

REPORT

2023 Annual Groundwater Monitoring and Corrective Action Report

LCPA Surface Impoundment, Labadie Energy Center, Franklin County, Missouri, USA

January 31, 2024

Project Number: 23007

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EXECUTIVE SUMMARY AND STATUS OF THE LCPA GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the LCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Labadie Energy Center (LEC or Site) is subject to the requirements of the CCR Rule. This Annual Report for the LCPA describes CCR Rule groundwater monitoring activities from January 1, 2023, through December 31, 2023 including verification results related to late 2022 sampling.

Throughout 2023, the LCPA has been in Corrective Action Monitoring with Detection and Assessment Monitoring continuing concurrently. Semi-annual groundwater sampling associated with Detection Monitoring has been ongoing since Detection Monitoring was initiated on October 17, 2017, as required by the CCR Rule. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values at a Statistically Significant Increase (SSI) over background concentrations. SSIs have been determined for each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

The Assessment Monitoring program was established at the LCPA on April 15, 2018. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at a Statistically Significant Level (SSL) over the site-specific Groundwater Protection Standard (GWPS). On October 11, 2018, it was determined that molybdenum was present at an SSL. A summary of SSLs for the past year is provided in **Table 1**.

Table 1 - Summary of 2023 LCPA Sampling Events, Previous Year Verification, and Statistical Evaluations for Detection and Assessment Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October 2022 Sampling Event	Detection & Assessment Monitoring, October 25-28, 2022	November 22, 2022	Appendix III, Detected Appendix IV ^(See Note 1) , & Major Cations and Anions	pH: UMW-3D(R), UMW-4D, UMW-5D, UMW-6D Boron: UMW-1D, UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-7D, UMW-8D Chloride: UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-9D Fluoride: UMW-8D Sulfate: UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-7D TDS: UMW-1D, UMW-2D, UMW-3D(R), UMW-6D	Molybdenum: UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-7D	February 20, 2023
	Verification Sampling, January 4-5, 2023	January 20, 2023	Detected Appendix III parameters ^(See Note 2)			
May 2023 Sampling Event	Detection & Assessment Monitoring, May 11-23, 2023	June 24, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	pH: UMW-3D(R), UMW-4D, UMW-5D, UMW-6D Boron: UMW-1D, UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-7D, UMW-8D Chloride: UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-9D Sulfate: UMW-2D, UMW-3D(R), UMW-4D, UMW-5D, UMW-6D TDS: UMW-1D, UMW-2D, UMW-3D(R), UMW-5D, UMW-6D	Molybdenum: UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, UMW-7D	September 22, 2023
	Verification Sampling, July 13-14, 2023	August 10, 2023	Detected Appendix III parameters ^(See Note 2)			
November 2023 Sampling Event	Detection & Assessment Monitoring, November 16-20, 2023	January 25, 2024	Appendix III, Appendix IV, & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2024.		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2022 sampling event.
- 2) Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
- 3) SSI – Statistically Significant Increase.
- 4) SSL – Statistically Significant Limit.
- 5) TDS – Total Dissolved Solids.
- 6) MNA – Monitored Natural Attenuation.

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 29, 2019, and responses to public comments are posted on Ameren’s CCR website. On August 30, 2019, Ameren published its “Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins” (Remedy Selection Report) that identified source control through installation of a low permeability cover system, use of Monitored Natural Attenuation (MNA), and installation of Supplemental Corrective Measures as its chosen corrective action remedial plan. The Remedy Selection Report’s remedial plan consists of two phases as follows:

- 1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1×10^{-7} centimeters per second (cm/sec) versus 1×10^{-5} cm/sec required by the CCR Rule).
- 2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. MNA occurs due to naturally occurring processes within the aquifer.

Ameren commenced Phase 1 of the corrective action remedial plan in September 2019 by initiating closure at the LCPA. Substantial closure of the LCPA was completed in 2020, with the geomembrane cover system completed on December 30, 2020. Additional aspects of closure were completed in spring 2021 and the unit is closed. Closure of the LCPA triggered the transition of the LCPA into the post-closure care requirements of the CCR Rule. As outlined in §257.104 (Post-closure Care Requirements) of the CCR Rule, the monitoring system and programs must be maintained for at least 30 years. After 30 years, if the unit is in Detection Monitoring, the unit may cease groundwater sampling activities, otherwise post-closure care must continue until the unit can return to Detection Monitoring in accordance with §257.95 (Assessment Monitoring Program).

Sampling for Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report began with the February/April 2021 Corrective Action Sampling Event on February 18, 2021. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if any constituents within the Corrective Action Monitoring Well Network are statistically in exceedance of the GWPS. A summary of Corrective Action Monitoring activities and associated statistical results for this year is provided in **Table 2**.

Table 2 – Summary of 2023 LCPA Sampling Events and Statistical Evaluations for Corrective Action Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Constituents Statistically Exceeding the GWPS as a Part of Corrective Action Statistical Evaluations	Date Exceedance of GWPS was determined	ASD Completion Date
October 2022 Sampling Event	Phase 2 – Corrective Action Sampling October 24-28, 2022	November 22, 2022	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<u>Arsenic:</u> LMW-2S <u>Cobalt:</u> AM-1S <u>Lithium:</u> LMW-7S <u>Molybdenum:</u> LMW-2S, LMW-4S, LMW-8S, AM-1D, TP-2D, TP-3D, TP-3M, AMW-8, MW-33(D), MW-34(D), MW-35(D) <u>Radium 226 + 228:</u> TP-1D	February 20, 2023	May 19, 2023(See Note 2)

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Constituents Statistically Exceeding the GWPS as a Part of Corrective Action Statistical Evaluations	Date Exceedance of GWPS was determined	ASD Completion Date
May 2023 Sampling Event	Phase 2 – Corrective Action Sampling May 11-25, 2023	June 26, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	<p>Arsenic: LMW-2S</p> <p>Cobalt: AM-1S</p> <p>Lithium: LMW-7S</p> <p>Molybdenum: LMW-2S, LMW-4S, LMW-8S, AM-1D, TP-2D, TP-3D, TP-3M, AMW-8, MW-33(D), MW-34(D), MW-35(D)</p>	September 22, 2023	December 21, 2023 ^(See Note 3)
November 2023 Sampling Event	Phase 2 – Corrective Action Sampling November 15-20, 2023	January 25, 2024	Appendix III, Appendix IV, & Major Cations and Anions	Statistical analyses to evaluate statistical exceedances of the GWPS were not completed in 2023. Results of the statistical evaluation will be included in the 2024 Annual Report		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2022 sampling event.
- 2) Cobalt, lithium, and radium 226 + 228 have not historically been identified as SSLs in Assessment Monitoring. An Alternative Source Demonstration (ASD) was prepared for these constituents at AM-1S (cobalt), LMW-7S (lithium), and TP-1D (radium 226 + 228).
- 3) Cobalt and lithium have not been historically identified as SSLs in Assessment Monitoring. An ASD was prepared for these constituents at AM-1S (cobalt) and LMW-7S (lithium).

While there are exceedances of the GWPS using corrective action statistical analysis methods for arsenic, cobalt lithium, molybdenum, and radium 226 + 228 (Radium in October 2022 sampling event only), variability in the initial groundwater sampling results after closure of the LCPA is expected, especially at wells in close proximity to the LCPA CCR Unit (e.g. LMW-2S). These preliminary results are expected to show decreases in concentration over time after stabilization occurs due to closure and corrective measure remedial activities. Alternative Source Demonstrations (ASDs) were completed for the cobalt, lithium, and radium 226+228 exceedances, demonstrating that these exceedances are not a result of impacts from the LCPA, but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. Molybdenum and arsenic remain as exceedances within the LCPA Corrective Action Network; therefore, the unit remains in Corrective Action monitoring.

Supplemental Corrective Measures

In addition to MNA as a Corrective Action Remedy at Labadie, Ameren is currently preparing for installation of a groundwater treatment system similar to the system at the Rush Island Energy Center (RIEC). Ameren received an Underground Injection Control State Operating Permit (UI – 0000045). Due to the success of the treatment systems at the Rush Island Energy Center and the Sioux Energy Center, Ameren is currently expanding use of this technology to the downgradient side (northern side) of the LCPA, to supplement MNA at the site. Drilling of the injection and extraction wells associated with the treatment system is planned to be completed in 2024-2025, and the system is expected to be fully operational in 2025.

Overall, Corrective Actions taken by Ameren, including closure of the LCPA with an engineered geomembrane cover system and MNA, has reduced concentrations of key CCR constituents. In monitoring wells downgradient of the LCPA that currently have an exceedance for molybdenum in either the Assessment Monitoring or Corrective Action monitoring networks, average boron concentrations have decreased approximately 15% and average molybdenum concentrations have decreased approximately 9% since 2019 (the last year CCR Unit received CCR waste). After installation of the treatment system, it is expected that the additional remediation system will aid in reducing the concentrations of constituents of concern at the LCPA in coming years. Monitoring and further evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

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FIGURES

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APPENDICES

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1.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

There are currently two different networks used for monitoring the LCPA. These include the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring, as displayed in **Figure 1**. No new wells were installed or decommissioned in 2023. A summary of the well construction details for monitoring wells in both networks is provided in **Table 3**. Further details, including well construction diagrams for these wells, are provided in previous annual reports for the LCPA.

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the LCPA CCR Unit in 2023. **Tables 4 and 5** provide a summary of the groundwater samples collected in 2023 including the number of samples, the date of the sample collection, and the monitoring program for which the samples were collected. **Appendix A** provides laboratory analytical data for CCR Rule sampling events conducted in 2023.

2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed October 25-28, 2022. Verification sampling and the statistical analysis to evaluate for SSIs for the October 2022 event were not completed until 2023 and are therefore included in this report. New initial exceedances of Appendix III analytes triggered a verification sampling event, which was completed January 4-5, 2023, and verified SSIs. **Table 6** summarizes the results and the statistical analysis of the October 2022 Detection Monitoring event. Laboratory analytical data for the October 2022 Detection Monitoring event are provided in the 2022 Groundwater Monitoring and Corrective Action Annual Report for the LCPA.

Detection Monitoring samples were collected May 11-23, 2023, and testing was completed for all Appendix III analytes, as well as major cations and anions. As outlined in the Statistical Analysis Plan for the Site, updates to the statistical limits should be completed once four to eight new sample results are available. During the statistical analysis of the May 2023 sampling event, the statistical limits used to determine an SSI were updated according to the Statistical Analysis Plan. New initial exceedances of Appendix III analytes triggered a verification sampling event, which was completed July 13-14, 2023, and verified one SSI. **Table 7** summarizes the results and the statistical analyses of the May 2023 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 16-20, 2023, and testing was completed for all Appendix III analytes, as well as major cations and anions. The statistical analysis to evaluate for SSIs in the November 2023 data was not completed in 2023 and will be included in the 2024 Annual Report. **Table 8** summarizes the results of the November 2023 Detection Monitoring event.

2.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed October 25-28, 2022, and testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 9** summarizes the results of the October 2022 Assessment Monitoring event. Laboratory analytical data for this event are provided in the 2022 Annual Report. The statistical evaluation for this event was completed in 2023 and is included in this report. The results from this analysis and a table that displays the site-specific GWPS for each Appendix IV constituent are provided in **Appendix B**. The SSLs for the LCPA continue to be:

- Molybdenum at UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, and UMW-7D

An Assessment Monitoring sampling event was completed May 11-23, 2023. Testing was completed for all Appendix IV analytes, major cations and anions, and other selected MNA parameters. During the statistical

analysis of the April 2023 sampling event, the site-specific GWPSs used to determine SSLs were updated in accordance with the Statistical Analysis Plan. **Table 10** summarizes the results of the May 2023 Assessment Monitoring event. The statistical evaluation for this event was completed in 2023 and is included in this report. The statistical evaluation for this event and a table that displays the site-specific GWPSs are provided in **Appendix C** and determined that there were no new SSLs.

