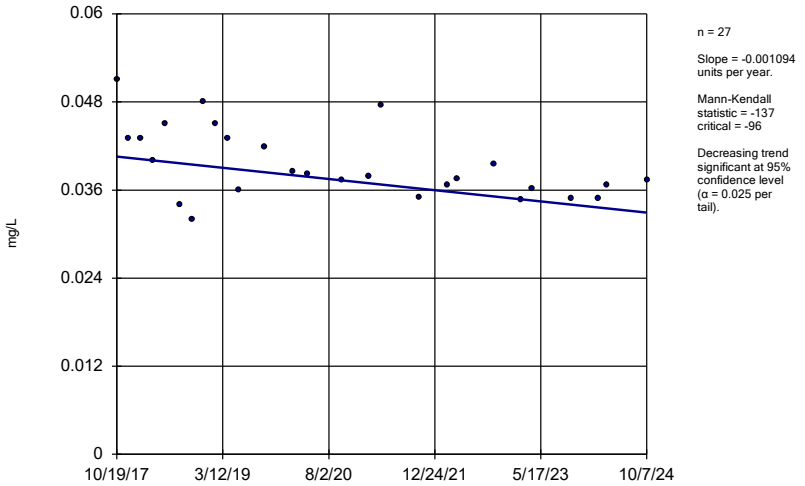
Sen's Slope Estimator

MW-1602 (bg)



n = 27

Slope = -0.001094 units per year.

Mann-Kendall statistic = -137
critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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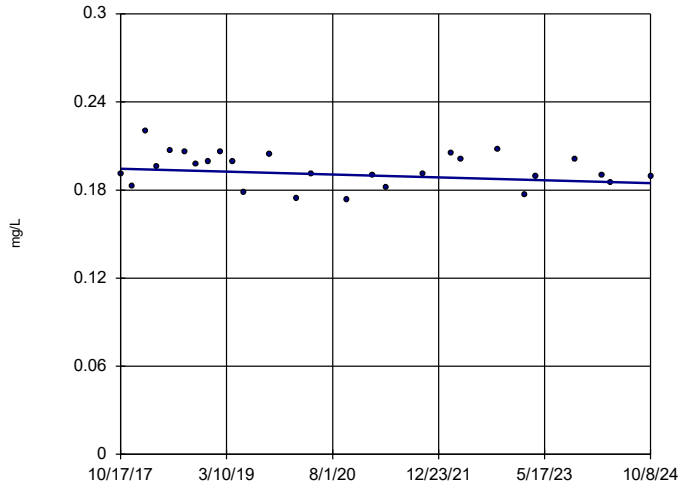
Sen's Slope Estimator

MW-1605



n = 27

Slope = -0.001426 units per year.

Mann-Kendall statistic = -67
critical = -96

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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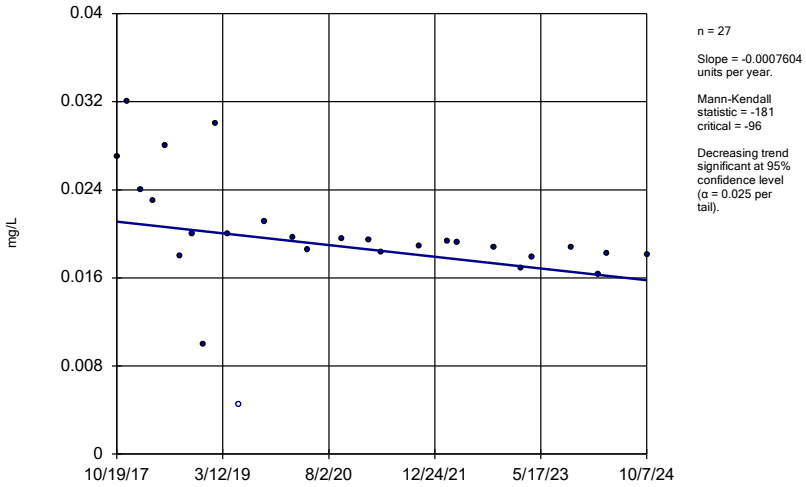
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1608 (bg)



n = 27

Slope = -0.0007604 units per year.

Mann-Kendall statistic = -181
critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:20 PM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

Appendix IV Trend Tests - Rome Limestone - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:45 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Lithium total (mg/L)	**MW-1609 (bg)**	**-0.0006848**	**-120**	**-96**	**Yes**	**27**	**22.22**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1607**	**-0.003784**	**-114**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1609 (bg)**	**-0.00007838**	**-130**	**-96**	**Yes**	**27**	**22.22**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:45 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Cobalt total (mg/L)	MW-1607	-0.0002408	-66	-96	No	27	0	n/a	0.05	NP
Cobalt total (mg/L)	MW-1609 (bg)	-0.00001485	-72	-96	No	27	11.11	n/a	0.05	NP
Lithium total (mg/L)	MW-1606	-0.000524	-11	-96	No	27	0	n/a	0.05	NP
Lithium total (mg/L)	MW-1607	0.001719	91	96	No	27	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1609 (bg)**	**-0.0006848**	**-120**	**-96**	**Yes**	**27**	**22.22**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1607**	**-0.003784**	**-114**	**-96**	**Yes**	**27**	**0**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1609 (bg)**	**-0.00007838**	**-130**	**-96**	**Yes**	**27**	**22.22**	**n/a**	**0.05**	**NP**

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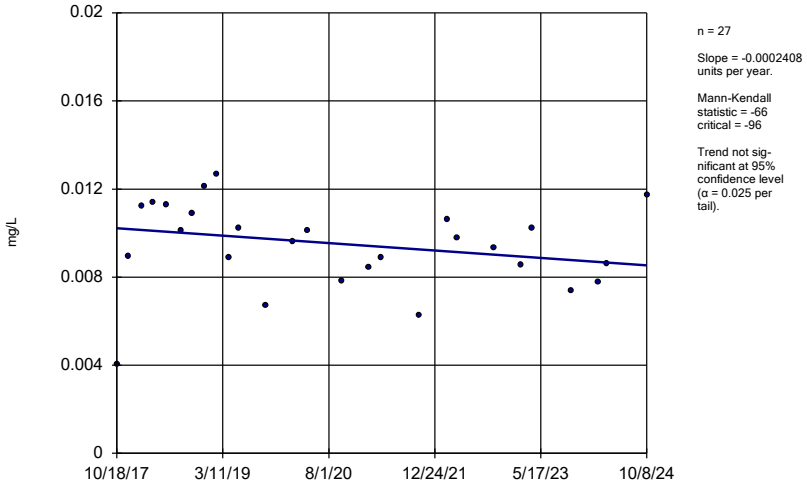
Sen's Slope Estimator

MW-1607



n = 27

Slope = -0.0002408 units per year.

Mann-Kendall statistic = -66
critical = -96

Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendix IV Tr
Clinch River Client: AEP Data: Clinch River Pond 1

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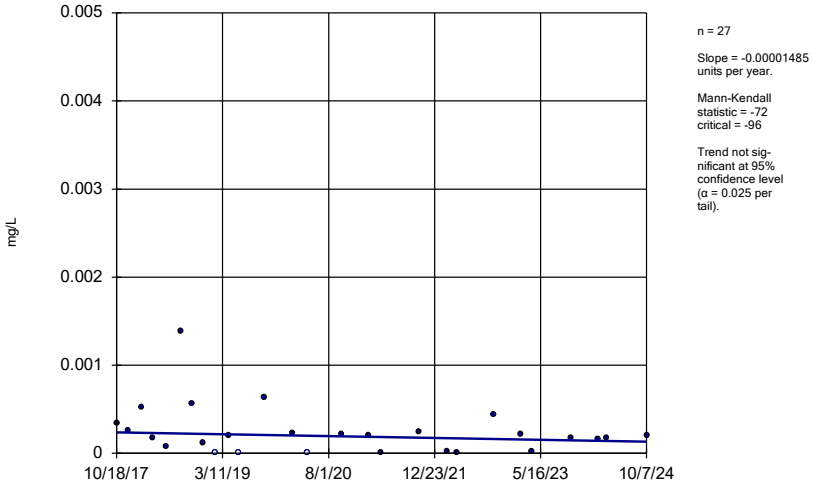
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1609 (bg)



n = 27

Slope = -0.00001485 units per year.

Mann-Kendall statistic = -72
critical = -96

Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendix IV Tr
Clinch River Client: AEP Data: Clinch River Pond 1

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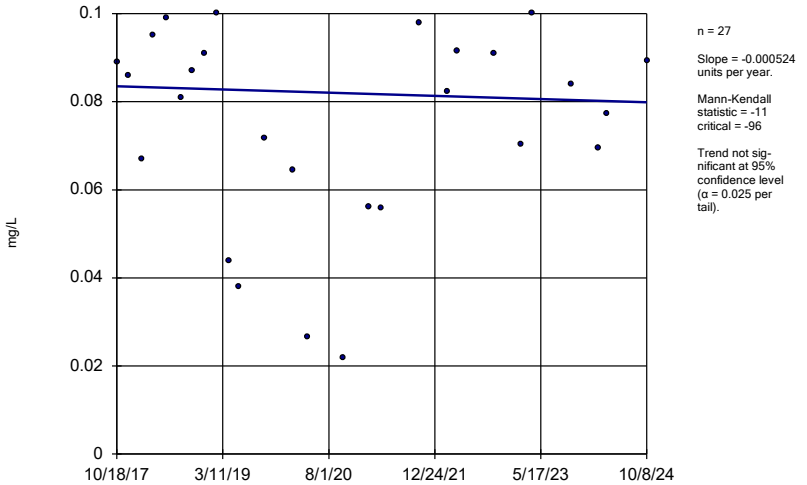
Sen's Slope Estimator

MW-1606



n = 27

Slope = -0.000524 units per year.

Mann-Kendall statistic = -11
critical = -96

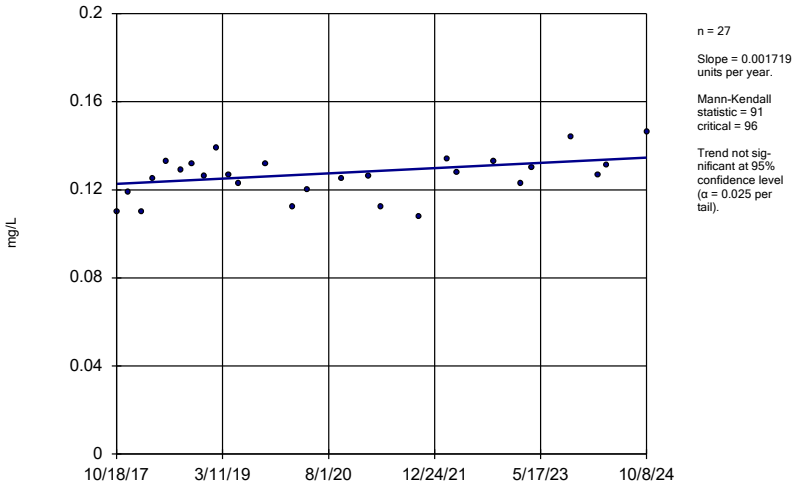
Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-1607



n = 27

Slope = 0.001719 units per year.

Mann-Kendall statistic = 91
critical = 96

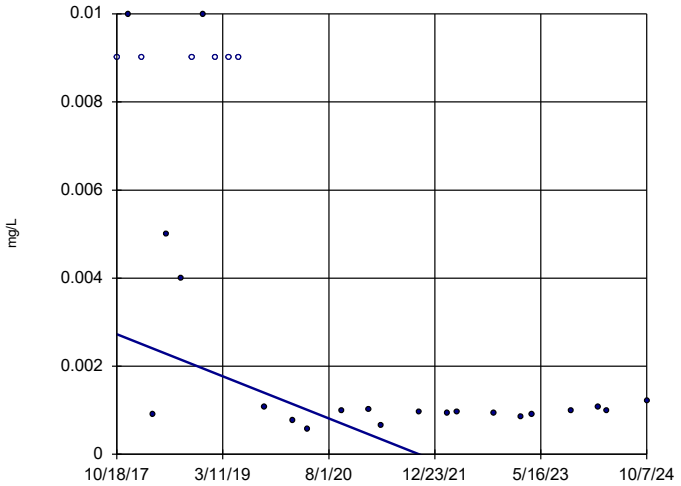
Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1609 (bg)



n = 27

Slope = -0.0006848 units per year.

Mann-Kendall statistic = -120
critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

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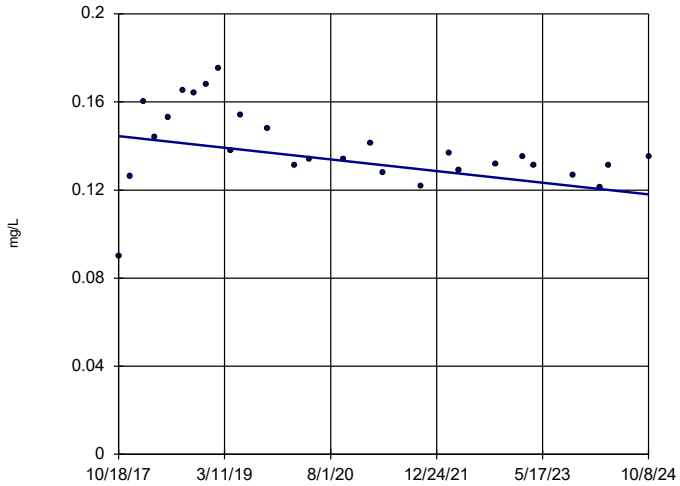
Sen's Slope Estimator

MW-1607



n = 27

Slope = -0.003784 units per year.

Mann-Kendall statistic = -114
critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendi
Clinch River Client: AEP Data: Clinch River Pond 1

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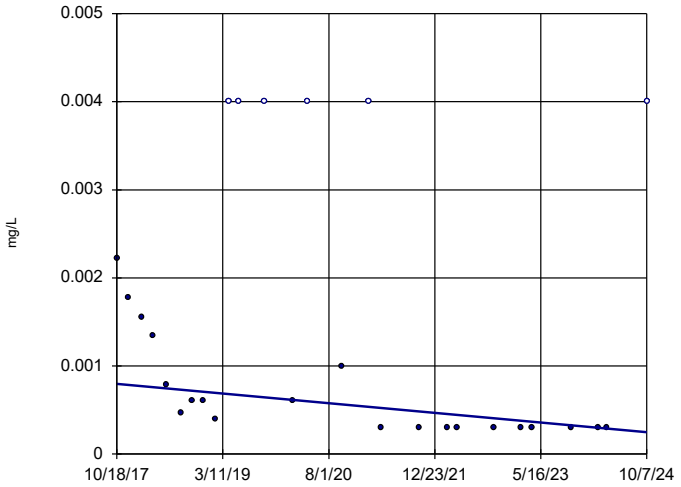
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1609 (bg)



n = 27

Slope = -0.00007838 units per year.

Mann-Kendall statistic = -130
critical = -96

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum total Analysis Run 1/29/2025 3:44 PM View: Rome Limestone - Pond 1 Appendi
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE L.

Confidence Intervals (Most Recent 8) - Rome Limestone - All/Significant Results

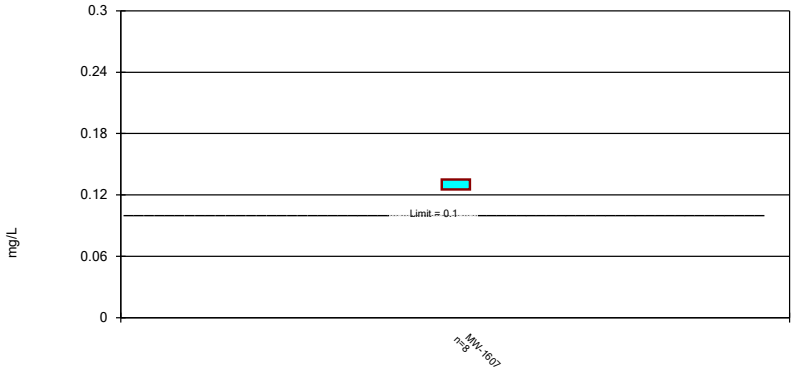
Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 4:07 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Molybdenum total (mg/L)	**MW-1607**	**0.135**	**0.1253**	**0.1**	**Yes**	**8**	**0.1301**	**0.004581**	**0**	**None**	**No**	**0.01**	**Param.**

Sanitas™ v.10.0.24 Software licensed to Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 1/29/2025 4:07 PM View: Rome Limestone - Pond 1 Confide
Clinch River Client: AEP Data: Clinch River Pond 1

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY, 2025 1ST SEMIANNUAL EVENT ASH POND 1

Clinch River Plant

Carbo, Virginia

Prepared for

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2372

Prepared by

Geosyntec Consultants, Inc.
500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085

Project Number: CHA1147C

September 2025

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Attachment B: Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

CCR	coal combustion residuals
CFR	Code of Federal Regulations
GWPS	groundwater protection standards
LCL	lower confidence limit
LPL	lower prediction limit
mg/L	milligrams per liter
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
UPL	upper prediction limit
UTL	upper tolerance limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at Ash Pond 1, an existing CCR unit at the Clinch River Plant in Carbo, Virginia. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above the groundwater protection standards (GWPSs).

Eight monitoring events were completed from December 2017 to December 2018 to establish background concentrations for Appendix III and Appendix IV parameters under the CCR rule. Data collected through April 2019 were compared to the background concentrations to evaluate for any statistically significant increases (SSIs) or statistically significant levels (SSLs) of Appendix III or Appendix IV constituents. SSLs and SSIs were identified for several constituents in groundwater. Because alternative sources for the SSLs were not identified, an assessment of corrective measures was initiated for Ash Pond 1 in accordance with 40 CFR 257.96. The assessment of corrective measures has been conducted, and the selection of a remedy is ongoing. Ash Pond 1 continues to undergo assessment monitoring in the interim.

An annual sampling event at Ash Pond 1 for Appendix III and Appendix IV parameters required by 40 CFR 257.95(b) was completed in February 2025, and a semiannual sampling event for Appendix III and Appendix IV parameters required by 40 CFR 257.95(d)(1) was completed in April 2025. The results of these annual and semiannual assessment monitoring events for wells in the certified groundwater monitoring network are documented in this report. The results of these annual and semiannual assessment monitoring events at the nature and extent wells installed to characterize the nature and extent of the release were also used in a separate statistical analysis which is not documented in this report (Geosyntec 2025a).

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

Groundwater data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. The statistics were completed in three separate groups that correspond to differences in the underlying geology at the monitoring locations. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at SSLs above the previously established GWPSs. SSLs were identified for barium, cobalt, lithium, and molybdenum. Therefore, selection of the remedy will continue, and groundwater monitoring will continue in accordance with the assessment monitoring program as required by 40 CFR 275.96(b). Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. ASH POND 1 EVALUATION

2.1 Data Validation and QA/QC

Two sets of samples were collected for analysis from wells throughout the three geologically distinct monitoring well networks. The three geological units are the Chattanooga Shale, the Rome Limestone, and the Dumps Fault water-bearing unit. In accordance with 40 CFR 257.95b, samples were collected from compliance wells only in February 2025. In accordance with 40 CFR 257.95(d)(1), samples were collected from each background and compliance well in April 2025. Samples from the February and April 2025 sampling events were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during these assessment monitoring events may be found in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program-certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.27 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for Ash Pond 1 were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B. The data obtained in February and April 2025 were screened for potential outliers. No outliers were identified for these events.

2.2.1 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). Sen's Slop/Mann-Kendall trend tests at a 95% confidence level were used to evaluate data for statistically significant trends. A statistically significant decreasing trend was observed for molybdenum at MW-1607; therefore, the lower confidence limit (LCL) was calculated using the most recent eight data points (i.e., data collected since February 2023, see Trend Analysis). Additionally, the confidence interval for barium at MW-1605 was calculated using data collected since February 2021 due to a statistically significant increasing trend, and confidence intervals at MW-1610 were calculated using data since April 2019 for cobalt and since October 2021 for lithium and molybdenum, as earlier results were above the GWPS and recent concentrations are more stable with lower reported values.

An SSL was concluded if the LCL exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2. The GWPSs were established during a previous statistical analysis as either (a) the background concentration or (b) the maximum contaminant level and risk-based level specified in 40 CFR 257.95(h)(2), whichever was greater (Geosyntec 2025b).

The following SSLs were identified at Clinch River Ash Pond 1 (Table 3):

- Chattanooga Shale
  - LCLs for barium at MW-1603 (2.32 milligrams per liter [mg/L]), MW-1604 (3.01 mg/L), MW-1605 (2.21 mg/L) and MW-1612 (2.13 mg/L) were above the GWPS of 2.00 mg/L.
  - The LCL for lithium at MW-1605 (0.189 mg/L) was above the GWPS of 0.118 mg/L.
- Rome Limestone
  - The LCL for cobalt at MW-1607 (0.00841 mg/L) was above the GWPS of 0.00600 mg/L.
  - LCLs for lithium at MW-1606 (0.0653 mg/L) and MW-1607 (0.121 mg/L) were above the GWPS of 0.0400 mg/L.
  - The LCL for molybdenum at MW-1607 using the most recent eight data points (0.109 mg/L) was above the GWPS of 0.100 mg/L.

As a result of the identified SSLs, the selection of remedy will continue, and groundwater monitoring will continue in accordance with the assessment monitoring program per 40 CFR 257.96(b).

2.2.2 Evaluation of Potential Appendix III SSIs

While SSLs were identified, a review of the Appendix III results was also completed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the April 2025 assessment monitoring event from each compliance well were compared to previously calculated prediction limits to assess whether the results were statistically above background values., as shown in Table 4. The following SSIs above the upper prediction limits (UPLs) were noted:

- Calcium concentrations were above the Chattanooga Shale interwell UPL of 8.42 mg/L at MW-1603 (33.1 mg/L), MW-1604 (30.3 mg/L), MW-1605 (47.9 mg/L), and MW-1612 (44.2 mg/L).
- Chloride concentrations were above the Chattanooga Shale interwell UPL of 34.3 mg/L at MW-1603 (191 mg/L) and MW-1605 (159 mg/L). Chloride concentrations were above the Rome Limestone interwell UPL of 4.10 mg/L at MW-1606 (12.2 mg/L) and MW-1607 (5.79 mg/L).
- The fluoride concentration was above the Rome Limestone intrawell UPL of 0.259 mg/L at MW-1606 (0.26 mg/L).

- pH values were above the Rome Limestone intrawell UPL of 7.4 standard units (SU) at MW-1606 (7.7 SU) and below the Rome Limestone intrawell lower prediction limit (LPL) of 7.3 SU at MW-1607 (7.2 SU).
- Sulfate concentrations were above the Rome Limestone interwell UPL of 20.6 mg/L at MW-1606 (38.9 mg/L) and MW-1607 (136 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the April 2025 sample was above the UPL or, in the case of pH, below the LPL.

2.3 Conclusions

Annual and semiannual assessment monitoring events were conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that prevented data usage. A review of outliers identified no potential outliers in the February or April 2025 data. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPS. SSLs were identified for barium, cobalt, lithium, and molybdenum.

Appendix III parameters were compared to previously calculated prediction limits; concentrations of calcium, chloride, fluoride, pH, and sulfate were outside the prediction limits.

Based on this evaluation, the selection of a remedy for the Clinch River Ash Pond 1 CCR unit will continue, and the groundwater monitoring will continue in accordance with the assessment monitoring program per 40 CFR 257.96(b).

3. REFERENCES

Geosyntec. 2020. Statistical Analysis Plan – Clinch River Plant. Geosyntec Consultants, Inc. October.

Geosyntec. 2025a. Statistical Analysis Summary, 2025 1st Semiannual Event – Ash Pond 1 Nature and Extent Wells, Clinch River Plant, Carbo, Virginia. Geosyntec Consultants, Inc. September.

Geosyntec. 2025b. Statistical Analysis Summary, 2024 2nd Semiannual Event – Ash Pond 1, Clinch River Plant, Carbo, Virginia. Geosyntec Consultants, Inc. February.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Parameter	Unit	MW-1601	MW-1602	MW-1603		MW-1604		MW-1605		MW-1606	
		4/1/2025	4/1/2025	2/18/2025	4/2/2025	2/18/2025	4/2/2025	2/18/2025	4/2/2025	2/17/2025	4/2/2025
Antimony	µg/L	0.8 U1	0.06 J1	0.08 J1	0.14 J1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.8 U1
Arsenic	µg/L	4.4	1.7	2.4	2.9	5	3.4	0.9	0.8	10.7	5.5
Barium	µg/L	155	93.1	2,820	3,340	2,440	2,870	2,260 M1	2,220	111	107
Beryllium	µg/L	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1
Boron	mg/L	0.54	0.61	0.24 J1	0.28 J1	0.29 J1	0.36 J1	0.52	0.49	0.1 J1	0.14 J1
Cadmium	µg/L	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1
Calcium	mg/L	6.0	4.0	29.2	33.1	41.6	30.3	48.4 M1	47.9	49.5	48.5
Chloride	mg/L	15.1	4.84	135	191	15.5	17.2	156	159	11.9	12.2
Chromium	µg/L	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1
Cobalt	µg/L	0.16 U1	0.16 U1	0.23	0.12 J1	0.21	0.12 J1	0.16 U1	0.16 U1	4.65	3.60
Combined Radium	pCi/L	1.23	0.22	1.79	1.23	1.9	1.15	3.03	1.71	1.67	1.61
Fluoride	mg/L	2.36	1.75	0.11	0.14	0.28	0.33	0.32	0.35	0.2	0.26
Lead	µg/L	0.6 J1	0.6 J1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	0.6 J1	0.4 J1
Lithium	mg/L	0.0911 M1	0.0360 M1	0.0577	0.0909	0.0634	0.0744	0.191	0.198	0.0592	0.105
Mercury	µg/L	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1
Molybdenum	µg/L	1.7 J1	1.0 J1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	48.7	66.2
Selenium	µg/L	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1
Sulfate	mg/L	165	17.9	0.6 U1	0.6 U1	0.6 U1	0.6 U1	0.6 U1	0.6 U1	37.4	38.9
Thallium	µg/L	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1
Total Dissolved Solids	mg/L	1,400 S7	570 S7	490	590	400	420	640	650	310	320
pH	SU	7.9	8.0	6.8	7.7	6.7	7.2	6.8	7.7	6.4	7.7

Notes:
J1: concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1: the associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
S7: sample did not achieve constant weight.
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Parameter	Unit	MW-1607		MW-1608	MW-1609	MW-1610		MW-1611	MW-1612	
		2/17/2025	4/1/2025	4/1/2025	4/1/2025	2/17/2025	4/2/2025	4/1/2025	2/18/2025	4/2/2025
Antimony	µg/L	0.8 U1	0.8 U1	0.8 U1	0.8 U1	0.08 J1	0.07 J1	0.8 U1	0.8 U1	0.8 U1
Arsenic	µg/L	1.2	1.8	1.3	0.8 U1	1.1	1.1	4.6	0.4 J1	0.8 U1
Barium	µg/L	73.6	68.7	23.2	434	291	311	345	2,270	2,280
Beryllium	µg/L	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1	0.4 U1
Boron	mg/L	0.13 J1	0.13 J1	0.38 J1	0.4 U1	0.4 U1	0.4 U1	0.53	0.39 J1	0.37 J1
Cadmium	µg/L	0.09 J1	0.04 J1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1	0.16 U1
Calcium	mg/L	48.9 M1	43.6	0.5	76.2	32.1	33.1	34.2	46.1	44.2
Chloride	mg/L	4.65	5.79	4.37	1.22	9.43	10.1	10.8	16.9	20.8
Chromium	µg/L	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1	2.4 U1
Cobalt	µg/L	7.43	8.28	0.08 J1	0.17	5.28	4.91	0.16 U1	0.12 J1	0.06 J1
Combined Radium	pCi/L	0.55	1.15	0.16	1.34	1.07	0.63	0.56	1.63	1.31
Fluoride	mg/L	0.19	0.23	0.52	0.26	0.2	0.23	1.22	0.15	0.17
Lead	µg/L	0.9 J1	1.2 J1	0.4 J1	0.8 J1	1.2 J1	1.8	0.4 J1	1.6 U1	1.6 U1
Lithium	mg/L	0.108 M1	0.131	0.0198	0.0017 J1	0.127	0.125	0.0624	0.131	0.129
Mercury	µg/L	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1	1 U1
Molybdenum	µg/L	89.4	115	0.9 J1	4 U1	75.9	80.4	2.4 J1	4 U1	4 U1
Selenium	µg/L	1.3 J1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1	4 U1
Sulfate	mg/L	107	136	149	17.0	13.8	17.6	13.8	0.6 U1	0.6 U1
Thallium	µg/L	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1	1.6 U1
Total Dissolved Solids	mg/L	310	290	440	270	230	240	470	490	490
pH	SU	7.0	7.2	7.7	7.2	6.8	7.7	7.1	6.9	7.2

Notes:
J1: concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1: the associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
S7: sample did not achieve constant weight.
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Chattanooga Shale Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000493	0.00600
Arsenic, Total (mg/L)	0.0100		0.0115	0.0115
Barium, Total (mg/L)	2.00		0.306	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00126	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.000416	0.00600
Combined Radium, Total (pCi/L)	5.00		2.63	5.00
Fluoride, Total (mg/L)	4.00		2.44	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00160	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.118	0.118
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.0257	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Rome Limestone Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000400	0.00600
Arsenic, Total (mg/L)	0.0100		0.000970	0.0100
Barium, Total (mg/L)	2.00		0.496	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00120	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.00102	0.00600
Combined Radium, Total (pCi/L)	5.00		4.53	5.00
Fluoride, Total (mg/L)	4.00		0.324	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00108	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0100	0.0400
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00400	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Clinch River Plant - Ash Pond 1

Dumps Fault Monitoring Well Network				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Calculated UTL**	**GWPS**
Antimony, Total (mg/L)	0.00600		0.000800	0.00600
Arsenic, Total (mg/L)	0.0100		0.0216	0.0216
Barium, Total (mg/L)	2.00		0.442	2.00
Beryllium, Total (mg/L)	0.00400		0.000400	0.00400
Cadmium, Total (mg/L)	0.00500		0.000160	0.00500
Chromium, Total (mg/L)	0.100		0.00109	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.000159	0.00600
Combined Radium, Total (pCi/L)	5.00		2.62	5.00
Fluoride, Total (mg/L)	4.00		1.32	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00160	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.161	0.161
Mercury, Total (mg/L)	0.00200		0.00100	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00676	0.100
Selenium, Total (mg/L)	0.0500		0.00400	0.0500
Thallium, Total (mg/L)	0.00200		0.00160	0.00200

Notes:
1: Calculated UTL (Upper Tolerance Limit) represents site-specific background values
2: Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: Coal Combustion Residuals
GWPS: Groundwater Protection Standard
MCL: Maximum Contaminant Level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix IV Identified Statistically Significant Levels
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Formation	Well ID	Constituent	GWPS	LCL
Chattanooga Shale	MW-1603	Barium	2.00	2.32
	MW-1604	Barium	2.00	3.01
	MW-1605	Barium	2.00	2.21
		Lithium	0.118	0.189
	MW-1612	Barium	2.00	2.13
Rome Limestone	MW-1606	Lithium	0.0400	0.0653
	MW-1607	Cobalt	0.00600	0.00841
		Lithium	0.0400	0.121
		Molybdenum*	0.100	0.109

Notes:
1. All values are in milligrams per liter
*: The LCL for molybdenum at MW-1607 was calculated using the most recent eight data points, due to the observation of a statistically significant decreasing trend.
GWPS: groundwater protection standard
LCL: lower confidence limit

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Analyte	Unit	Description	Chattanooga Shale			
			MW-1603	MW-1604	MW-1605	MW-1612
			4/2/2025	4/2/2025	4/2/2025	4/2/2025
Boron	mg/L	Intrawell Background Value (UPL)	0.431	0.487	0.699	0.531
		Analytical Result	0.28	0.36	0.49	0.37
Calcium	mg/L	Interwell Background Value (UPL)	8.42			
		Analytical Result	**33.1**	**30.3**	**47.9**	**44.2**
Chloride	mg/L	Interwell Background Value (UPL)	34.3			
		Analytical Result	**191**	17.2	**159**	20.8
Fluoride	mg/L	Intrawell Background Value (UPL)	0.171	0.345	0.417	0.227
		Analytical Result	0.14	0.33	0.35	0.17
pH	SU	Interwell Background Value (UPL)	9.1			
		Interwell Background Value (LPL)	6.7			
		Analytical Result	7.7	7.2	7.7	7.2
Sulfate	mg/L	Intrawell Background Value (UPL)	3.49	1.17	11.2	1.20
		Analytical Result	0.1	0.1	0.1	0.1
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	739	428	715	559
		Analytical Result	590	420	650	490

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Analyte	Unit	Description	Rome Limestone	
			MW-1606	MW-1607
			4/2/2025	4/1/2025
Boron	mg/L	Intrawell Background Value (UPL)	0.189	0.212
		Analytical Result	0.14	0.13
Calcium	mg/L	Intrawell Background Value (UPL)	63.3	51.5
		Analytical Result	48.5	43.6
Chloride	mg/L	Interwell Background Value (UPL)	4.10	
		Analytical Result	**12.2**	**5.79**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.259	0.263
		Analytical Result	**0.26**	0.23
pH	SU	Intrawell Background Value (UPL)	7.4	8.2
		Intrawell Background Value (LPL)	6.8	7.3
		Analytical Result	**7.7**	**7.2**
Sulfate	mg/L	Interwell Background Value (UPL)	20.6	
		Analytical Result	**38.9**	**136**
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	373	310
		Analytical Result	320	290

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

Table 4. Appendix III Data Summary
Statistical Analysis Summary
Clinch River Plant – Ash Pond 1

Analyte	Unit	Description	Dumps Fault MW-1610 4/2/2025
Boron	mg/L	Intrawell Background Value (UPL)	0.139
		Analytical Result	0.06
Calcium	mg/L	Intrawell Background Value (UPL)	38.7
		Analytical Result	33.1
Chloride	mg/L	Intrawell Background Value (UPL)	12.0
		Analytical Result	10.1
Fluoride	mg/L	Intrawell Background Value (UPL)	0.350
		Analytical Result	0.23
pH	SU	Intrawell Background Value (UPL)	8.0
		Intrawell Background Value (LPL)	7.1
		Analytical Result	7.7
Sulfate	mg/L	Intrawell Background Value (UPL)	50.0
		Analytical Result	17.6
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	266
		Analytical Result	240

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Clinch River Ash Pond 1 CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

058541	**Virginia**	**09.24.2025**
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

August 27, 2025

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Ste. 250
Worthington, OH 43085

RE: Clinch River Pond 1 – Assessment Monitoring Report – February & April 2025

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical evaluation of groundwater data for the February and April 2025 sample event at American Electric Power Company's Clinch River Pond 1. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the Clinch River Pond 1 for the Coal Combustion Residuals (CCR) program in 2017 at each of the groundwater monitoring wells. The monitoring well network, as provided by Geosyntec Consultants, consists of the following three formations:

Chattanooga Shale:
Upgradient Wells: MW-1601, MW-1602, MW-1608
Downgradient Wells: MW-1603, MW-1604, MW-1605, and MW-1612

Rome Limestone:
Cross-gradient (background) Well: MW-1609
Downgradient Wells: MW-1606 and MW-1607

Dumps Fault:
Upgradient Well: MW-1611 and W-2204
Downgradient Well: MW-1610

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Kristina Rayner, Founder and Senior Statistician for Groundwater Stats Consulting. Note that upgradient well W-2204 for Dumps Fault was first included in the well network for this event. Data from this well are plotted on time series and box plots for this report. During the Fall 2025 background update report, data from this well will be used to calculate interwell upper tolerance limits.

The CCR program consists of the following Assessment Monitoring constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Due to varying detection limits in background data sets, generally from improved laboratory practices, a substitution of the most recent reporting limit is used for all non-detects. In some cases, the reporting limit provided by the laboratory contains varying limits for a given parameter; therefore, the substitution may differ from well to well. The computed statistical limits, both background and compliance limits, were not adversely affected by these substitutions. The time series plots display the substitution of the most recent reporting limits; however, the original reporting limits are maintained in the Sanitas database.

A separate section is provided for each formation and includes time series plots for Appendix IV parameters at all wells within the same formation for the purpose of screening data (Figure A for each formation). Additionally, box plots are included for all constituents at upgradient and downgradient wells (Figure B for each formation). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

Summary of Statistical Methods:

Parametric tolerance limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA, 2009), data are analyzed using either parametric or non-parametric prediction limits as appropriate. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric tolerance limits and confidence intervals are used on data containing greater than 50% non-detects or data sets which do not follow a normal or transformed-normal distribution.

Summary of Background Update for Appendix IV Parameters – Fall 2024

Outlier Analysis

Background data were originally screened in June 2019, and all data are re-screened annually. The results were submitted with each respective report. During the update, data at all wells were re-evaluated through October 2024 using time series plots and Tukey's outlier test to confirm previously identified outliers as well as identify new outliers and extreme trending patterns that would lead to artificially elevated statistical limits. Note that for the downgradient well data that are evaluated with confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. Any flagged values, as further discussed below, may be seen on the Outlier Summary table for each formation following this letter.

Tukey's outlier test on pooled upgradient well data for Chattanooga Shale, Rome Limestone, and Dumps Fault identified values for combined radium 226 + 228 and molybdenum. Although not identified by Tukey's, the second highest observation for combined radium 226 + 228 in upgradient well MW-1602 at Chattanooga Shale was flagged since this reported observation was at least four standard deviations above the remaining concentrations among upgradient well data. Tukey's outlier test and visual screening confirmed previously flagged measurements. Any values identified by Tukey's test but not flagged in the database were either similar to remaining concentrations among upgradient wells, were below the respective Maximum Containment Level or CCR-Rule Specified levels. Values identified as outliers are flagged with "o" and displayed in a lighter font and disconnected symbol on the time series graphs. Summaries of all flagged outliers are included in Figure C for each of the three formations.

Interwell Upper Tolerance Limits

Interwell upper tolerance limits were calculated to create background limits for the Appendix IV constituents from all available pooled upgradient well data through October 2024 at each of the formations (Figures D). Parametric limits use a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. The upper tolerance limits are updated annually and will be updated again during the 2025 2nd semi-annual analysis.

Groundwater Protection Standards

Interwell upper tolerance limits were compared to the MCLs and CCR-Rule specified levels, as shown in the Groundwater Protection Standards (GWPS) table following this letter (Figures E), to determine the highest limit for use as the GWPS in the Confidence Interval comparisons.

Summary of Data Screening – February & April 2025

Outlier Analysis

Time series plots were used to visually identify potential outliers in downgradient wells for the February and April 2025 sample events. When suspected outliers are identified, Tukey's outlier test may be used to formally test whether measurements are statistically significant. As mentioned above, high outliers are cautiously flagged in the nature and extent wells when measurements are clearly much different from remaining data within a given well. Although flagging values will also reduce the mean and thus lower the entire interval, the intent is to reduce the variance and thus reduce the width of parametric confidence intervals to better represent the actual mean. No additional outliers were identified in downgradient wells based on visual screening; therefore, Tukey's outlier test was not performed during this analysis.

Note that while upgradient well data are plotted on the time series and box plots through June 2025, the statistical limits are based only on background data through September 2024. Therefore, all upgradient well data will be re-evaluated during the next background update. As mentioned above, a list of flagged values for Appendix IV constituents follows this report.