An Assessment Monitoring sampling event was completed November 16-20, 2023. Testing was completed for all Appendix IV analytes as well as major cations and anions. **Table 11** summarizes the results of the May 2023 Assessment Monitoring event; however, the statistical analysis to evaluate SSLs were not completed in 2023. Results of the statistical evaluation will be included in the 2024 Annual Report.

2.3 Corrective Action Monitoring Program

A Corrective Action sampling event was completed October 24-28, 2022. Testing was completed for all Appendix III analytes, Appendix IV analytes that were detected above the PQL during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, and major cations and anions. A summary of the October 2022 Corrective Action sampling event results is provided in **Table 12** and the results of the statistical evaluation for this event are provided in **Appendix D**. Cobalt at AM-1S is a new exceedance and lithium at LMW-7S returns as an exceedance based on additional data from the October 2022 sampling event. The remaining exceedances are the same as those reported for the April 2022 sampling event. A summary of constituents displaying statistical exceedances of the GWPS using Corrective Action statistical methods¹ as of the October 2022 sampling event is as follows:

- Arsenic at LMW-2S.
- Cobalt at AM-1S.
- Lithium at LMW-7S.
- Molybdenum at LMW-2S, LMW-4S, LMW-8S, AM-1D, TP-2D, TP-3D, TP-3M, AMW-8, MW-33(D), MW-34(D), and MW-35(D).
- Radium 226 + 228 at TP-1D.

A Corrective Action sampling event was completed May 11-25, 2023. Testing was completed for all Appendix III and IV analytes, major cations and anions, and other selected MNA parameters. A summary of the May 2023 Corrective Action sampling event results is provided in **Table 13**. The results from the statistical evaluation are provided in **Appendix E**. Based on this analysis, radium 226 + 228 is no longer an exceedance of the GWPS at any well in the Corrective Action well network. The other exceedances remained the same for this event as those reported for the October 2022 event.

As stated in the Corrective Action GMP, if the statistical evaluation determines that a constituent exceeds the GWPS that was not identified as an SSL in Assessment Monitoring, the data should be evaluated to determine the source of the exceedance. Cobalt, lithium, and radium 226 + 228 have not historically been identified as SSLs in Assessment Monitoring, and a review of the data determined that the statistical exceedances at monitoring wells AM-1S (cobalt), and LMW-7S (lithium), and TP-1D (radium 226 + 228) are not caused by the LCPA CCR Unit. Therefore, Alternative Source Demonstrations (ASDs) were completed following the October 2022 and May 2023 sampling events and are provided in **Appendices F** and **G**. These ASDs conclude the statistical exceedances for lithium, cobalt, and radium 226 + 228 (only applicable for October 2022) are not a result of impacts from the LCPA but appear to result from natural geochemical variability within the alluvial aquifer.

¹ The statistical testing method used to evaluate the Corrective Action monitoring results is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the Groundwater Protection Standard (GWPS) for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the GWPS instead of the Lower Confidence Limit (LCL) [as used during Assessment Monitoring].

While there are exceedances of the GWPS using corrective action statistical analysis methods for arsenic and molybdenum, variability in the initial groundwater sampling results during and directly after closure of the LCPA is expected, especially at wells in close proximity to the LCPA CCR Unit (e.g., LMW-2S). The concentrations reported in these preliminary results are expected to decrease over time as a result of the closure activities, as stabilization occurs, and groundwater treatment corrective measures are put into service.

A Corrective Action sampling event was completed on November 15-20, 2023. Testing was completed for all Appendix III and IV analytes in addition to major cations and anions. **Table 14** summarizes the results of the November 2023 Corrective Action event; however, the evaluation for statistical exceedances of the GWPS was not completed in 2023. Results of this statistical evaluation will be included in the 2024 Annual Report.

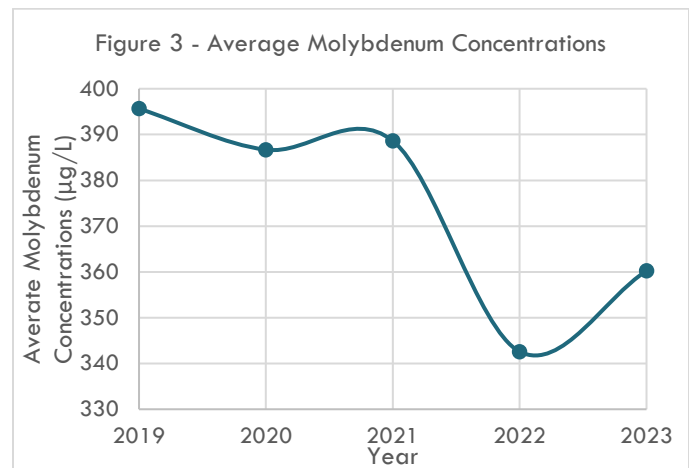
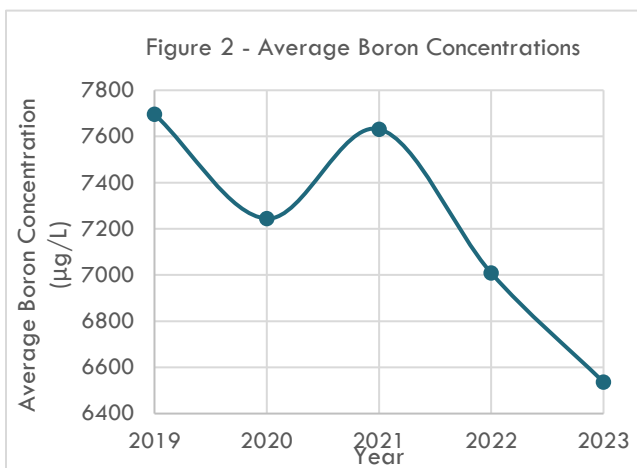
2.4 Evaluation of Corrective Measures

As discussed above, Ameren obtained an Underground Injection Control Missouri State Operating Permit (UI – 0000045) in 2022. Due to the success of the treatment systems at the Rush Island and Sioux Energy Centers, Ameren plans to implement an additional corrective measure (a pump, treat, and re-inject groundwater treatment system) at the downgradient side of the LCPA, to supplement the MNA at the site. The groundwater treatment system is expected to be fully operational in 2025.

Ameren commenced Phase 1 of the corrective action remedial plan in September 2019 by initiating closure of the LCPA, which was completed on December 30, 2020. The November 2023 groundwater sampling event represents the sixth groundwater sampling event since closure of the LCPA was completed.

In order to document the effectiveness of the Corrective Action Remedies (Corrective Measures), a site-wide evaluation of the key site CCR Indicators was completed. **Figures 2 and 3**, below, display the average concentrations for boron and molybdenum in the monitoring wells that currently contain a statistical exceedance for molybdenum in either the Assessment Monitoring or Corrective Action Monitoring Networks for the LCPA. While there is variability in individual well results, the average annual concentrations at the site are decreasing for boron and molybdenum concentrations as follows:

- **Boron** - Average concentrations in these monitoring wells downgradient of the LCPA have decreased approximately 15% since 2019.
- **Molybdenum** - Average concentrations in these monitoring wells downgradient of the LCPA have decreased approximately 9% since 2019.



As displayed by these figures, corrective measures taken by Ameren including the closure of the LCPA with an engineered geomembrane system and MNA have been effective at reducing concentrations of key CCR constituents. The future implementation of the groundwater treatment system discussed previously is expected to supplement these reductions. Groundwater monitoring and evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

2.5 Groundwater Elevation, Flow Rate and Direction

To meet the requirements of §257.93(c), water level measurements were taken at all monitoring wells prior to the start of groundwater purging and sampling. Static water levels were measured within a 24-hour period in each monitoring well using an electronic water level indicator.

Groundwater elevations were used to generate potentiometric surface maps included in **Appendix H**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in the water level in the adjacent Missouri River. Water flows into and out of the alluvial aquifer because of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. Overall, based on the potentiometric surface maps, a general flow direction from the south/southwest (bluffs area) to the north/northeast (Missouri River) is observed under normal river conditions. However, during periods of high river levels, groundwater flow can temporarily reverse. During these times of high river stage and temporary flow direction changes, horizontal groundwater gradients generally decrease, and little net movement of groundwater occurs. Based on quarterly water level measurements collected in 2023, groundwater across the LEC exhibited typical flow towards the Missouri River throughout the year.

Groundwater flow direction and hydraulic gradient were estimated for the alluvial aquifer wells at the LEC using commercially available software. Results from this assessment indicate that, while groundwater flow direction is variable, the overall net groundwater flow in the alluvial aquifer at the LEC is from the bluffs toward the river. Horizontal gradients calculated by the program range from 0.0001 to 0.0007 feet/foot with an estimated net annual groundwater movement of approximately 18 feet per year in the prevailing downgradient direction.

2.6 Sampling Issues

No notable sampling issues were encountered at the LCPA in 2023.

3.0 ACTIVITIES PLANNED FOR 2024

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2024. Statistical analysis of the November 2023 Detection and Assessment Monitoring data will be completed in 2024 and will be included in the 2024 Annual Report.

As part of the Phase 2 of the Remedy Selection Report’s corrective measures remedial plan, Corrective Action sampling is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2024. Statistical analysis of the November 2023 Corrective Action Monitoring data will be completed in 2024 and will be included in the 2024 Annual Report. Monitoring and statistical evaluation of MNA will be completed in accordance with the corrective measures remedial plan discussed in the Remedy Selection Report.

Drilling of the injection and extraction wells associated with the treatment system is planned to be completed in 2024-2025, and the system is expected to be operational in 2025. Evaluation of the effectiveness of Corrective Action and Corrective Measures on CCR constituent concentrations in groundwater will continue in 2024 and be included in the 2024 Annual Report.

Tables

Table 3
Summary of Well Construction Details
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