Evaluation of Appendix IV Parameters – February & April 2025

Confidence Intervals

Confidence intervals were then constructed for each Appendix IV constituent and each downgradient well using data through April 2025. These intervals were constructed as either parametric or nonparametric confidence intervals depending on the data distribution and percentage of non-detects. When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

As noted in previous analyses, barium at downgradient wells MW-1603 and MW-1612 have had statistically significant increases over their records, and truncation of these records would have no significant impact on the resulting confidence intervals. For barium in downgradient well MW-1605 at Chattanooga Shale, however, a significant increase in concentrations since February 2021 was identified when compared to historic measurements as observed on the time series graph; therefore, a confidence interval was constructed only using more recent and stable data (USEPA Unified Guidance, 2009, Chapter 7). Similarly, more recent concentrations for cobalt, lithium, and molybdenum in downgradient well MW-1610 at Dumps Fault have stabilized at concentrations at or below the GWPS; therefore, confidence intervals were constructed using only more recent data. Trend tests using both the full and truncated records for these well/constituent pairs follow this report. (Figures F). The truncated date ranges used for these well/constituent pairs are shown in the date range table following this report.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete results of the confidence interval analysis follow this letter (Figures G). The following confidence interval exceedances were identified using all available data within each well:

Chattanooga Shale

- Barium: MW-1603, MW-1604, MW-1605, and MW-1612
- Lithium: MW-1605

Rome Limestone

- Cobalt: MW-1607
- Lithium: MW-1606 and MW-1607
- Molybdenum: MW-1607

Dumps Fault

- None

Trend Test Evaluation – Appendix IV

Data at wells with confidence interval exceedances are further evaluated using the Sen's Slope/Mann Kendall trend test at the 95% confidence level to determine whether concentrations are statistically increasing, decreasing, or stable (Figures H). Previously, trend analyses were performed for the Appendix IV constituents at the 99% confidence level (i.e., 1% false positive rate). In order to identify whether statistically significant trends are present for these constituents, the 95% confidence level is used instead of the 99% confidence level and is more sensitive to detecting significant trends due to the increased false positive rate.

Upgradient wells are included in the trend analyses to identify whether similar patterns exist upgradient of the site for the same constituents. When trends are present in upgradient trends, it is an indication of variability in groundwater quality unrelated to practices at the site. A summary of the Appendix IV trend test results follows this letter. Statistically significant trends were identified for the following well/constituent pairs:

Increasing

Chattanooga Shale

- Barium: MW-1603 and MW-1605

Rome Limestone

- None

Dumps Fault

- None

Decreasing

Chattanooga Shale

- Barium: MW-1601 MW-1602, MW-1608 (all upgradient), and MW-1604
- Lithium: MW-1601, MW-1602 and MW-1608 (all upgradient)

Rome Limestone

- Lithium: MW-1609 (upgradient)
- Molybdenum: MW-1609 (upgradient) and MW-1607

Dumps Fault

- None

Note that the decreasing trends for lithium and molybdenum in upgradient well MW-1609 at Rome Limestone are a result of higher non-detects earlier in the record compared to lower trace values later in the record.

Confidence Intervals – Most Recent 8 Measurements

Downgradient well/constituent pairs that meet both of the following criteria are further evaluated with confidence intervals using only the most recent 8 measurements through April 2025 to determine present-day groundwater quality conditions relative to the respective GWPS:

- Exceedance of the respective GWPS when using the entire record of data
- Statistically significant decreasing trends

This includes molybdenum in downgradient well MW-1607 at Rome Limestone, which was the only downgradient well/constituent pair to meet these criteria (Figure I). The confidence interval was compared against the same respective GWPS to assess compliance. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete results of the confidence interval analysis follow this letter, and an exceedance was identified for molybdenum at well MW-1607.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Clinch River Pond 1. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew T. Collins
Project Manager

Kristina L. Rayner
Senior Statistician

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Date Ranges

Date: 8/8/2025 10:47 AM

Clinch River Client: AEP Data: Clinch River Pond 1

Barium total (mg/L)
MW-1605 overall:2/9/2021-4/2/2025
Cobalt total (mg/L)
MW-1610 overall:4/9/2019-4/2/2025
Lithium total (mg/L)
MW-1610 overall:10/12/2021-4/2/2025
Molybdenum total (mg/L)
MW-1610 overall:10/12/2021-4/2/2025

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100% Non-Detects

Cadmium total (mg/L)
MW-1603, MW-1604, MW-1612

Mercury total (mg/L)
MW-1605

FIGURE A.

Time Series - Chattanooga Shale

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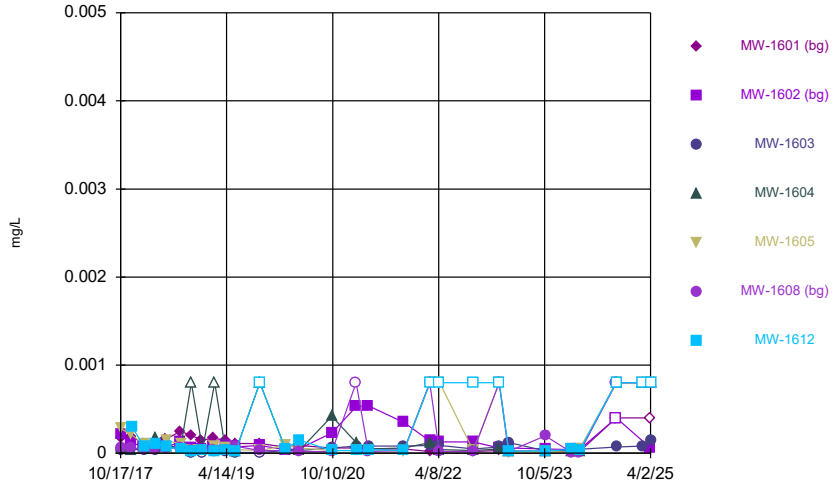
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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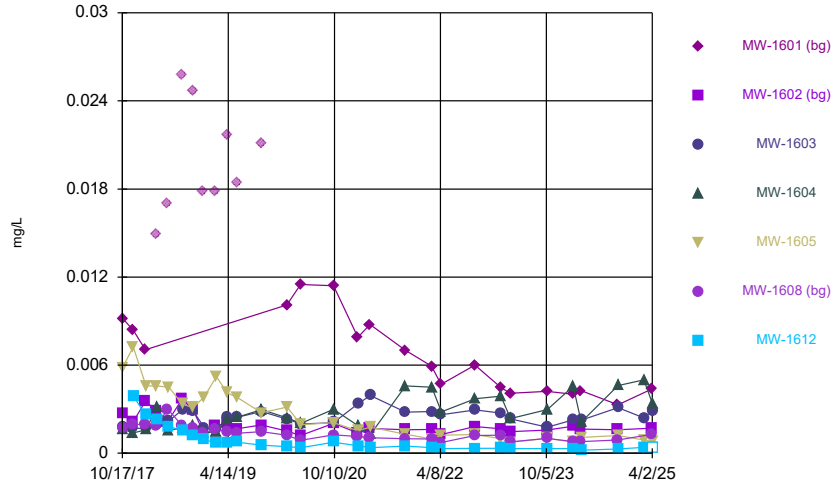
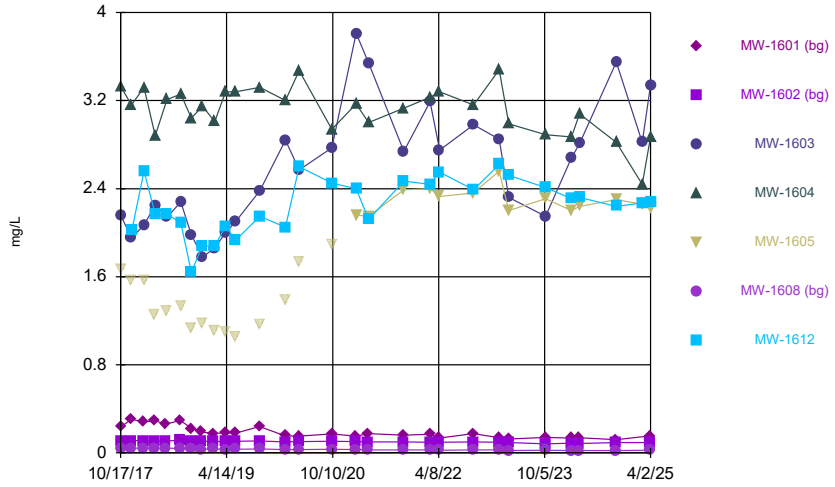
Time Series



Constituent: Arsenic total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Barium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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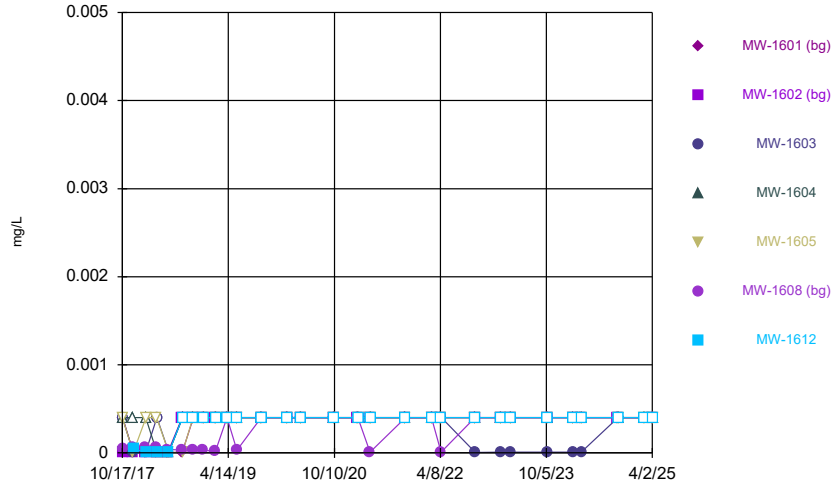
Time Series



Constituent: Beryllium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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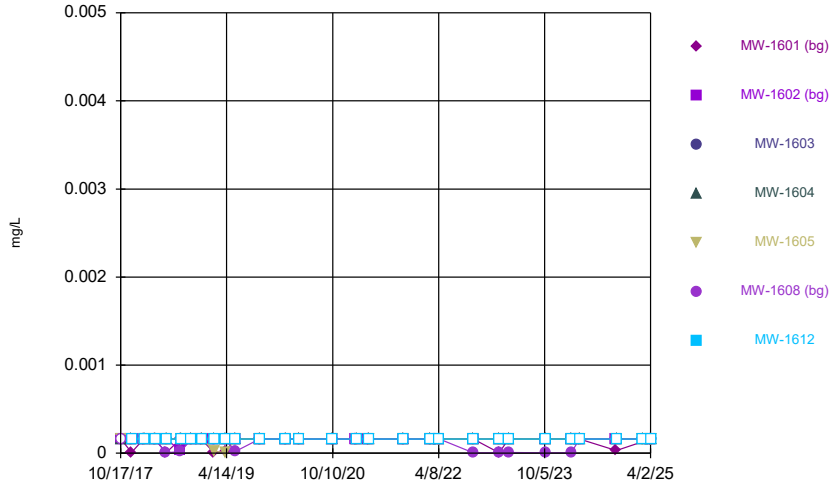
Time Series



Constituent: Cadmium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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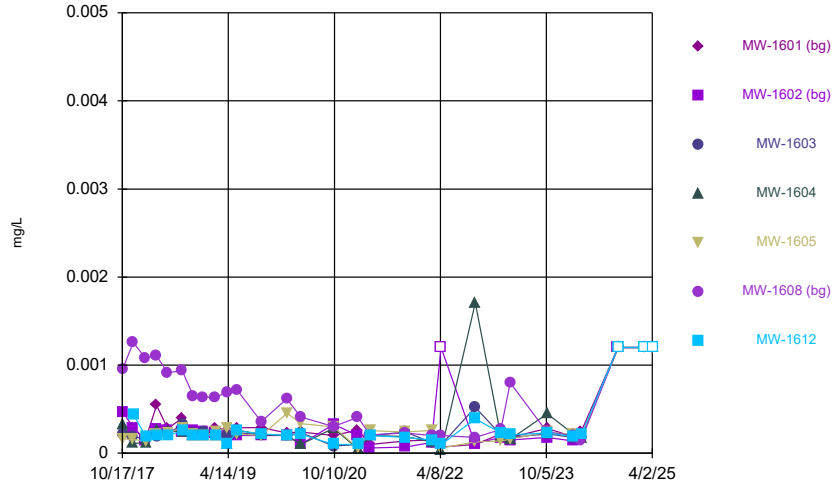
Time Series



Constituent: Chromium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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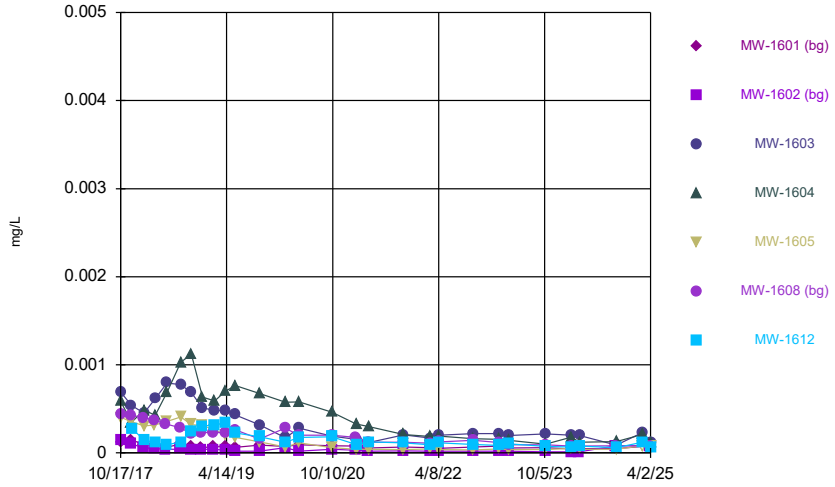
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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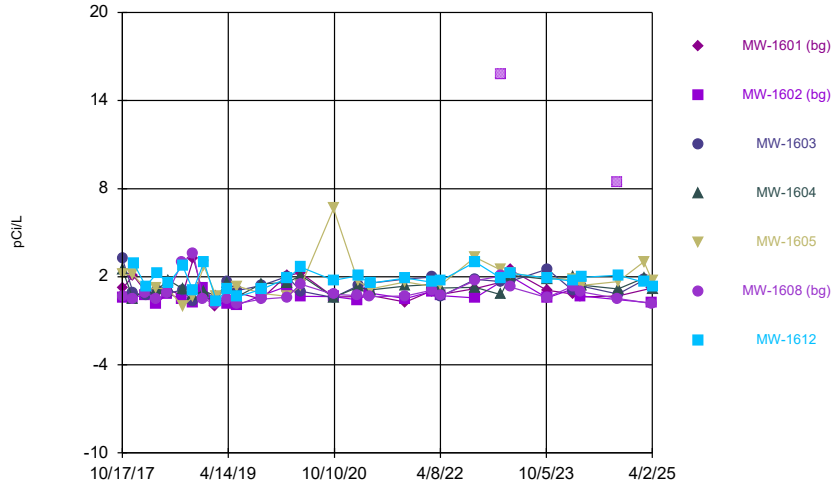
Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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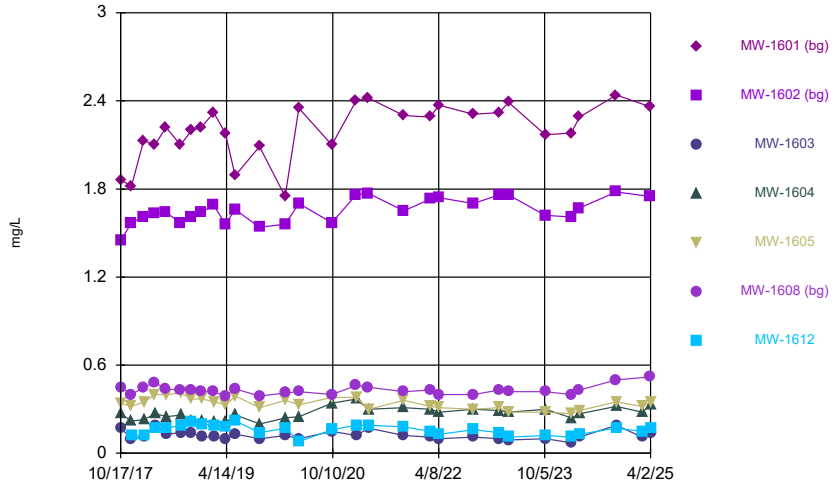
Time Series



Constituent: Fluoride total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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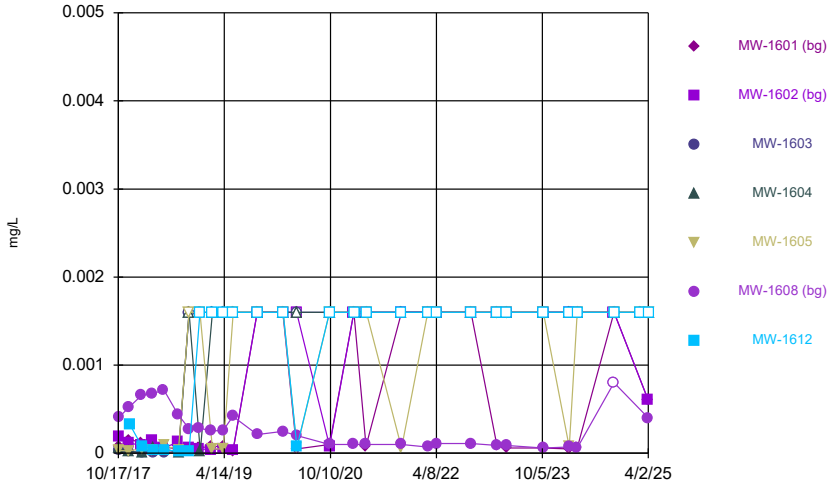
Hollow symbols indicate censored values.

Time Series



Constituent: Lead total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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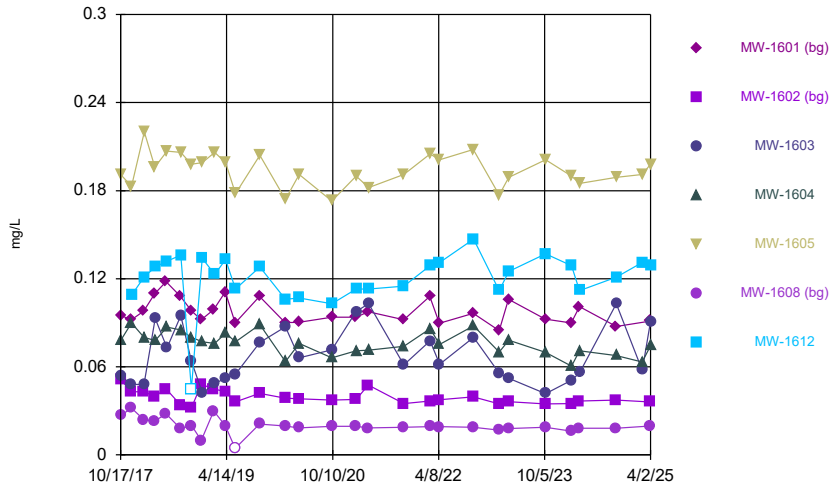
Time Series



Constituent: Lithium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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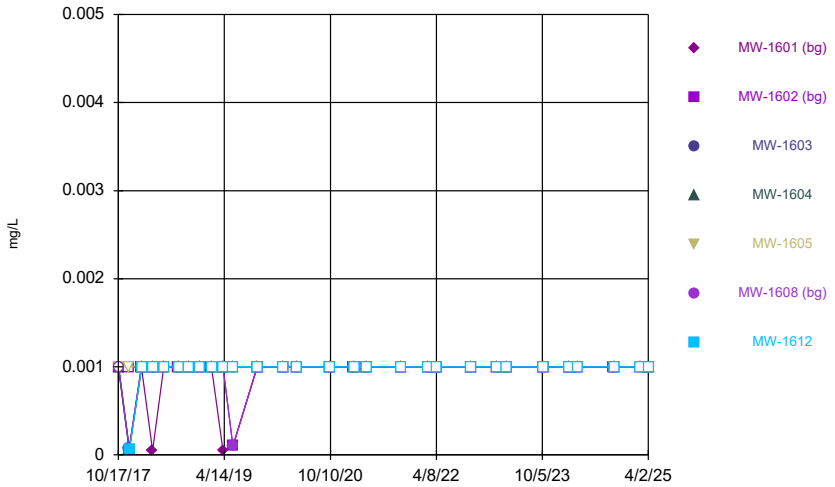
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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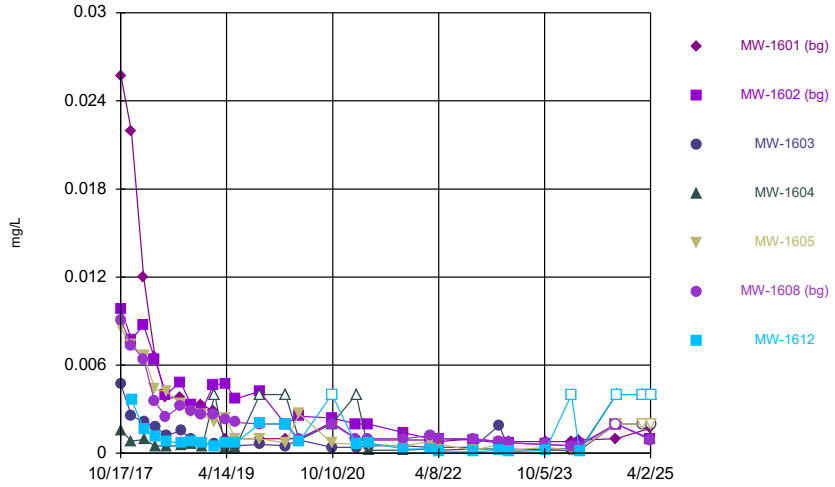
Time Series



Constituent: Molybdenum total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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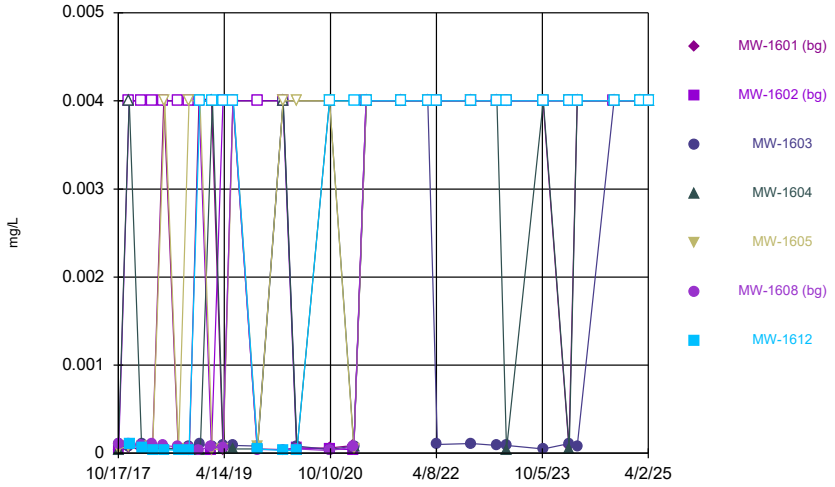
Time Series



Constituent: Selenium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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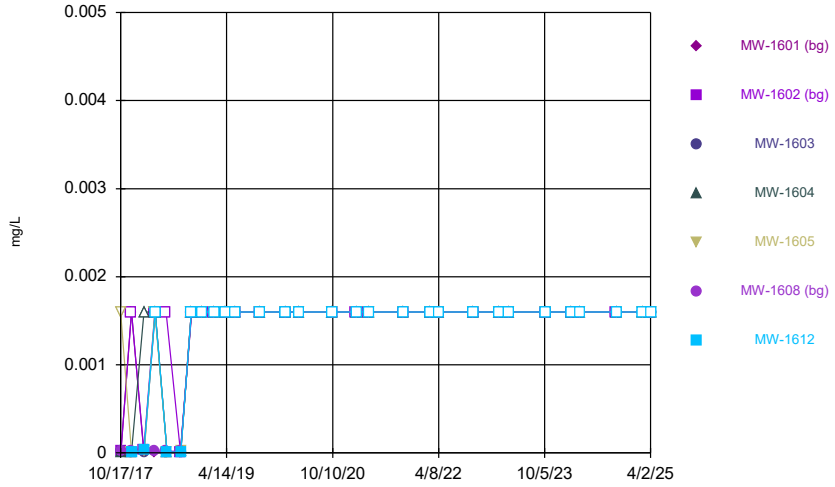
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium total Analysis Run 8/8/2025 11:03 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Time Series - Rome Limestone

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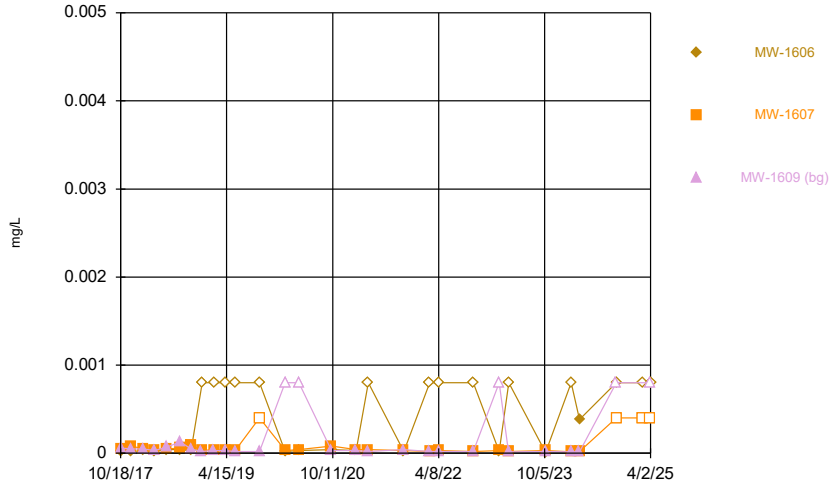
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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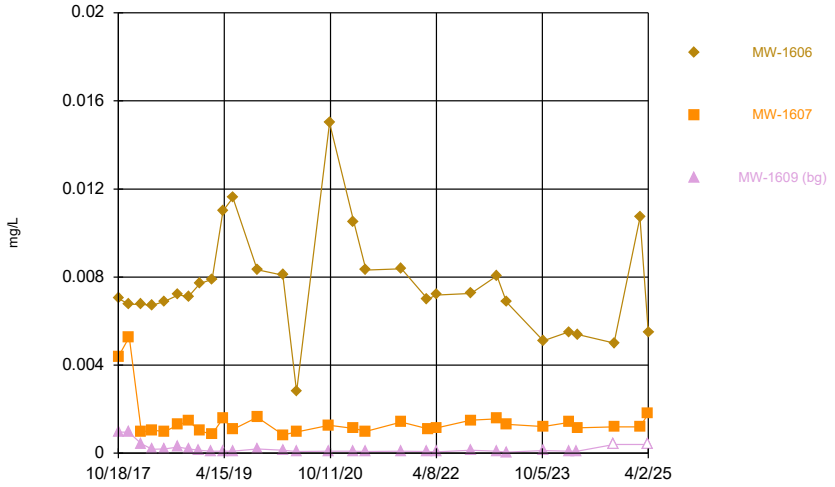
Time Series



Constituent: Arsenic total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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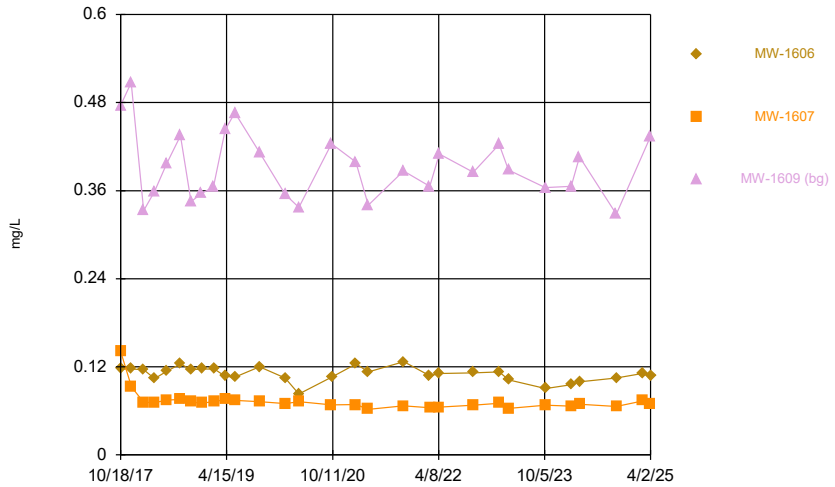
Time Series



Constituent: Barium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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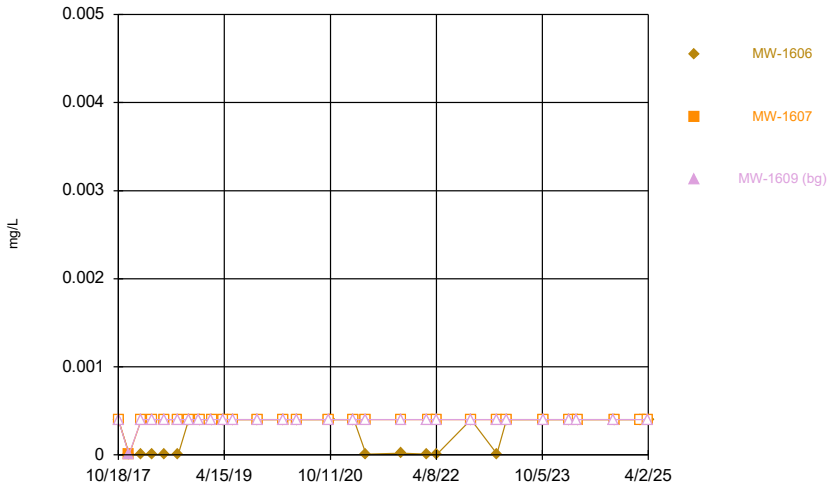
Time Series



Constituent: Beryllium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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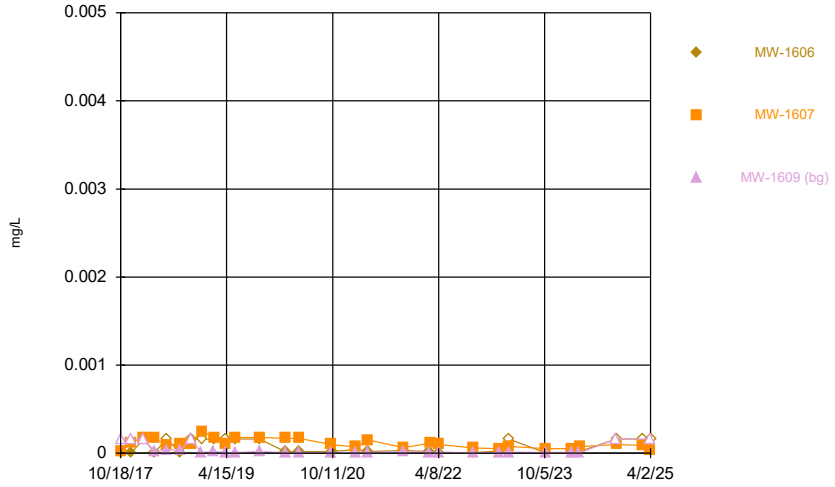
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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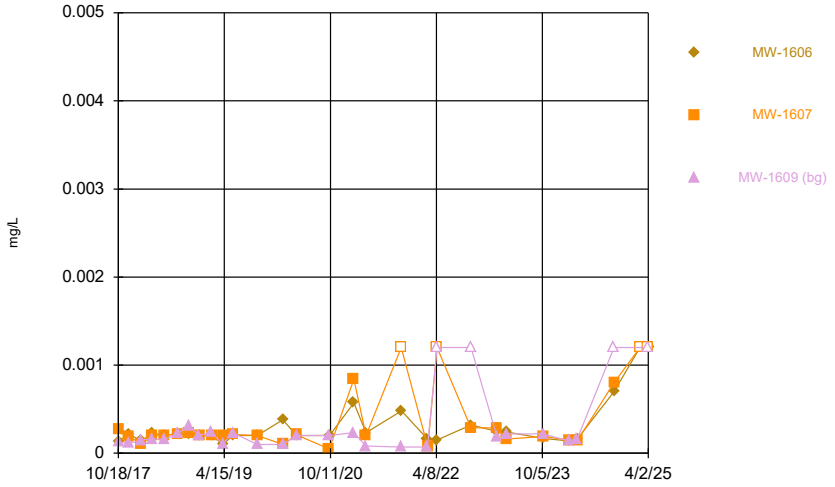
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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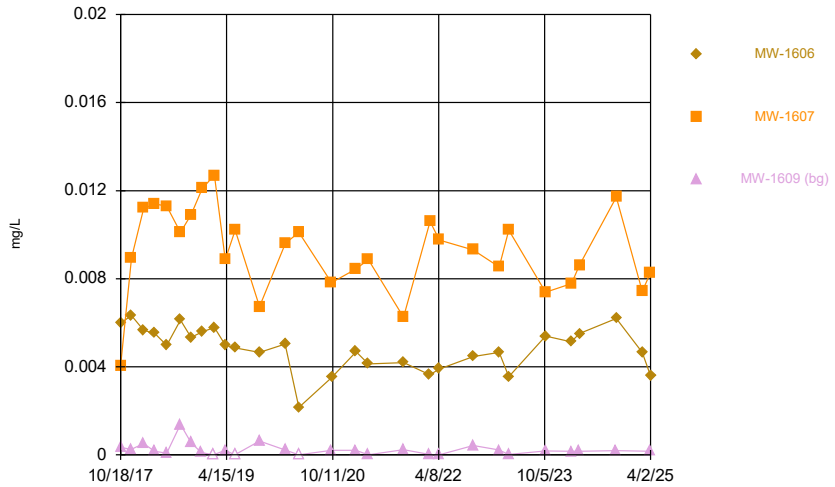
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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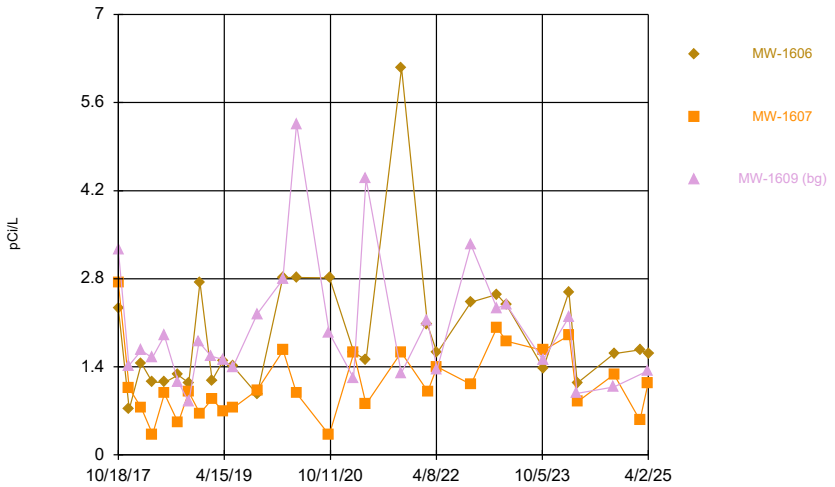
Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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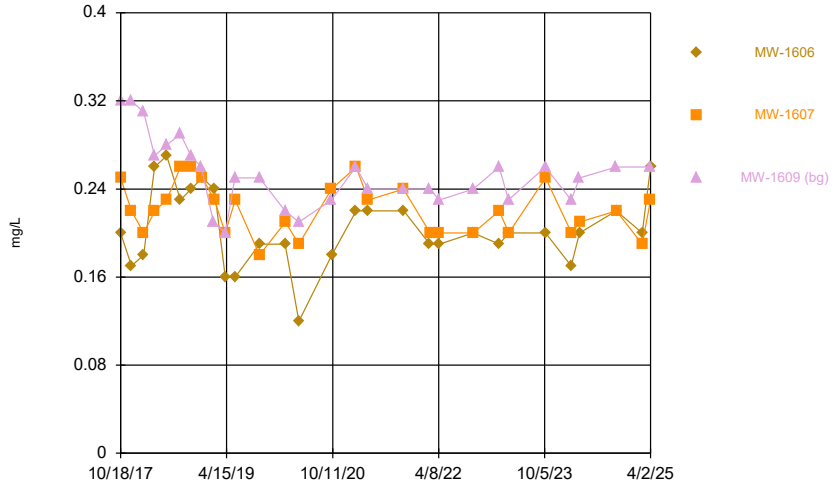
Time Series



Constituent: Fluoride total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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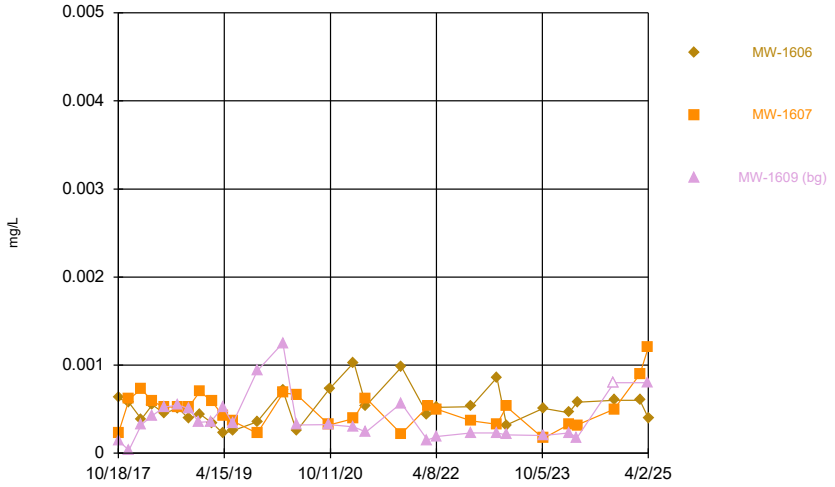
Time Series



Constituent: Lead total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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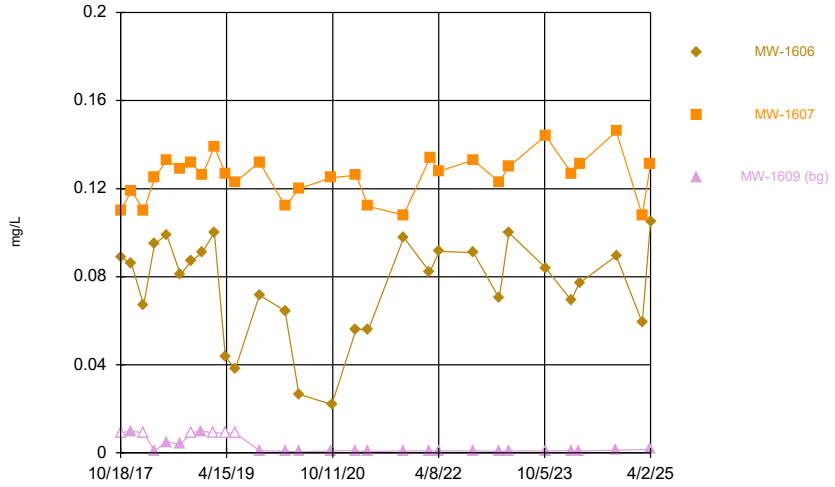
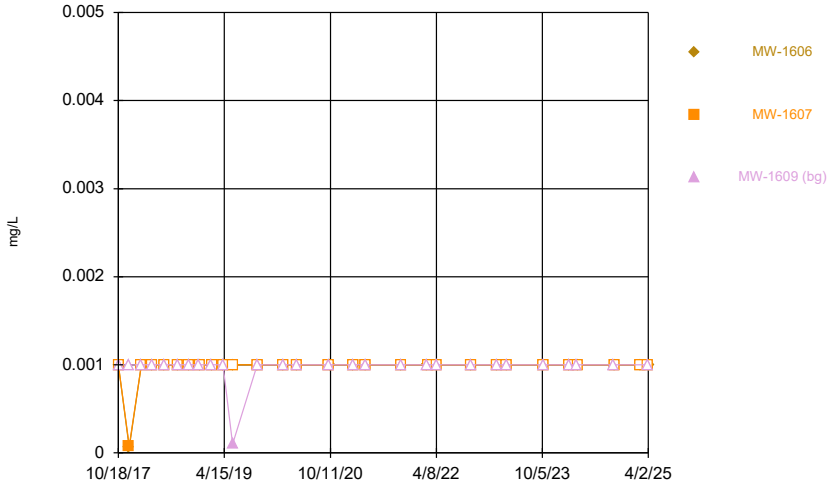
Time Series