Monitoring Well ID	Installation Date	Location		Top of Casing Elevation	Ground Surface Elevation	Top of Screen Elevation	Base of Well	Total Depth
		Northing ¹	Easting ¹	(FT MSL) ²	(FT MSL) ²	(FT MSL) ²	(FT MSL) ²	(FT BGS) ³
CCR RULE COMPLIANCE NETWORK								
UMW-1D	11/19/2015	988822.5	723129.4	489.72	487.8	407.6	397.4	90.4
UMW-2D	11/21/2015	990437.2	722248.6	484.81	482.7	412.7	402.5	80.3
UMW-3D(R)	10/25/2018	991823.5	723545.1	491.13	488.9	409.4	399.2	89.7
UMW-4D	11/24/2015	992512.3	724538.1	494.95	493.2	407.9	397.7	95.5
UMW-5D	11/23/2015	992027.2	725067.9	496.76	494.9	408.2	398.0	96.9
UMW-6D*	11/22/2015	991382.8	725540.9	493.59	492.0	410.4	400.2	91.8
UMW-7D	11/20/2015	990722.8	726032.4	469.79	468.0	412.6	402.4	65.6
UMW-8D	11/19/2015	989892.7	725179.5	469.47	467.5	407.0	396.8	70.6
UMW-9D	11/19/2015	989220.0	724447.8	470.61	468.8	408.9	398.7	70.1
BMW-1D	2/1/2016	988310.6	715138.4	473.54	471.2	410.5	400.3	70.9
BMW-2D	2/2/2016	987204.3	715104.2	474.39	472.4	413.0	402.8	69.6
CORRECTIVE ACTION MONITORING WELL NETWORK								
BMW-1S	2/1/2016	988310.0	715131.6	473.49	471.2	450.7	440.5	30.7
BMW-2S	2/2/2016	987210.1	715104.3	474.56	472.5	454.6	444.4	28.1
LMW-1S	11/20/2015	990727.7	726039.1	470.06	468.1	454.5	444.3	23.8
LMW-2S	11/23/2015	992017.5	725074.2	496.64	494.9	445.8	440.6	54.3
LMW-4S	11/18/2015	994194.9	725624.1	472.88	470.7	448.3	438.1	32.7
LMW-7S	11/20/2015	992330.1	726371.1	468.43	466.7	453.4	443.2	23.5
LMW-8S	11/20/2015	991371.2	726351.3	467.24	465.2	452.2	442.0	23.2
MW-24	3/20/2013	991819.3	727992.3	467.10	464.6	457.3	447.1	17.5
MW-26	3/20/2013	993976.5	726910.9	469.20	466.7	456.4	446.2	20.5
S-1	4/5/2017	994676.8	726055.1	472.64	470.4	453.2	442.9	27.5
TP-1D	6/3/2018	997122.3	734100.3	469.09	465.8	380.1	375.0	90.8
TP-2M	6/2/2018	993865.6	722603.7	471.22	468.2	412.9	407.8	60.5
TP-2D	6/2/2018	993865.6	722603.7	471.22	468.2	374.6	369.5	98.7
TP-3M	6/17/2018	996343.6	725783.7	475.64	472.6	417.8	412.7	59.9
TP-3D	6/17/2018	996343.6	725783.7	475.63	472.6	382.5	377.4	95.2
TP-4D	6/13/2018	999139.8	728578.3	472.08	469.1	379.0	373.9	95.2
MW-33(D)	3/6/2014	995742.0	727409.0	472.15	469.4	402.1	391.9	77.5
MW-34(D)	2/25/2014	995561.0	728820.0	470.19	467.4	401.5	391.3	76.1
MW-35(D)	3/8/2014	992693.0	727536.0	468.59	465.9	398.5	388.3	77.6
AM-1D (UMW-10D)	5/31/2018	995298.6	723827.3	482.78	480.0	409.8	399.6	80.4
AM-1S (UMW-10S)	5/31/2018	995288.1	723817.1	483.00	480.2	454.8	444.6	35.6
AMW-8	6/13/2018	994225.9	726113.0	471.06	468.4	411.1	400.9	67.5

Notes:

- 1) Horizontal Datum: State Plane Coordinates NAD83 (2000) Missouri East Zone feet.
- 2) FT MSL- Feet above mean sea level.
- 3) FT BGS - Feet below ground surface.
- 4) Vertical Datum: NAVD88 feet.
- 5) * - UMW-6D was modified on October 15th, 2020 due to construction requirements associated with the closure of the LCPA.

Table 4
Summary of Detection and Assessment Groundwater Network Sampling Dates
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

Groundwater Monitoring Wells	Date of Sample Collection				
	January 2023 Verification Sampling	May 2023 Sampling Event	July 2023 Verification Sampling	November 2023 Sampling Event	Total Number of Samples
CCR Rule Compliance Monitoring Well Network					
BMW-1D	-	5/11/2023	-	11/16/2023	2
BMW-2D	-	5/11/2023	-	11/16/2023	2
UMW-1D	-	5/22/2023	7/13/2023	11/20/2023	3
UMW-2D	-	5/11/2023	-	11/16/2023	2
UMW-3D(R)	1/5/2023	5/23/2023	-	11/20/2023	3
UMW-4D	-	5/19/2023	-	11/17/2023	2
UMW-5D	-	5/19/2023	7/13/2023	11/20/2023	3
UMW-6D	-	5/19/2023	-	11/20/2023	2
UMW-7D	-	5/12/2023	7/14/2023	11/16/2023	3
UMW-8D	1/4/2023	5/12/2023	-	11/16/2023	3
UMW-9D	-	5/12/2023	7/14/2023	11/16/2023	3
Detection or Assessment Monitoring	Detection	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 6 - 8.
- 2.) Verification Sampling results provided in Tables 6 & 7.
- 3.) Assessment Monitoring results provided in Tables 9 - 11.
- 4.) "-" No sample collected.
- 5.) NA - Not Applicable.

Table 5
Summary of Corrective Action Groundwater Network Sampling Dates
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

Groundwater Monitoring Wells	Date of Sample Collection		
	May 2023 Sampling Event	November 2023 Sampling Event	Total Number of Samples
Corrective Action Monitoring Well Network			
BMW-1S	5/11/2023	11/16/2023	2
BMW-2S	5/11/2023	11/16/2023	2
LMW-1S	5/12/2023	11/16/2023	2
LMW-2S	5/19/2023	11/20/2023	2
LMW-4S	5/24/2023	11/17/2023	2
LMW-7S	5/18/2023	11/15/2023	2
LMW-8S	5/18/2023	11/16/2023	2
MW-24	5/18/2023	11/17/2023	2
MW-26	5/18/2023	11/17/2023	2
S-1	5/16/2023	11/20/2023	2
TP-1D	5/16/2023	11/15/2023	2
TP-2M	5/22/2023	11/17/2023	2
TP-2D	5/22/2023	11/17/2023	2
TP-3M	5/25/2023	11/15/2023	2
TP-3D	5/25/2023	11/15/2023	2
TP-4D	5/24/2023	11/15/2023	2
MW-33(D)	5/24/2023	11/16/2023	2
MW-34(D)	5/24/2023	11/16/2023	2
MW-35(D)	5/18/2023	11/17/2023	2
AMW-8	5/24/2023	11/16/2023	2
AM-1D (UMW-10D)	5/22/2023	11/20/2023	2
AM-1S (UMW-10S)	5/22/2023	11/20/2023	2
Event Type	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 12-14.
- 2.) NA - Not Applicable.

Table 6
October 2022 Detection Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
			BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
October 2022 Sampling Event													
DATE	NA	NA	10/27/2022	10/27/2022	10/26/2022	10/26/2022	10/27/2022	10/27/2022	10/25/2022	10/25/2022	10/27/2022	10/28/2022	10/27/2022
pH	SU	6.815-7.507	7.09	7.23	7.01	7.38	7.58	8.16	9.21	8.50	6.97	7.20	6.94
BORON, TOTAL	µg/L	DQR	79.1 J	67.9 J	556	941	10,000	4,960	6,680 J	10,500 J	1,320	654	86.4 J
CALCIUM, TOTAL	µg/L	150,175	132,000	138,000	141,000	121,000	152,000	58,600	74,800 J	123,000 J	140,000	26,400	114,000
CHLORIDE, TOTAL	mg/L	17.29	7.3	2.4	10.6	28.0	17.9	21.2	22.1	21.8	6.9	3.4 J	25.5
FLUORIDE, TOTAL	mg/L	0.3163	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	0.22
SULFATE, TOTAL	mg/L	54.83	22.5	45.5	20.0	128	413	289	272 J	511 J	58.9	17.2	ND
TOTAL DISSOLVED SOLIDS	mg/L	577	504	495	609	643	762	545	558 J	1,080 J	545	181	453
January 2023 Verification Sampling Event													
DATE	NA	NA					1/5/2023					1/4/2023	
pH	SU	6.815-7.507											
BORON, TOTAL	µg/L	DQR											
CALCIUM, TOTAL	µg/L	150,175					118,000						
CHLORIDE, TOTAL	mg/L	17.29											
FLUORIDE, TOTAL	mg/L	0.3163										0.36 J	
SULFATE, TOTAL	mg/L	54.83											
TOTAL DISSOLVED SOLIDS	mg/L	577					758						

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
9. If all background values are less than the Practical Quantitation Limit (PQL) then the Double Quantification Rule (DQR) is used.

Prepared By: GTM
Checked By: ANT
Reviewed By: MNH

Table 7
May 2023 Detection Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
			BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
May 2023 Sampling Event													
DATE	NA	NA	5/11/2023	5/11/2023	5/22/2023	5/11/2023	5/23/2023	5/19/2023	5/19/2023	5/19/2023	5/12/2023	5/12/2023	5/12/2023
pH	SU	6.865-7.474	7.21	7.29	7.13	7.45	8.45	8.30	9.44	8.53	7.12	7.45	7.11
BORON, TOTAL	µg/L	DQR	72.4 J	61.5 J	431	1,040	9,640	4,930	9,950	9,240	906	665	85.7 J
CALCIUM, TOTAL	µg/L	149,838	124,000	137,000	150,000	118,000 J	85,000	59,600	87,600	122,000	137,000	34,000	118,000
CHLORIDE, TOTAL	mg/L	17.52	8.2	2.3	8.2	40.4 J	25.1	25.4	23.9	19.9	5.9	2.5	22.7 J
FLUORIDE, TOTAL	mg/L	0.2975	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND
SULFATE, TOTAL	mg/L	53.67	26.0	45.1	20.4	172	99.2	286	292	734	13.5	10.5	ND
TOTAL DISSOLVED SOLIDS	mg/L	569.9	486	747	622	667	608	554	632	989	603	290	702 J
July 2023 Verification Sampling Event													
DATE	NA	NA			7/13/2023				7/13/2023		7/14/2023		7/14/2023
pH	SU	6.865-7.474											
BORON, TOTAL	µg/L	DQR											
CALCIUM, TOTAL	µg/L	149,838			143,000								
CHLORIDE, TOTAL	mg/L	17.52											
FLUORIDE, TOTAL	mg/L	0.2975											
SULFATE, TOTAL	mg/L	53.67											
TOTAL DISSOLVED SOLIDS	mg/L	569.9							626		495		475

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
9. If all background values are less than the Practical Quantitation Limit (PQL) then the Double Quantification Rule (DQR) is used.

Prepared By: GTM
Checked By: JSI
Reviewed By: MNH

Table 8
November 2023 Detection Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
November 2023 Detection Monitoring Event												
DATE	NA	11/16/2023	11/16/2023	11/20/2023	11/16/2023	11/20/2023	11/17/2023	11/20/2023	11/20/2023	11/16/2023	11/16/2023	11/16/2023
pH	SU	7.23	7.31	7.18	7.43	8.95	8.37	9.32	8.82	7.17	7.39	7.16
BORON, TOTAL	µg/L	72.5 J	63.6 J	485	1,080	10,800	6,090	11,100	9,650	803	619	86.5 J
CALCIUM, TOTAL	µg/L	116,000	135,000	156,000	128,000	75,500	62,800	91,700	125,000	140,000	36,800	115,000
CHLORIDE, TOTAL	mg/L	6.2	2.0	10.5	27.2	23.0	22.3	20.8 J	19.6 J	6.4	2.5	25.9
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20 J	ND
SULFATE, TOTAL	mg/L	16.7	45.9	17.9	130	263	293	303 J	648	6.4	8.4	ND
TOTAL DISSOLVED SOLIDS	mg/L	182	325	596 J	615	515 J	565	645	961	465	128	445

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Prepared By: JSI
Checked By: ANT
Reviewed By: MNH

Table 9
October 2022 Assessment Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	10/27/2022	10/27/2022	10/26/2022	10/26/2022	10/27/2022	10/27/2022	10/25/2022	10/25/2022	10/27/2022	10/28/2022	10/27/2022
DISSOLVED OXYGEN	mg/L	0.22	0.45	0.16	0.44	1.00	0.35	0.37	0.29	0.15	0.10	0.15
pH	SU	7.09	7.23	7.01	7.38	7.58	8.16	9.21	8.50	6.97	7.20	6.94
REDOX POTENTIAL	mV	56.3	60.8	-214.3	-194.8	-168.3	-153.2	-92.9	-9.2	-134.9	-175.6	-155.7
SPECIFIC CONDUCTIVITY	mS/cm	0.917	0.862	1.040	0.998	1.160	0.830	0.759	1.247	0.942	0.305	0.865
TURBIDITY	NTU	3.45	4.58	4.16	4.99	1.74	1.85	1.32	0.95	1.12	10.3	1.48
APPENDIX IV PARAMETERS												
ARSENIC, TOTAL	µg/L	2.3	33.9	41.9	1.1	0.95 J	ND	20.4	25.9 J	25.6	23.2	27.9
BARIUM, TOTAL	µg/L	1,070	320	488	132	110	70.7	64.5 J	104 J	96.3	75.8	493
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	0.22
LITHIUM, TOTAL	µg/L	30.8	45.5	28.1	27.0	26.7	28.6	20.0 J	11.4 J	26.6	13.1	18.5
MOLYBDENUM, TOTAL	µg/L	1.9 J	1.4 J	2.9 J	30.5	173	263	451 J	575	89.9	18.5 J	1.8 J
RADIUM [226 + 228]	pCi/L	1.927	ND	2.013	1.522	1.248	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.19 J	0.21 J	0.29 J	ND	ND	ND