Constituent: Lithium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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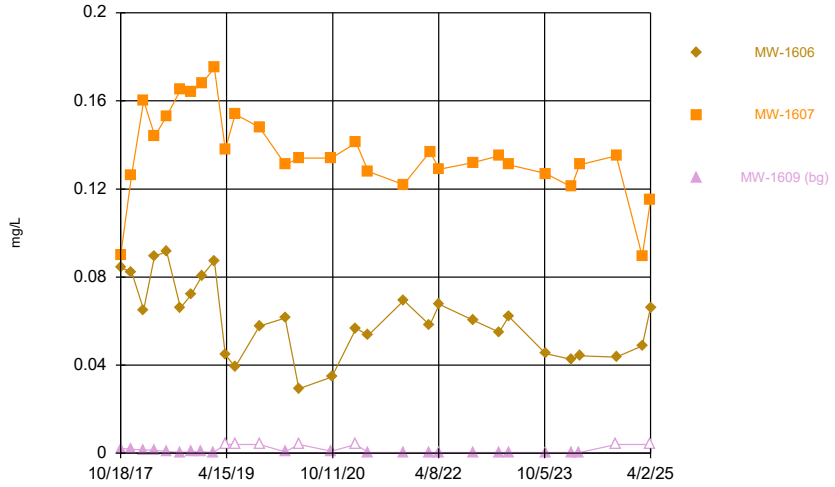
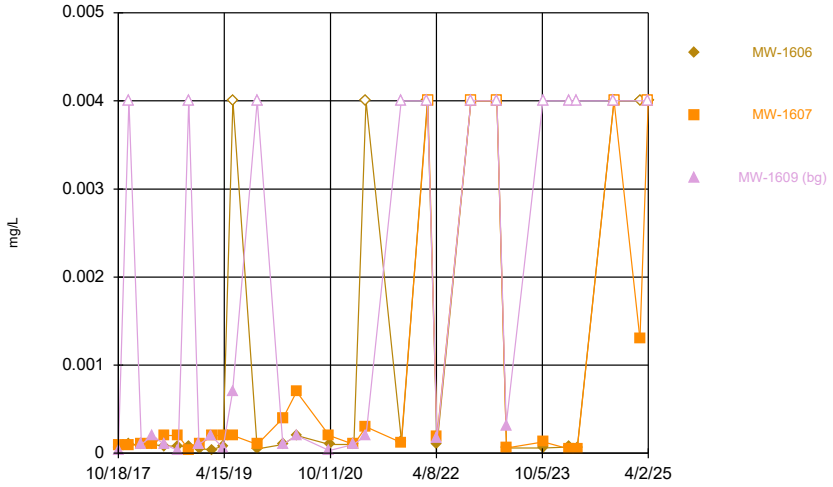
Time Series



Constituent: Molybdenum total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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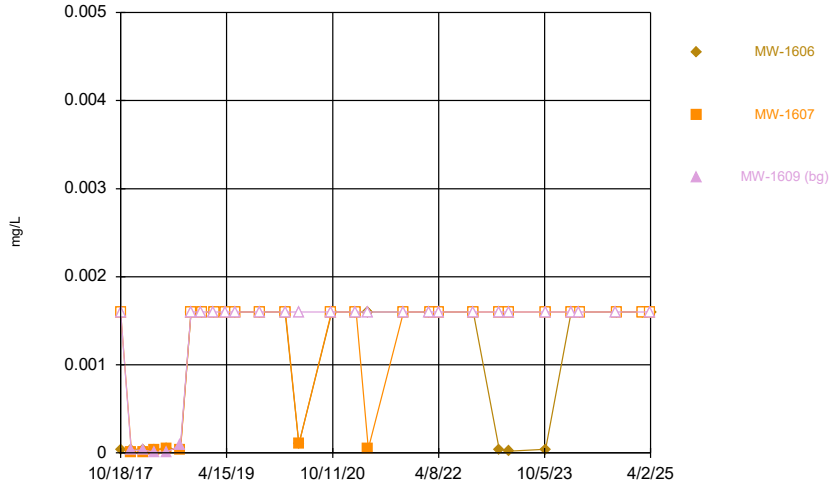
Time Series



Constituent: Thallium total Analysis Run 8/8/2025 11:24 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Time Series - Dumps Fault

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
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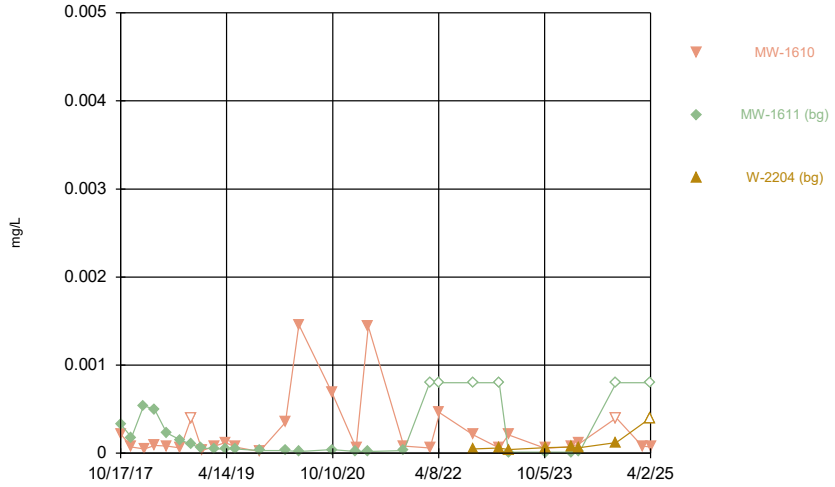
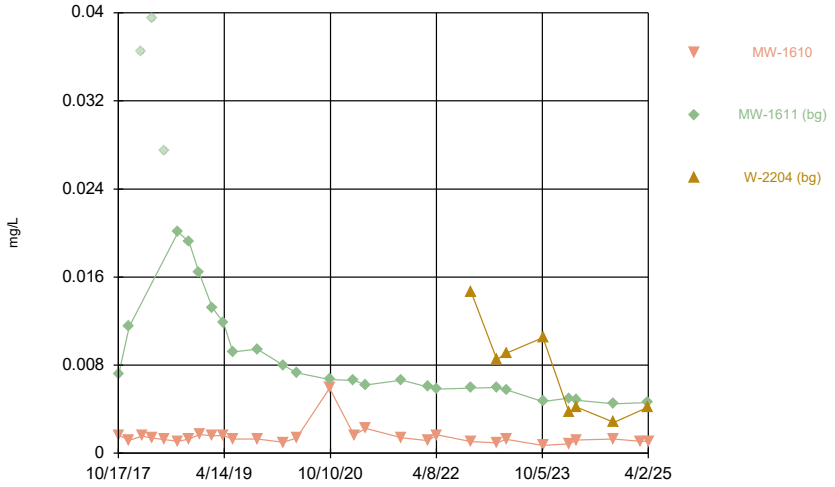
Time Series



Constituent: Antimony total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

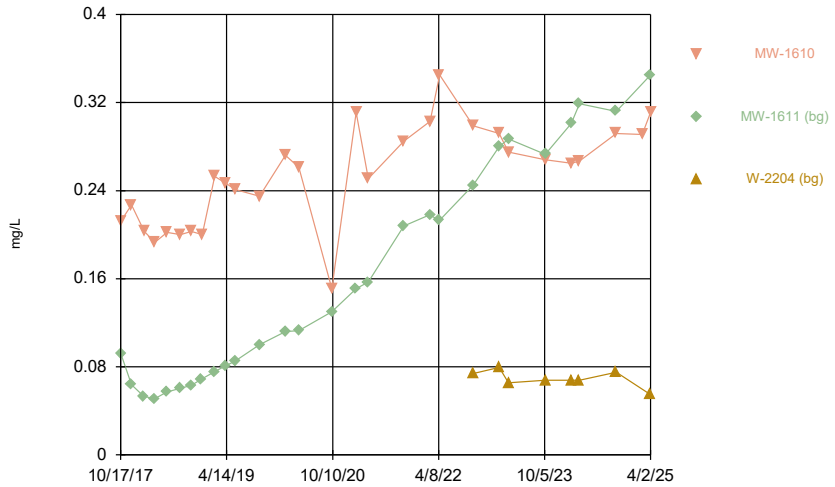
Time Series



Constituent: Arsenic total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Barium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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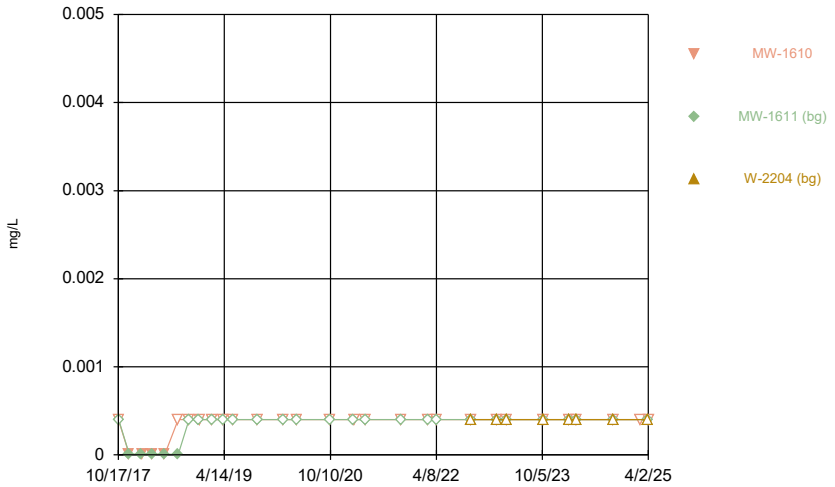
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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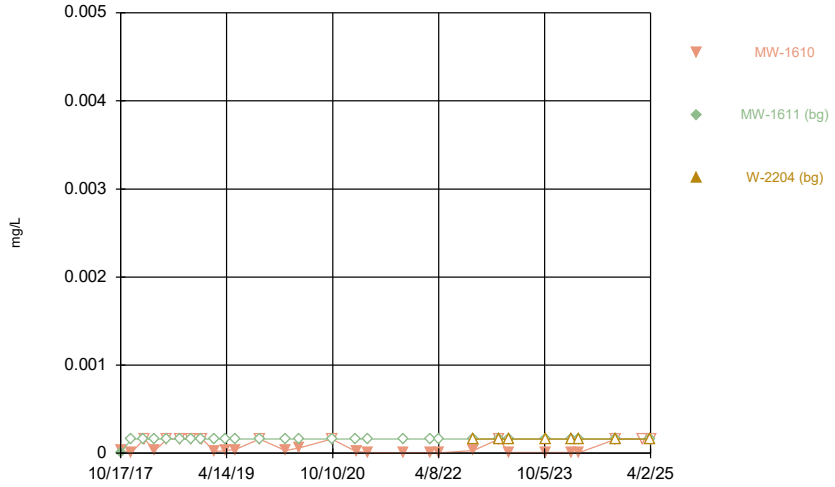
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
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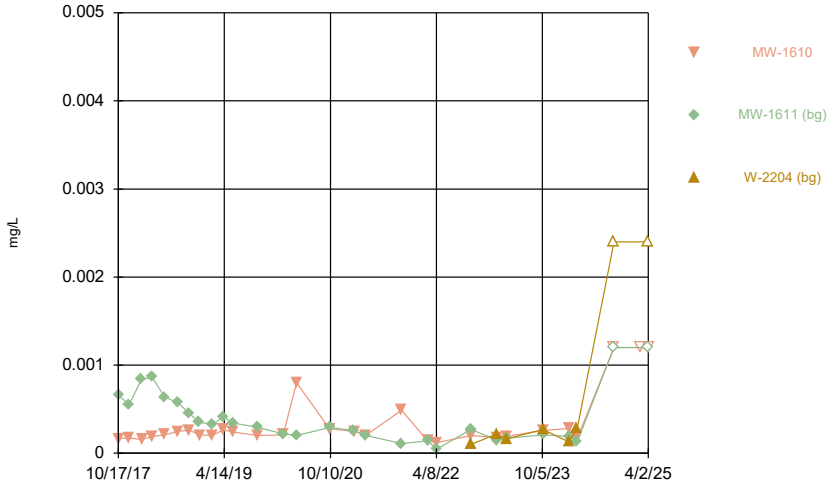
Hollow symbols indicate censored values.

Time Series



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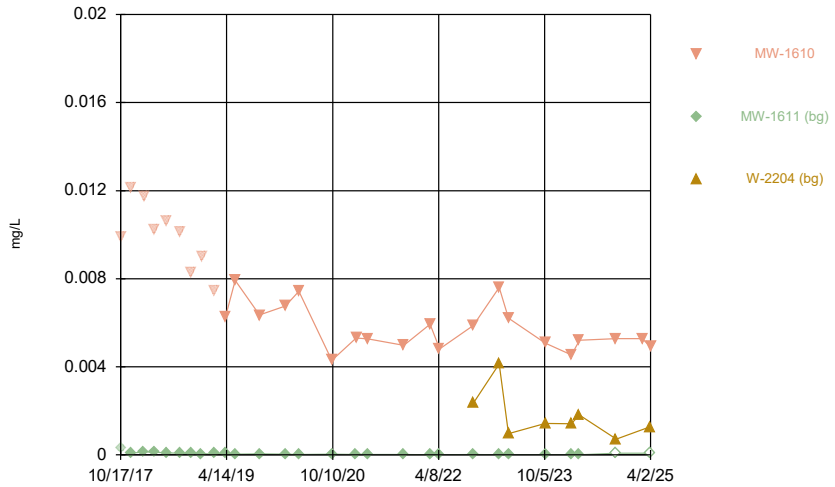
Hollow symbols indicate censored values.

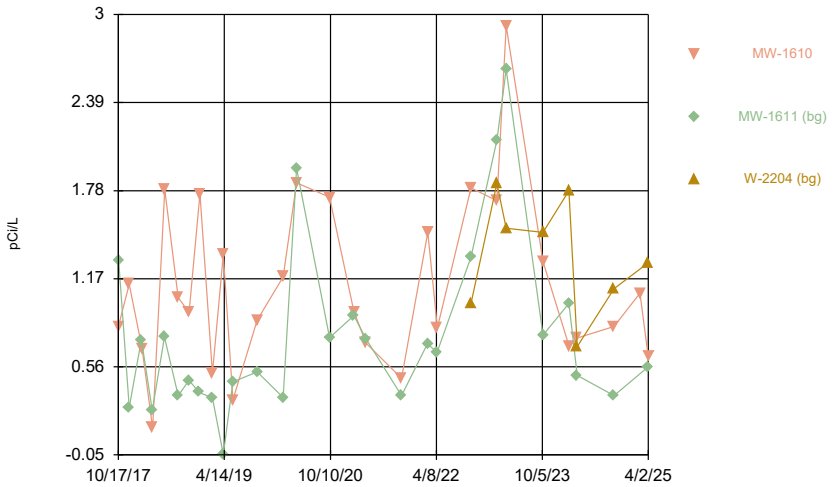
Time Series



Constituent: Cobalt total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Combined Radium 226 and 228 Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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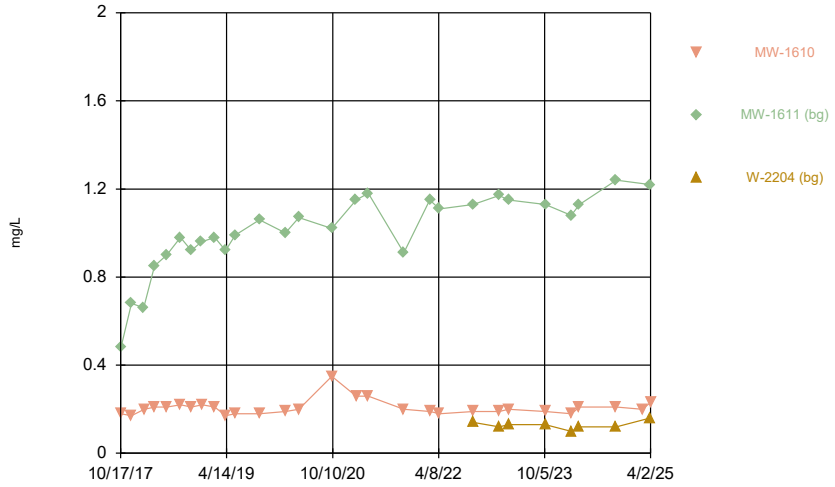
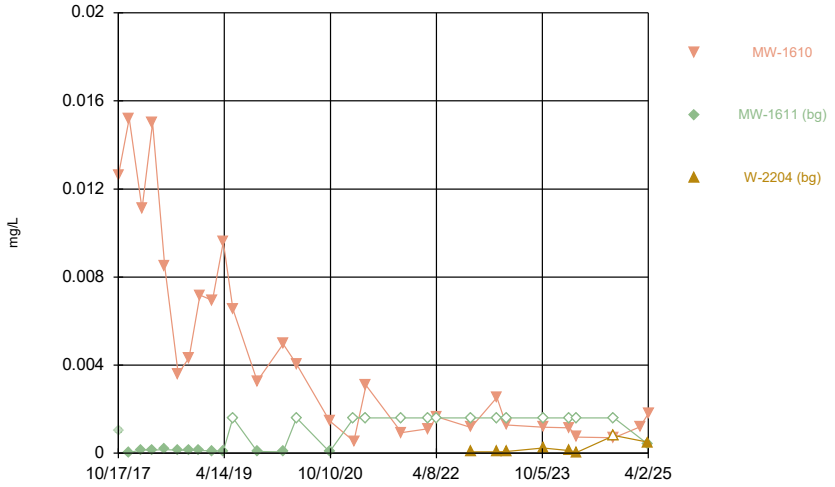
Time Series



Constituent: Fluoride total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Lead total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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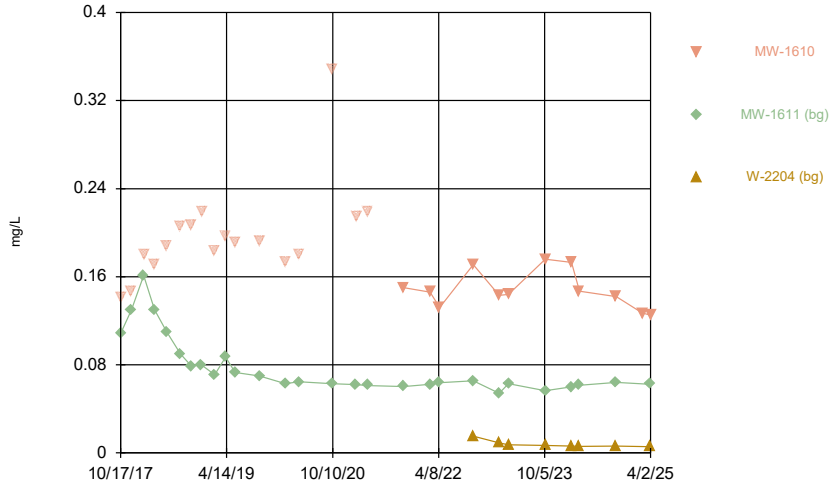
Time Series



Constituent: Lithium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
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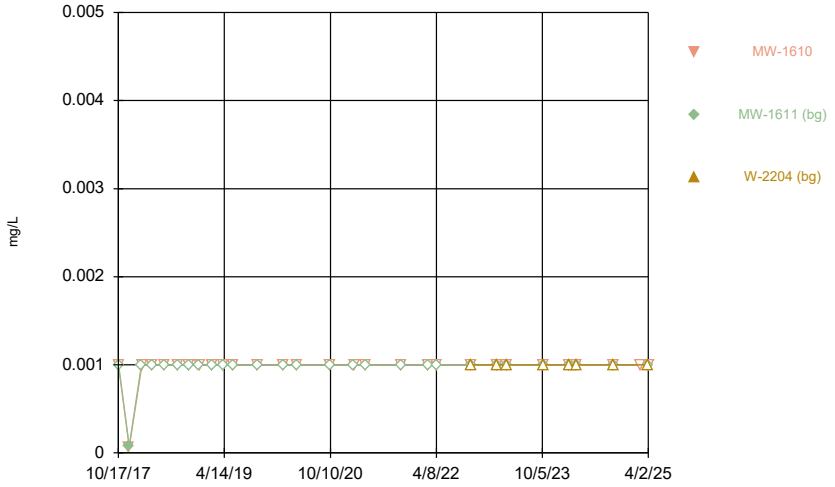
Hollow symbols indicate censored values.

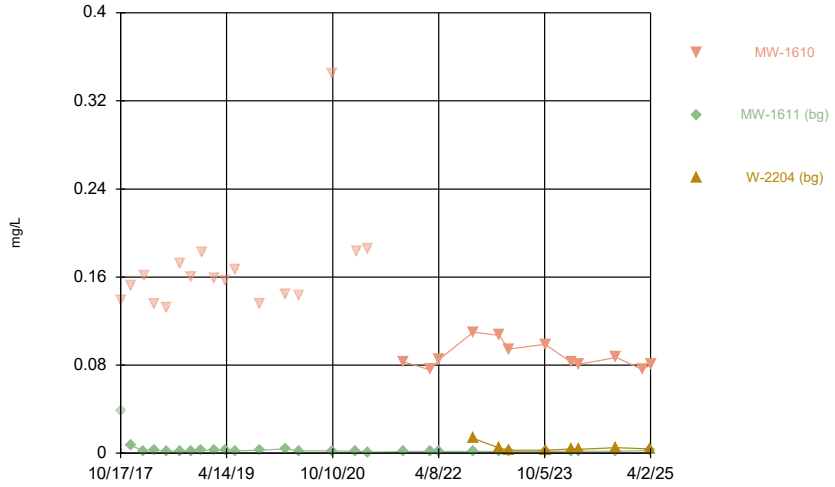
Time Series



Constituent: Mercury total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Molybdenum total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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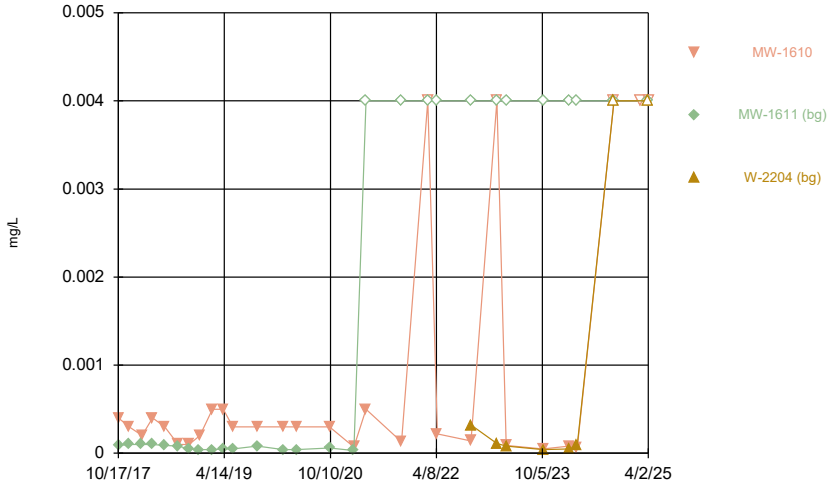
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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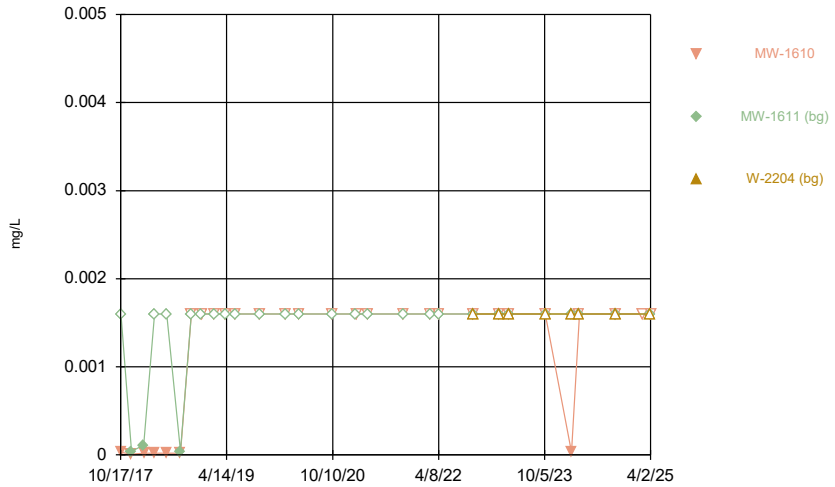
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium total Analysis Run 8/11/2025 4:02 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

FIGURE B.

Box Plots - Chattanooga Shale

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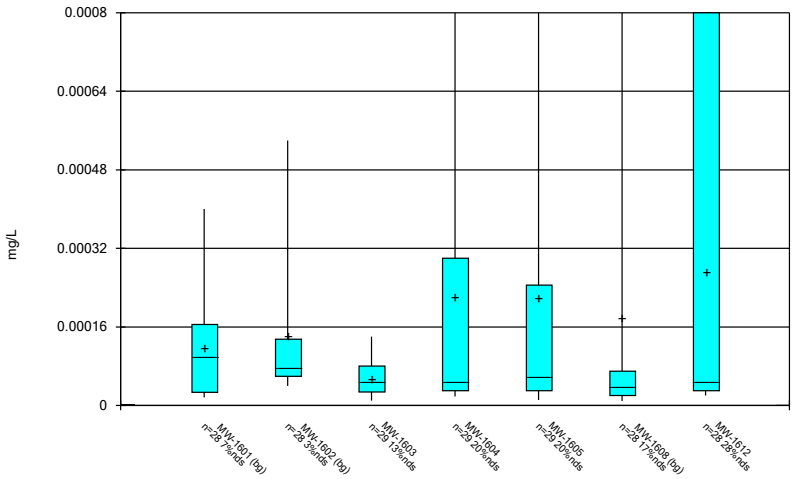
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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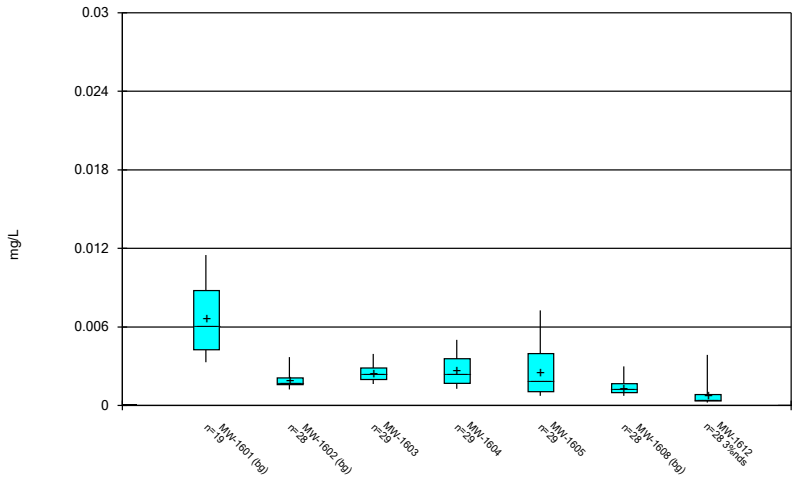
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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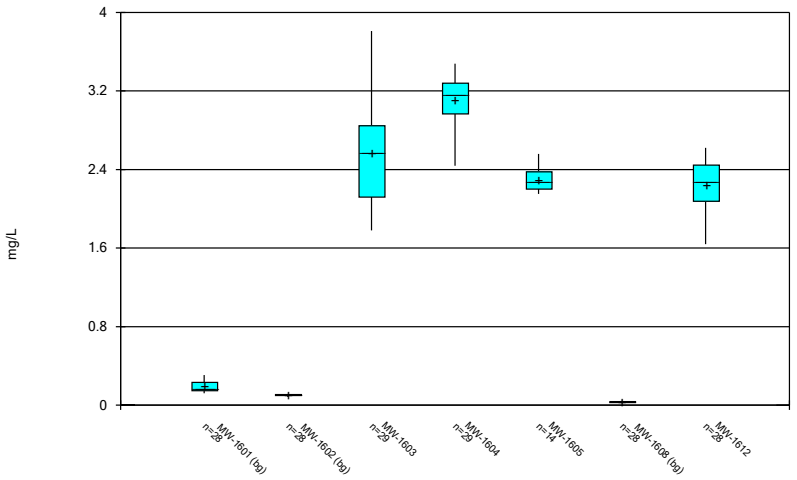
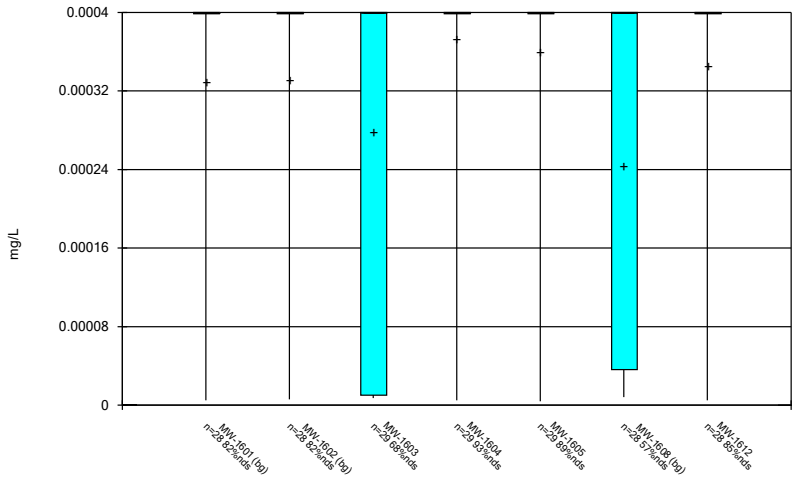
Box & Whiskers Plot



Constituent: Barium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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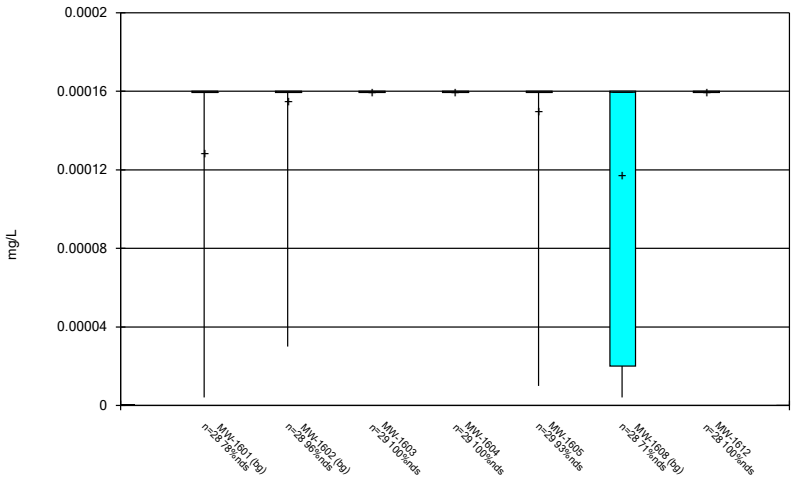
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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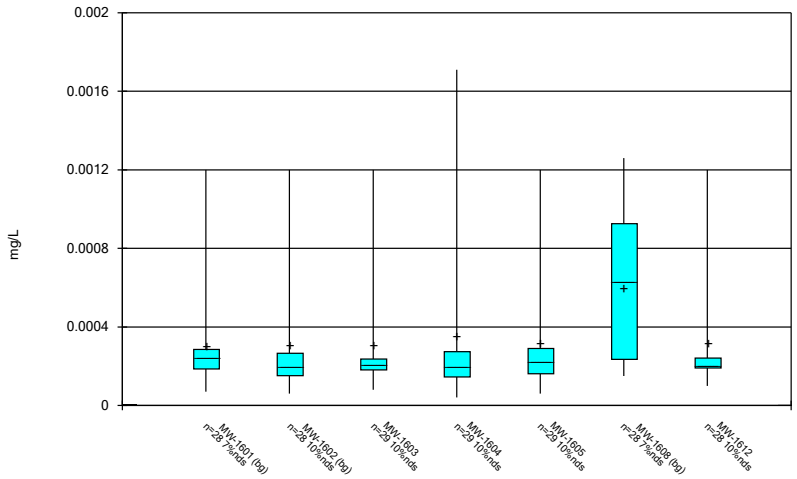
Box & Whiskers Plot



Constituent: Chromium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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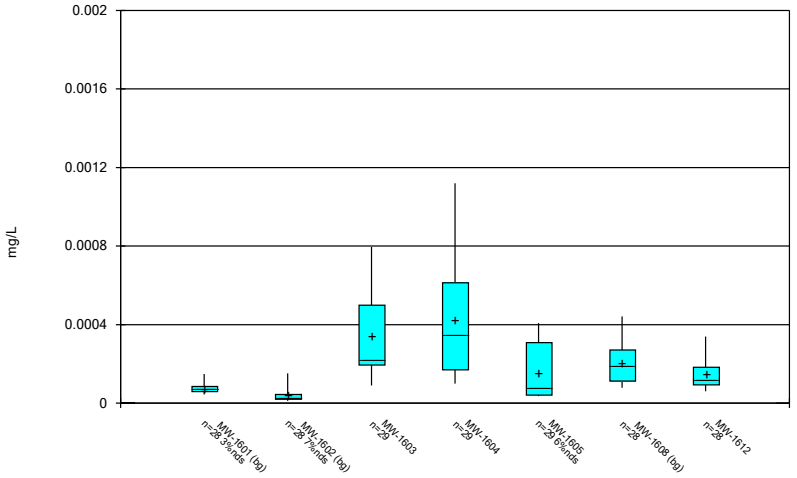
Box & Whiskers Plot



Constituent: Cobalt total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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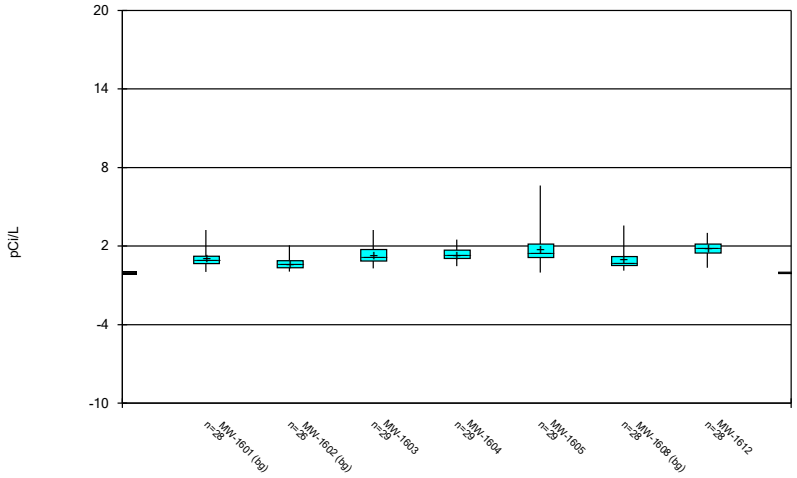
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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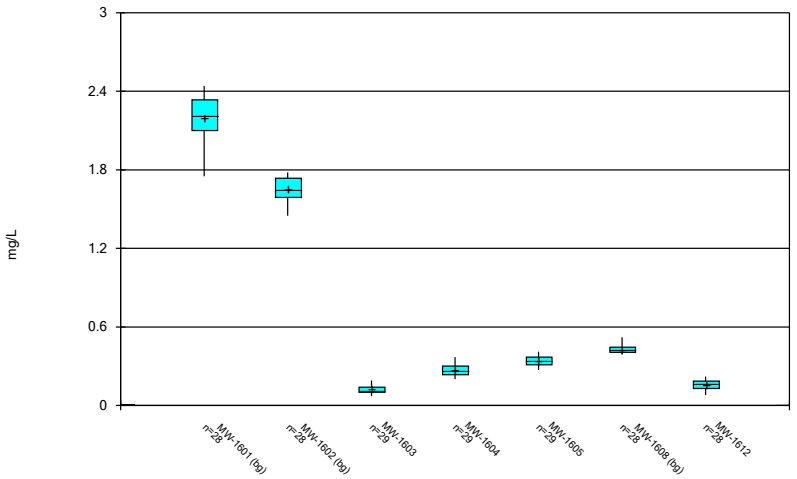
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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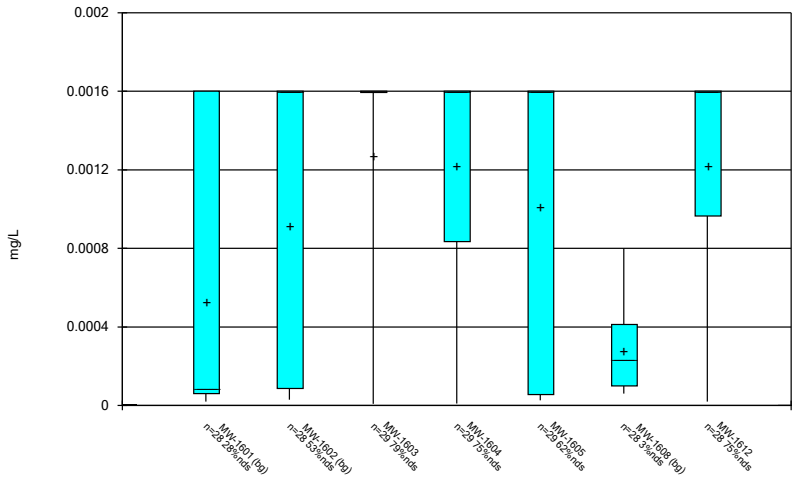
Box & Whiskers Plot



Constituent: Lead total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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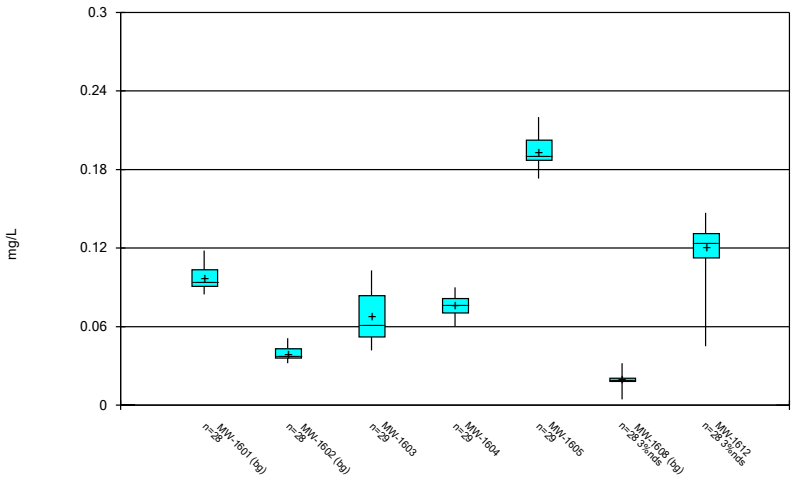
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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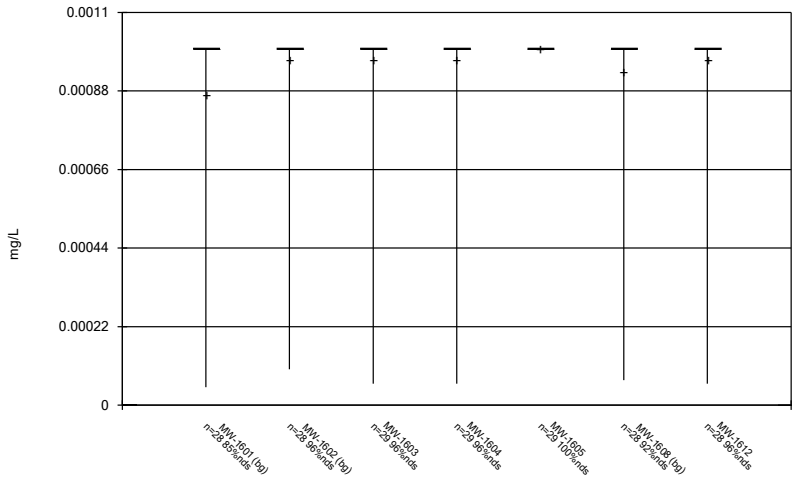
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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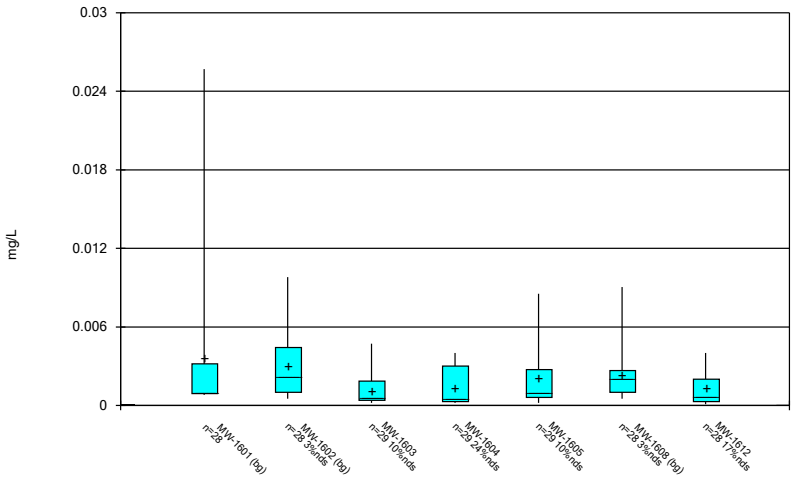
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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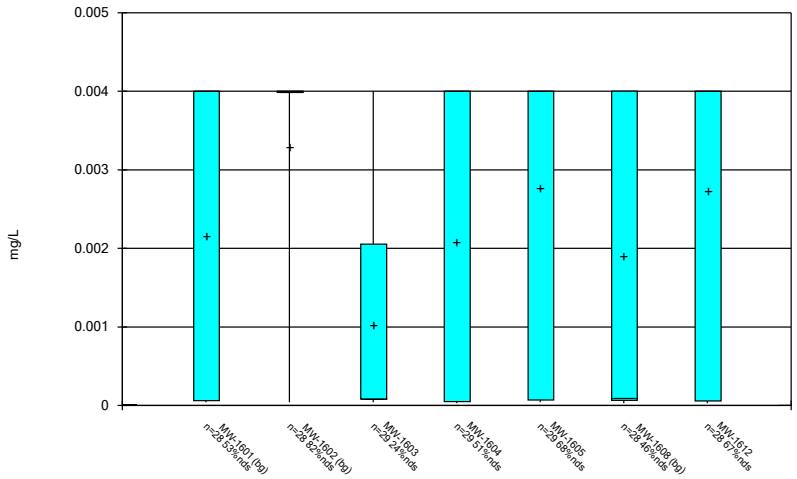
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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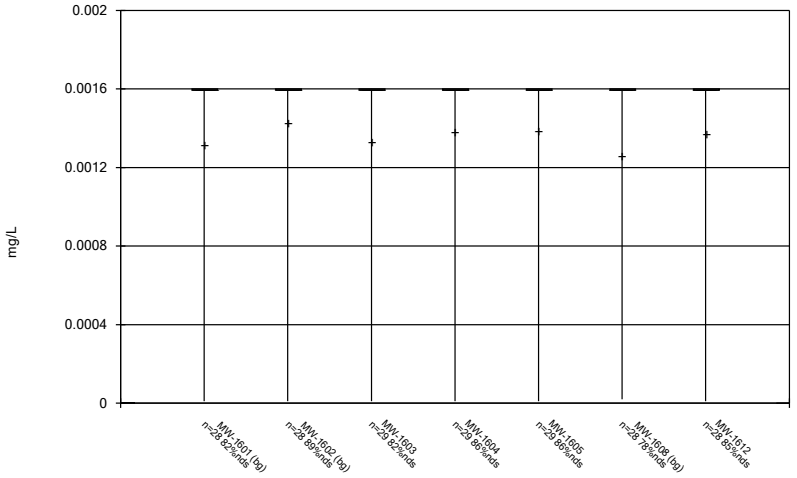
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 8/8/2025 11:07 AM View: Chattanooga Shale - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Box Plots - Rome Limestone

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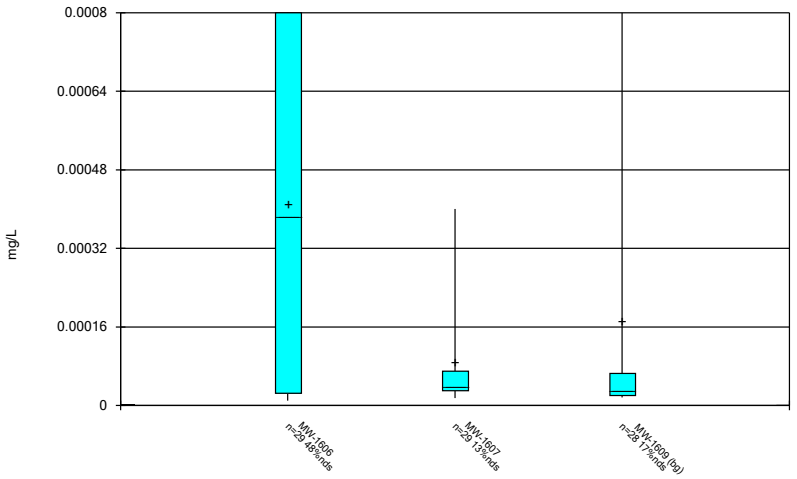
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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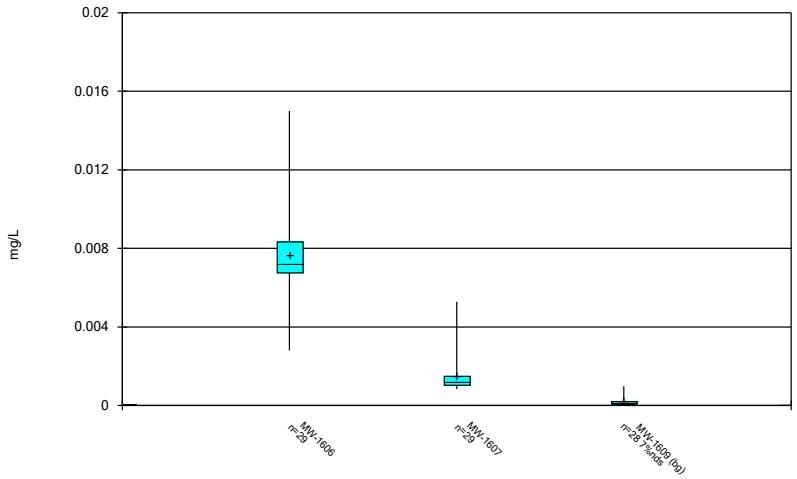
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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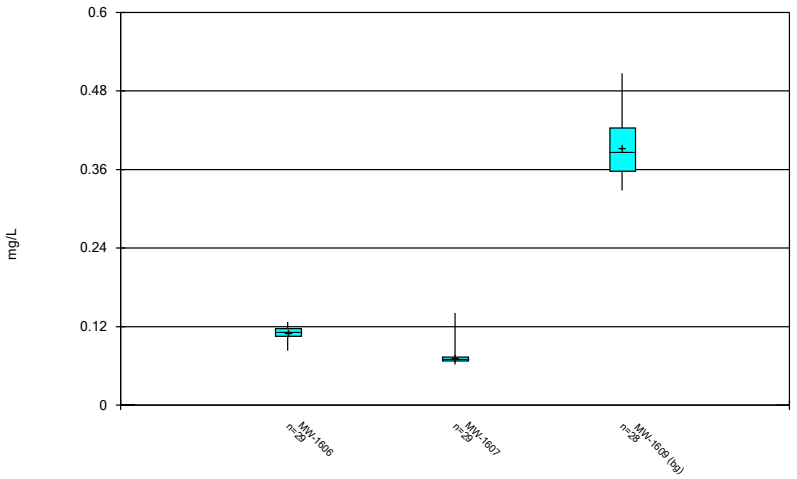
Box & Whiskers Plot



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Clinch River Client: AEP Data: Clinch River Pond 1

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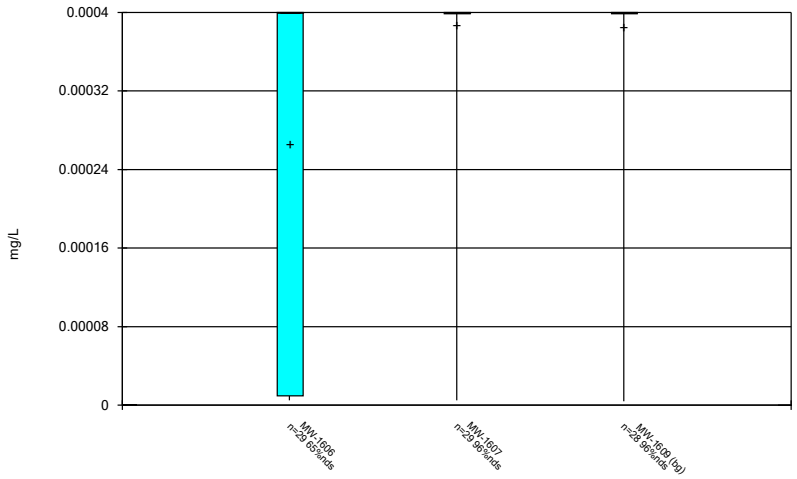
Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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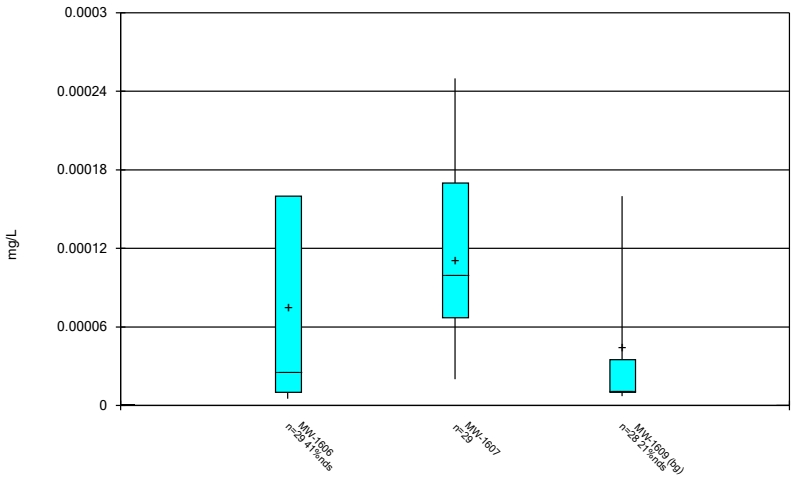
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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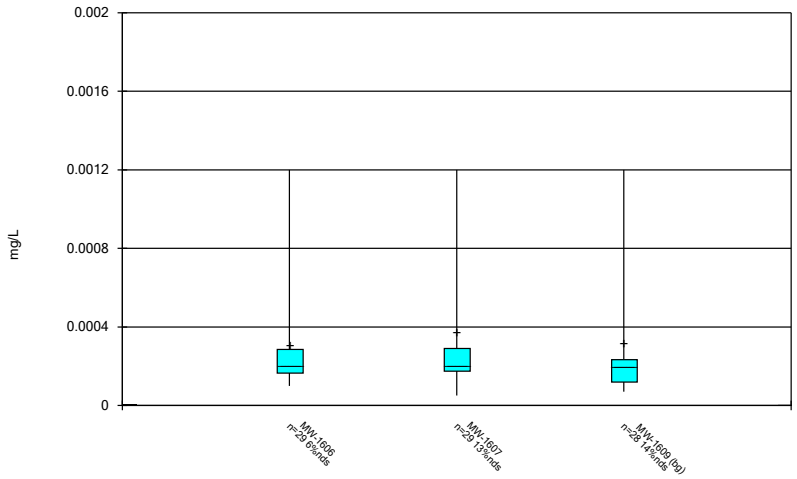
Box & Whiskers Plot



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Clinch River Client: AEP Data: Clinch River Pond 1

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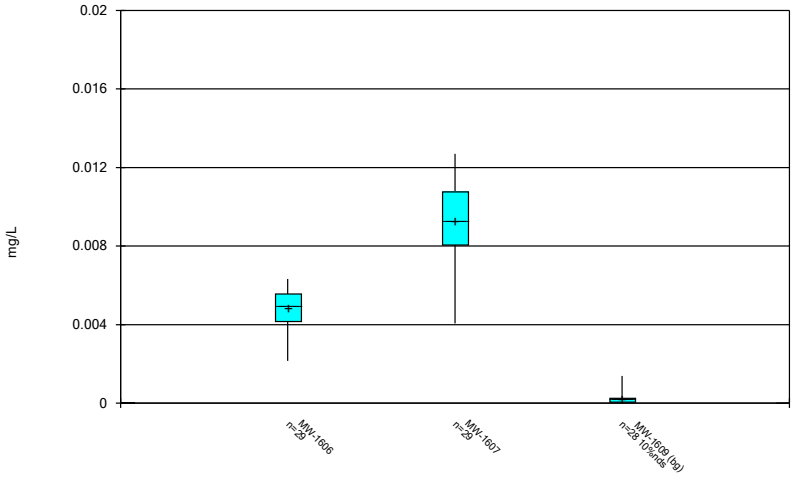
Box & Whiskers Plot



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Clinch River Client: AEP Data: Clinch River Pond 1

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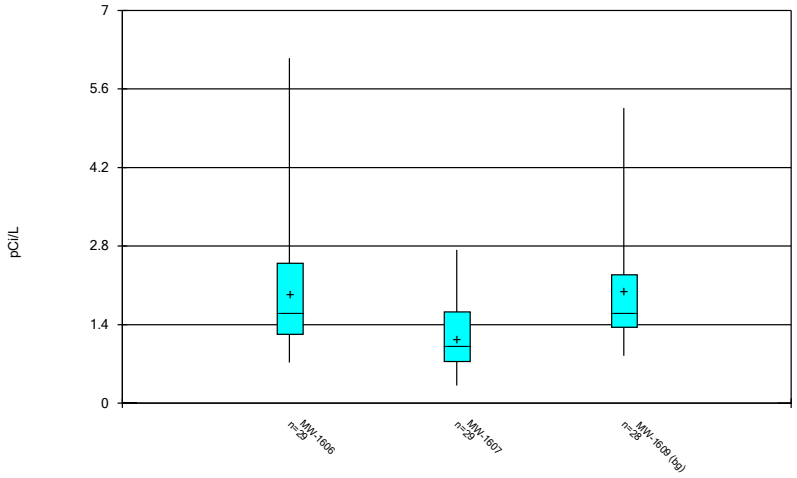
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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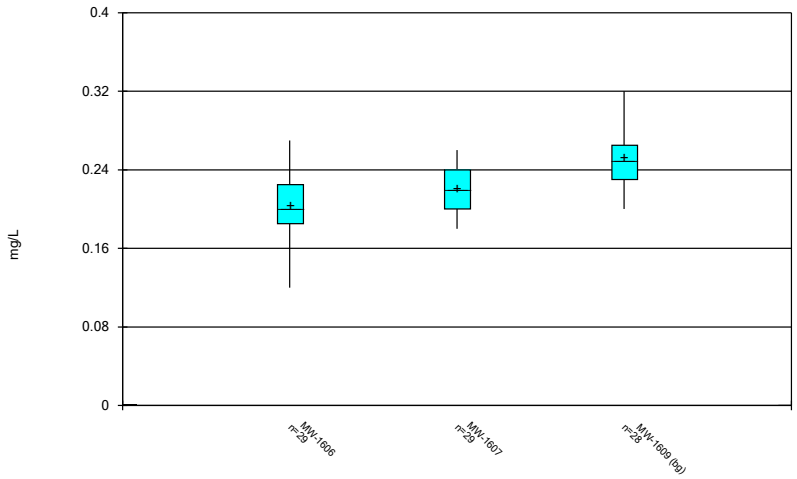
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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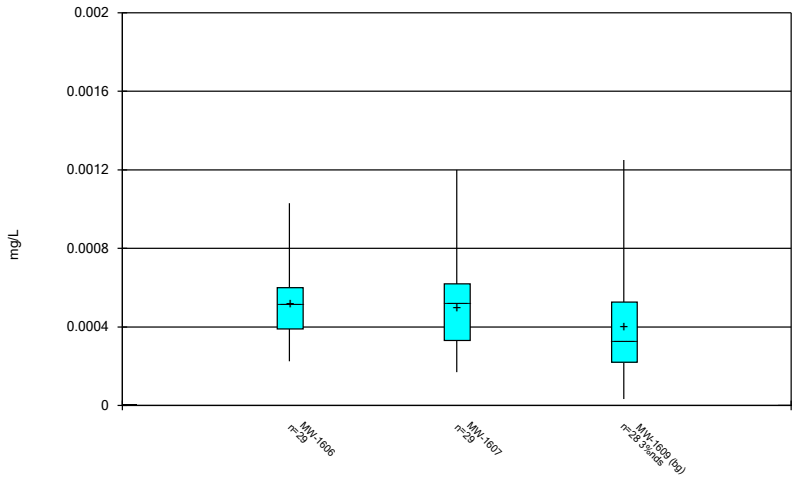
Box & Whiskers Plot



Constituent: Lead total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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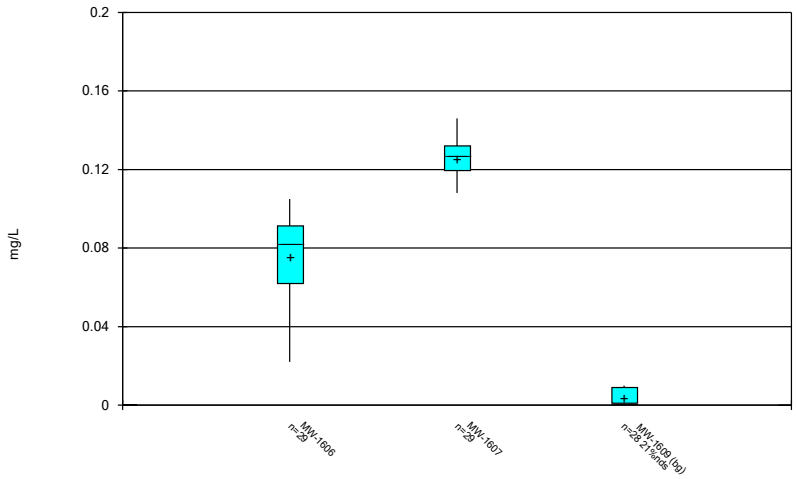
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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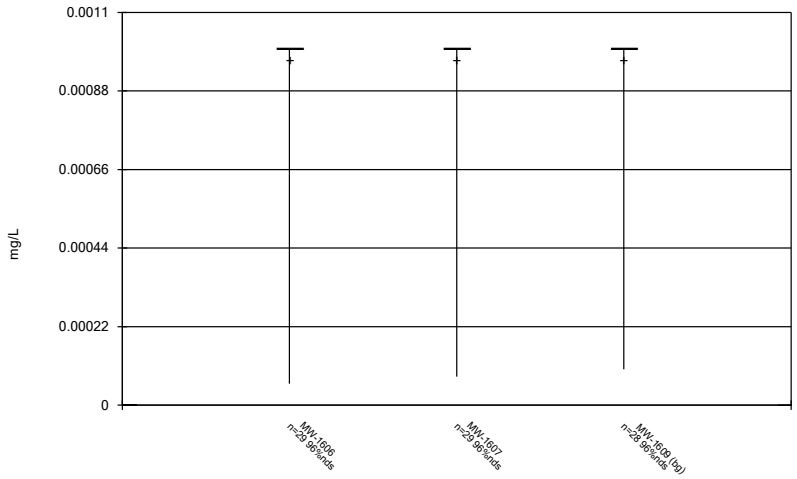
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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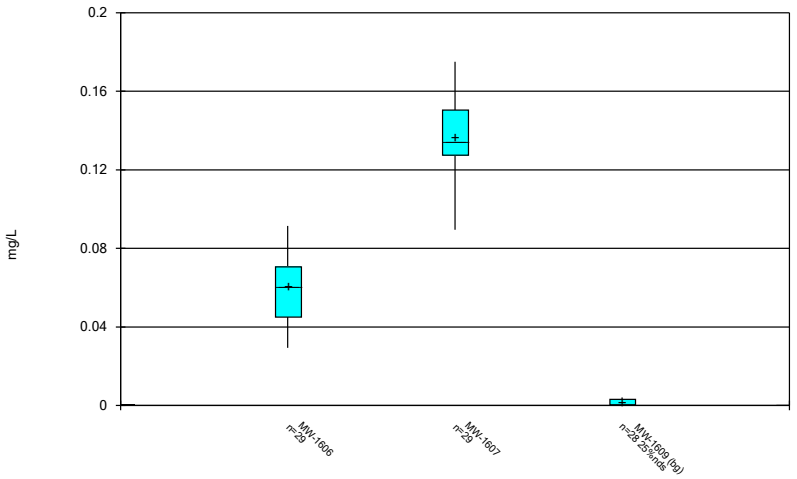
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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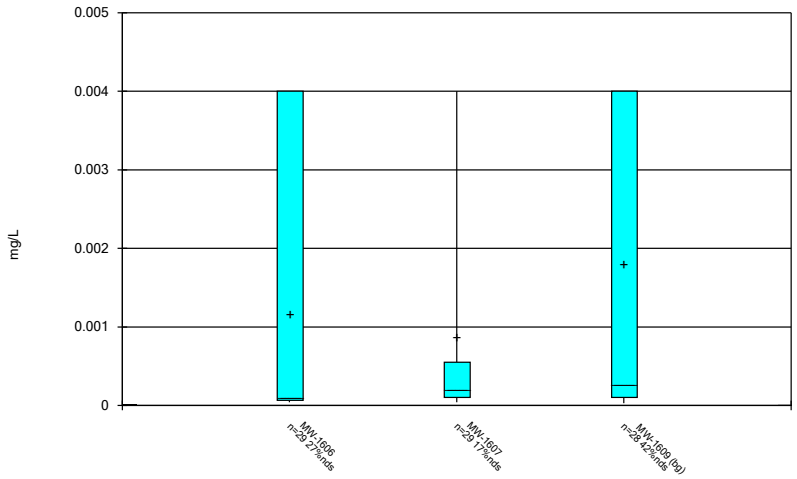
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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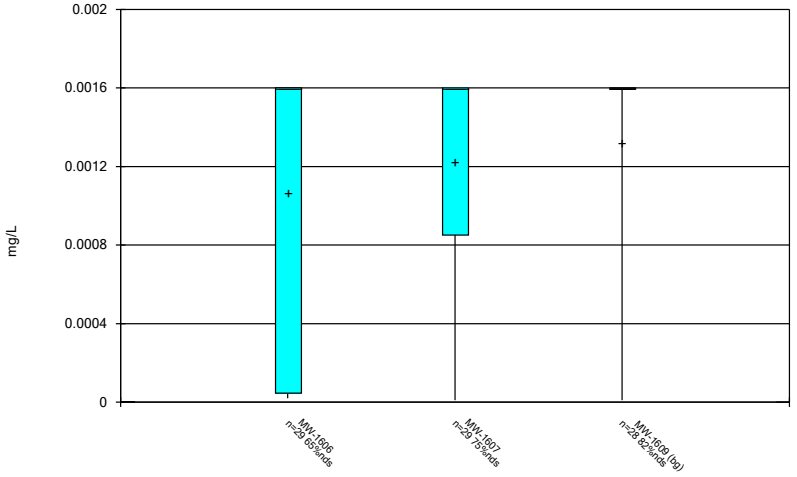
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 8/8/2025 11:27 AM View: Rome Limestone - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Box Plots - Dumps Fault

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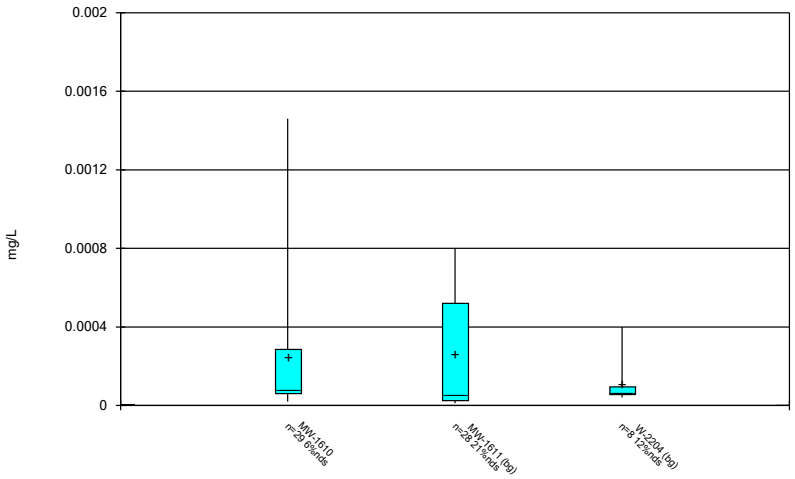
Box & Whiskers Plot



Constituent: Antimony total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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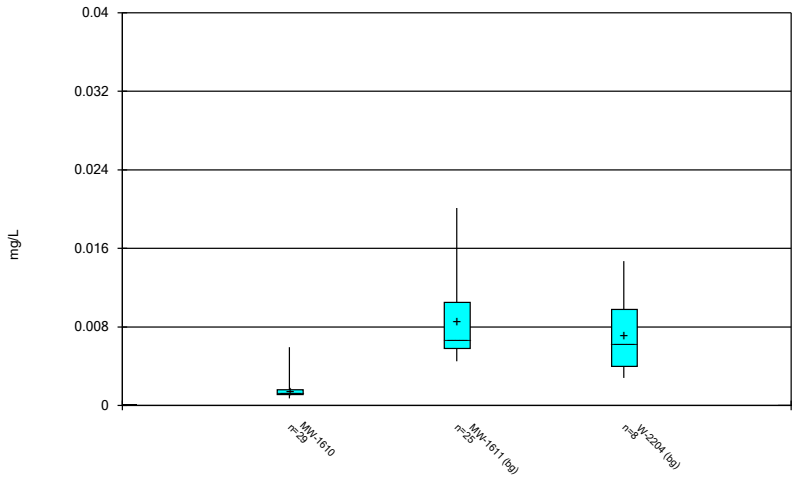
Box & Whiskers Plot



Constituent: Arsenic total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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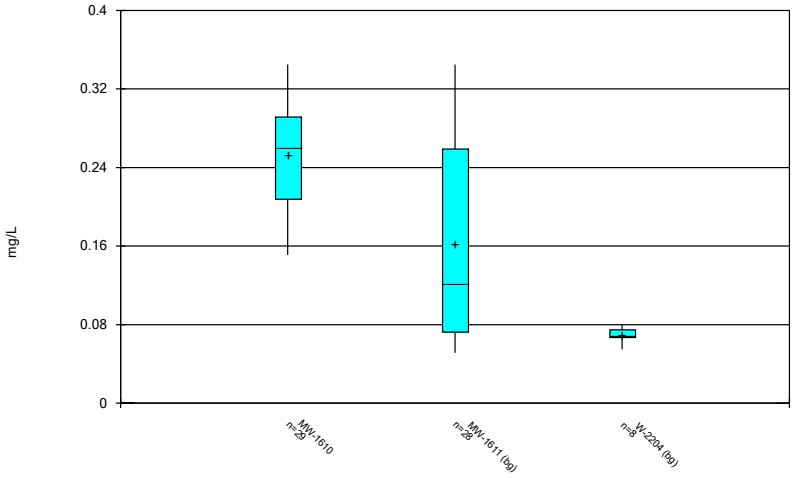
Box & Whiskers Plot



Constituent: Barium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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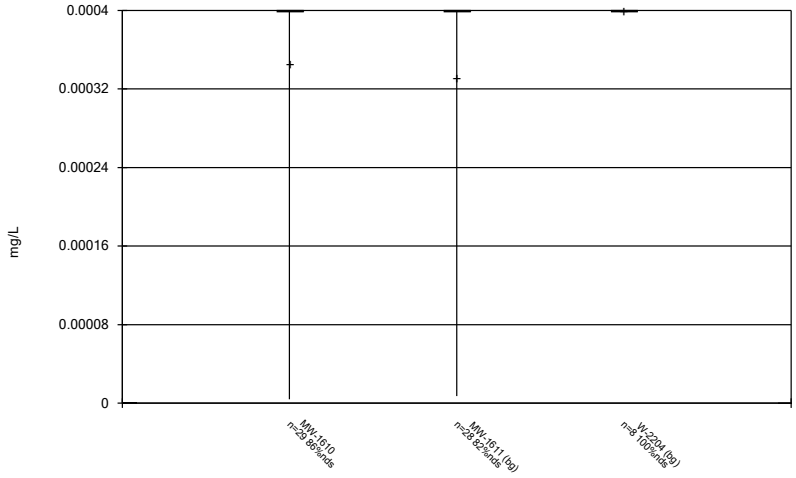
Box & Whiskers Plot



Constituent: Beryllium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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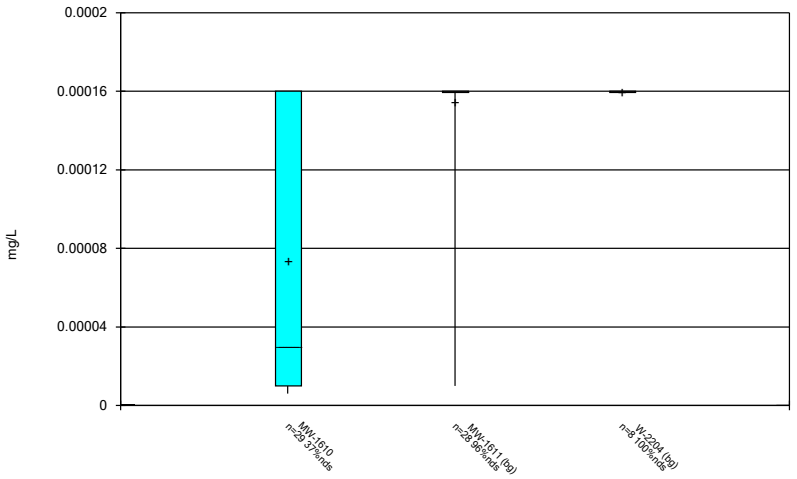
Box & Whiskers Plot



Constituent: Cadmium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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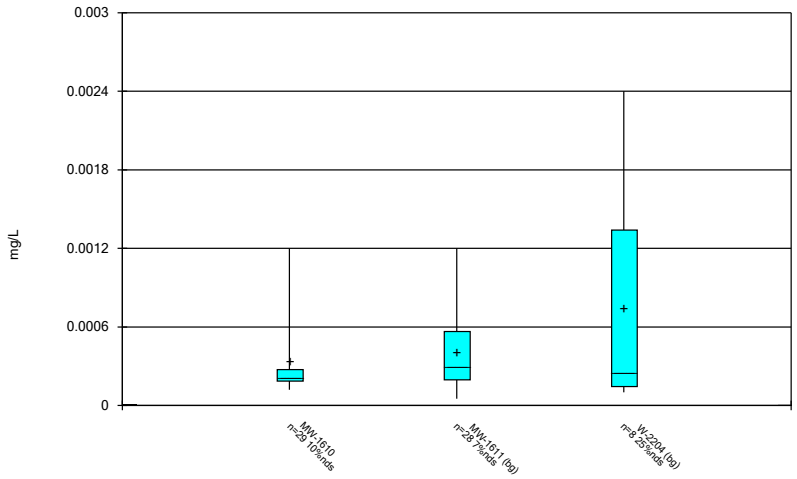
Box & Whiskers Plot



Constituent: Chromium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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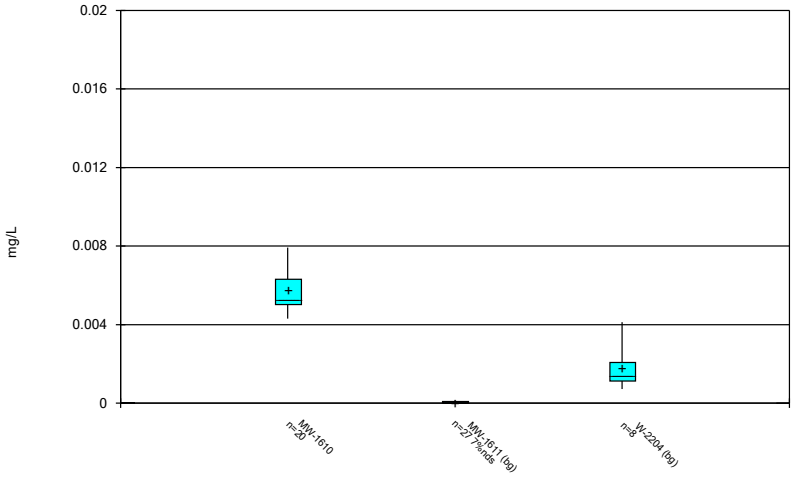
Box & Whiskers Plot



Constituent: Cobalt total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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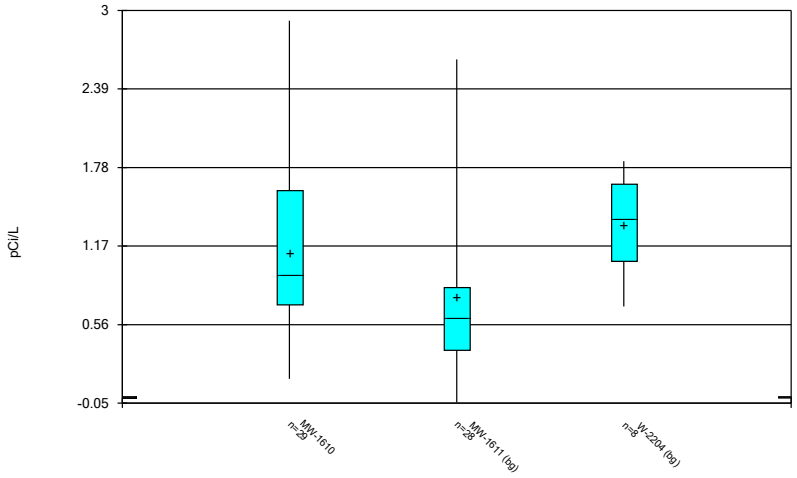
Box & Whiskers Plot



Constituent: Combined Radium 226 and 228 Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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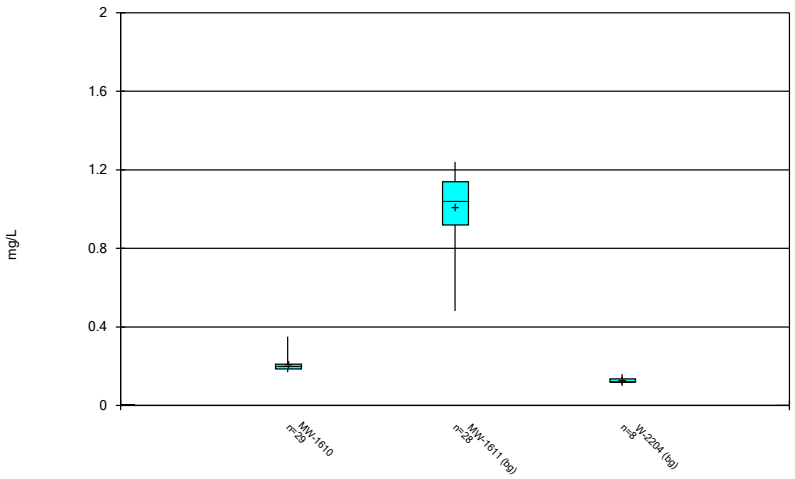
Box & Whiskers Plot



Constituent: Fluoride total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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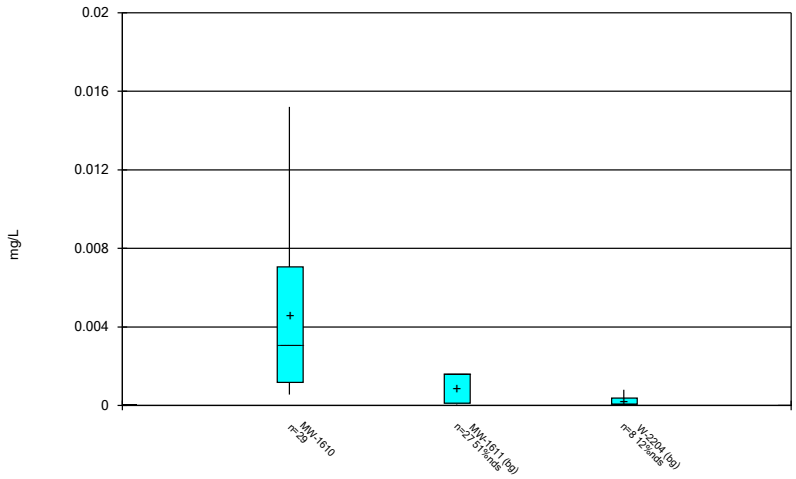
Box & Whiskers Plot



Constituent: Lead total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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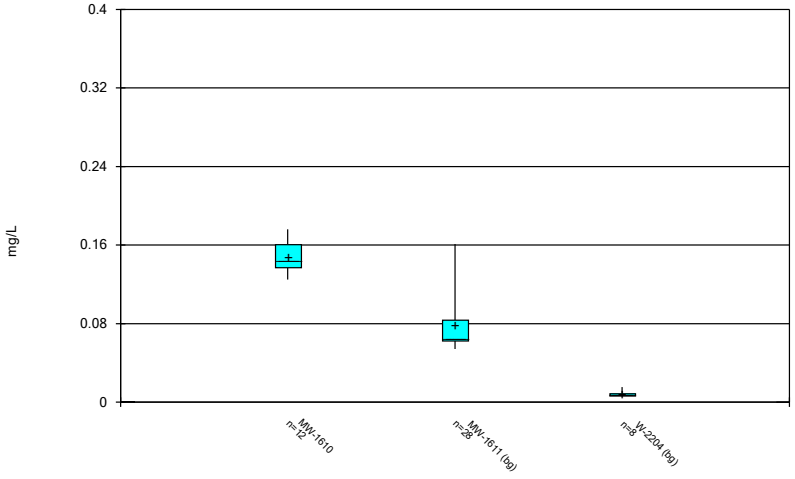
Box & Whiskers Plot