NOTES

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Table 10
May 2023 Assessment Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	5/11/2023	5/11/2023	5/22/2023	5/11/2023	5/23/2023	5/19/2023	5/19/2023	5/19/2023	5/12/2023	5/12/2023	5/12/2023
DISSOLVED OXYGEN	mg/L	0.08	0.11	0.09	0.22	0.64	0.13	0.12	0.09	0.06	0.06	0.06
pH	SU	7.21	7.29	7.13	7.45	8.45	8.30	9.44	8.53	7.12	7.45	7.11
REDOX POTENTIAL	mV	-125.2	-121.5	-139.2	-123.8	-150.0	-139.5	-94.7	-193.8	-123.0	-155.4	-141.0
SPECIFIC CONDUCTIVITY	mS/cm	0.844	0.866	1.149	1.004	0.841	0.882	0.916	1.452	0.890	0.310	0.883
TURBIDITY	NTU	2.03	4.10	2.09	4.02	1.00	3.15	3.63	2.45	4.60	4.11	3.80
APPENDIX IV PARAMETERS												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	2.4	34.7	46.8	0.88 J	5.8	ND	19.3	15.8	27.2	28.8	28.1
BARIUM, TOTAL	µg/L	974	330	517	127	65.3	71.1	80.7	84.4	118	105	508
BERYLLIUM, TOTAL	µg/L	ND	ND	0.20 J	ND	ND	ND	ND	ND	0.51 J	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	0.071 J	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.79 J	0.33 J	ND	0.37 J	ND	ND	ND	ND	ND	0.36 J	0.32 J
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	29.9	45.2	28.8	28.8	18.8	29.5	19.9	12.8	27.1	14.7	18.5
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.5 J	1.8 J	3.8 J	35.1	228	288	681	544	88.9	15.7 J	1.4 J
RADIUM [226 + 228]	pCi/L	2.421	ND	1.892	1.781	ND	ND	ND	ND	1.574	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.20 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI
Checked By: GTM
Reviewed By: MNH

Table 11
November 2023 Assessment Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D(R)	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	11/16/2023	11/16/2023	11/20/2023	11/16/2023	11/20/2023	11/17/2023	11/20/2023	11/20/2023	11/16/2023	11/16/2023	11/16/2023
DISSOLVED OXYGEN	mg/L	0.99	0.23	0.51	0.33	0.97	0.55	0.31	0.68	0.18	0.49	0.30
pH	SU	7.23	7.31	7.18	7.43	8.95	8.37	9.32	8.82	7.17	7.39	7.16
REDOX POTENTIAL	mV	1.0	49.4	33.5	27.3	22.5	-34.2	60.9	-52.4	-48.7	-62.0	-117.7
SPECIFIC CONDUCTIVITY	mS/cm	0.707	0.761	1.063	0.924	0.737	0.783	0.827	1.322	0.642	0.276	0.577
TURBIDITY	NTU	4.48	3.22	4.93	3.28	4.97	1.04	1.10	3.22	3.01	4.28	0.90
APPENDIX IV PARAMETERS												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	2.8	39.4	53.1	0.89 J	10.9	0.13 J	19.2	19.9	29.7	38.4	32.2
BARIUM, TOTAL	µg/L	951	311	551	134	63.4	76.3	88.8	89.7	143	124	496
BERYLLIUM, TOTAL	µg/L	0.21 J	0.20 J	0.19 J	0.15 J	ND	ND	ND	ND	0.18 J	ND	0.20 J
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.11 J	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.76 J	0.40 J	ND	0.51 J	0.53 J	0.41 J	0.46 J	0.31 J	0.39 J	0.51 J	0.53 J
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20 J	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	29.3	46.3	28.2	30.6	12.0	29.9	17.1	8.6 J	27.2	16.0	18.3
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	1.3 J	2.8 J	31.2	289	335	683	525	85.8	14.3 J	ND
RADIUM [226 + 228]	pCi/L	ND	ND	2.245	1.396	ND	1.495	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.30 J	ND	ND	0.26 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

- Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
- J - Result is an estimated value.
- NA - Not Applicable.
- ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI
Checked By: ANT
Reviewed By: MMH

Table 12
October 2022 Corrective Action Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-4S	LMW-7S	LMW-8S	MW-24	MW-26	S-1	AM-1S	TP-1D	TP-2M	TP-2D	TP-3M	TP-3D	TP-4D	MW-33(D)	MW-34(D)	MW-35(D)	AMW-8	AM-1D
FIELD PARAMETERS																							
DATE	NA	10/27/2022	10/27/2022	10/27/2022	10/25/2022	10/25/2022	10/28/2022	10/27/2022	10/24/2022	10/24/2022	10/26/2022	10/26/2022	10/26/2022	10/26/2022	10/26/2022	10/28/2022	10/28/2022	10/24/2022	10/28/2022	10/28/2022	10/24/2022	10/26/2022	10/26/2022
DISSOLVED OXYGEN	mg/L	0.21	1.39	0.17	0.32	0.19	0.19	0.14	1.78	1.52	0.24	0.43	0.15	0.25	0.16	0.17	0.11	0.16	0.27	0.23	0.54	0.38	0.11
REDOX POTENTIAL	mV	63.5	99.0	-48.9	-61.1	92.2	-22.2	-69.7	114.6	150.9	116.2	-125.4	86.6	-201.9	-215.2	101.5	96.4	62.5	93.9	-136.1	-123.3	67.7	-215.1
SPECIFIC CONDUCTIVITY	mS/cm	1.310	0.861	0.722	0.741	1.101	1.275	0.681	0.831	0.829	1.019	1.254	0.919	0.856	0.828	0.990	1.128	0.907	1.209	0.995	1.116	0.789	1.098
TURBIDITY	NTU	4.62	4.48	3.42	2.54	9.86	4.28	9.81	1.29	3.56	2.03	6.63	2.34	1.90	2.83	0.86	0.67	1.14	1.05	0.46	0.88	4.83	4.79
APPENDIX III PARAMETERS																							
BORON, TOTAL	µg/L	91.2 J	45.3 J	2,240	3,250	5,490	7,050	2,760	71.1 J	68.3 J	75.1 J	316	60.6 J	1,350	1,620	5,050	9,470	6,860	9,220	9,580	7,710	5,770	8,070
CALCIUM, TOTAL	µg/L	185,000	146,000	108,000	75,900	139,000	185,000	82,700	123,000	128,000	144,000	166,000	138,000	70,900	92,500	103,000	90,500	120,000	108,000	101,000	119,000	61,400	97,400
CHLORIDE, TOTAL	mg/L	5.9	1.4	4.9	15.8	39.5	17.5	3.2 J	5.7 J	10.3 J	1.8 J	35.9	3.5 J	25.0	25.0	19.2	23.8	15.2	21.1	19.5	16.7	22.2	36.9 J
pH	SU	6.68	6.95	6.97	9.52	6.80	6.57	7.10	6.77	6.80	6.75	6.82	7.04	7.33	7.39	7.00	7.50	7.07	7.36	7.08	7.17	7.61	7.38
SULFATE, TOTAL	mg/L	66.5	34.4	74.3	299	174	202	93.1	29.6	31.3	17.5	5.1	17.9	163	154	197	527	171	425	267	399 J	236	353
TOTAL DISSOLVED SOLIDS	mg/L	710	496	430	556	756	829	404	487	493	520	755	545	588	1,320	608	814	627	801	666	779	534	807
APPENDIX IV PARAMETERS																							
ARSENIC, TOTAL	µg/L	22.8	0.40 J	3.5	46.0	19.3	7.8	9.2	0.58 J	0.48 J	0.68 J	11.0	1.3	0.63 J	10.7	0.36 J	7.5	8.1	3.4	3.4	0.15 J	0.17 J	3.7
BARIUM, TOTAL	µg/L	315	271	88.2	48.4	142	280	90.1	169	184	362	577	1,410	89.5	113	236	62.3	384	130	94.1	42.6	107	61.2
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	4.0 J	ND	ND	ND	2.1 J	3.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	0.13 J	ND	0.54	ND	ND	ND	ND	ND	0.15 J	0.14 J	ND	ND	0.15 J	ND	ND	0.18 J	ND	ND
LITHIUM, TOTAL	µg/L	16.8	19.6	11.2	13.0	35.4	49.0	15.7	21.1	24.3	22.8	33.5	25.3	25.3	38.0	30.9	31.7	24.0	34.0	35.1	25.7	18.0	38.9
MOLYBDENUM, TOTAL	µg/L	ND	2.2 J	ND	218	87.7	59.7	99.2	ND	ND	ND	ND	ND	62.1	110	296	481	ND	792	762	442	269	321
RADIUM [226 + 228]	pCi/L	1.479	ND	ND	ND	ND	ND	ND	ND	ND	1.961	ND	3.065	2.391	1.701	ND	ND	2.183 J	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	5.1	5.7	0.24 J	0.46 J	ND	1.8	31.8	5.6	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																							
ALKALINITY	mg/L	625	404	311	35.1	398	493	266	417	410	464	672	6.6 J	254	254	262	117	309	109	200	274	102	147
IRON, TOTAL	µg/L	30,500	ND	1,270	17.4 J	6,370	2,430	2,310	14.1 J	7.5 J	62.9	14,200	8,450	2,120	3,430	8,200	4,220	5,270	5,240	5,670	5,360	2,390	4,830
MAGNESIUM, TOTAL	µg/L	37,200	21,300	18,300	103	24,000	38,800	14,000	24,400	23,200	20,400	33,700	34,300	10,300	16,100	21,900	19,800	30,700	22,000 J	23,700	26,800	10,200	11,900
MANGANESE, TOTAL	µg/L	2,320	ND	647	ND	1,380	1,840	389	ND	68.9	527	2,780	234	299	302	1,240	158	318	275	256	393	294	248
POTASSIUM, TOTAL	µg/L	4,940	5,400	3,600	9,690	6,150	7,900	4,450	5,090	4,180	28,200	6,180	4,240	5,040	5,520	5,020	6,690	4,570	7,390	6,880	5,170	5,350	8,950
SODIUM, TOTAL	µg/L	15,500	4,130	8,040	69,000	67,700	44,200	38,200	7,100	5,270	2,920	50,300	11,500	48,700	58,200	59,300	119,000	28,300	99,400	71,700	75,900	81,400	104,000

NOTES

- Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
- J - Result is an estimated value.
- ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
- NA - Not Applicable.

Table 13
May 2023 Corrective Action Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-4S	LMW-7S	LMW-8S	MW-24	MW-26	S-1	AM-1S	TP-1D	TP-2M	TP-2D	TP-3M	TP-3D	TP-4D	MW-33(D)	MW-34(D)	MW-35(D)	AMW-8	AM-1D
FIELD PARAMETERS																							
DATE	NA	5/11/2023	5/11/2023	5/12/2023	5/19/2023	5/24/2023	5/18/2023	5/18/2023	5/18/2023	5/18/2023	5/16/2023	5/22/2023	5/16/2023	5/22/2023	5/22/2023	5/25/2023	5/25/2023	5/24/2023	5/24/2023	5/24/2023	5/18/2023	5/24/2023	5/22/2023
DISSOLVED OXYGEN	mg/L	0.07	2.58	0.15	0.12	0.15	0.09	0.48	0.91	0.71	0.79	0.08	0.10	0.20	0.19	0.10	0.07	0.18	0.31	0.20	0.24	0.99	0.10
REDOX POTENTIAL	mV	-103.4	65.8	24.7	-65.7	-37.0	-27.1	51.7	61.1	59.1	102.2	-81.1	-108.6	-137.8	-128.6	-85.1	-135.7	-79.7	-126.4	-122.1	-107.3	-148.3	-141.7
SPECIFIC CONDUCTIVITY	mS/cm	1.364	0.859	0.667	0.841	1.237	1.304	0.706	0.797	0.956	0.898	1.600	0.957	1.003	0.927	0.955	1.202	0.947	1.146	1.127	1.165	0.832	1.193
TURBIDITY	NTU	8.43	1.03	3.95	2.73	16.7	4.74	4.33	2.99	2.09	3.51	4.82	2.02	0.85	2.33	1.27	2.26	2.83	2.80	1.44	2.37	6.60	3.59
APPENDIX III PARAMETERS																							
BORON, TOTAL	µg/L	88.2 J	45.3 J	930	3,180	4,580	7,890	1,050	52.3 J	45.6 J	75.5 J	305	63.5 J	1,210	1,440	5,980	10,500	6,740	9,710	10,100	7,690	7,220	8,340
CALCIUM, TOTAL	µg/L	191,000	141,000	109,000	79,600	163,000	161,000	81,900	111,000	140,000	149,000	189,000	145,000	109,000	97,500	97,200	104,000	131,000	110,000	121,000	119,000	71,600	109,000
CHLORIDE, TOTAL	mg/L	6.6	2.2	4.6	14.6	66.0	18.7	1.6	4.8	14.2	1.4	125	3.9	24.4	26.3	23.9	26.9	13.6	25.2	26.1	13.9	24.2	42.2
pH	SU	6.76	7.03	7.09	9.55	6.86	6.84	7.27	6.98	7.01	6.80	6.80	7.00	7.53	7.48	7.11	7.50	7.16	7.48	7.37	7.26	7.75	7.43
SULFATE, TOTAL	mg/L	65.9	39.7	40.3	311	133	209	44.7	25.1	44.4	18.3	2.6	16.6	163	151	215	404	172	420	370	237	259	312
TOTAL DISSOLVED SOLIDS	mg/L	801	607	597	567	767	800	400	437	549	601 J	836	560	620	559	643	821	621	784	778	715	569	856
APPENDIX IV PARAMETERS																							
ANTIMONY, TOTAL	µg/L	ND	0.19 J	ND	0.27 J	ND	ND	ND	0.15 J	0.13 J	0.15 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	26.9	0.44 J	2.1	39.0	16.8	9.8	4.6	ND	ND	0.57 J	7.1	1.2	0.56 J	11.3	0.33 J	8.4	7.5	2.8	3.5	ND	0.28 J	3.1
BARIUM, TOTAL	µg/L	307	263	97.5	49.7	166	239	103	135	183	366	615	1,460	135	114	220	70.6	417	130	113	46.5	117	66.0
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16 J	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.061 J	ND	ND	0.080 J	ND	ND	ND	ND	ND	0.10 J	ND	ND	ND	0.12 J	0.18 J	ND	0.26 J	0.26 J	ND	0.11 J	0.11 J
CHROMIUM, TOTAL	µg/L	0.52 J	0.32 J	ND	ND	0.41 J	ND	ND	1.1 J	ND	0.36 J	0.44 J	0.32 J	ND	ND	0.41 J	0.37 J	0.44 J	9.2	0.45 J	1.4 J	0.49 J	0.41 J
COBALT, TOTAL	µg/L	1.4 J	ND	ND	ND	3.2 J	4.1 J	ND	ND	ND	ND	2.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	0.36	ND	ND	ND	ND	0.14 J	0.33	0.33	0.19 J	0.17 J	ND	0.21	ND	ND	0.27	0.27 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	18.3	18.4	12.9	14.0	35.0	45.4	14.6	15.8	26.3	24.7	41.0	25.2	35.9	41.8	29.3	34.5	23.0	36.2	38.1	28.5	17.1	37.5
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	2.3 J	2.2 J	3.7 J	228	55.5	58.0	102	ND	ND	ND	3.8 J	3.5 J	74.8	109	342	474	4.1 J	819	741	447	296	328
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.750	ND	ND	ND	ND	3.710 J	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	1.7	4.6	0.35 J	0.92 J	0.71 J	11.2	26.0	8.1	19.9	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	0.24 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																							
ALKALINITY	mg/L	674	408	327	44.6	414	431	302	98.1	435	474	584	510	285	273	217	119	296	111	175	316	93.8	182
IRON, FERRIC, TOTAL	mg/L	23.0	0.013 J	0.43	0.026 J	5.7	3.6	0.74	0.041 J	0.13 J	0.024 J	14.7	9.0	3.3	3.5	6.5	4.2	5.4	5.7	6.4	5.5	2.2	4.9
IRON, FERROUS, TOTAL	mg/L	1.7 J	ND	ND	ND	0.18 J	ND	ND	ND	ND	ND	0.19 J	0.054 J	ND	ND	0.47 J	0.22 J	0.28 J	0.24 J	0.41 J	0.054 J	ND	0.062 J
IRON, TOTAL	µg/L	24,700	ND	430	ND	5,840	3,630	742	ND	ND	23.7 J	14,900	9,010	3,330	3,530	6,940	4,450	5,710	5,990	6,850	5,600	2,220	5,000
MAGNESIUM, TOTAL	µg/L	42,900	20,900	18,800	104	27,600	36,200	13,200	21,800	26,000	21,500	35,800	36,400	16,800	17,300	20,900	23,100	34,700	23,000	29,100	27,000	11,200	13,300
MANGANESE, TOTAL	µg/L	2,510	ND	587	ND	1,430	1,580	48.1	6.1	11.4	117	1,920	257	476	322	938	175	356	294	305	403	334	276
POTASSIUM, TOTAL	µg/L	5,060	5,800	3,440	9,670	6,570	7,100	3,880	3,910	3,970	27,700	7,530	4,330	7,120	5,780	5,350	7,500	4,880	7,560	7,500	5,120	6,090	8,960
SODIUM, TOTAL	µg/L	15,800	4,580	7,040	69,900	74,700	50,800	35,300	6,170	4,910	6,700	69,100	11,000	70,100	59,700	75,000	132,000	29,100	99,600	83,300	70,800	78,300	109,000
SULFIDE, TOTAL	mg/L	ND	0.021 J	ND	ND	0.016 J	ND	ND	ND	ND	ND	ND	ND	0.049 J	ND	ND	ND	0.024 J	0.034 J	0.021 J	0.024 J	0.020 J	ND

NOTES

- Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
- J - Result is an estimated value.
- ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
- NA - Not Applicable.

**Table 14
November 2023 Corrective Action Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO**

ANALYTE	UNITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-4S	LMW-7S	LMW-8S	MW-24	MW-26	S-1	AM-1S	TP-1D	TP-2M	TP-2D	TP-3M	TP-3D	TP-4D	MW-33(D)	MW-34(D)	MW-35(D)	AMW-8	AM-1D
FIELD PARAMETERS																							
DATE	NA	11/16/2023	11/16/2023	11/16/2023	11/20/2023	11/17/2023	11/15/2023	11/16/2023	11/17/2023	11/17/2023	11/20/2023	11/20/2023	11/15/2023	11/17/2023	11/17/2023	11/15/2023	11/15/2023	11/15/2023	11/16/2023	11/16/2023	11/17/2023	11/16/2023	11/20/2023
DISSOLVED OXYGEN	mg/L	0.24	1.43	0.27	0.23	0.11	0.15	4.01	0.83	0.61	0.34	0.28	0.12	0.53	0.22	0.23	0.35	0.27	0.37	0.35	0.37	0.74	0.30
REDOX POTENTIAL	mV	140.1	57.6	66.2	57.3	-38.9	-3.1	74.1	184.2	128.4	93.7	50.0	-38.5	-30.3	-79.6	-26.3	-69.4	-43.3	-13.1	9.1	87.6	146.7	152.6
SPECIFIC CONDUCTIVITY	mS/cm	1.151	0.784	0.537	0.760	1.035	1.048	0.742	0.184	0.798	0.830	1.340	0.911	1.007	0.812	0.905	1.114	0.893	1.058	1.023	0.987	0.731	1.084
TURBIDITY	NTU	3.20	3.13	4.17	0.58	9.74	8.05	3.59	4.45	3.85	0.89	4.91	4.35	0.36	0.58	2.11	2.73	2.28	4.78	3.89	2.73	4.97	4.49
APPENDIX III PARAMETERS																							
BORON, TOTAL	µg/L	113	50.8 J	1,060	3,450	3,470	6,580	1,550	71.9 J	69.9 J	83.6 J	327	65.8 J	1,190	1,320	5,040	9,620	6,510	9,340	9,760	7,640	6,670	8,410
CALCIUM, TOTAL	µg/L	208,000	150,000	103,000	84,300	178,000	184,000	118,000	128,000	147,000	143,000	188,000	141,000	128,000	101,000	108,000	94,600	125,000	117,000	121,000	120,000	68,200	106,000
CHLORIDE, TOTAL	mg/L	5.3	2.8	4.0	15.0	60.7	13.5	3.9	5.3	10.0	1.6 J	86.0	4.7	28.3	22.6	19.5	23.5	15.0	21.3	19.6	13.0	21.1	35.8
pH	SU	6.71	7.04	7.16	9.54	6.88	6.82	7.02	7.01	7.02	6.81	6.79	7.12	7.57	7.56	7.10	7.52	7.20	7.47	7.36	7.33	7.79	7.35
SULFATE, TOTAL	mg/L	72.4	38.3	41.2	337	116	192	79.2	29.9	37.2	15.5	5.0	13.3	241	165	189	457	183	477	394	219	273	329
TOTAL DISSOLVED SOLIDS	mg/L	692	471	348	533 J	722	607	462	439	434	523	767	498	685	520	604	792	526	834	817	700	510	753
APPENDIX IV PARAMETERS																							
ANTIMONY, TOTAL	µg/L	ND	0.21 J	ND	ND	ND	ND	ND	0.15 J	ND	0.13 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	22.2	0.51 J	1.9	45.4	16.4	13.6	3.0	0.66 J	0.58 J	0.59 J	5.6	1.4	0.75 J	12.0	0.42 J	8.6	8.0	3.2	3.6	0.20 J	0.28 J	3.9
BARIUM, TOTAL	µg/L	342	307	111	55.5	178	269	171	175	205	367	647	1,480	162	121	250	64.9	404	137	116	52.9	117	67.9
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20 J	0.15 J	0.18 J	0.17 J	0.16 J	ND	ND	ND	ND	0.14 J	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.075 J	ND	ND	0.054 J	0.061 J	ND	ND	0.082 J	ND	ND	ND	ND	ND	0.095 J	0.15 J	ND	0.26 J	0.25 J	0.17 J	0.11 J	ND
CHROMIUM, TOTAL	µg/L	0.33 J	0.34 J	ND	0.51 J	ND	0.30 J	ND	0.41 J	ND	0.42 J	0.45 J	0.50 J	0.32 J	0.38 J	0.41 J	0.49 J	0.41 J	ND	ND	0.49 J	ND	1.0 J
COBALT, TOTAL	µg/L	1.7 J	ND	ND	ND	2.6 J	3.6 J	ND	ND	ND	1.2 J	3.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	15.9	20.3	12.2	11.6	35.4	48.2	17.6	18.9	31.5	23.3	37.2	26.8	37.8	43.6	33.7	33.2	25.3	34.5	39.1	28.4	15.8	38.2
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	2.6 J	4.0 J	281	50.3	38.6	49.1	2.1 J	1.3 J	ND	2.8 J	ND	68.2	109	259	471	3.5 J	782	750	463	280	344
RADIUM [226 + 228]	pCi/L	2.306	ND	ND	ND	ND	ND	ND	ND	ND	1.276 J	ND	3.160	ND	ND	1.559	ND	2.528	1.000 J	ND	ND	1.429	ND
SELENIUM, TOTAL	µg/L	ND	2.8	18.6	0.22 J	0.49 J	ND	14.8	28.5	3.6	8.2	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																							
ALKALINITY	mg/L	646	381	298	39.2	494	481	365	380	424	473	635	505	286	271	271	119	310	114	186	343	95.6	162
IRON, TOTAL	µg/L	29,900	ND	348	17.0 J	7,670	4,480	454	66.2	ND	13.1 J	11,800	8,560	3,750	3,750	7,970	4,080	5,430	5,710	7,020	5,550	2,640	4,820
MAGNESIUM, TOTAL	µg/L	40,600	23,100	17,400	76.6	30,200	38,800	18,800	24,800	27,500	20,900	37,800	35,700	19,000	18,100	22,900	20,700	32,900	23,800	29,200	27,300	11,000	13,100
MANGANESE, TOTAL	µg/L	2,720	9.7	504	1.9 J	1,840	1,490	30.2	6.2	241	179	1,700	264	570	358	1,270	173	347	309	329	422	327	281
POTASSIUM, TOTAL	µg/L	5,770	6,920	3,810	10,300	7,080	7,950	5,380	5,220	5,170	31,200	7,380	4,300	7,510	5,950	5,310	6,710	4,810	7,650	7,450	5,330	6,480	9,270
SODIUM, TOTAL	µg/L	13,100	4,290	7,330	72,700	61,400	39,600	38,300	7,280	5,980	2,960	50,300	12,700	79,200	64,000	62,400	122,000	28,500	99,100	87,600	75,600	76,500	107,000