Constituent: Lithium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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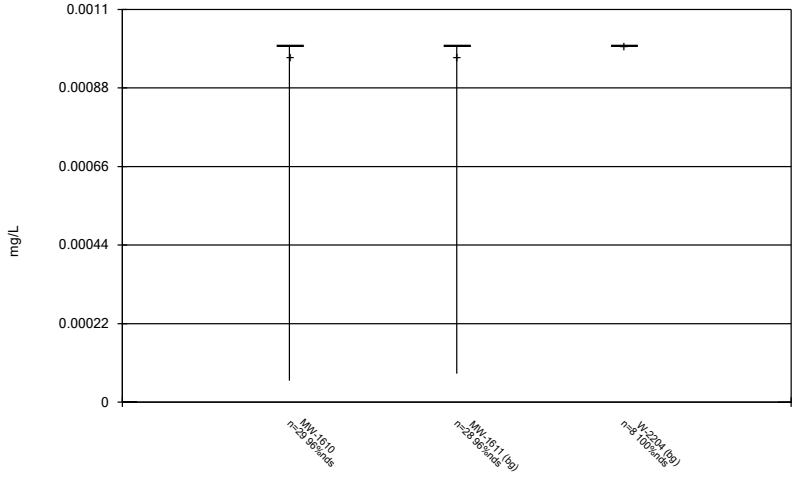
Box & Whiskers Plot



Constituent: Mercury total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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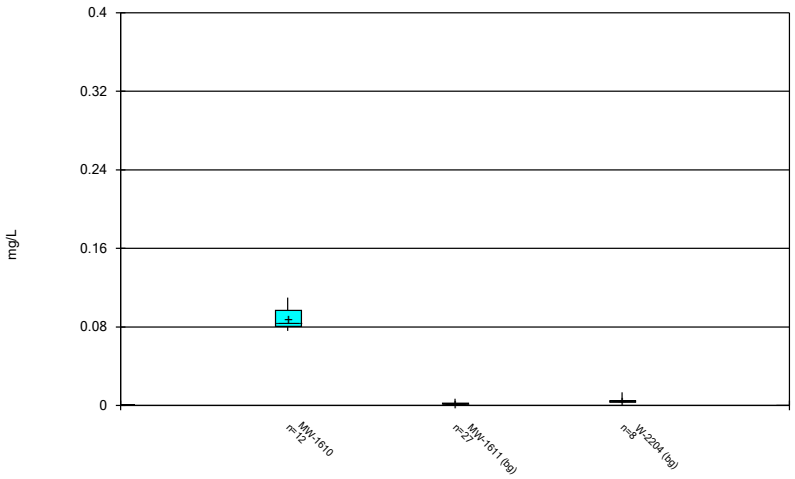
Box & Whiskers Plot



Constituent: Molybdenum total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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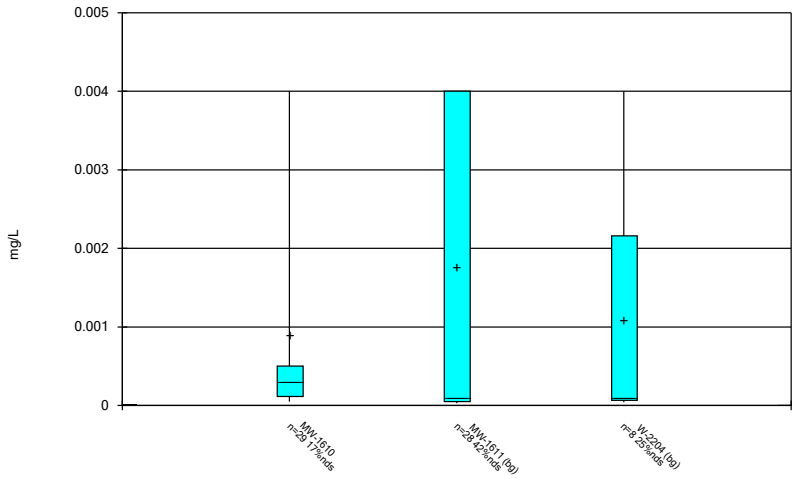
Box & Whiskers Plot



Constituent: Selenium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

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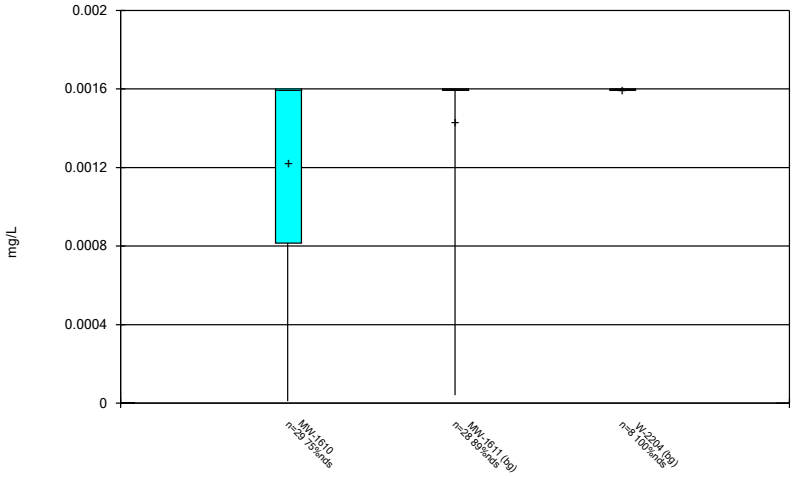
Box & Whiskers Plot



Constituent: Thallium total Analysis Run 8/11/2025 4:05 PM View: Dumps Fault - Pond 1
Clinch River Client: AEP Data: Clinch River Pond 1

Outlier Summary - Chattanooga Shale

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:12 AM

	MW-1601 Arsenic total (mg/L)	MW-1602 Combined Radium 226 and 228 (pCi/L)
4/11/2018	0.0149 (o)	
6/7/2018	0.017 (o)	
8/20/2018	0.0258 (o)	
10/17/2018	0.0247 (o)	
12/6/2018	0.0178 (o)	
2/7/2019	0.0178 (o)	
4/8/2019	0.0217 (o)	
5/28/2019	0.0184 (o)	
10/1/2019	0.0211 (o)	
2/13/2023		15.74 (o)
10/7/2024		8.42 (o)

Outlier Summary - Rome Limestone

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:32 AM

No values were flagged as outliers.

Outlier Summary - Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:51 AM

	MW-1611 Arsenic total (mg/L)	MW-1611 Cobalt total (mg/L)	MW-1611 Lead total (mg/L)	MW-1611 Molybdenum total (mg/L)
10/19/2017		0.000311 (o)	0.00105 (o)	0.038 (o)
2/13/2018	0.0365 (o)			
4/10/2018	0.0395 (o)			
6/11/2018	0.0275 (o)			

Upper Tolerance Limits - Chattanooga Shale

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 2/3/2025, 4:01 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0004929	81	-9.551	0.9871	7.407	None	ln(x)	0.05	Inter
Arsenic total (mg/L)	0.0115	72	n/a	n/a	0	n/a	n/a	0.02489	NP Inter(normality)
Barium total (mg/L)	0.306	81	n/a	n/a	0	n/a	n/a	0.01569	NP Inter(normality)
Beryllium total (mg/L)	0.0004	81	n/a	n/a	72.84	n/a	n/a	0.01569	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	81	n/a	n/a	81.48	n/a	n/a	0.01569	NP Inter(NDs)
Chromium total (mg/L)	0.00126	81	n/a	n/a	4.938	n/a	n/a	0.01569	NP Inter(normality)
Cobalt total (mg/L)	0.0004159	81	-9.523	0.8866	1.235	None	ln(x)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	2.628	79	0.9246	0.2318	0	None	x^(1/3)	0.05	Inter
Fluoride total (mg/L)	2.44	81	n/a	n/a	0	n/a	n/a	0.01569	NP Inter(normality)
Lead total (mg/L)	0.0016	81	n/a	n/a	29.63	n/a	n/a	0.01569	NP Inter(normality)
Lithium total (mg/L)	0.118	81	n/a	n/a	1.235	n/a	n/a	0.01569	NP Inter(normality)
Mercury total (mg/L)	0.001	81	n/a	n/a	91.36	n/a	n/a	0.01569	NP Inter(NDs)
Molybdenum total (mg/L)	0.0257	81	n/a	n/a	2.469	n/a	n/a	0.01569	NP Inter(normality)
Selenium total (mg/L)	0.004	81	n/a	n/a	59.26	n/a	n/a	0.01569	NP Inter(NDs)
Thallium total (mg/L)	0.0016	81	n/a	n/a	82.72	n/a	n/a	0.01569	NP Inter(NDs)

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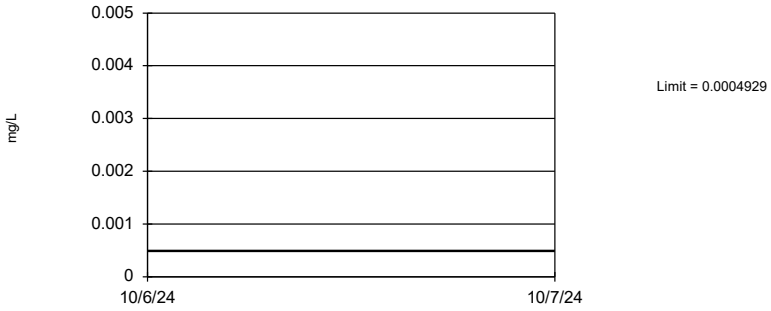
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-9.551, Std. Dev.=0.9871, n=81, 7.407% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9796, critical = 0.958. Report alpha = 0.05.

Constituent: Antimony total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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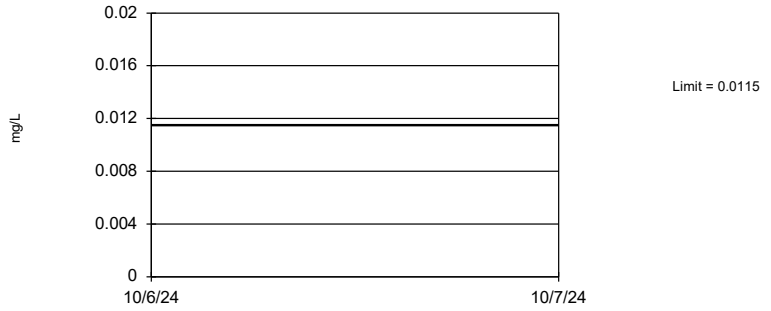
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 72 background values. 93.95% coverage at alpha=0.01; 95.9% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.02489.

Constituent: Arsenic total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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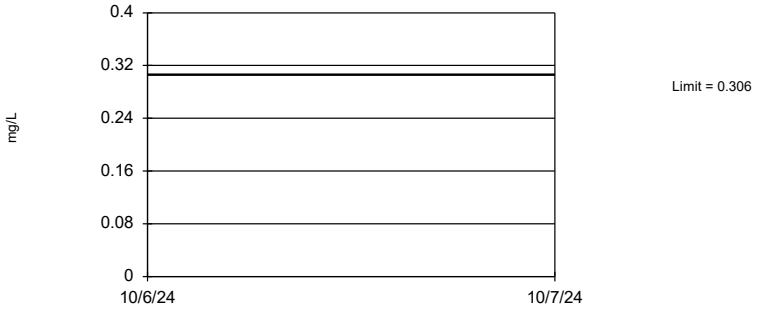
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Barium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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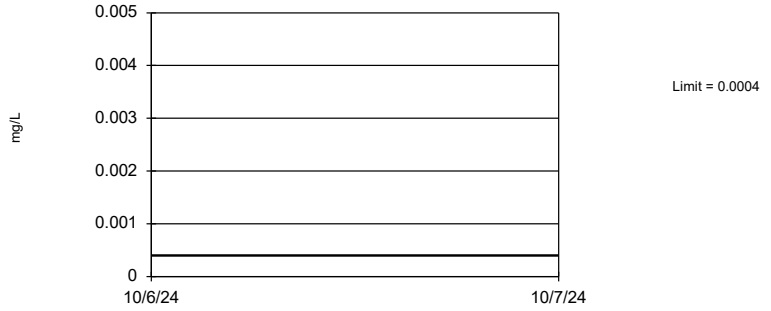
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 72.84% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Beryllium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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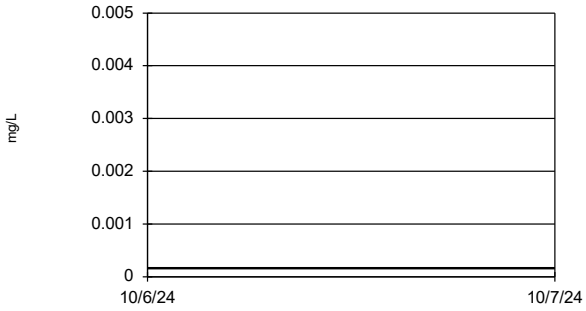
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 81.48% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Cadmium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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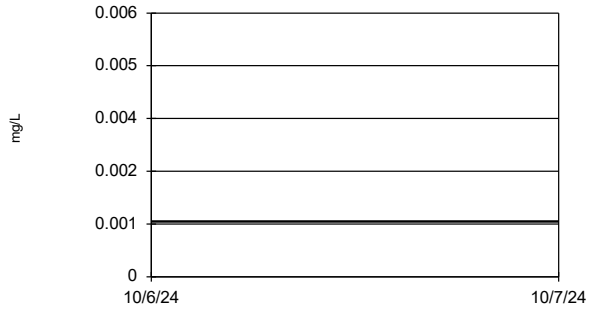
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 4.938% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Chromium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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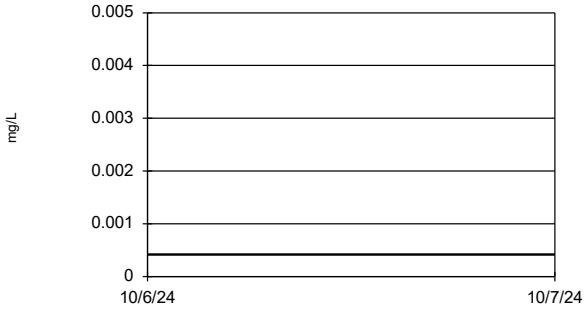
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-9.523, Std. Dev.=0.8866, n=81, 1.235% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9855, critical = 0.958. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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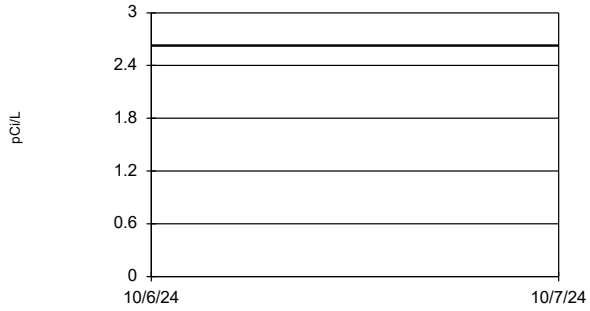
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.9246, Std. Dev.=0.2318, n=79. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.959, critical = 0.957. Report alpha = 0.05.

Constituent: Combined Radium 226 and 228 Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Fluoride total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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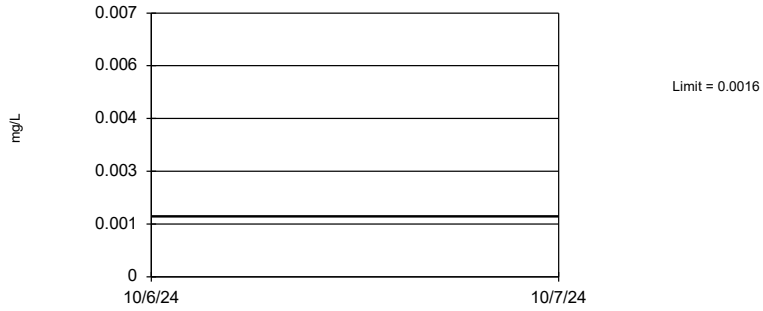
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 29.63% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Lead total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 1.235% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Lithium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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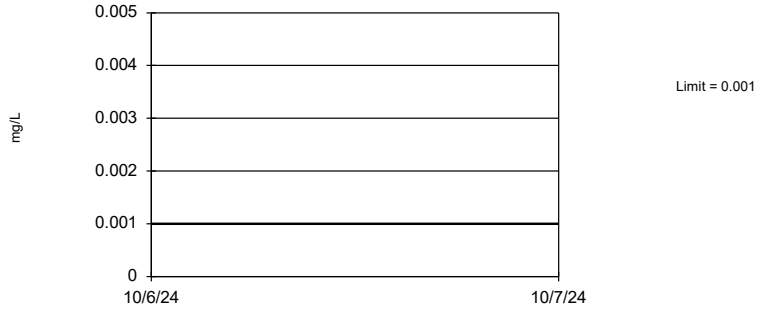
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 91.36% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Mercury total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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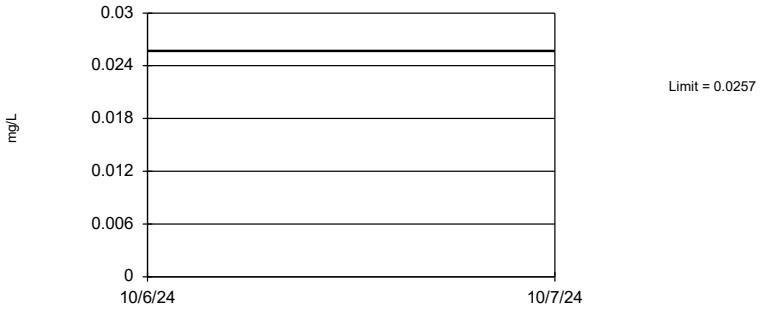
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 2.469% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Molybdenum total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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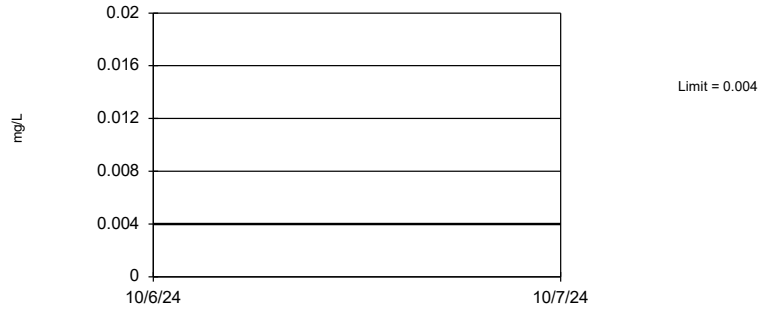
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 59.26% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Selenium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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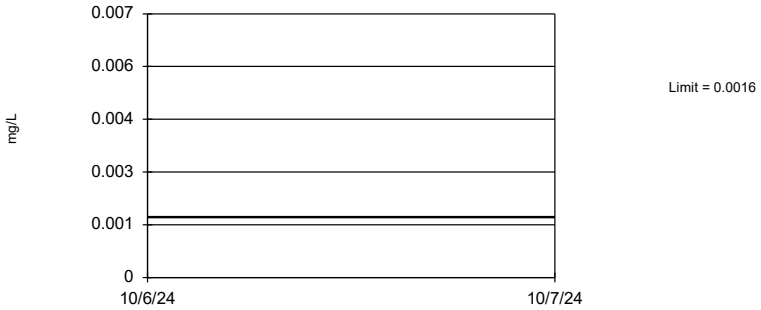
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 81 background values. 82.72% NDs. 94.34% coverage at alpha=0.01; 96.29% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.01569.

Constituent: Thallium total Analysis Run 2/3/2025 4:00 PM View: Chattanooga Shale - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

Upper Tolerance Limits - Rome Limestone

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:29 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0004	27	n/a	n/a	14.81	n/a	n/a	0.2503	NP Inter(normality)
Arsenic total (mg/L)	0.00097	27	n/a	n/a	3.704	n/a	n/a	0.2503	NP Inter(normality)
Barium total (mg/L)	0.496	27	0.3916	0.04616	0	None	No	0.05	Inter
Beryllium total (mg/L)	0.0004	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	27	n/a	n/a	18.52	n/a	n/a	0.2503	NP Inter(normality)
Chromium total (mg/L)	0.0012	27	n/a	n/a	11.11	n/a	n/a	0.2503	NP Inter(normality)
Cobalt total (mg/L)	0.001022	27	0.01337	0.008219	11.11	None	sqrt(x)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	4.526	27	1.384	0.3286	0	None	sqrt(x)	0.05	Inter
Fluoride total (mg/L)	0.3239	27	0.253	0.03136	0	None	No	0.05	Inter
Lead total (mg/L)	0.001076	27	0.01869	0.006234	3.704	None	sqrt(x)	0.05	Inter
Lithium total (mg/L)	0.01	27	n/a	n/a	22.22	n/a	n/a	0.2503	NP Inter(normality)
Mercury total (mg/L)	0.001	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Molybdenum total (mg/L)	0.004	27	n/a	n/a	22.22	n/a	n/a	0.2503	NP Inter(normality)
Selenium total (mg/L)	0.004	27	n/a	n/a	40.74	n/a	n/a	0.2503	NP Inter(normality)
Thallium total (mg/L)	0.0016	27	n/a	n/a	81.48	n/a	n/a	0.2503	NP Inter(NDs)

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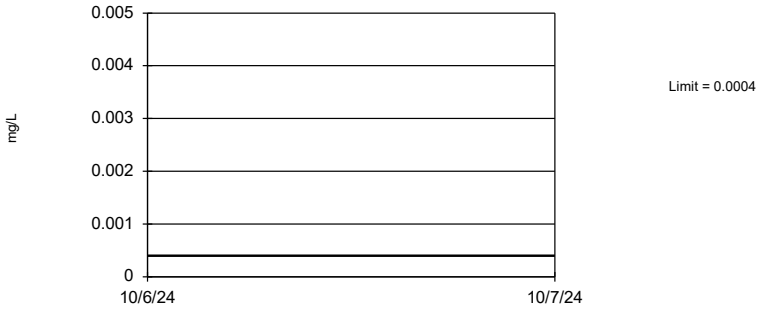
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 14.81% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Antimony total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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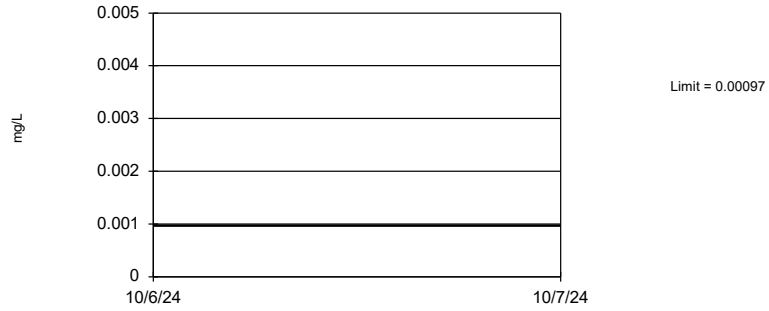
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 3.704% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Arsenic total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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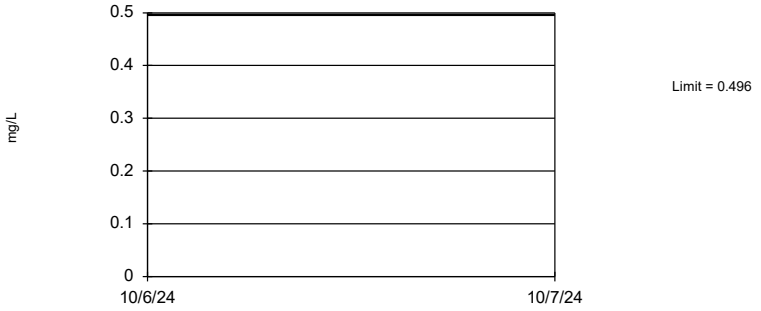
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary: Mean=0.3916, Std. Dev.=0.04616, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.894. Report alpha = 0.05.

Constituent: Barium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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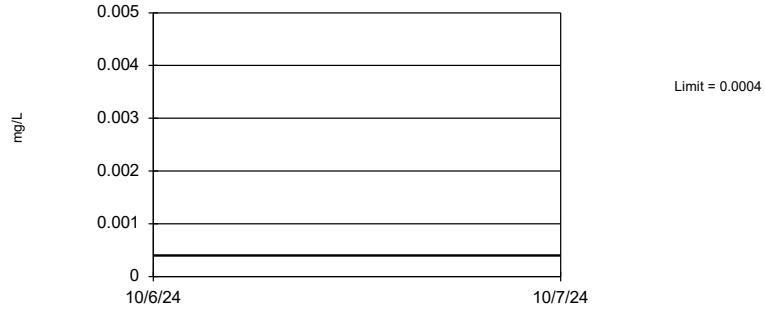
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Beryllium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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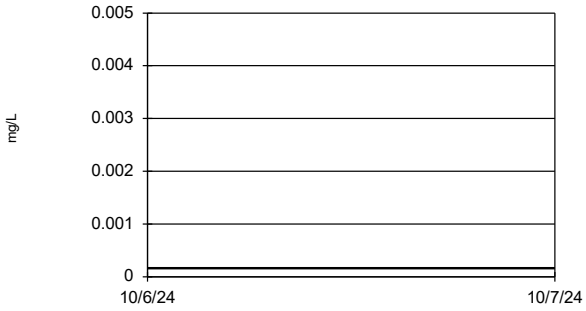
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 18.52% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Cadmium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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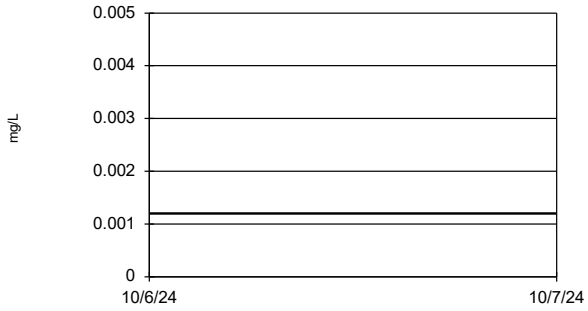
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 11.11% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Chromium total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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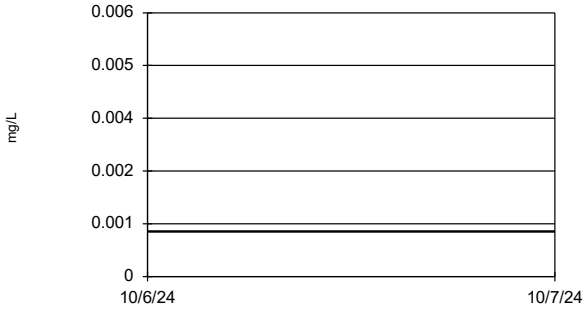
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=0.01337, Std. Dev.=0.008219, n=27, 11.11% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9163, critical = 0.894. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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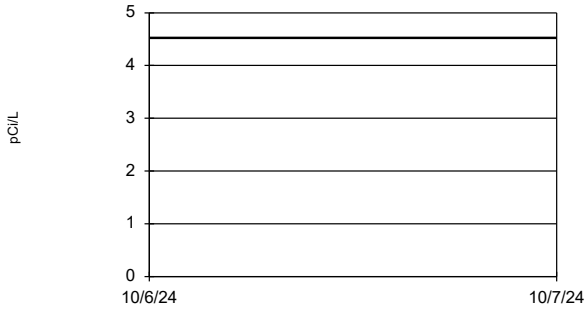
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=1.384, Std. Dev.=0.3286, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.913, critical = 0.894. Report alpha = 0.05.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Parametric

95% coverage. Background Data Summary: Mean=0.253, Std. Dev.=0.03136, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9437, critical = 0.894. Report alpha = 0.05.

Constituent: Fluoride total Analysis Run 1/29/2025 3:28 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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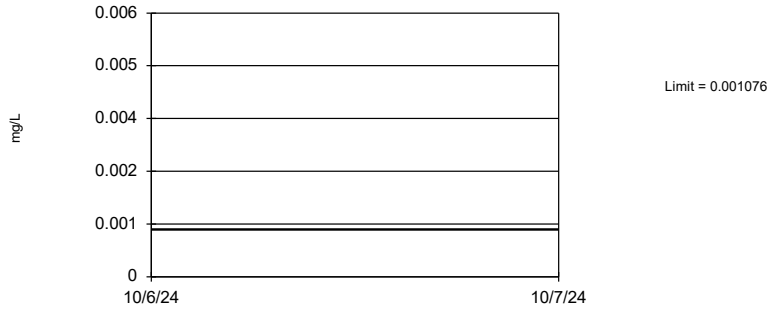
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=0.01869, Std. Dev.=0.006234, n=27, 3.704% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9503, critical = 0.894. Report alpha = 0.05.

Constituent: Lead total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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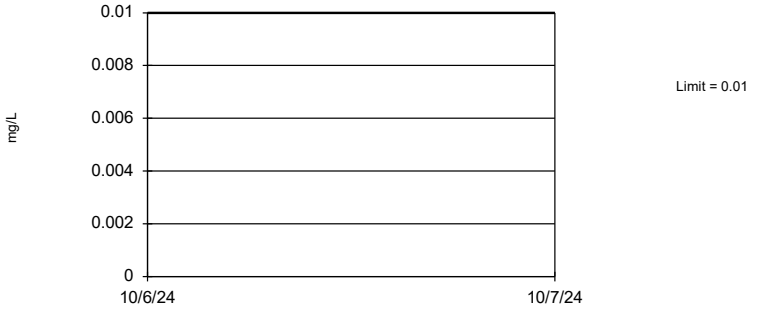
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 22.22% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Lithium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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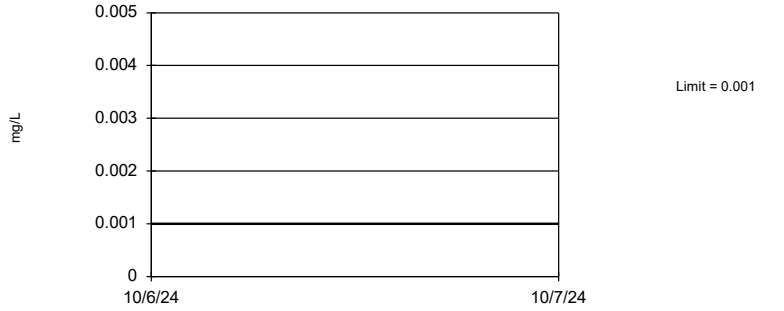
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Mercury total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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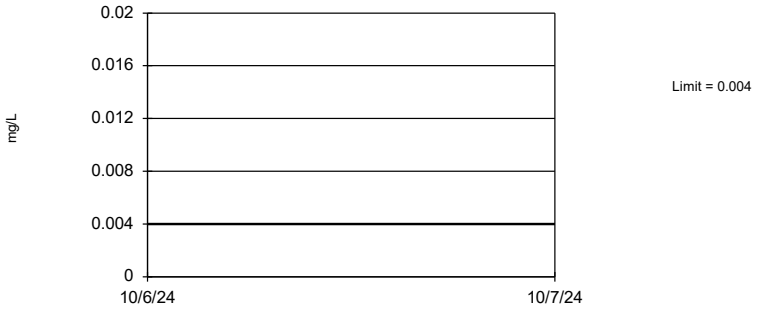
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 22.22% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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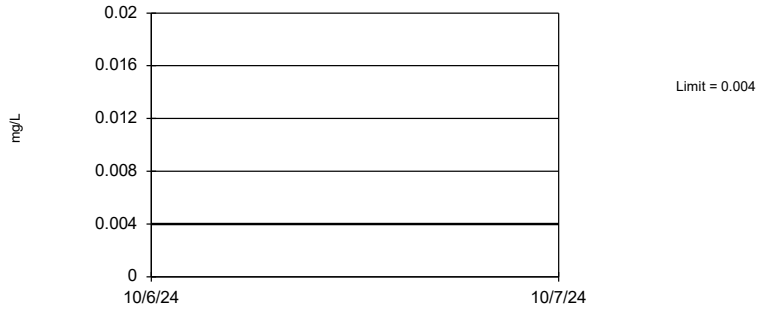
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Selenium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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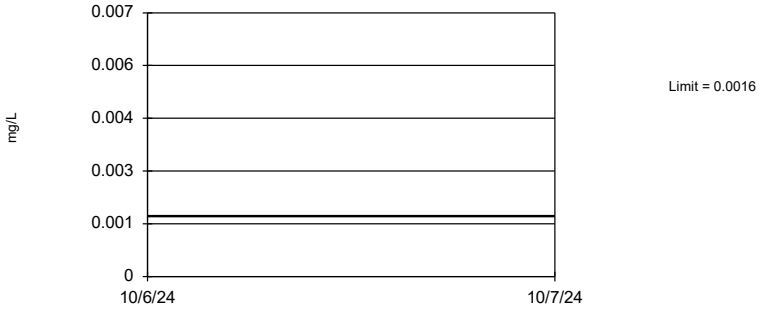
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Thallium total Analysis Run 1/29/2025 3:29 PM View: Rome Limestone - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

Upper Tolerance Limits - Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 1/29/2025, 3:50 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	0.0008	27	n/a	n/a	18.52	n/a	n/a	0.2503	NP Inter(normality)
Arsenic total (mg/L)	0.02161	24	-4.851	0.4402	0	None	ln(x)	0.05	Inter
Barium total (mg/L)	0.4424	27	0.5148	0.1092	0	None	x^(1/3)	0.05	Inter
Beryllium total (mg/L)	0.0004	27	n/a	n/a	81.48	n/a	n/a	0.2503	NP Inter(NDs)
Cadmium total (mg/L)	0.00016	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Chromium total (mg/L)	0.001092	27	0.01825	0.006537	3.704	None	sqrt(x)	0.05	Inter
Cobalt total (mg/L)	0.0001587	26	0.03265	0.009433	3.846	None	x^(1/3)	0.05	Inter
Combined Radium 226 and 228 (pCi/L)	2.62	27	n/a	n/a	0	n/a	n/a	0.2503	NP Inter(normality)
Fluoride total (mg/L)	1.322	27	1.03	0.3172	0	None	x^2	0.05	Inter
Lead total (mg/L)	0.0016	26	n/a	n/a	53.85	n/a	n/a	0.2635	NP Inter(NDs)
Lithium total (mg/L)	0.161	27	n/a	n/a	0	n/a	n/a	0.2503	NP Inter(normality)
Mercury total (mg/L)	0.001	27	n/a	n/a	96.3	n/a	n/a	0.2503	NP Inter(NDs)
Molybdenum total (mg/L)	0.00676	26	n/a	n/a	0	n/a	n/a	0.2635	NP Inter(normality)
Selenium total (mg/L)	0.004	27	n/a	n/a	40.74	n/a	n/a	0.2503	NP Inter(normality)
Thallium total (mg/L)	0.0016	27	n/a	n/a	88.89	n/a	n/a	0.2503	NP Inter(NDs)

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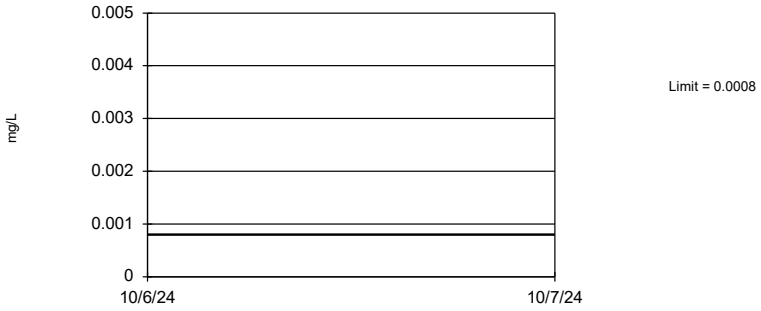
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 18.52% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Antimony total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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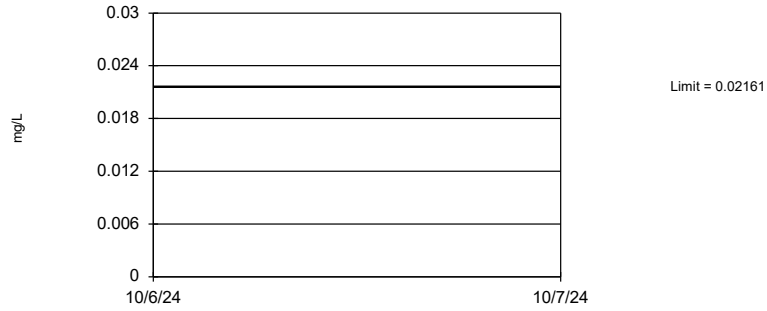
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation): Mean=-4.851, Std. Dev.=0.4402, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8971, critical = 0.884. Report alpha = 0.05.

Constituent: Arsenic total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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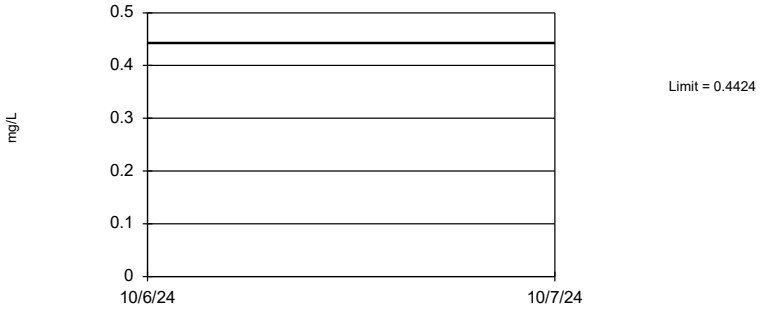
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.5148, Std. Dev.=0.1092, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.894. Report alpha = 0.05.

Constituent: Barium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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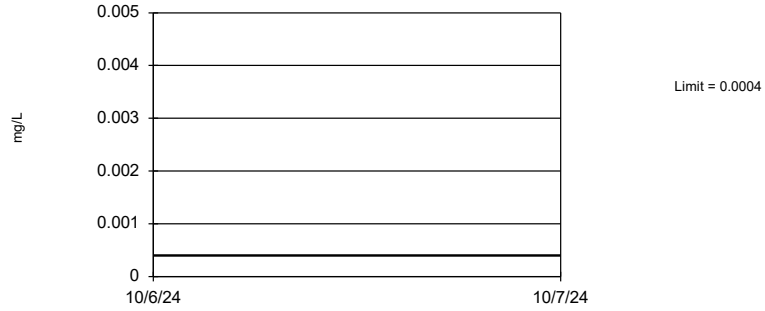
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Beryllium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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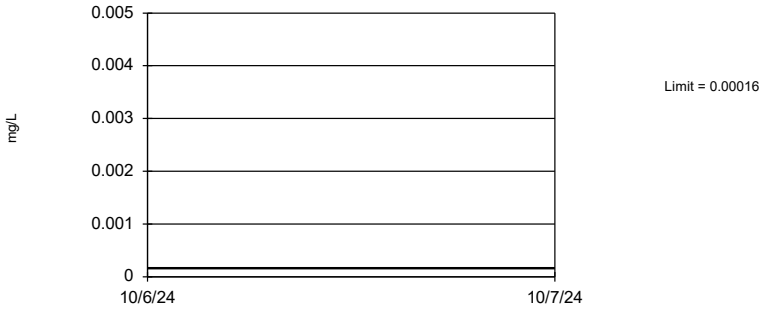
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Cadmium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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Tolerance Limit

Interwell Parametric

95% coverage. Background Data Summary (based on square root transformation): Mean=0.01825, Std. Dev.=0.006537, n=27, 3.704% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9539, critical = 0.894. Report alpha = 0.05.