NOTES

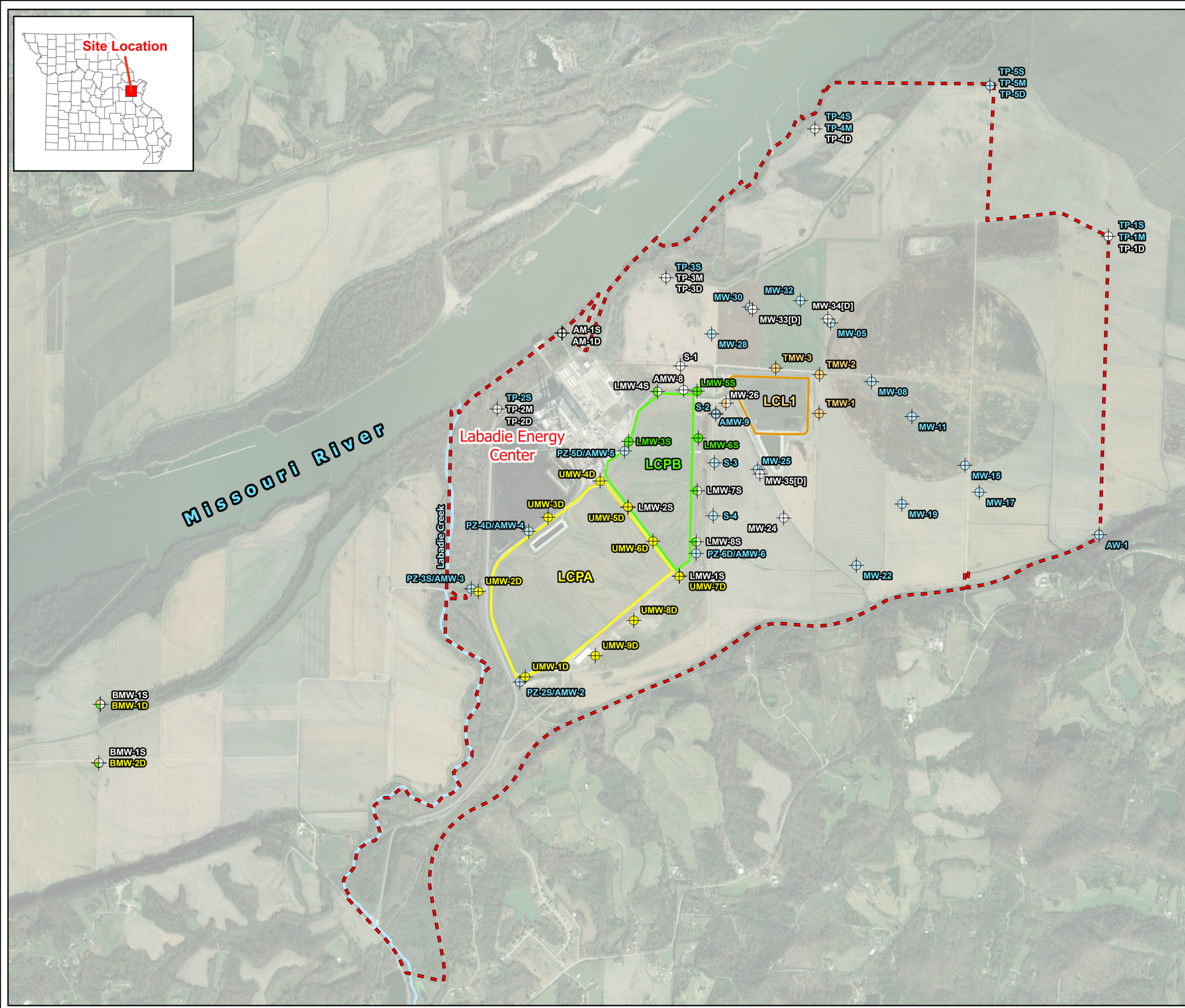
- Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
- J - Result is an estimated value.
- ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
- NA - Not Applicable.

Figures



TITLE
LABADIE ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND MONITORING WELL LOCATION MAP

- Legend**
- Approximate Property Boundary
- Labadie Energy Center CCR Units**
- LCPA - Closed Bottom Ash Surface Impoundment
 - LCPB - Closed Fly Ash Surface Impoundment
 - LCL1 - Utility Waste Landfill Cell 1
- Monitoring Well Network**
- Corrective Action Monitoring Well
 - LCPA Monitoring Well
 - LCPB Monitoring Well
 - LCPB and Corrective Action Monitoring Well
 - LCL1 Monitoring Well
 - LCL1 and Corrective Action Monitoring Well
 - Background Well Used for LCPA, Corrective Action, LCPB, and LCL1 Monitoring
 - Monitoring Well Used for Water Level Elevation Measurements Only

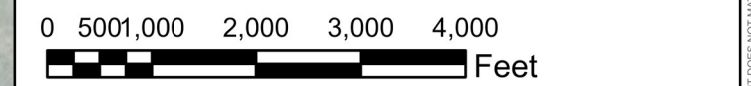


NOTES

- All locations and boundaries are approximate.

REFERENCES

- Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
- USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER

	DESIGN	JSI	YYYY-MM-DD	2023-12-18
	PREPARED	JSI	PROJECT No.	23007
	REVIEW	GTM	FIGURE 1	
	APPROVED	MNH		

Path: C:\Users\Cramsey\Rocksmith Geotechnical Engineering LLC\202307 - Ameren GTM - Documents\400 - Drawings - Figures\4.1-LECCL1.2 - Production\Other Maps\Annual Report Figure 1.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

Appendix A

Laboratory Analytical Data

January 24, 2023

Jeffrey Ingram
WSP Golder
701 Emerson Road
Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN LEC LCPA
Pace Project No.: 60419333

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 06, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

REV-1, 1/24/23: Sample collection dates updated for L-UMW-3D and L-LCPA-FB-1.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Lisa Meyer, Ameren
Grant Morey, WSP Golder
Ann Muehlfarth, WSP Golder
Eric Schneider, WSP Golder



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60419333001	L-UMW-8D	Water	01/04/23 15:39	01/06/23 03:25
60419333002	L-LCPA-DUP-1	Water	01/04/23 00:00	01/06/23 03:25
60419333003	L-UMW-3D	Water	01/05/23 09:51	01/06/23 03:25
60419333004	L-LCPA-FB-1	Water	01/05/23 10:20	01/06/23 03:25

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SAMPLE ANALYTE COUNT

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60419333001	L-UMW-8D	EPA 200.7	ALH	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	RKA	1	PASI-K
60419333002	L-LCPA-DUP-1	EPA 200.7	ALH	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	RKA	1	PASI-K
60419333003	L-UMW-3D	EPA 200.7	MA1	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	RKA	1	PASI-K
60419333004	L-LCPA-FB-1	EPA 200.7	MA1	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	RKA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Sample: L-UMW-8D **Lab ID: 60419333001** Collected: 01/04/23 15:39 Received: 01/06/23 03:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	28100	ug/L	200	26.5	1	01/09/23 10:58	01/10/23 14:12	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	180	mg/L	5.0	5.0	1		01/11/23 10:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.36	mg/L	0.20	0.12	1		01/10/23 10:27	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Sample: L-LCPA-DUP-1 **Lab ID: 60419333002** Collected: 01/04/23 00:00 Received: 01/06/23 03:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	133000	ug/L	200	26.5	1	01/09/23 10:58	01/10/23 14:14	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	489	mg/L	10.0	10.0	1		01/11/23 10:11		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		01/09/23 15:47	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Sample: L-UMW-3D **Lab ID: 60419333003** Collected: 01/05/23 09:51 Received: 01/06/23 03:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	118000	ug/L	200	33.7	1	01/09/23 10:58	01/13/23 13:30	7440-70-2	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	758	mg/L	10.0	10.0	1		01/11/23 10:11		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		01/09/23 16:01	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Sample: L-LCPA-FB-1 **Lab ID: 60419333004** Collected: 01/05/23 10:20 Received: 01/06/23 03:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	59.9J	ug/L	200	33.7	1	01/09/23 10:58	01/13/23 13:36	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		01/11/23 10:11		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		01/09/23 16:54	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

QC Batch: 826357	Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7	Analysis Description: 200.7 Metals, Total
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419333001, 60419333002

METHOD BLANK: 3282766 Matrix: Water

Associated Lab Samples: 60419333001, 60419333002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<26.5	200	26.5	01/10/23 13:17	

LABORATORY CONTROL SAMPLE: 3282767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9750	98	85-115	

MATRIX SPIKE SAMPLE: 3282768

Parameter	Units	60419277002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	76600	10000	84700	81	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282769 3282770

Parameter	Units	60419332002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	288000	10000	10000	293000	299000	45	110	70-130	2	20	M1

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

QC Batch: 826359

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419333003, 60419333004

METHOD BLANK: 3282773

Matrix: Water

Associated Lab Samples: 60419333003, 60419333004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<33.7	200	33.7	01/13/23 13:26	

LABORATORY CONTROL SAMPLE: 3282774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9020	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282775 3282776

Parameter	Units	60419333003		3282776		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	ug/L	118000	10000	10000	123000	129000	46	103	70-130	5	20 M1

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

QC Batch: 826840

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419333001, 60419333002

METHOD BLANK: 3284069

Matrix: Water

Associated Lab Samples: 60419333001, 60419333002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/11/23 10:08	

LABORATORY CONTROL SAMPLE: 3284070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 3284071

Parameter	Units	60419197001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1700	1750	3	10	

SAMPLE DUPLICATE: 3284072

Parameter	Units	60419233007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5580	5300	5	10	

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

QC Batch: 826841

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419333003, 60419333004

METHOD BLANK: 3284073

Matrix: Water

Associated Lab Samples: 60419333003, 60419333004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/11/23 10:11	

LABORATORY CONTROL SAMPLE: 3284074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	970	97	80-120	