Constituent: Chromium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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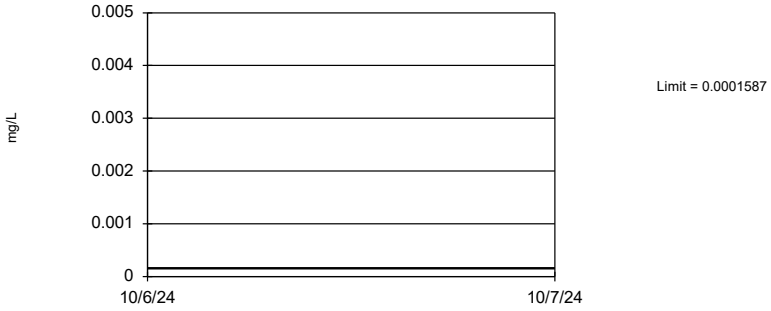
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.03265, Std. Dev.=0.009433, n=26, 3.846% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8983, critical = 0.891. Report alpha = 0.05.

Constituent: Cobalt total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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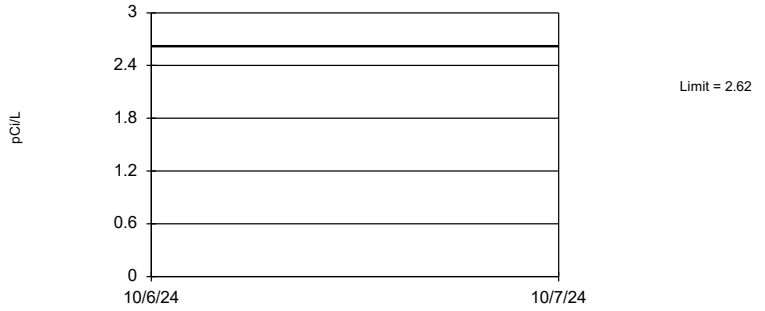
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Combined Radium 226 and 228 Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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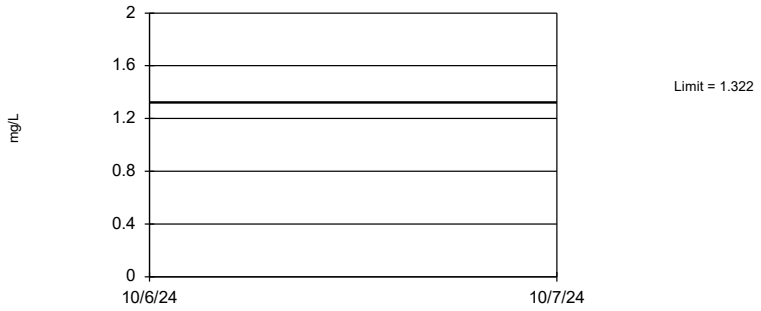
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square transformation): Mean=1.03, Std. Dev.=0.3172, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9406, critical = 0.894. Report alpha = 0.05.

Constituent: Fluoride total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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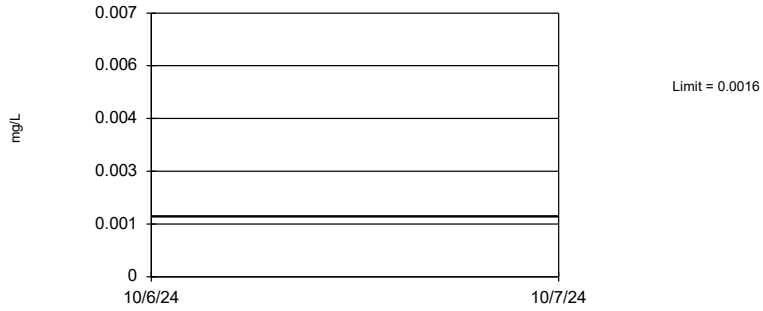
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 26 background values. 53.85% NDs. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Lead total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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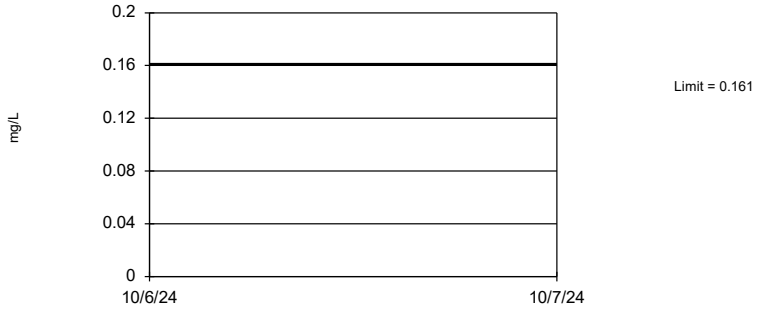
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Lithium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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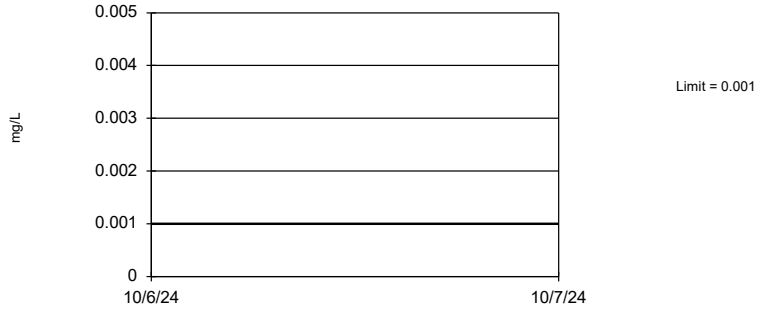
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Mercury total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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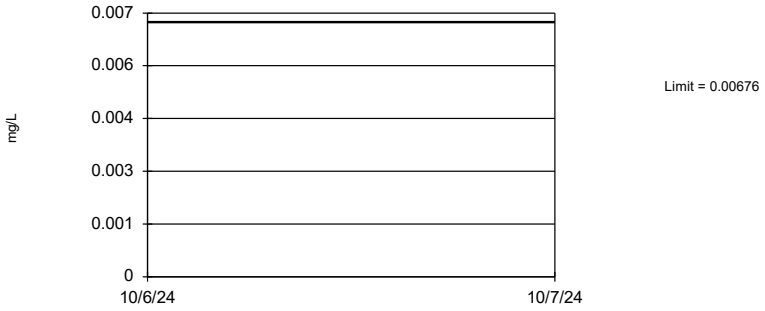
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 83.79% coverage at alpha=0.01; 89.26% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2635.

Constituent: Molybdenum total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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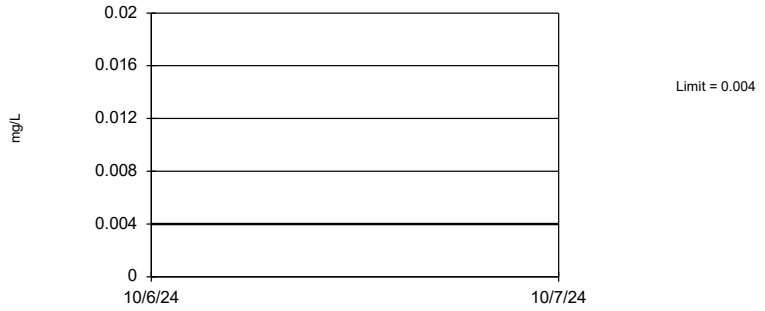
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Selenium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

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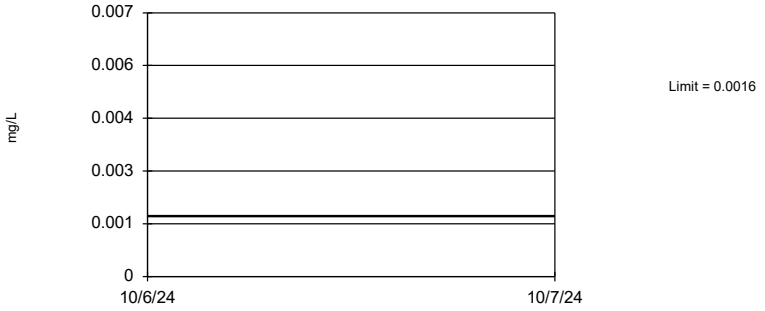
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. 84.18% coverage at alpha=0.01; 89.65% coverage at alpha=0.05; 97.46% coverage at alpha=0.5. Report alpha = 0.2503.

Constituent: Thallium total Analysis Run 1/29/2025 3:48 PM View: Dumps Fault - Pond 1 UTLs
Clinch River Client: AEP Data: Clinch River Pond 1

CLINCH RIVER GWPS - CHATTANOOGA SHALE				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.00049	0.006
Arsenic, Total (mg/L)	0.01		0.0115	0.0115
Barium, Total (mg/L)	2		0.31	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.0013	0.1
Cobalt, Total (mg/L)		0.006	0.00042	0.006
Combined Radium, Total (pCi/L)	5		2.63	5
Fluoride, Total (mg/L)	4		2.44	4
Lead, Total (mg/L)		0.015	0.0016	0.015
Lithium, Total (mg/L)		0.04	0.118	0.118
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.026	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**Grey cell indicates background is higher than MCL or CCR Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

CLINCH RIVER GWPS - ROME LIMESTONE				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0004	0.006
Arsenic, Total (mg/L)	0.01		0.00097	0.01
Barium, Total (mg/L)	2		0.5	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.0012	0.1
Cobalt, Total (mg/L)		0.006	0.00102	0.006
Combined Radium, Total (pCi/L)	5		4.53	5
Fluoride, Total (mg/L)	4		0.33	4
Lead, Total (mg/L)		0.015	0.0011	0.015
Lithium, Total (mg/L)		0.04	0.01	0.04
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.004	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

CLINCH RIVER GWPS - DUMPS FAULT				
Constituent Name	**MCL**	**CCR Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0008	0.006
Arsenic, Total (mg/L)	0.01		0.0216	0.0216
Barium, Total (mg/L)	2		0.44	2
Beryllium, Total (mg/L)	0.004		0.0004	0.004
Cadmium, Total (mg/L)	0.005		0.00016	0.005
Chromium, Total (mg/L)	0.1		0.00109	0.1
Cobalt, Total (mg/L)		0.006	0.00016	0.006
Combined Radium, Total (pCi/L)	5		2.62	5
Fluoride, Total (mg/L)	4		1.32	4
Lead, Total (mg/L)		0.015	0.0016	0.015
Lithium, Total (mg/L)		0.04	0.161	0.161
Mercury, Total (mg/L)	0.002		0.001	0.002
Molybdenum, Total (mg/L)		0.1	0.0068	0.1
Selenium, Total (mg/L)	0.05		0.004	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**Grey cell indicates background is higher than MCL or CCR Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

MW-1605 Trend Test - All/Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/26 /2025, 4:13 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	**MW-1605**	**0.162**	**185**	**106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**

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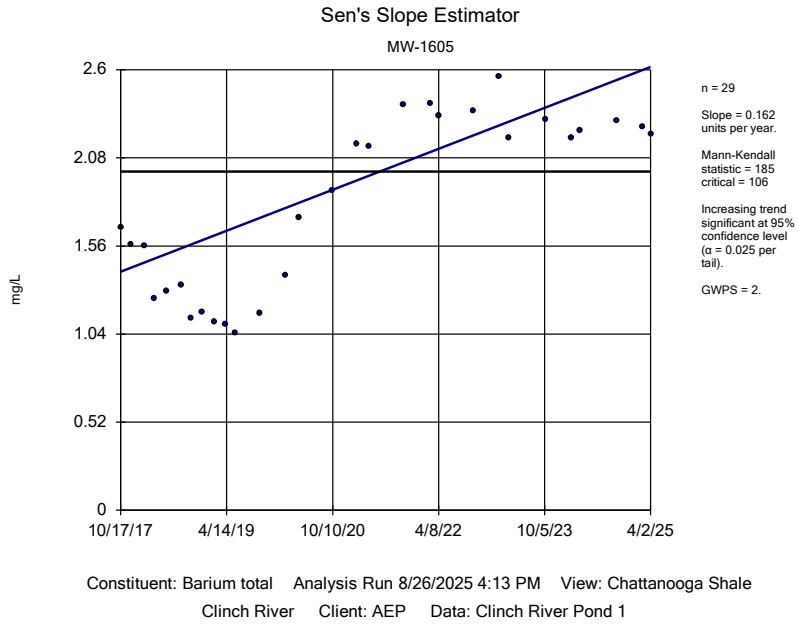

Constituent: Barium total Analysis Run 8/26/2025 4:13 PM View: Chattanooga Shale Clinch River Client: AEP Data: Clinch River Pond 1

MW-1605 Trend Test - Truncated Record - All Results (No Significant)

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/26/2025, 4:12 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	MW-1605	-0.02	-8	-37	No	14	0	n/a	0.05	NP

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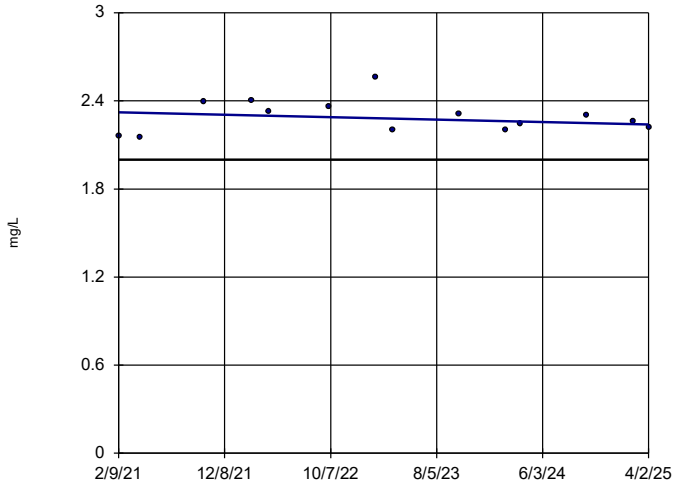
Sen's Slope Estimator

MW-1605



n = 14

Slope = -0.02 units per year.

Mann-Kendall statistic = -8 critical = -37

Trend not significant at 95% confidence level (α = 0.025 per tail).

GWPS = 2.

Constituent: Barium total Analysis Run 8/26/2025 4:11 PM View: Chattanooga Shale Clinch River Client: AEP Data: Clinch River Pond 1

MW-1610 Trend Tests - All/Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/26/2025, 4:15 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Cobalt total (mg/L)	**MW-1610**	**-0.0007552**	**-258**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1610**	**-0.006623**	**-125**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1610**	**-0.01213**	**-181**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**

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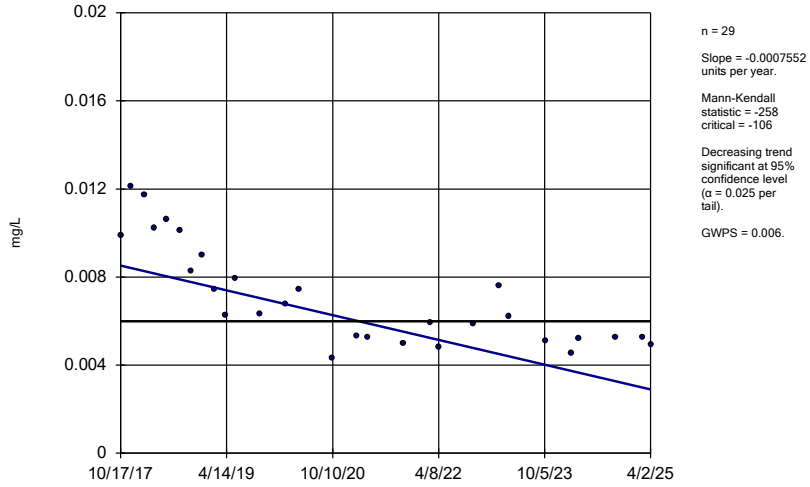
Sen's Slope Estimator

MW-1610



n = 29

Slope = -0.0007552 units per year.

Mann-Kendall statistic = -258 critical = -106

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.006.

Constituent: Cobalt total Analysis Run 8/26/2025 4:14 PM View: Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1

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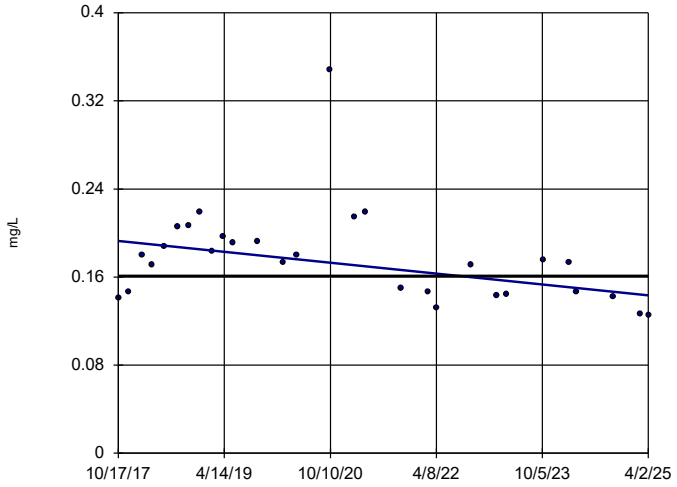
Sen's Slope Estimator

MW-1610



n = 29

Slope = -0.006623 units per year.

Mann-Kendall statistic = -125 critical = -106

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.161.

Constituent: Lithium total Analysis Run 8/26/2025 4:14 PM View: Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1

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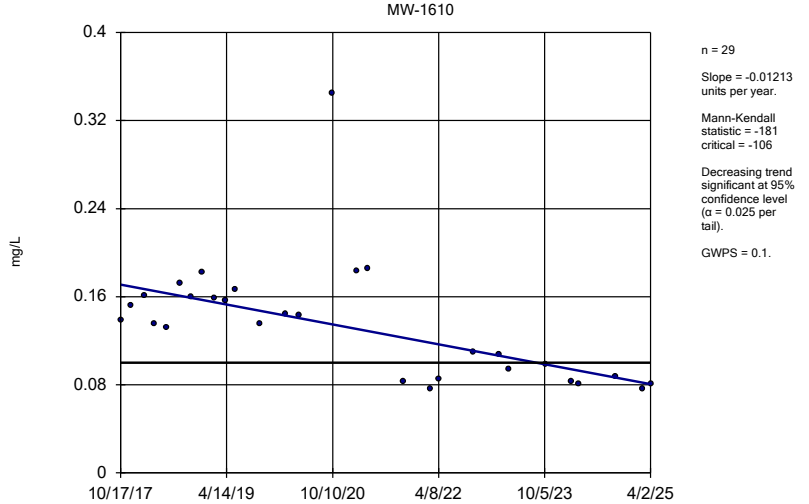
Sen's Slope Estimator

MW-1610



n = 29

Slope = -0.01213 units per year.

Mann-Kendall statistic = -181 critical = -106

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.1.

Constituent: Molybdenum total Analysis Run 8/26/2025 4:14 PM View: Dumps Fault

Clinch River Client: AEP Data: Clinch River Pond 1

MW-1610 Trend Tests - Truncated Records - All Results (No Significant)

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/26/2025, 4:10 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Cobalt total (mg/L)	MW-1610	-0.0002517	-61	-62	No	20	0	n/a	0.05	NP
Lithium total (mg/L)	MW-1610	-0.004648	-20	-30	No	12	0	n/a	0.05	NP
Molybdenum total (mg/L)	MW-1610	-0.002252	-16	-30	No	12	0	n/a	0.05	NP

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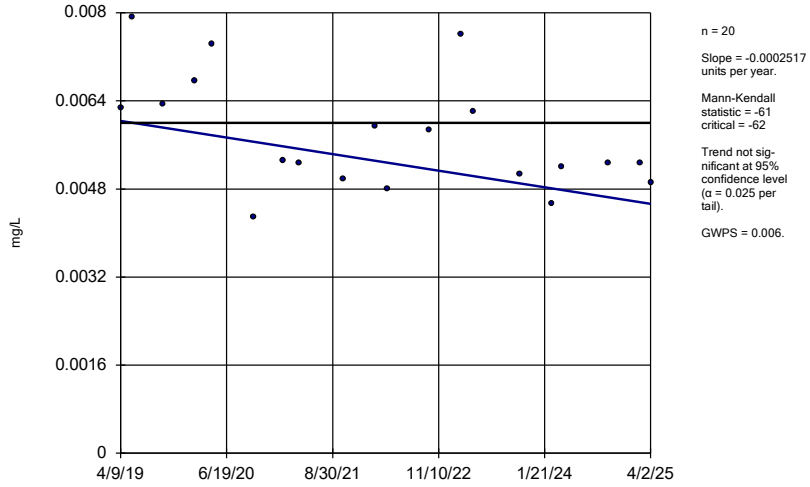
Sen's Slope Estimator

MW-1610



n = 20

Slope = -0.0002517 units per year.

Mann-Kendall statistic = -61
critical = -62

Trend not significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.006.

Constituent: Cobalt total Analysis Run 8/26/2025 4:10 PM View: Dumps Fault
Clinch River Client: AEP Data: Clinch River Pond 1

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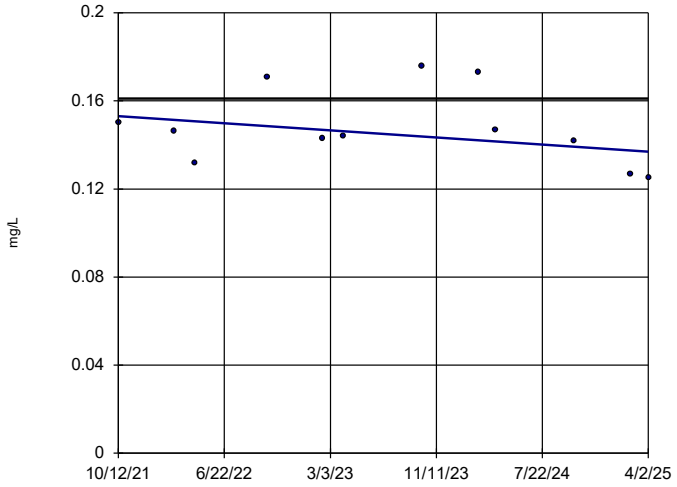
Sen's Slope Estimator

MW-1610



n = 12

Slope = -0.004648 units per year.

Mann-Kendall statistic = -20
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.161.

Constituent: Lithium total Analysis Run 8/26/2025 4:10 PM View: Dumps Fault
Clinch River Client: AEP Data: Clinch River Pond 1

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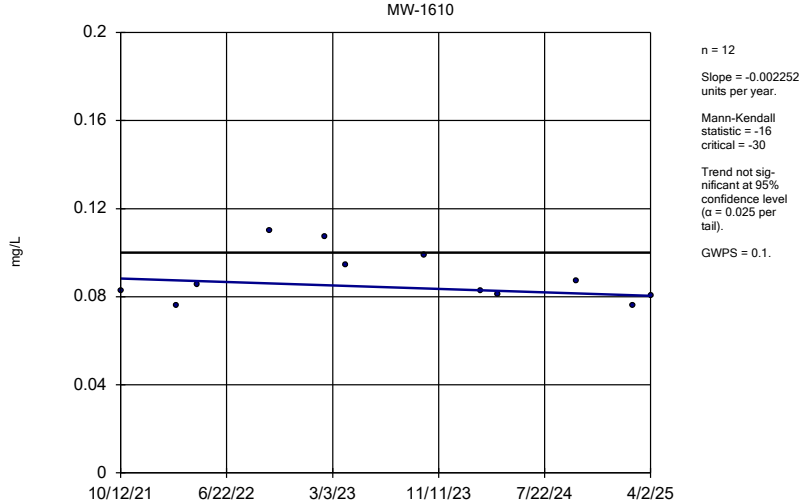
Sen's Slope Estimator

MW-1610



n = 12

Slope = -0.002252 units per year.

Mann-Kendall statistic = -16
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

GWPS = 0.1.

Constituent: Molybdenum total Analysis Run 8/26/2025 4:10 PM View: Dumps Fault
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/22/2025, 8:51 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Barium total (mg/L)	**MW-1603**	**2.826**	**2.323**	**2**	**Yes 29**	**2.574**	**0.549**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1604**	**3.214**	**3.011**	**2**	**Yes 29**	**3.112**	**0.2217**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1605**	**2.371**	**2.212**	**2**	**Yes 14**	**2.291**	**0.112**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1612**	**2.366**	**2.134**	**2**	**Yes 28**	**2.25**	**0.2482**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1605**	**0.199**	**0.1887**	**0.118**	**Yes 29**	**0.1939**	**0.01131**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/22/2025, 8:51 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1603	0.00006897	0.0000382	0.006	No	29	0.00005359	0.00003359	13.79	None	No	0.01	Param.
Antimony total (mg/L)	MW-1604	0.00018	0.00003	0.006	No	29	0.0002212	0.0003103	20.69	None	No	0.01	NP (normality)
Antimony total (mg/L)	MW-1605	0.00021	0.00003	0.006	No	29	0.0002199	0.000307	20.69	None	No	0.01	NP (normality)
Antimony total (mg/L)	MW-1612	0.0003	0.00003	0.006	No	28	0.0002707	0.0003453	28.57	None	No	0.01	NP (normality)
Arsenic total (mg/L)	MW-1603	0.002708	0.002193	0.0115	No	29	0.002451	0.000562	0	None	No	0.01	Param.
Arsenic total (mg/L)	MW-1604	0.003233	0.002186	0.0115	No	29	0.00271	0.001143	0	None	No	0.01	Param.
Arsenic total (mg/L)	MW-1605	0.003144	0.001636	0.0115	No	29	0.00261	0.001787	0	None	sqrt(x)	0.01	Param.
Arsenic total (mg/L)	MW-1612	0.00076	0.00034	0.0115	No	28	0.0008404	0.0008545	3.571	None	No	0.01	NP (normality)
Barium total (mg/L)	**MW-1603**	**2.826**	**2.323**	**2**	**Yes**	**29**	**2.574**	**0.549**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1604**	**3.214**	**3.011**	**2**	**Yes**	**29**	**3.112**	**0.2217**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1605**	**2.371**	**2.212**	**2**	**Yes**	**14**	**2.291**	**0.112**	**0**	**None**	**No**	**0.01**	**Param.**
Barium total (mg/L)	**MW-1612**	**2.366**	**2.134**	**2**	**Yes**	**28**	**2.25**	**0.2482**	**0**	**None**	**No**	**0.01**	**Param.**
Beryllium total (mg/L)	MW-1603	0.0004	0.00001	0.004	No	29	0.0002786	0.0001841	68.97	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1604	0.0004	0.000007	0.004	No	29	0.0003728	0.0001016	93.1	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1605	0.0004	0.00001	0.004	No	29	0.0003593	0.000122	89.66	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1612	0.0004	0.000045	0.004	No	28	0.0003452	0.0001368	85.71	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1605	0.00016	0.00002	0.005	No	29	0.00015	0.00003742	93.1	None	No	0.01	NP (NDs)
Chromium total (mg/L)	MW-1603	0.000234	0.000187	0.1	No	29	0.0003101	0.0003173	10.34	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1604	0.0003419	0.0001537	0.1	No	29	0.0003516	0.0004142	10.34	None	ln(x)	0.01	Param.
Chromium total (mg/L)	MW-1605	0.000288	0.000163	0.1	No	29	0.0003173	0.0003151	10.34	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1612	0.00023	0.00019	0.1	No	28	0.000313	0.0003212	10.71	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1603	0.0004104	0.0002301	0.006	No	29	0.0003436	0.0002136	0	None	sqrt(x)	0.01	Param.
Cobalt total (mg/L)	MW-1604	0.0005065	0.0002643	0.006	No	29	0.0004205	0.0002813	0	None	sqrt(x)	0.01	Param.
Cobalt total (mg/L)	MW-1605	0.000306	0.000042	0.006	No	29	0.0001528	0.0001345	6.897	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1612	0.0001749	0.0001061	0.006	No	28	0.0001478	0.0000817	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1603	1.621	1.022	5	No	29	1.321	0.6533	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1604	1.57	1.112	5	No	29	1.341	0.5001	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1605	2.122	1.137	5	No	29	1.749	1.194	0	None	No	0.01	NP (normality)
Combined Radium 226 and 228 (pCi/L)	MW-1612	2.137	1.513	5	No	28	1.825	0.6677	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1603	0.1337	0.108	4	No	29	0.1221	0.0292	0	None	sqrt(x)	0.01	Param.
Fluoride total (mg/L)	MW-1604	0.2892	0.2501	4	No	29	0.2697	0.04263	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1605	0.3568	0.3211	4	No	29	0.339	0.03904	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1612	0.1738	0.1419	4	No	28	0.1579	0.03414	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1603	0.0016	0.000038	0.015	No	29	0.001273	0.0006523	79.31	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1604	0.0016	0.000068	0.015	No	29	0.001222	0.0006823	75.86	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1605	0.0016	0.00006	0.015	No	29	0.001012	0.0007652	62.07	None	No	0.01	NP (NDs)
Lead total (mg/L)	MW-1612	0.0016	0.000331	0.015	No	28	0.001222	0.0006693	75	None	No	0.01	NP (NDs)
Lithium total (mg/L)	MW-1603	0.07644	0.05902	0.118	No	29	0.06773	0.01902	0	None	No	0.01	Param.
Lithium total (mg/L)	MW-1604	0.07971	0.07242	0.118	No	29	0.07606	0.007959	0	None	No	0.01	Param.
Lithium total (mg/L)	**MW-1605**	**0.199**	**0.1887**	**0.118**	**Yes**	**29**	**0.1939**	**0.01131**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	MW-1612	0.1283	0.1141	0.118	No	28	0.1201	0.01839	3.571	None	x^2	0.01	Param.
Mercury total (mg/L)	MW-1603	0.001	0.00006	0.002	No	29	0.0009676	0.0001746	96.55	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1604	0.001	0.00006	0.002	No	29	0.0009676	0.0001746	96.55	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1612	0.001	0.00006	0.002	No	28	0.0009664	0.0001776	96.43	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1603	0.001228	0.0005426	0.1	No	29	0.001066	0.0009999	10.34	None	x^(1/3)	0.01	Param.
Molybdenum total (mg/L)	MW-1604	0.002	0.0003	0.1	No	29	0.001384	0.001554	24.14	None	No	0.01	NP (normality)
Molybdenum total (mg/L)	MW-1605	0.002572	0.0009302	0.1	No	29	0.002119	0.002228	10.34	None	sqrt(x)	0.01	Param.
Molybdenum total (mg/L)	MW-1612	0.0005959	0.0002011	0.1	No	28	0.001383	0.001447	17.86	Kaplan-Meier	ln(x)	0.01	Param.
Selenium total (mg/L)	MW-1603	0.00011	0.00008	0.05	No	29	0.001027	0.001707	24.14	None	No	0.01	NP (normality)
Selenium total (mg/L)	MW-1604	0.004	0.00005	0.05	No	29	0.002093	0.002009	51.72	None	No	0.01	NP (NDs)
Selenium total (mg/L)	MW-1605	0.004	0.00007	0.05	No	29	0.002776	0.001857	68.97	None	No	0.01	NP (NDs)
Selenium total (mg/L)	MW-1612	0.004	0.00006	0.05	No	28	0.002729	0.001881	67.86	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1603	0.0016	0.00002	0.002	No	29	0.001326	0.0006105	82.76	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1604	0.0016	0.00002	0.002	No	29	0.001381	0.0005571	86.21	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1605	0.0016	0.00002	0.002	No	29	0.001381	0.0005562	86.21	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1612	0.0016	0.00003	0.002	No	28	0.001374	0.0005648	85.71	None	No	0.01	NP (NDs)

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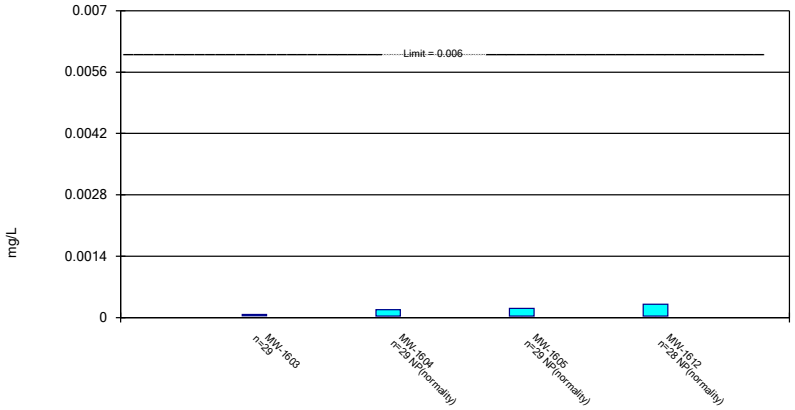
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confiden
Clinch River Client: AEP Data: Clinch River Pond 1

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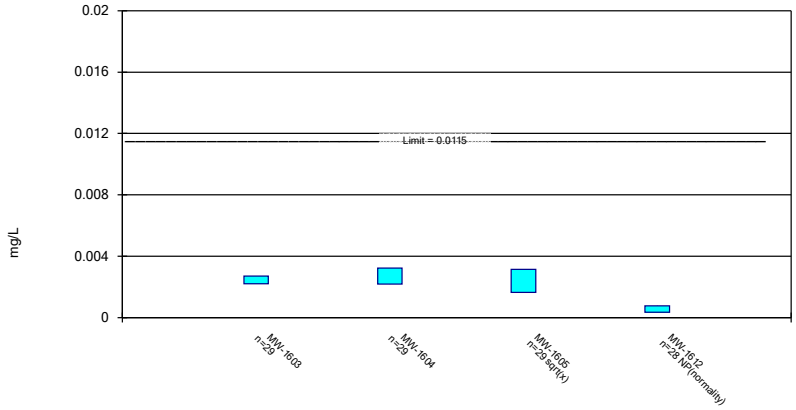
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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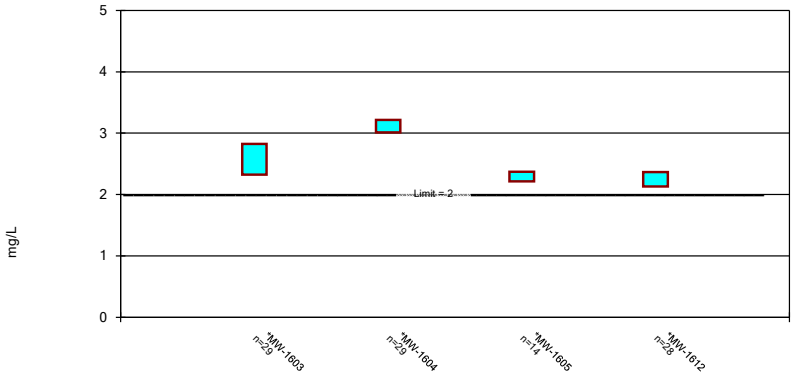
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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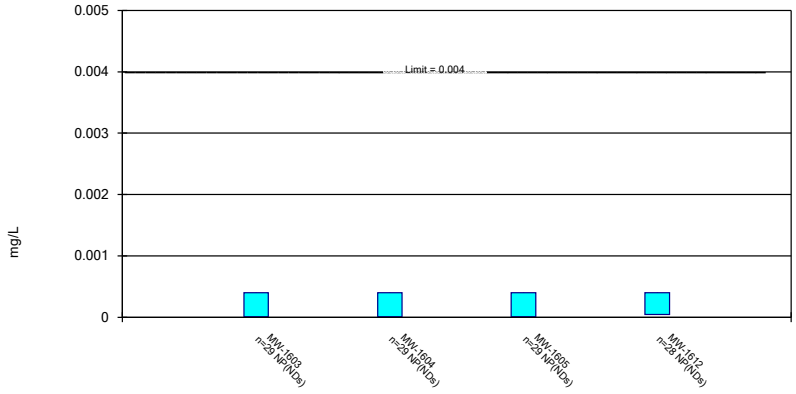
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confiden
Clinch River Client: AEP Data: Clinch River Pond 1

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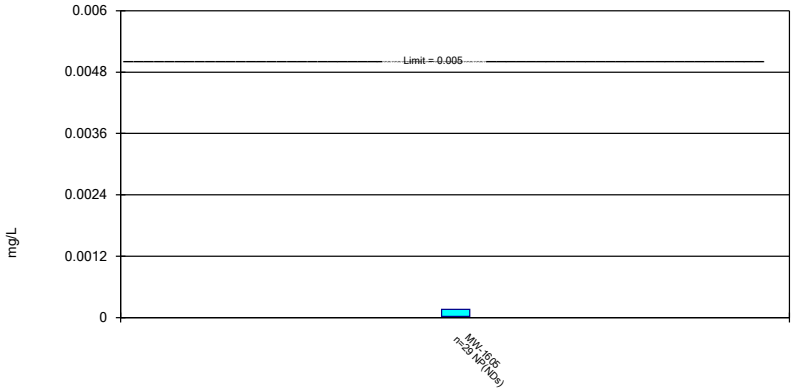
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confiden
Clinch River Client: AEP Data: Clinch River Pond 1

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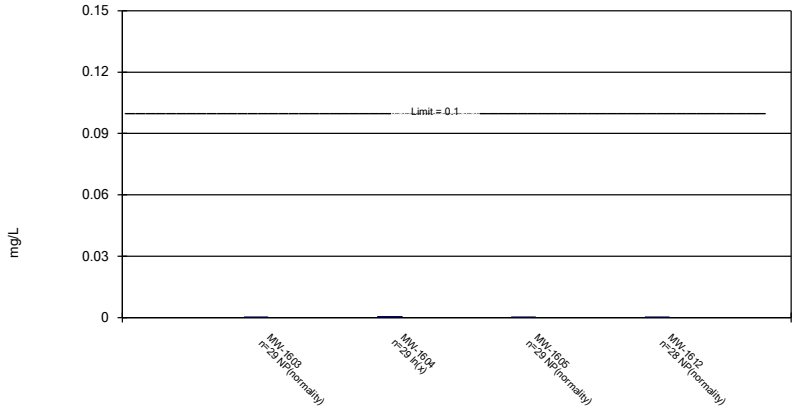
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confide
Clinch River Client: AEP Data: Clinch River Pond 1

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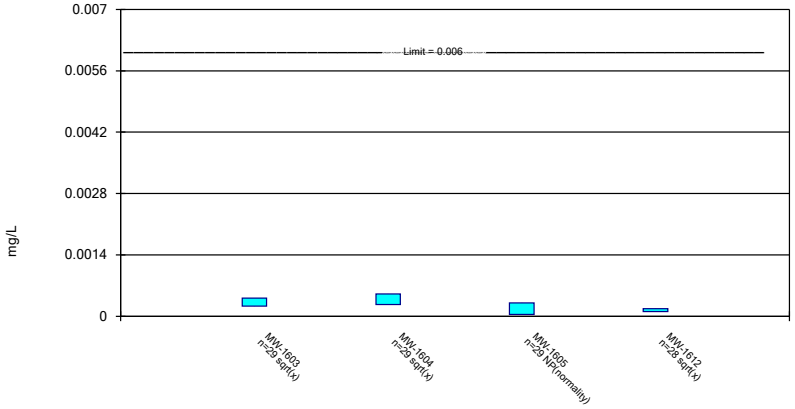
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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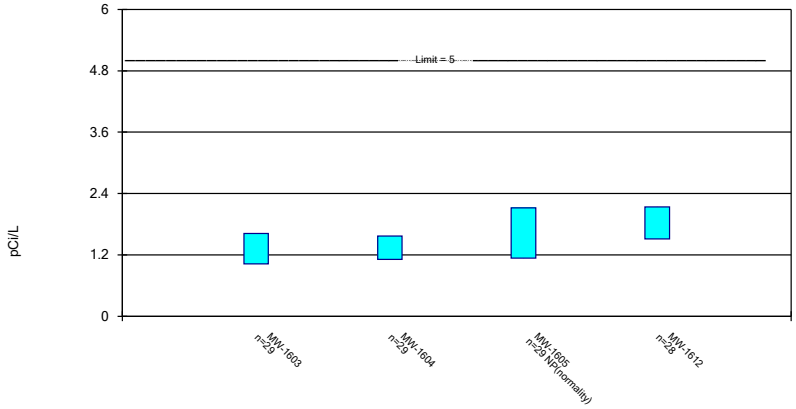
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale -
Clinch River Client: AEP Data: Clinch River Pond 1

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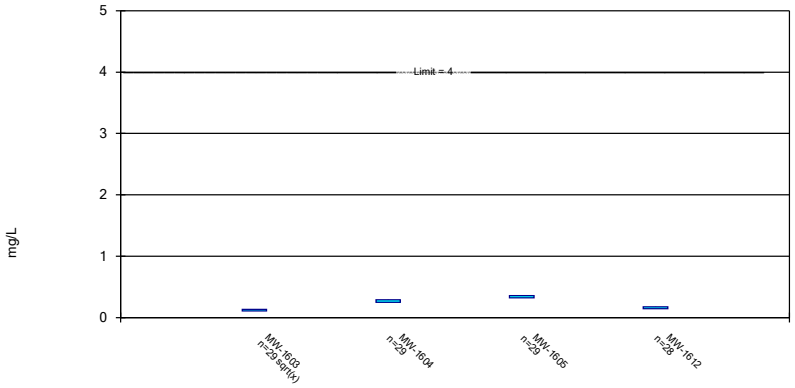
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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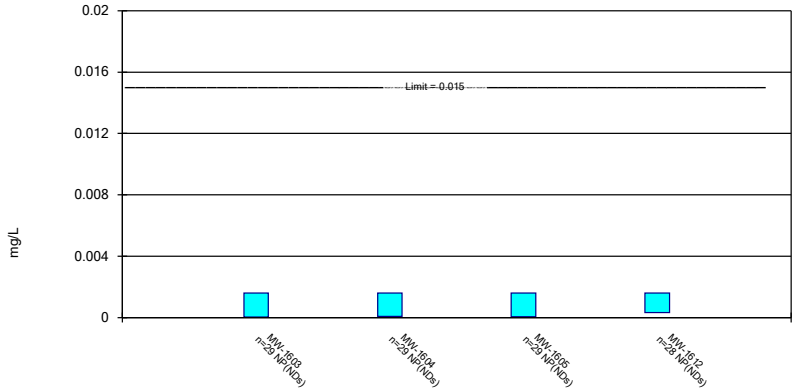
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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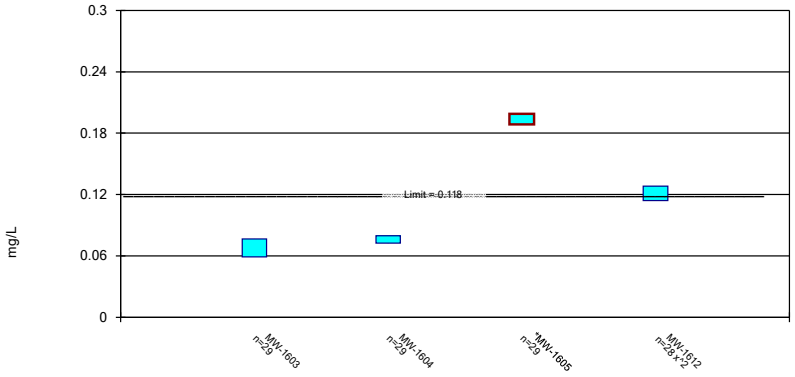
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium total Analysis Run 8/22/2025 8:40 AM View: Chattanooga Shale - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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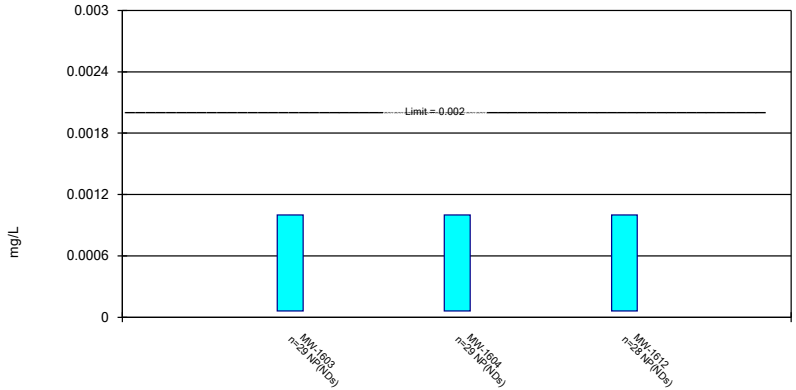
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 8/22/2025 8:41 AM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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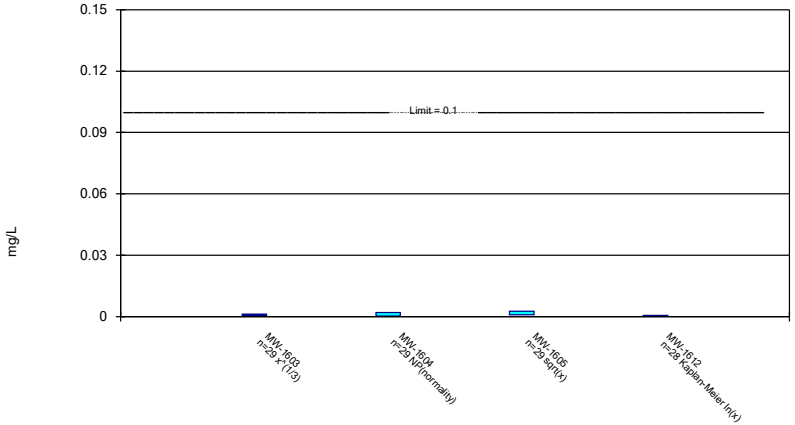
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 8/22/2025 8:41 AM View: Chattanooga Shale - Pond 1 Confi
Clinch River Client: AEP Data: Clinch River Pond 1

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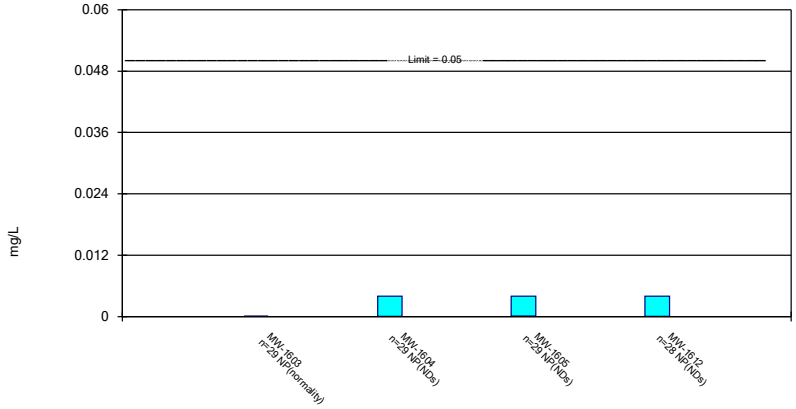
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium total Analysis Run 8/22/2025 8:41 AM View: Chattanooga Shale - Pond 1 Confiden
Clinch River Client: AEP Data: Clinch River Pond 1

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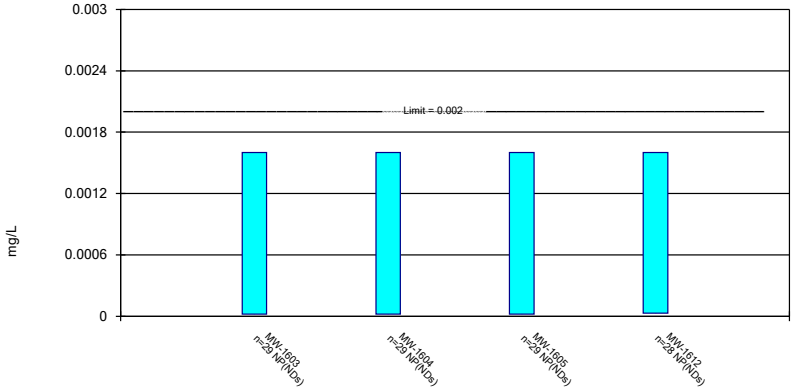
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 8/22/2025 8:41 AM View: Chattanooga Shale - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals - Rome Limestone - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:36 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt total (mg/L)	**MW-1607**	**0.01016**	**0.008405**	**0.006**	**Yes**	**29**	**0.009283**	**0.001917**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1606**	**0.08578**	**0.06532**	**0.04**	**Yes**	**29**	**0.07555**	**0.02232**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1607**	**0.1303**	**0.121**	**0.04**	**Yes**	**29**	**0.1256**	**0.01011**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum total (mg/L)	**MW-1607**	**0.1456**	**0.1273**	**0.1**	**Yes**	**29**	**0.1365**	**0.01997**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:36 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1606	0.0008	0.00003	0.006	No	29	0.0004122	0.0003869	48.28	None	No	0.01	NP (normality)
Antimony total (mg/L)	MW-1607	0.00006	0.00003	0.006	No	29	0.00008948	0.0001277	13.79	None	No	0.01	NP (normality)
Arsenic total (mg/L)	MW-1606	0.008728	0.00656	0.01	No	29	0.007644	0.002366	0	None	No	0.01	Param.
Arsenic total (mg/L)	MW-1607	0.00146	0.00105	0.01	No	29	0.001476	0.0009673	0	None	No	0.01	NP (normality)
Barium total (mg/L)	MW-1606	0.1144	0.1054	2	No	29	0.1099	0.009821	0	None	No	0.01	Param.
Barium total (mg/L)	MW-1607	0.0731	0.0678	2	No	29	0.07288	0.01423	0	None	No	0.01	NP (normality)
Beryllium total (mg/L)	MW-1606	0.0004	0.00001	0.004	No	29	0.0002651	0.0001893	65.52	None	No	0.01	NP (NDs)
Beryllium total (mg/L)	MW-1607	0.0004	0.000005	0.004	No	29	0.0003864	0.00007335	96.55	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1606	0.00016	0.000018	0.005	No	29	0.00007586	0.00007233	41.38	None	No	0.01	NP (normality)
Cadmium total (mg/L)	MW-1607	0.0001366	0.00008623	0.005	No	29	0.0001114	0.00005496	0	None	No	0.01	Param.
Chromium total (mg/L)	MW-1606	0.00025	0.00017	0.1	No	29	0.0003107	0.0002798	6.897	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1607	0.00029	0.00019	0.1	No	29	0.0003698	0.0003792	13.79	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1606	0.005282	0.00439	0.006	No	29	0.004836	0.0009732	0	None	No	0.01	Param.
Cobalt total (mg/L)	**MW-1607**	**0.01016**	**0.008405**	**0.006**	**Yes**	**29**	**0.009283**	**0.001917**	**0**	**None**	**No**	**0.01**	**Param.**
Combined Radium 226 and 228 (pCi/L)	MW-1606	2.202	1.442	5	No	29	1.925	1.03	0	None	x^(1/3)	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1607	1.397	0.8876	5	No	29	1.142	0.5555	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1606	0.2197	0.1885	4	No	29	0.2041	0.03407	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1607	0.232	0.2107	4	No	29	0.2214	0.02326	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1606	0.0006143	0.000433	0.015	No	29	0.0005237	0.0001978	0	None	No	0.01	Param.
Lead total (mg/L)	MW-1607	0.0006052	0.0004034	0.015	No	29	0.0005043	0.0002203	0	None	No	0.01	Param.
Lithium total (mg/L)	**MW-1606**	**0.08578**	**0.06532**	**0.04**	**Yes**	**29**	**0.07555**	**0.02232**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium total (mg/L)	**MW-1607**	**0.1303**	**0.121**	**0.04**	**Yes**	**29**	**0.1256**	**0.01011**	**0**	**None**	**No**	**0.01**	**Param.**
Mercury total (mg/L)	MW-1606	0.001	0.00006	0.002	No	29	0.0009676	0.0001746	96.55	None	No	0.01	NP (NDs)
Mercury total (mg/L)	MW-1607	0.001	0.00008	0.002	No	29	0.0009683	0.0001708	96.55	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1606	0.06843	0.05292	0.1	No	29	0.06067	0.01693	0	None	No	0.01	Param.
Molybdenum total (mg/L)	**MW-1607**	**0.1456**	**0.1273**	**0.1**	**Yes**	**29**	**0.1365**	**0.01997**	**0**	**None**	**No**	**0.01**	**Param.**
Selenium total (mg/L)	MW-1606	0.0002	0.00007	0.05	No	29	0.001165	0.001781	27.59	None	No	0.01	NP (normality)
Selenium total (mg/L)	MW-1607	0.0004	0.0001	0.05	No	29	0.0008697	0.001475	17.24	None	No	0.01	NP (normality)
Thallium total (mg/L)	MW-1606	0.0016	0.00005	0.002	No	29	0.001064	0.0007518	65.52	None	No	0.01	NP (NDs)
Thallium total (mg/L)	MW-1607	0.0016	0.0001	0.002	No	29	0.001223	0.0006795	75.86	None	No	0.01	NP (NDs)

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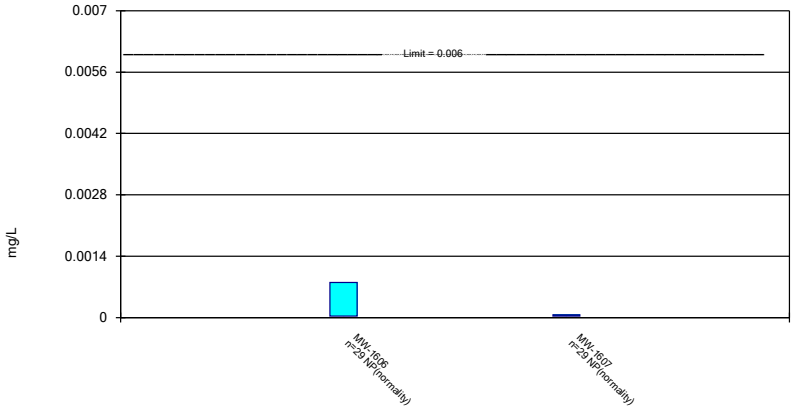
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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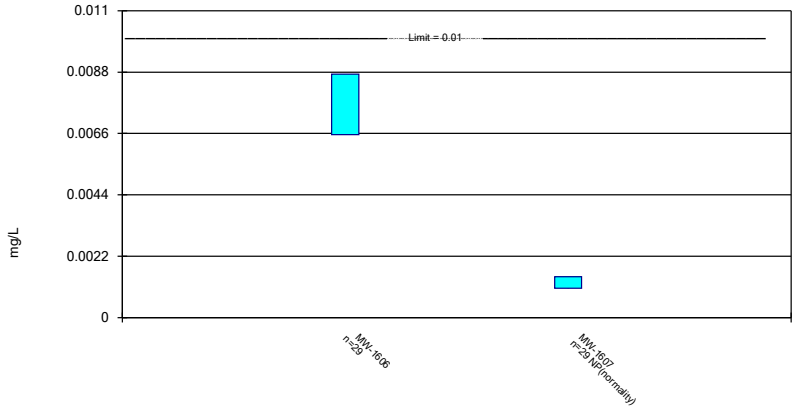
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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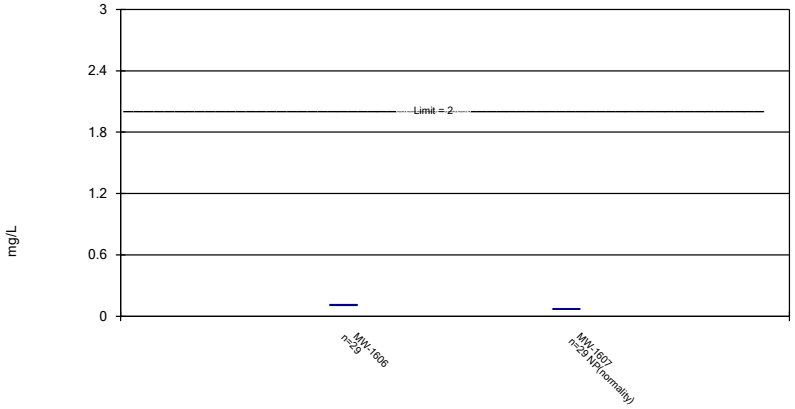
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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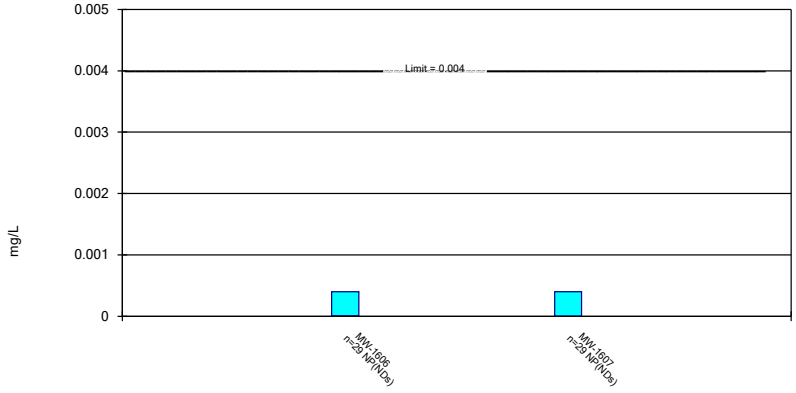
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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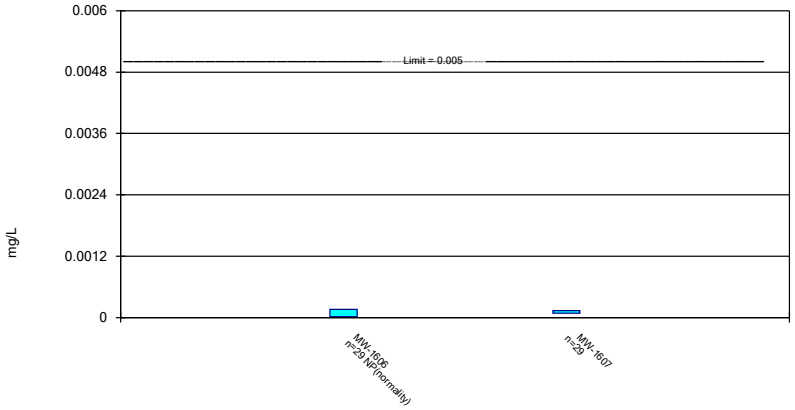
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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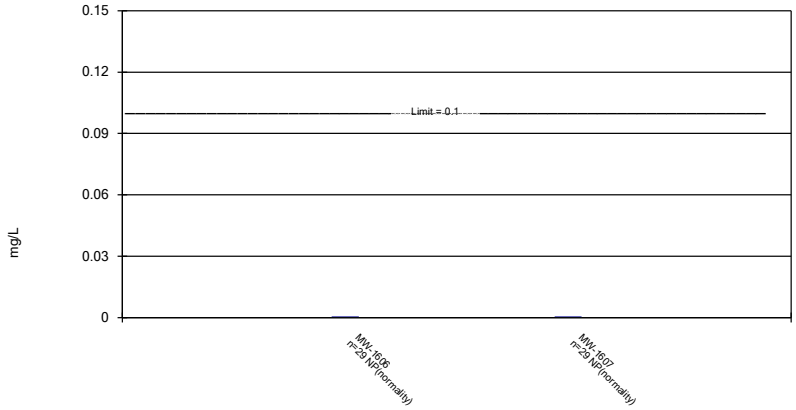
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidenc
Clinch River Client: AEP Data: Clinch River Pond 1

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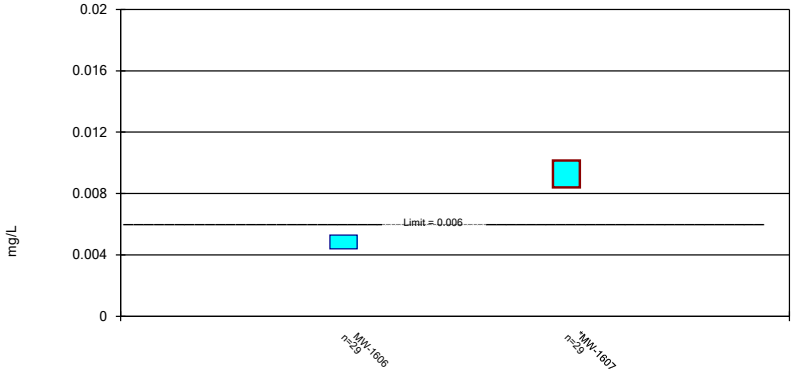
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence Int
Clinch River Client: AEP Data: Clinch River Pond 1

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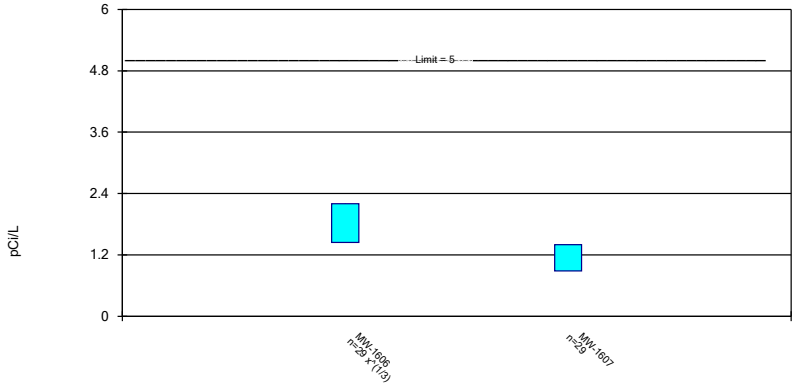
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - P
Clinch River Client: AEP Data: Clinch River Pond 1

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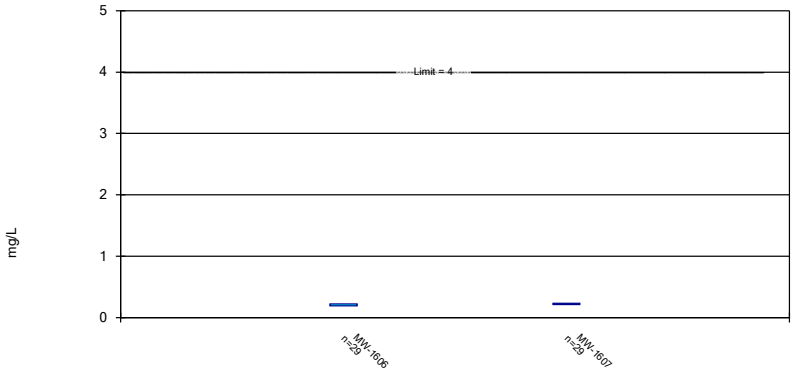
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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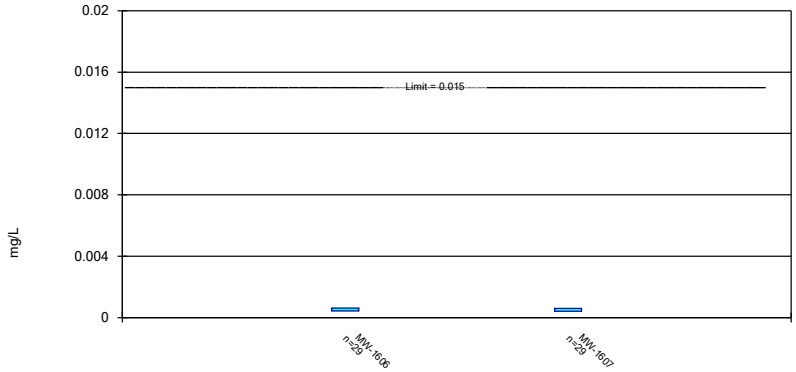
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence Inter
Clinch River Client: AEP Data: Clinch River Pond 1

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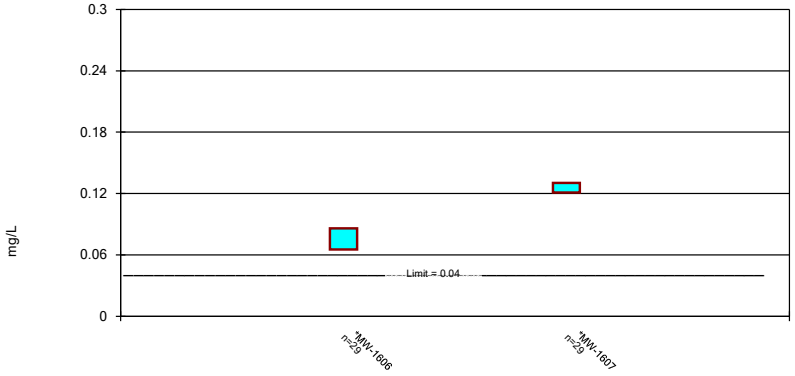
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence In
Clinch River Client: AEP Data: Clinch River Pond 1

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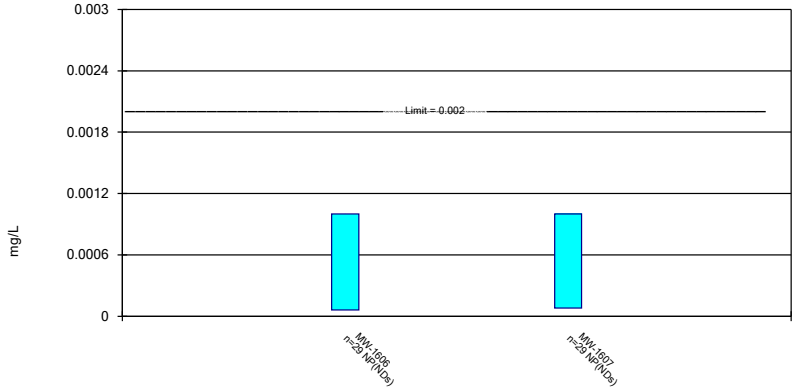
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 8/8/2025 11:34 AM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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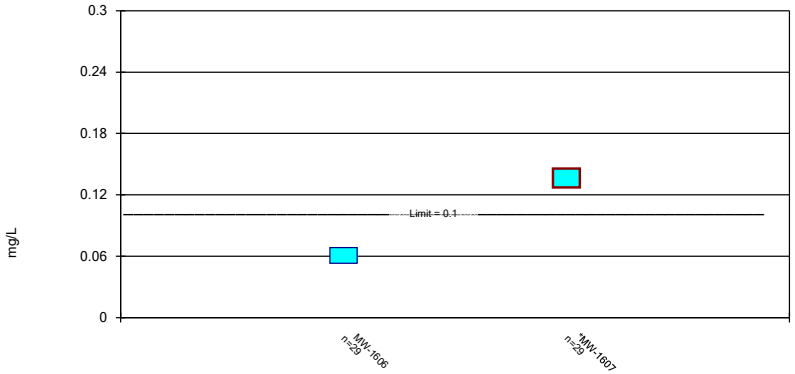
Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 8/8/2025 11:35 AM View: Rome Limestone - Pond 1 Confide
Clinch River Client: AEP Data: Clinch River Pond 1

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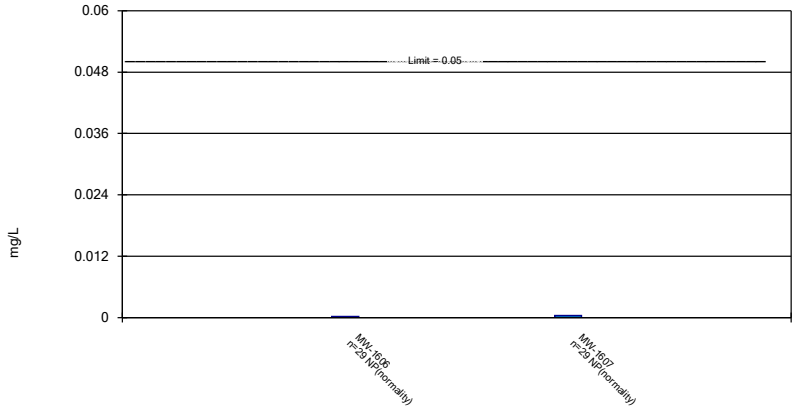
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium total Analysis Run 8/8/2025 11:35 AM View: Rome Limestone - Pond 1 Confidence
Clinch River Client: AEP Data: Clinch River Pond 1

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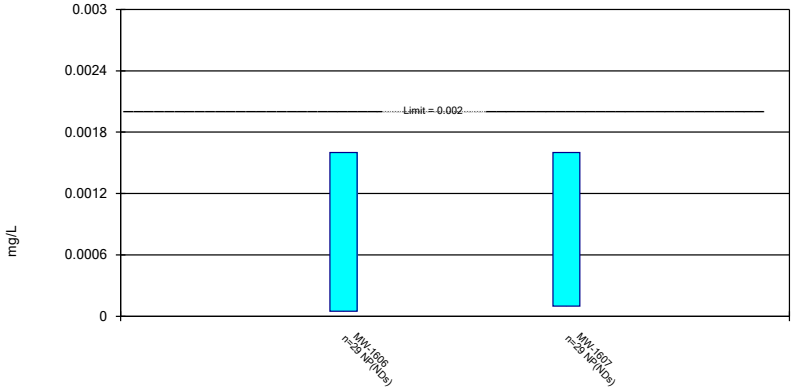
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 8/8/2025 11:35 AM View: Rome Limestone - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals - Dumps Fault- All Results (No Significant)

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:56 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony total (mg/L)	MW-1610	0.0002078	0.00007747	0.006	No	29	0.000247	0.0003687	6.897	None	ln(x)	0.01	Param.
Arsenic total (mg/L)	MW-1610	0.00159	0.0011	0.0216	No	29	0.001477	0.00091	0	None	No	0.01	NP (normality)
Barium total (mg/L)	MW-1610	0.2743	0.233	2	No	29	0.2536	0.04507	0	None	No	0.01	Param.
Beryllium total (mg/L)	MW-1610	0.0004	0.000007	0.004	No	29	0.0003455	0.0001387	86.21	None	No	0.01	NP (NDs)
Cadmium total (mg/L)	MW-1610	0.00016	0.00001	0.005	No	29	0.00007345	0.0000698	37.93	None	No	0.01	NP (normality)
Chromium total (mg/L)	MW-1610	0.000267	0.00019	0.1	No	29	0.0003413	0.0003224	10.34	None	No	0.01	NP (normality)
Cobalt total (mg/L)	MW-1610	0.006353	0.005179	0.006	No	20	0.005766	0.001033	0	None	No	0.01	Param.
Combined Radium 226 and 228 (pCi/L)	MW-1610	1.383	0.8461	5	No	29	1.115	0.5865	0	None	No	0.01	Param.
Fluoride total (mg/L)	MW-1610	0.21	0.19	4	No	29	0.2066	0.03538	0	None	No	0.01	NP (normality)
Lead total (mg/L)	MW-1610	0.005251	0.002048	0.015	No	29	0.004602	0.004427	0	None	x^(1/3)	0.01	Param.
Lithium total (mg/L)	MW-1610	0.1615	0.1345	0.161	No	12	0.148	0.01719	0	None	No	0.01	Param.
Mercury total (mg/L)	MW-1610	0.001	0.00006	0.002	No	29	0.0009676	0.0001746	96.55	None	No	0.01	NP (NDs)
Molybdenum total (mg/L)	MW-1610	0.09751	0.07939	0.1	No	12	0.08845	0.01155	0	None	No	0.01	Param.
Selenium total (mg/L)	MW-1610	0.0005	0.00013	0.05	No	29	0.000891	0.00145	17.24	None	No	0.01	NP (normality)
Thallium total (mg/L)	MW-1610	0.0016	0.00003	0.002	No	29	0.001219	0.0006875	75.86	None	No	0.01	NP (NDs)

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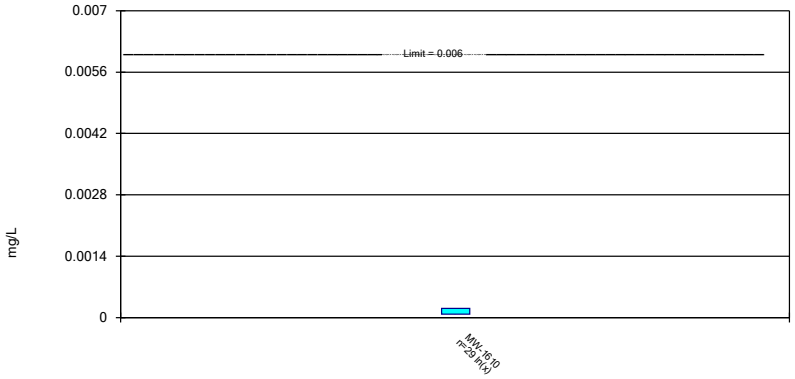
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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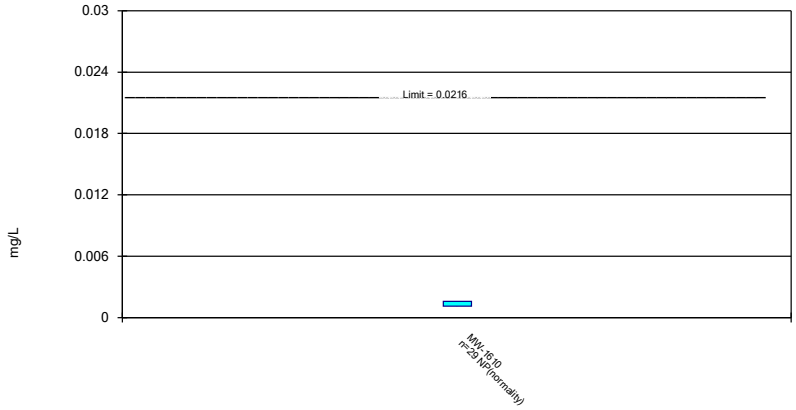
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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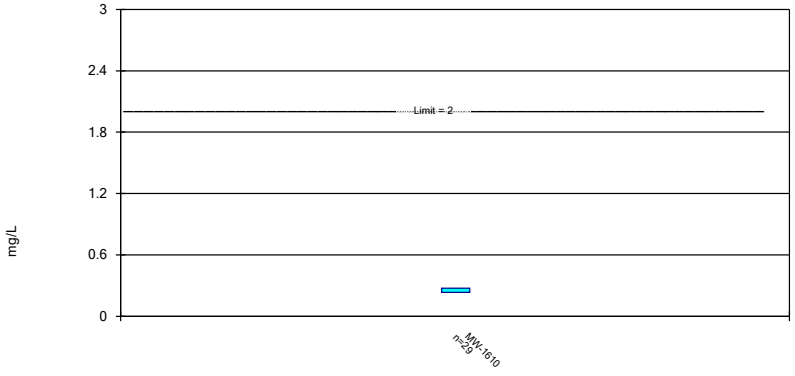
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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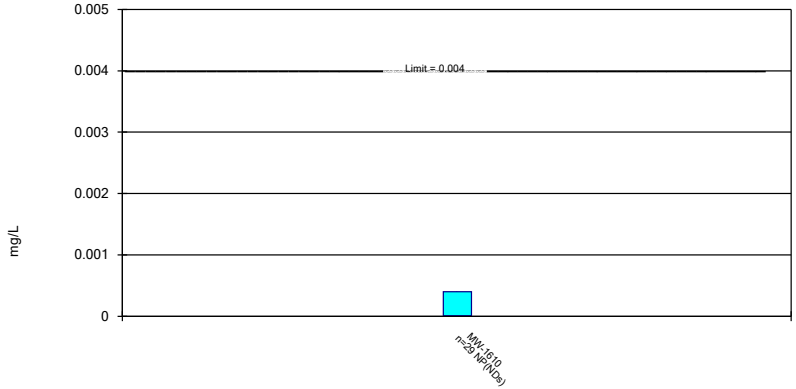
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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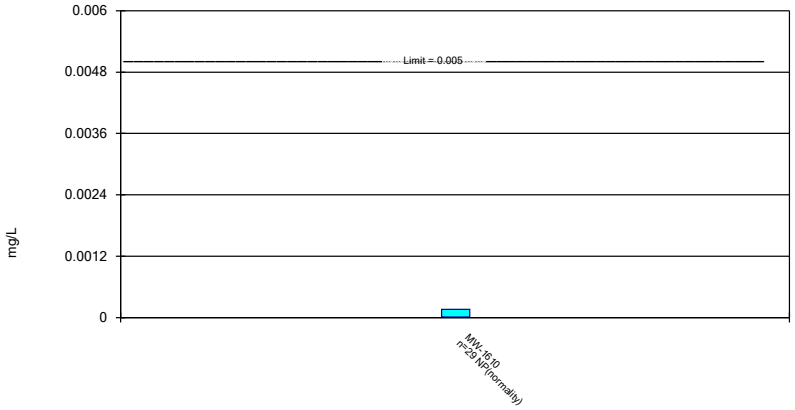
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cadmium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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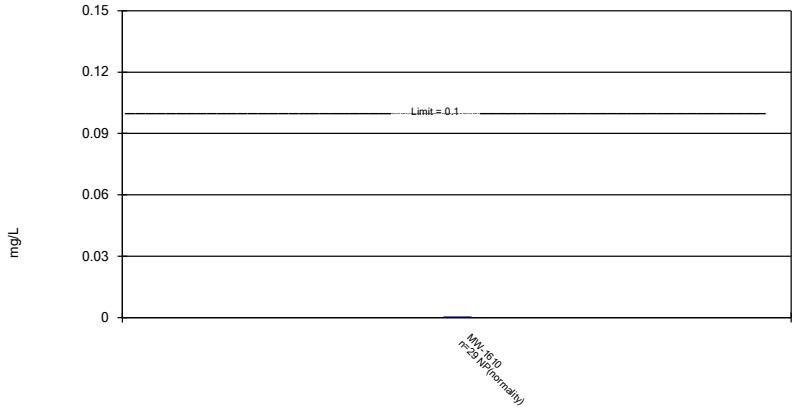
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Int
Clinch River Client: AEP Data: Clinch River Pond 1

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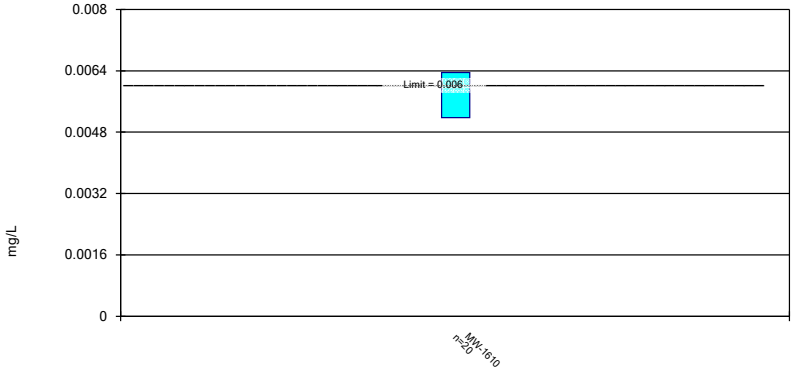
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interva
Clinch River Client: AEP Data: Clinch River Pond 1

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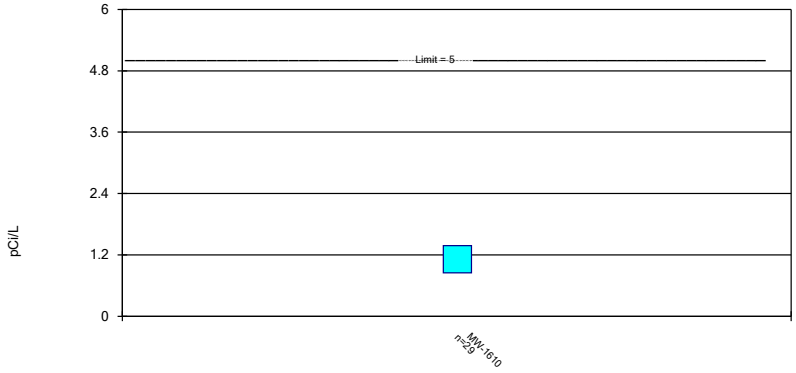
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 and 228 Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond
Clinch River Client: AEP Data: Clinch River Pond 1