SAMPLE DUPLICATE: 3284075

Parameter	Units	60419333003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	758	712	6	10	

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

QC Batch: 826287 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60419333001, 60419333002, 60419333003, 60419333004

METHOD BLANK: 3282394 Matrix: Water
 Associated Lab Samples: 60419333001, 60419333002, 60419333003, 60419333004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/09/23 11:18	

METHOD BLANK: 3284274 Matrix: Water
 Associated Lab Samples: 60419333001, 60419333002, 60419333003, 60419333004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/10/23 08:51	

LABORATORY CONTROL SAMPLE: 3282395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	100	90-110	

LABORATORY CONTROL SAMPLE: 3284275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282396 3282397

Parameter	Units	60419332002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	<0.25	5	5	4.4	4.4	88	87	80-120	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282399 3282400

Parameter	Units	60419333003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	<0.12	2.5	2.5	2.4	2.5	96	99	80-120	3	15	

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QUALITY CONTROL DATA

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

SAMPLE DUPLICATE: 3282398

Parameter	Units	60419332002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	<0.25	<0.25		15	

SAMPLE DUPLICATE: 3282401

Parameter	Units	60419333003 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	<0.12	<0.12		15	

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QUALIFIERS

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LEC LCPA

Pace Project No.: 60419333

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60419333001	L-UMW-8D	EPA 200.7	826357	EPA 200.7	826466
60419333002	L-LCPA-DUP-1	EPA 200.7	826357	EPA 200.7	826466
60419333003	L-UMW-3D	EPA 200.7	826359	EPA 200.7	826467
60419333004	L-LCPA-FB-1	EPA 200.7	826359	EPA 200.7	826467
60419333001	L-UMW-8D	SM 2540C	826840		
60419333002	L-LCPA-DUP-1	SM 2540C	826840		
60419333003	L-UMW-3D	SM 2540C	826841		
60419333004	L-LCPA-FB-1	SM 2540C	826841		
60419333001	L-UMW-8D	EPA 300.0	826287		
60419333002	L-LCPA-DUP-1	EPA 300.0	826287		
60419333003	L-UMW-3D	EPA 300.0	826287		
60419333004	L-LCPA-FB-1	EPA 300.0	826287		

REPORT OF LABORATORY ANALYSIS

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WO#: 60419333



DC#_Title: ENV-FRM-LENE-0009_Sar



Revision: 2

Effective Date: 01/12/2000

Client Name: GOLDER AS. USA

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T-246 Type of Ice: Wed Blue None

Cooler Temperature (°C): As-read 1.8 Corr. Factor -0.1 Corrected 1.7

Date and initials of person examining contents:

VF 01/06

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Client: GOLDER AS. USA

Profile #

9285

Site: GL153140604

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other	
1																															
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Matrix	Glass	Plastic	Misc.				
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic		
DG9H	40mL HCl amber vial	WGKU	4oz clear soil jar	BP1N	1L HNO3 plastic		
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic		
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic		
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate		
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NAOH plastic		
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic		
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered		
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic		
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic		
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic		
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate		
				BP4U	125mL unpreserved plastic		
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
				WPDU	16oz unpreserved plastic		

Work Order Number:

60419333



MEMORANDUM

DATE January 25, 2023

Project No. 153140604.0001

TO Project File
WSP USA Inc.

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPA – VERIFICATION SAMPLING - DATA PACKAGE 60419333REV1

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.
 Project Name: Ameren LEC - LCPA VS
 Reviewer: R.Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604.0001
 Validation Date: 1/25/2023

Laboratory: Pace Analytical Services SDG #: 60419333rev1
 Analytical Method (type and no.): EPA 200.7 (Total Metals); SM2540C (TDS); EPA 300.0 (Anions)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names L-UMW-8D, L-LCPA-DUP-1, L-UMW-3D, L-LCPA-FB-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/4/2023 - 1/5/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>PCS/EMS</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Were any matrix problems noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L-LCPA-DUP-1 @ L-UMW-8D
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

Sample collection dates updated for L-UMW-3D and L-LCPA-FB-1 from 1/4/2023 to 1/5/2023.

Blanks:

L-LCPA-FB-1 @ L-UMW-3: Calcium (59.9J). Associated with L-UMW-3. Results > 10 x blank and > RL: no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

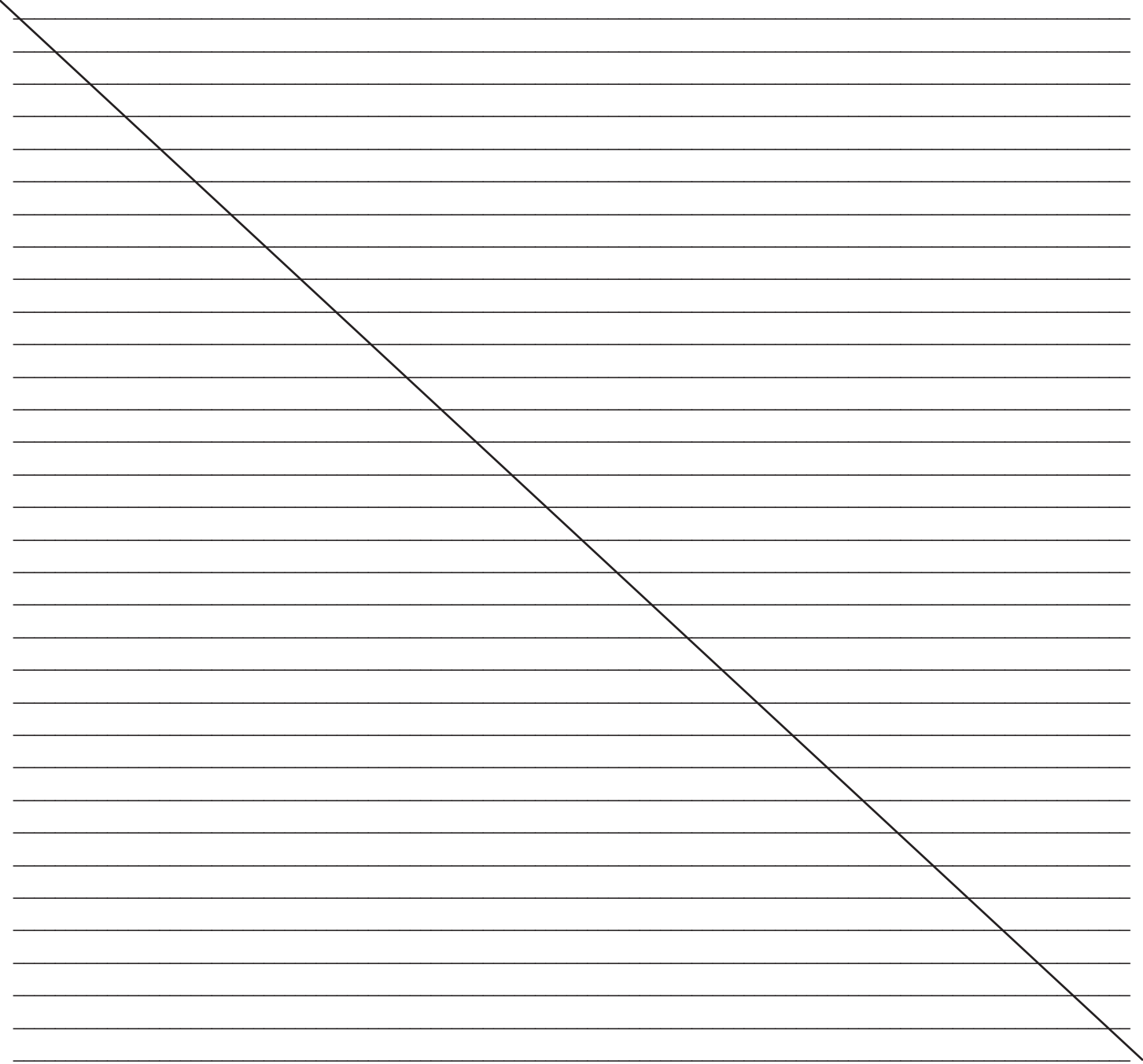
Duplicates:

L-LCPA-DUP-1 @ L-UMW-8D: RPD for calcium (130.2%) and Total Dissolved Solids (92.4%) exceeded max RPD (20%).
Fluoride detected in parent sample and ND in duplicate.

MS/MSD:

3282769/3282770: MS % recovery low for Calcium. Performed on unrelated sample: no qualification necessary.

3282775/3282776: MS % recovery low for Calcium. Associated with L-UMW-3D. Only one QC indicator out of control limits:
no qualification necessary.





January 30, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN LCPA
Pace Project No.: 60428744

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 13, 2023 and May 24, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 6/26/23: Report revised to correct prep date entry error for COD. Samples were not analyzed out of hold.

REV-2, 1/30/24: Parameters not required under the CCR rule removed.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN LCPA

Pace Project No.: 60428744

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60428744001	L-UMW-2D	Water	05/11/23 15:30	05/13/23 04:43
60428744002	L-UMW-7D	Water	05/12/23 09:57	05/13/23 04:43
60428744003	L-UMW-8D	Water	05/12/23 11:24	05/13/23 04:43
60428744004	L-UMW-9D	Water	05/12/23 12:29	05/13/23 04:43
60428744005	L-BMW-1D	Water	05/11/23 14:13	05/13/23 04:43
60428744006	L-BMW-2D	Water	05/11/23 09:32	05/13/23 04:43
60428744007	L-UMW-DUP-1	Water	05/12/23 00:00	05/13/23 04:43
60428744008	L-UMW-MS-1	Water	05/11/23 15:30	05/13/23 04:43
60428744009	L-UMW-MSD-1	Water	05/11/23 15:30	05/13/23 04:43
60428744010	L-UMW-4D	Water	05/19/23 12:58	05/20/23 04:40
60428744011	L-UMW-5D	Water	05/19/23 11:57	05/20/23 04:40
60428744012	L-UMW-6D	Water	05/19/23 09:32	05/20/23 04:40
60428744013	L-UMW-DUP-2	Water	05/19/23 00:00	05/20/23 04:40
60428744014	L-UMW-FB-1	Water	05/19/23 13:13	05/20/23 04:40
60428744015	L-UMW-1D	Water	05/22/23 17:18	05/24/23 04:46
60428744016	L-UMW-3D	Water	05/23/23 09:28	05/24/23 04:46
60428744017	UMW-FB-2	Water	05/22/23 17:33	05/24/23 04:46

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60428744001	L-UMW-2D	EPA 200.7	MA1	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	ZPC	1	PASI-PA		
		SM 2320B	BLA	1	PASI-K		
		SM 2540C	BDH1	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	BDH1	1	PASI-K		
		SM 4500-S-2 D	BLA	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60428744002	L-UMW-7D	EPA 200.7	MA1	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	MRV			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		
EPA 904.0	ZPC			1	PASI-PA		
SM 2320B	BLA			1	PASI-K		
SM 2540C	BDH1			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	BDH1			1	PASI-K		
SM 4500-S-2 D	CRN2			1	PASI-K		
EPA 300.0	CRN2			3	PASI-K		
60428744003	L-UMW-8D			EPA 200.7	MA1	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	ZPC	1	PASI-PA		
		SM 2320B	BLA	1	PASI-K		
		SM 2540C	BDH1	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	BDH1	1	PASI-K		
		SM 4500-S-2 D	CRN2	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60428744004	L-UMW-9D	EPA 200.7	MA1	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	MRV			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744005	L-BMW-1D	EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744006	L-BMW-2D	EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744007	L-UMW-DUP-1	EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744008	L-UMW-MS-1	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60428744009	L-UMW-MSD-1	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60428744010	L-UMW-4D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744011	L-UMW-5D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428744012	L-UMW-6D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428744013	L-UMW-DUP-2	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA, CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		60428744014	L-UMW-FB-1	SM 4500-S-2 D	BDH1
EPA 300.0	BLA, CRN2			3	PASI-K
EPA 200.7	JXD			13	PASI-K
EPA 200.8	JGP			6	PASI-K
EPA 7470	ALH			1	PASI-K
EPA 903.1	JLJ			1	PASI-PA
EPA 904.0	JJS1			1	PASI-PA
SM 2320B	JS2			1	PASI-K
SM 2540C	BDH1			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 4500-S-2 D	BDH1			1	PASI-K
60428744015	L-UMW-1D			EPA 300.0	CRN2
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA, CRN2	3	PASI-K
		60428744016	L-UMW-3D	EPA 200.7	MA1