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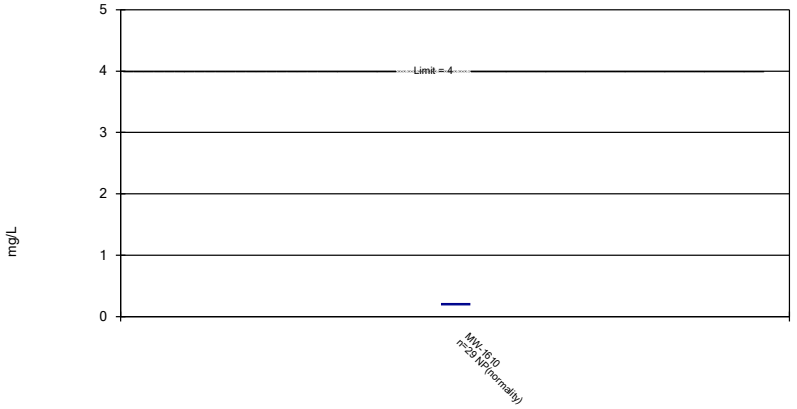
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Fluoride total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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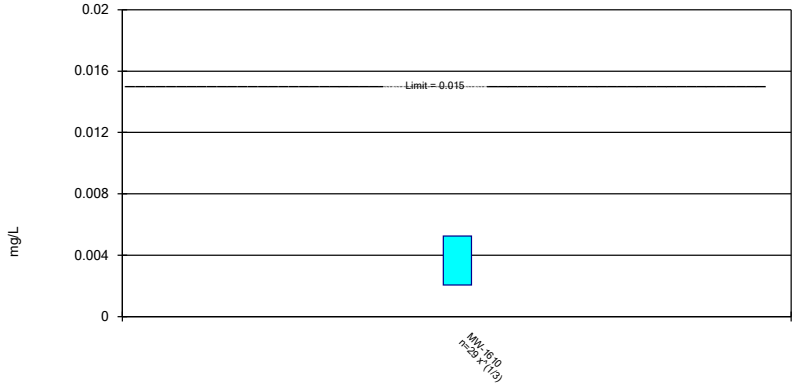
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Intervals
Clinch River Client: AEP Data: Clinch River Pond 1

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

Constituent: Lithium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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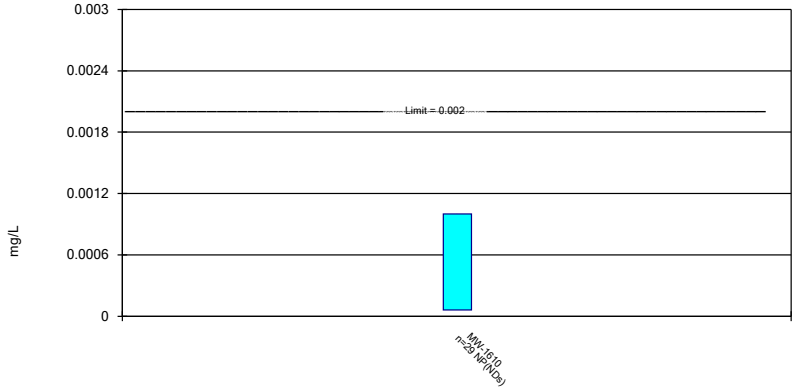
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Interv
Clinch River Client: AEP Data: Clinch River Pond 1

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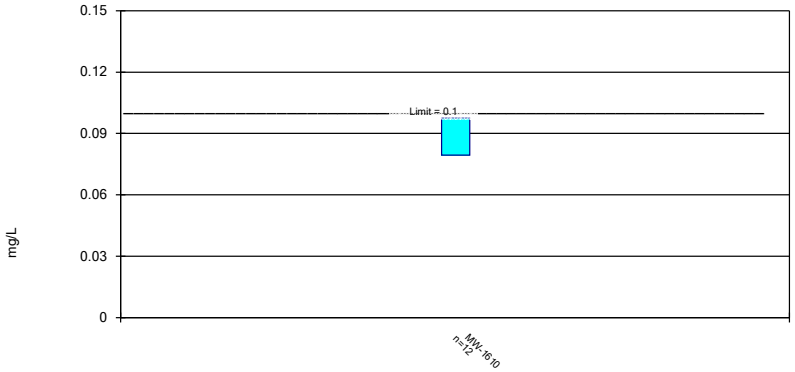
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence I
Clinch River Client: AEP Data: Clinch River Pond 1

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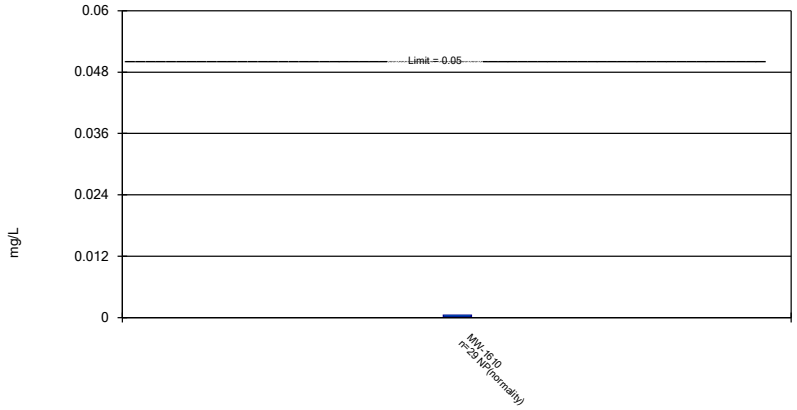
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Inte
Clinch River Client: AEP Data: Clinch River Pond 1

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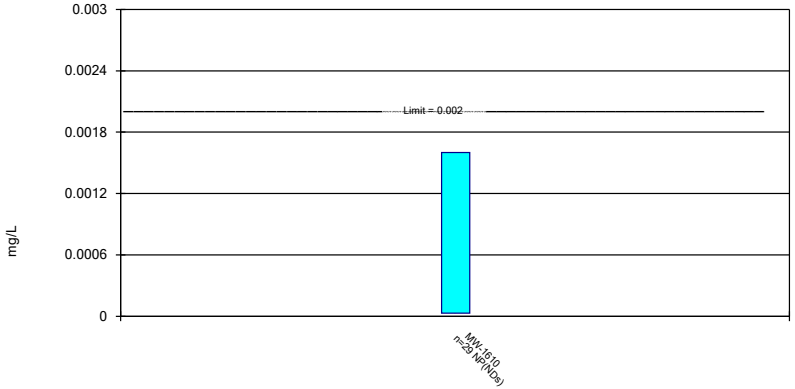
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium total Analysis Run 8/8/2025 11:54 AM View: Dumps Fault - Pond 1 Confidence Inter
Clinch River Client: AEP Data: Clinch River Pond 1

Appendix IV Trend Tests - Chattanooga Shale - Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:20 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	**MW-1601 (bg)**	**-0.01807**	**-266**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1602 (bg)**	**-0.002883**	**-265**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1603**	**0.1539**	**196**	**106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1604**	**-0.04099**	**-140**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1605**	**0.162**	**185**	**106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1608 (bg)**	**-0.003045**	**-320**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1601 (bg)**	**-0.001065**	**-103**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1602 (bg)**	**-0.001036**	**-151**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1608 (bg)**	**-0.0006991**	**-172**	**-101**	**Yes**	**28**	**3.571**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Chattanooga Shale - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:20 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Barium total (mg/L)	**MW-1601 (bg)**	**-0.01807**	**-266**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1602 (bg)**	**-0.002883**	**-265**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1603**	**0.1539**	**196**	**106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1604**	**-0.04099**	**-140**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1605**	**0.162**	**185**	**106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	**MW-1608 (bg)**	**-0.003045**	**-320**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Barium total (mg/L)	MW-1612	0.04593	98	101	No	28	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1601 (bg)**	**-0.001065**	**-103**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	**MW-1602 (bg)**	**-0.001036**	**-151**	**-101**	**Yes**	**28**	**0**	**n/a**	**0.05**	**NP**
Lithium total (mg/L)	MW-1605	-0.001084	-64	-106	No	29	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1608 (bg)**	**-0.0006991**	**-172**	**-101**	**Yes**	**28**	**3.571**	**n/a**	**0.05**	**NP**

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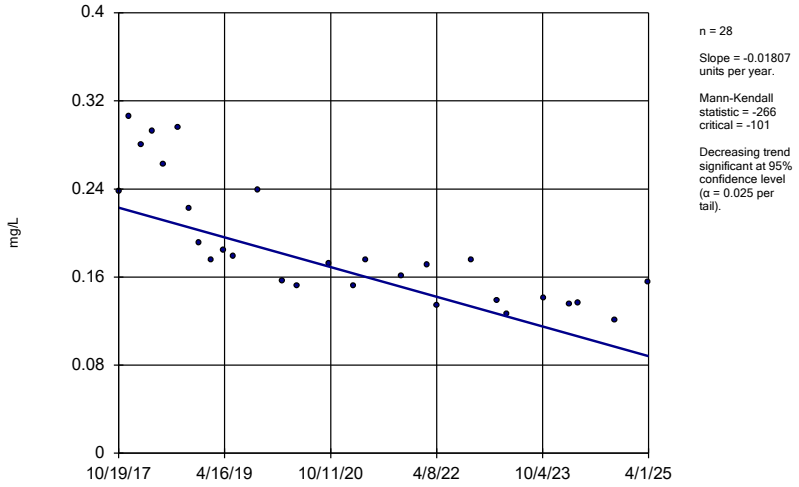
Sen's Slope Estimator

MW-1601 (bg)



n = 28

Slope = -0.01807 units per year.

Mann-Kendall statistic = -266
critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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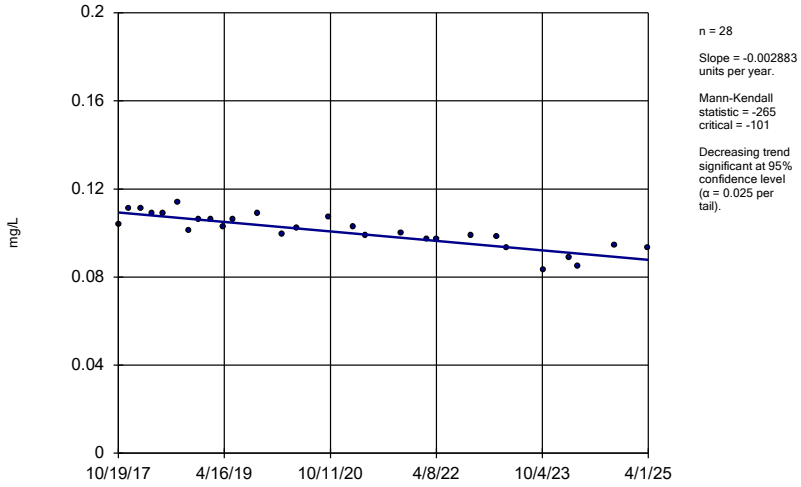
Sen's Slope Estimator

MW-1602 (bg)



n = 28

Slope = -0.002883 units per year.

Mann-Kendall statistic = -265
critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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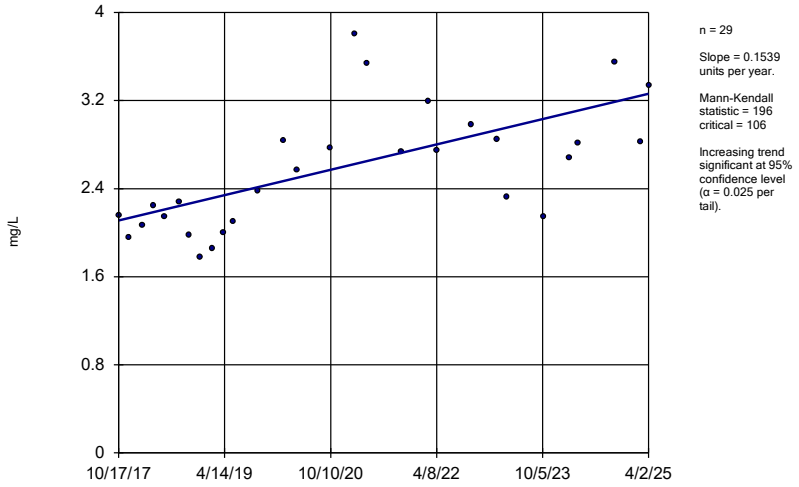
Sen's Slope Estimator

MW-1603



n = 29

Slope = 0.1539 units per year.

Mann-Kendall statistic = 196
critical = 106

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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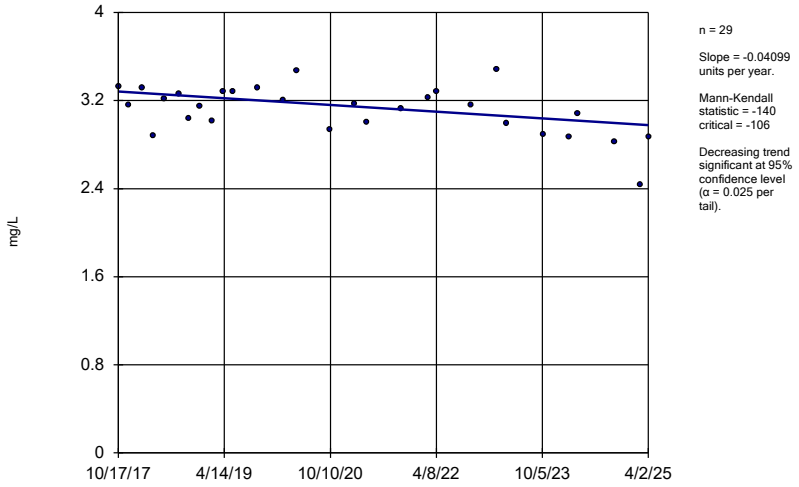
Sen's Slope Estimator

MW-1604



n = 29

Slope = -0.04099 units per year.

Mann-Kendall statistic = -140
critical = -106

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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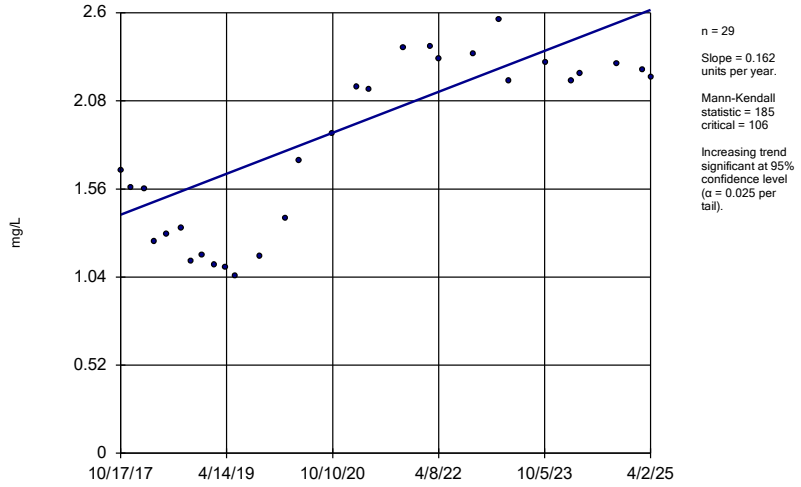
Sen's Slope Estimator

MW-1605



n = 29

Slope = 0.162 units per year.

Mann-Kendall statistic = 185 critical = 106

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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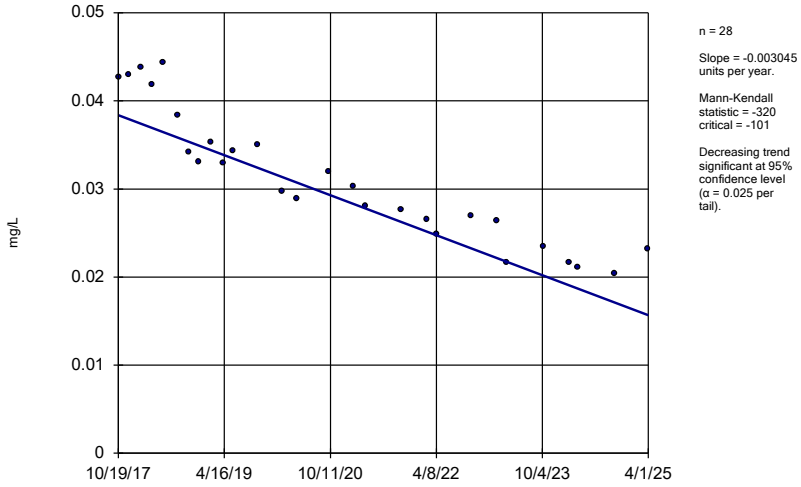
Sen's Slope Estimator

MW-1608 (bg)



n = 28

Slope = -0.003045 units per year.

Mann-Kendall statistic = -320 critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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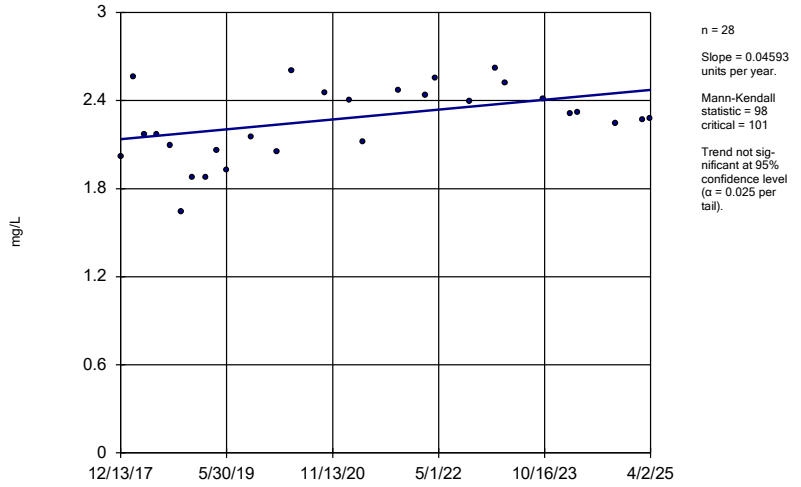
Sen's Slope Estimator

MW-1612



n = 28

Slope = 0.04593 units per year.

Mann-Kendall statistic = 98 critical = 101

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix IV
Clinch River Client: AEP Data: Clinch River Pond 1

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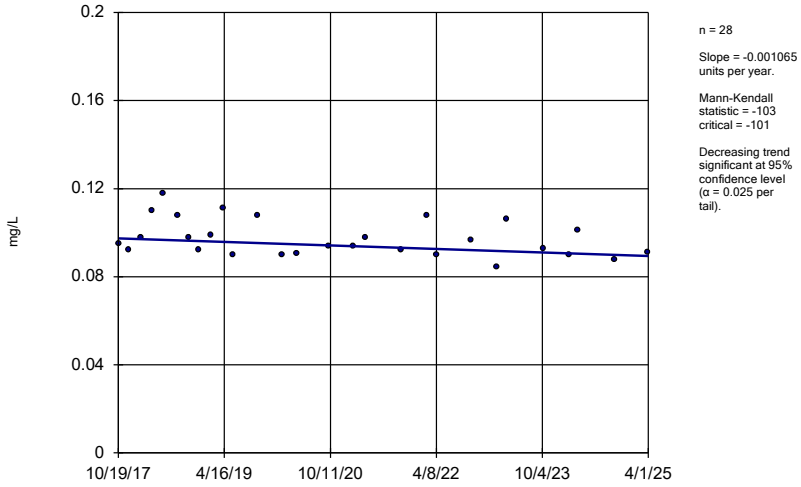
Sen's Slope Estimator

MW-1601 (bg)



n = 28

Slope = -0.001065 units per year.

Mann-Kendall statistic = -103 critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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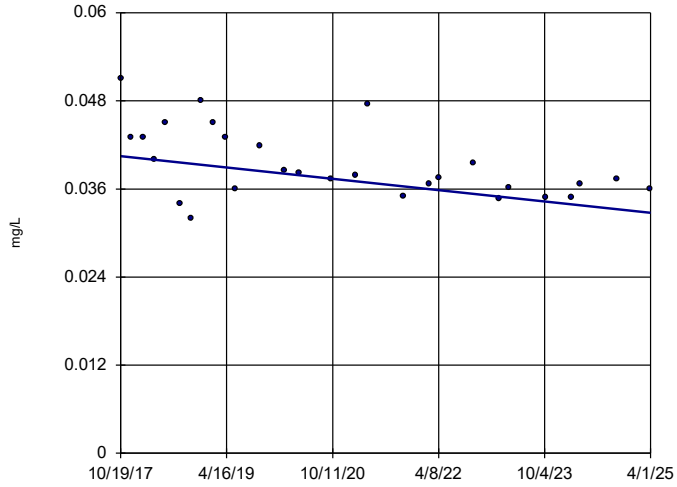
Sen's Slope Estimator

MW-1602 (bg)



n = 28

Slope = -0.001036 units per year.

Mann-Kendall statistic = -151
critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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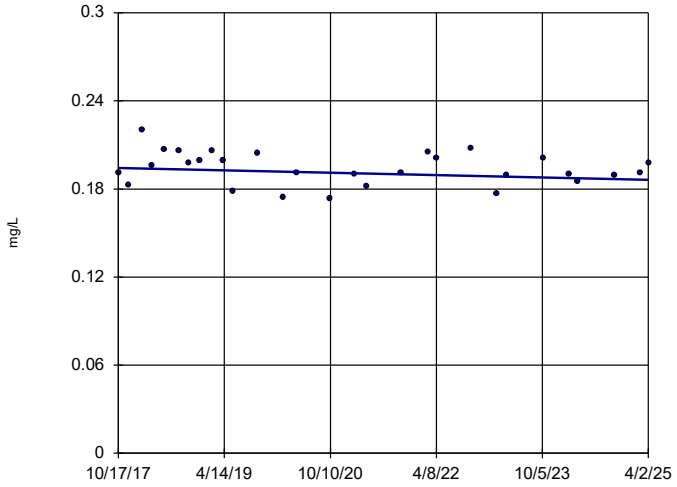
Sen's Slope Estimator

MW-1605



n = 29

Slope = -0.001084 units per year.

Mann-Kendall statistic = -64
critical = -106

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

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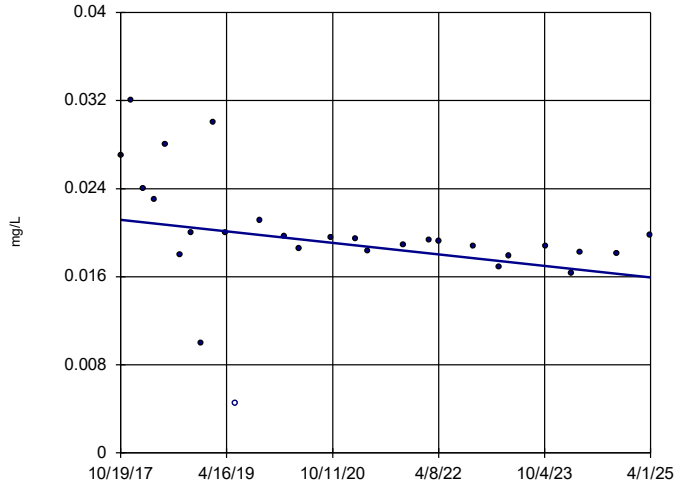
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1608 (bg)



n = 28

Slope = -0.0006991 units per year.

Mann-Kendall statistic = -172
critical = -101

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:19 AM View: Chattanooga Shale - Pond 1 Appendix I
Clinch River Client: AEP Data: Clinch River Pond 1

Appendix IV Trend Tests - Rome Limestone - Signiicant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:44 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Lithium total (mg/L)	**MW-1609 (bg)**	**-0.0005591**	**-113**	**-101**	**Yes**	**28**	**21.43**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1607**	**-0.004719**	**-165**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1609 (bg)**	**-0.00005548**	**-109**	**-101**	**Yes**	**28**	**25**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Rome Limestone - All Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:44 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Cobalt total (mg/L)	MW-1607	-0.0003238	-99	-106	No	29	0	n/a	0.05	NP
Cobalt total (mg/L)	MW-1609 (bg)	-0.0000142	-75	-101	No	28	10.71	n/a	0.05	NP
Lithium total (mg/L)	MW-1606	0.00002866	2	106	No	29	0	n/a	0.05	NP
Lithium total (mg/L)	MW-1607	0.001003	76	106	No	29	0	n/a	0.05	NP
Lithium total (mg/L)	**MW-1609 (bg)**	**-0.0005591**	**-113**	**-101**	**Yes**	**28**	**21.43**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1607**	**-0.004719**	**-165**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Molybdenum total (mg/L)	**MW-1609 (bg)**	**-0.00005548**	**-109**	**-101**	**Yes**	**28**	**25**	**n/a**	**0.05**	**NP**

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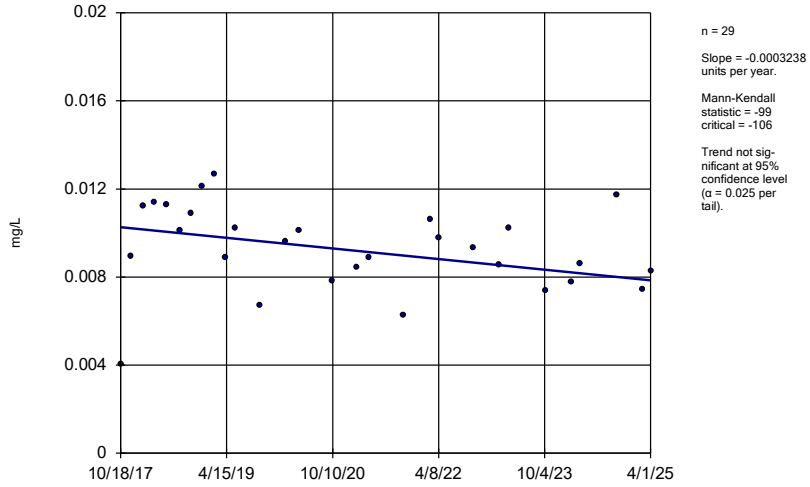
Sen's Slope Estimator

MW-1607



n = 29

Slope = -0.0003238 units per year.

Mann-Kendall statistic = -99
critical = -106

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendix IV Tr
Clinch River Client: AEP Data: Clinch River Pond 1

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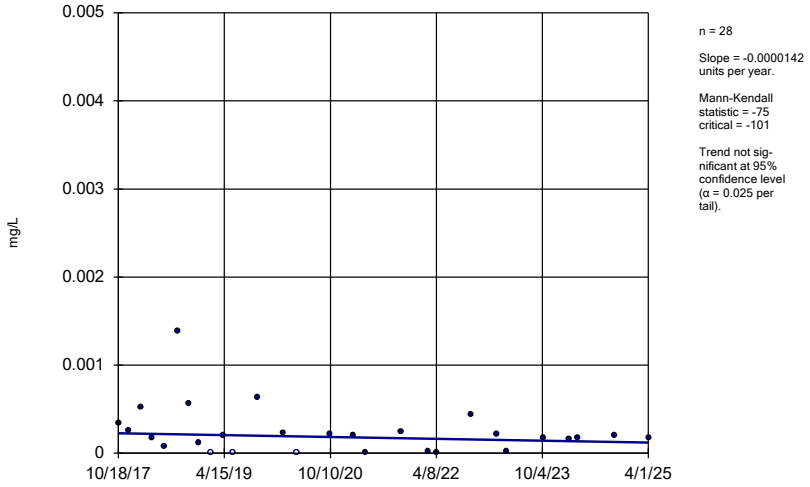
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1609 (bg)



n = 28

Slope = -0.0000142 units per year.

Mann-Kendall statistic = -75
critical = -101

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendix IV Tr
Clinch River Client: AEP Data: Clinch River Pond 1

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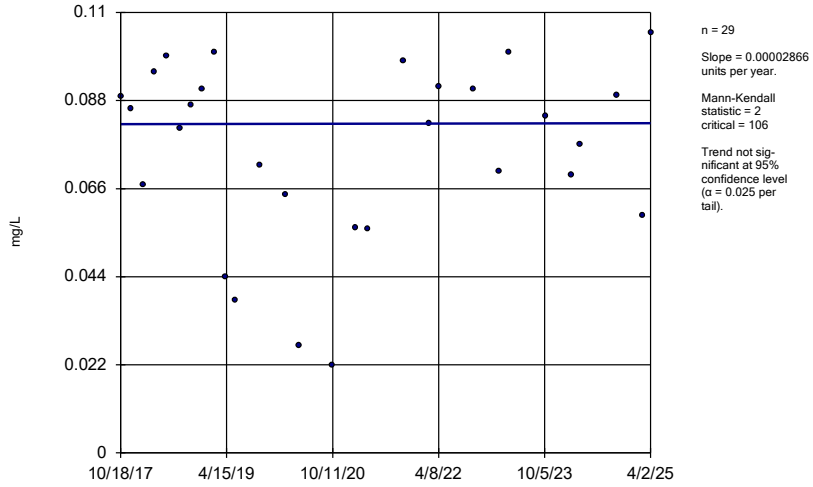
Sen's Slope Estimator

MW-1606



n = 29

Slope = 0.00002866 units per year.

Mann-Kendall statistic = 2
critical = 106

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

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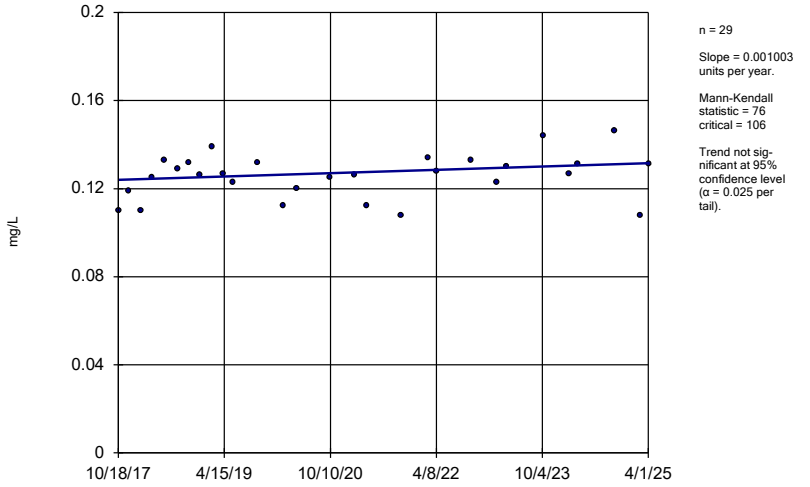
Sen's Slope Estimator

MW-1607



n = 29

Slope = 0.001003 units per year.

Mann-Kendall statistic = 76
critical = 106

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

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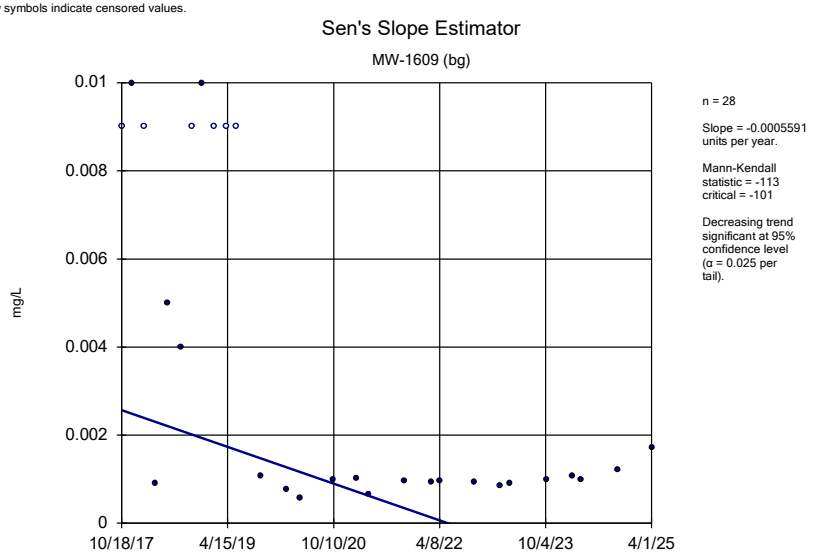
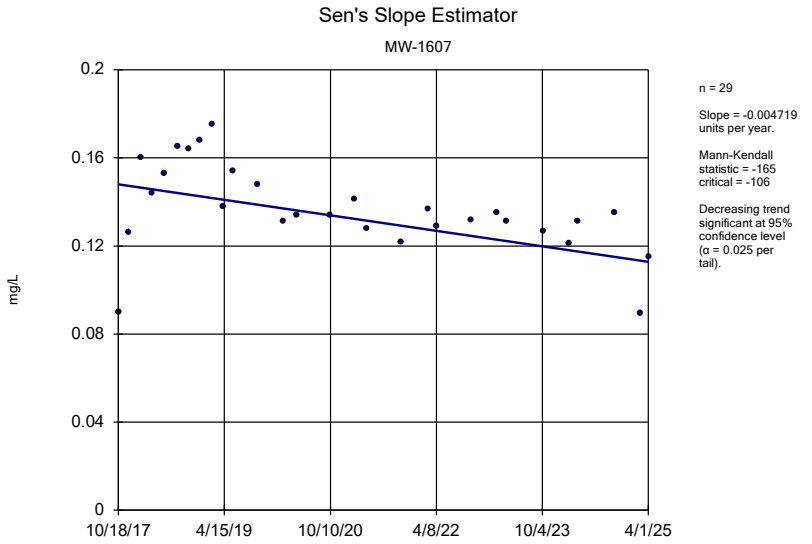
Hollow symbols indicate censored values.



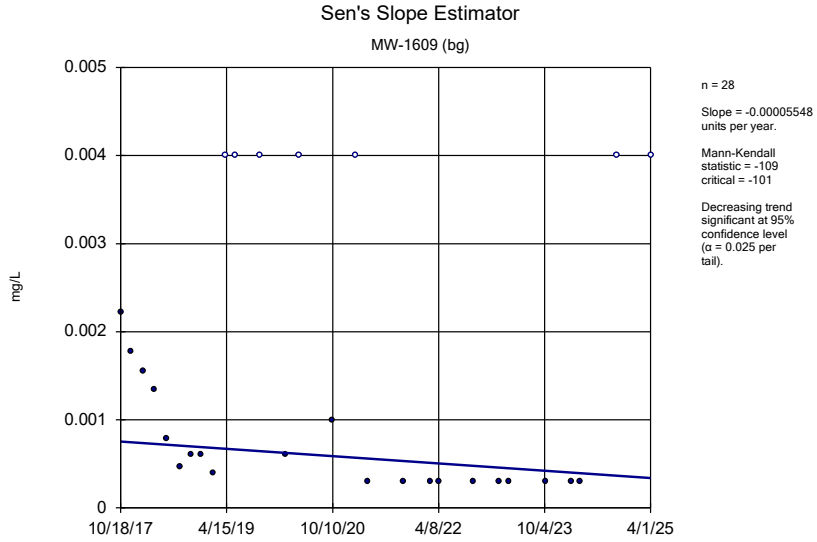
Constituent: Lithium total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendix IV T
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG



Constituent: Molybdenum total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendi
Clinch River Client: AEP Data: Clinch River Pond 1

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



Constituent: Molybdenum total Analysis Run 8/8/2025 11:43 AM View: Rome Limestone - Pond 1 Appendi
Clinch River Client: AEP Data: Clinch River Pond 1

Confidence Intervals (Most Recent 8) - Rome Limestone - All/Significant Results

Clinch River Client: AEP Data: Clinch River Pond 1 Printed 8/8/2025, 11:46 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Molybdenum total (mg/L)	**MW-1607**	**0.1368**	**0.1093**	**0.1**	**Yes**	**8**	**0.1231**	**0.01525**	**0**	**None**	**x^3**	**0.01**	**Param.**

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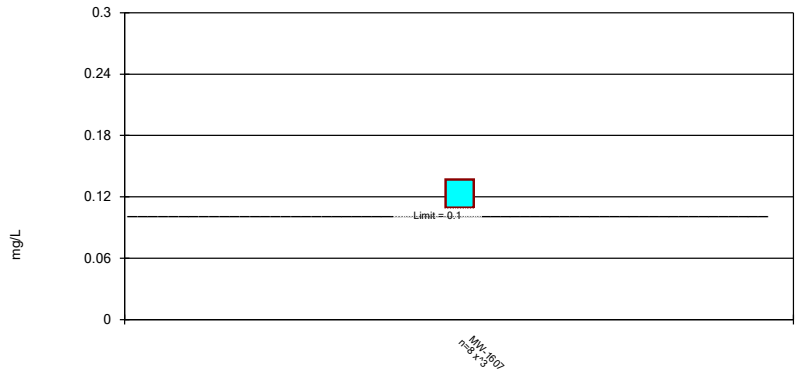
Parametric Confidence Interval

Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum total Analysis Run 8/8/2025 11:45 AM View: Rome Limestone - Pond 1 Confide
Clinch River Client: AEP Data: Clinch River Pond 1

APPENDIX 3 – Alternate Source Demonstrations

No new alternate source demonstrations have been completed.

APPENDIX 4 – Notices for Monitoring Program Transitions

The notification that an assessment monitoring program and assessment of corrective measure was initiated follows.

Clinch River Plant
Notice of Assessment Monitoring Program Establishment
Pond 1 CCR Management Unit

On July 15, 2019, it was determined that Clinch River Plant's Pond 1 had statistically significant increases over background for calcium, chloride and sulfate and a statistically significant decrease for pH.

Clinch River Pond 1 was officially closed on August 6, 2018 under a Solid Waste Permit issued by Virginia Department of Environmental Quality. The State solid waste permit included a groundwater monitoring program that required the groundwater to be sampled and analyzed for Appendix III, Appendix IV and additional State parameters immediately following the collection of background. Under the State statistical methods, the statistical analysis of the first compliance sampling event indicated statistical significant increases above groundwater protection standards for cobalt, lithium, molybdenum, nickel, lead and barium. Nickel and lead are State-only parameters.

Based on the results of the State statistical analysis, Appalachian Power Company made the decision to statistically evaluate Appendix IV parameters during the first Federal CCR detection monitoring event. This evaluation following Federal statistical analysis methods, indicated statistical significant increases above groundwater protection standards for barium, cobalt, lithium and molybdenum. This evaluation can be found as Appendix 2 of the Annual Groundwater Report dated August 1, 2019.

At this point, no alternate source demonstration (ASD) for Appendix III parameters will be completed in accordance with §257.94(e)(2), prompting the initiation of an assessment monitoring program, which was established on July 15, 2019. Therefore this notice is being placed in the operating record in accordance with the requirement of 257.94(e)(3). If a successful ASD is completed for the Appendix IV exceedances then an ASD will be completed for the Appendix III parameters.

Clinch River Plant

Notice for Initiating an Assessment of Corrective Measures

CCR Unit – Pond 1

This notice is being provided, as required by 40 CFR 257.95(g)(5), that an Assessment of Corrective Measures was initiated on October 13, 2019 for Clinch River Plant's Pond 1 due to the statistically significant concentrations detected above the established groundwater protection standards for cobalt, lithium, molybdenum and barium.

AEP Internal - Low Risk - Archived - ESH0000055043 - 10/13/2019 - crp_cmp_rpt_esh0000055043.pdf

APPENDIX 5 – Well Installation/Decommissioning Logs

No new wells were installed or decommissioned during the reporting period.