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60428744017	UMW-FB-2	EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-2D Lab ID: 60428744001 Collected: 05/11/23 15:30 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	127	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 11:54	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 11:54	7440-41-7	
Boron	1040	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 11:54	7440-42-8	
Calcium	118000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 11:54	7440-70-2	M1
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 11:54	7440-48-4	
Iron	3580	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 11:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 11:54	7439-92-1	
Lithium	28.8	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 11:54	7439-93-2	
Magnesium	25000	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 11:54	7439-95-4	
Manganese	409	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 11:54	7439-96-5	
Molybdenum	35.1	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 11:54	7439-98-7	
Potassium	7650	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 11:54	7440-09-7	
Sodium	60900	ug/L	500	115	1	05/16/23 14:40	06/01/23 11:54	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:02	7440-36-0	
Arsenic	0.88J	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:02	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:02	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:02	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:02	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:25	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	330	mg/L	20.0	10.5	1		05/17/23 14:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	667	mg/L	10.0	10.0	1		05/18/23 11:29		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.4	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.20	mg/L	0.20	0.041	1		05/18/23 08:32	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-2D Lab ID: 60428744001 Collected: 05/11/23 15:30 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/18/23 16:55	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	40.4	mg/L	20.0	10.5	20		06/01/23 00:41	16887-00-6	D6,M1
Fluoride	<0.12	mg/L	0.20	0.12	1		05/31/23 23:25	16984-48-8	L2,M0
Sulfate	172	mg/L	20.0	11.0	20		06/01/23 00:41	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-7D Lab ID: 60428744002 Collected: 05/12/23 09:57 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	118	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:01	7440-39-3	
Beryllium	0.51J	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:01	7440-41-7	
Boron	906	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:01	7440-42-8	
Calcium	137000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:01	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:01	7440-48-4	
Iron	13200	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:01	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:01	7439-92-1	
Lithium	27.1	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:01	7439-93-2	
Magnesium	22500	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:01	7439-95-4	
Manganese	1530	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:01	7439-96-5	
Molybdenum	88.9	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:01	7439-98-7	
Potassium	4500	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:01	7440-09-7	
Sodium	15800	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:01	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:11	7440-36-0	
Arsenic	27.2	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:11	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:11	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:11	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:11	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:32	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	468	mg/L	20.0	10.5	1		05/17/23 15:28		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	603	mg/L	10.0	10.0	1		05/19/23 11:08		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	12.6	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.54	mg/L	0.20	0.041	1		05/18/23 08:37	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-7D Lab ID: 60428744002 Collected: 05/12/23 09:57 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.016J	mg/L	0.050	0.016	1		05/19/23 10:34	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	5.9	mg/L	1.0	0.53	1		06/01/23 01:31	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 01:31	16984-48-8	L2
Sulfate	13.5	mg/L	1.0	0.55	1		06/01/23 01:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA
Pace Project No.: 60428744

Sample: L-UMW-8D **Lab ID: 60428744003** Collected: 05/12/23 11:24 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	105	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:10	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:10	7440-41-7	
Boron	665	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:10	7440-42-8	
Calcium	34000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:10	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:10	7440-48-4	
Iron	5210	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:10	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:10	7439-92-1	
Lithium	14.7	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:10	7439-93-2	
Magnesium	8520	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:10	7439-95-4	
Manganese	207	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:10	7439-96-5	
Molybdenum	15.7J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:10	7439-98-7	
Potassium	2880	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:10	7440-09-7	
Sodium	13000	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:10	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:14	7440-36-0	
Arsenic	28.8	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:14	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:14	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:14	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:34	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	146	mg/L	20.0	10.5	1		05/17/23 15:35		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	290	mg/L	5.0	5.0	1		05/19/23 11:08		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	4.5	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.70	mg/L	0.20	0.041	1		05/18/23 08:38	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-8D Lab ID: 60428744003 Collected: 05/12/23 11:24 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.023J	mg/L	0.050	0.016	1		05/19/23 10:34	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	2.5	mg/L	1.0	0.53	1		06/01/23 01:44	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 01:44	16984-48-8	L2
Sulfate	10.5	mg/L	1.0	0.55	1		06/01/23 01:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-9D Lab ID: 60428744004 Collected: 05/12/23 12:29 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	508	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:12	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:12	7440-41-7	
Boron	85.7J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:12	7440-42-8	
Calcium	118000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:12	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:12	7440-48-4	
Iron	24300	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:12	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:12	7439-92-1	
Lithium	18.5	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:12	7439-93-2	
Magnesium	31900	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:12	7439-95-4	
Manganese	391	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:12	7439-96-5	
Molybdenum	1.4J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:12	7439-98-7	
Potassium	4240	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:12	7440-09-7	
Sodium	14200	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:12	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:21	7440-36-0	
Arsenic	28.1	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:21	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:21	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:21	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:21	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:21	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:36	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	418	mg/L	20.0	10.5	1		05/17/23 15:41		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	702	mg/L	10.0	10.0	1		05/19/23 11:09		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	23.2	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	1.1	mg/L	0.20	0.041	1		05/18/23 08:38	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-9D Lab ID: 60428744004 Collected: 05/12/23 12:29 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/19/23 10:35	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.7	mg/L	2.0	1.1	2		06/01/23 12:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 01:56	16984-48-8	L2
Sulfate	<0.55	mg/L	1.0	0.55	1		06/01/23 01:56	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-BMW-1D Lab ID: 60428744005 Collected: 05/11/23 14:13 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	974	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:14	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:14	7440-41-7	
Boron	72.4J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:14	7440-42-8	
Calcium	124000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:14	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:14	7440-48-4	
Iron	10100	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:14	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:14	7439-92-1	
Lithium	29.9	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:14	7439-93-2	
Magnesium	27900	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:14	7439-95-4	
Manganese	600	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:14	7439-96-5	
Molybdenum	1.5J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:14	7439-98-7	
Potassium	4190	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:14	7440-09-7	
Sodium	7890	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:14	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:24	7440-36-0	
Arsenic	2.4	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:24	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:24	7440-43-9	
Chromium	0.79J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:24	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:24	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:24	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:38	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	422	mg/L	20.0	10.5	1		05/17/23 15:07		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	486	mg/L	10.0	10.0	1		05/18/23 11:30		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	9.8	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.38	mg/L	0.20	0.041	1		05/18/23 08:32	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-BMW-1D Lab ID: 60428744005 Collected: 05/11/23 14:13 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/18/23 16:57	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.2	mg/L	1.0	0.53	1		06/01/23 02:09	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 02:09	16984-48-8	L2
Sulfate	26.0	mg/L	2.0	1.1	2		06/01/23 12:20	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA
Pace Project No.: 60428744

Sample: L-BMW-2D Lab ID: 60428744006 Collected: 05/11/23 09:32 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	330	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:16	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:16	7440-41-7	
Boron	61.5J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:16	7440-42-8	
Calcium	137000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:16	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:16	7440-48-4	
Iron	6920	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:16	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:16	7439-92-1	
Lithium	45.2	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:16	7439-93-2	
Magnesium	27800	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:16	7439-95-4	
Manganese	267	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:16	7439-96-5	
Molybdenum	1.8J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:16	7439-98-7	
Potassium	3800	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:16	7440-09-7	
Sodium	5880	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:16	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:27	7440-36-0	
Arsenic	34.7	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:27	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:27	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:27	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:27	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:27	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:41	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	437	mg/L	20.0	10.5	1		05/17/23 15:14		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	747	mg/L	10.0	10.0	1		05/18/23 11:30		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.7	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.23	mg/L	0.20	0.041	1		05/18/23 09:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-BMW-2D Lab ID: 60428744006 Collected: 05/11/23 09:32 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/18/23 16:57	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.3	mg/L	1.0	0.53	1		06/01/23 02:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 02:47	16984-48-8	L2
Sulfate	45.1	mg/L	10.0	5.5	10		06/01/23 12:34	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-DUP-1 Lab ID: 60428744007 Collected: 05/12/23 00:00 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	474	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 12:18	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 12:18	7440-41-7	
Boron	79.4J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 12:18	7440-42-8	
Calcium	111000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 12:18	7440-70-2	M1
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 12:18	7440-48-4	
Iron	22600	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 12:18	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 12:18	7439-92-1	
Lithium	17.3	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 12:18	7439-93-2	
Magnesium	29900	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 12:18	7439-95-4	
Manganese	371	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 12:18	7439-96-5	
Molybdenum	1.2J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 12:18	7439-98-7	
Potassium	4000	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 12:18	7440-09-7	
Sodium	13400	ug/L	500	115	1	05/16/23 14:40	06/01/23 12:18	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 22:33	7440-36-0	
Arsenic	27.7	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 22:33	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 22:33	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 22:33	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 22:33	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 22:33	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 12:48	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	421	mg/L	20.0	10.5	1		05/17/23 15:48		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	787	mg/L	10.0	10.0	1		05/19/23 11:09		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	21.8	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.86	mg/L	0.20	0.041	1		05/18/23 08:34	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-DUP-1 Lab ID: 60428744007 Collected: 05/12/23 00:00 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/19/23 10:36	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	33.8	mg/L	20.0	10.5	20		06/01/23 18:31	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/01/23 18:18	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/01/23 18:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA
Pace Project No.: 60428744

Sample: L-UMW-4D **Lab ID: 60428744010** Collected: 05/19/23 12:58 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	71.1	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:18	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:18	7440-41-7	
Boron	4930	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:18	7440-42-8	
Calcium	59600	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:18	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:18	7440-48-4	
Iron	258	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:18	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:18	7439-92-1	
Lithium	29.5	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:18	7439-93-2	
Magnesium	6830	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:18	7439-95-4	
Manganese	295	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:18	7439-96-5	
Molybdenum	288	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:18	7439-98-7	
Potassium	7920	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:18	7440-09-7	
Sodium	94300	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:18	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:14	7440-36-0	
Arsenic	0.21J	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:14	7440-38-2	B
Cadmium	0.12J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:14	7440-43-9	B
Chromium	0.74J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:14	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:14	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:14	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:52	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	72.1	mg/L	20.0	10.5	1		05/24/23 14:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	554	mg/L	10.0	10.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.26	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:29	15438-31-0	1e,H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-4D Lab ID: 60428744010 Collected: 05/19/23 12:58 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:09	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.4	mg/L	20.0	10.5	20		06/13/23 21:31	16887-00-6	
Fluoride	0.29	mg/L	0.20	0.12	1		06/13/23 21:17	16984-48-8	
Sulfate	286	mg/L	20.0	11.0	20		06/13/23 21:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-5D Lab ID: 60428744011 Collected: 05/19/23 11:57 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	80.7	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:20	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:20	7440-41-7	
Boron	9950	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:20	7440-42-8	
Calcium	87600	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:20	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:20	7440-48-4	
Iron	23.1J	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:20	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:20	7439-92-1	
Lithium	19.9	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:20	7439-93-2	
Magnesium	48.5J	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:20	7439-95-4	
Manganese	8.1	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:20	7439-96-5	
Molybdenum	681	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:20	7439-98-7	
Potassium	13600	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:20	7440-09-7	
Sodium	80700	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:20	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:19	7440-36-0	
Arsenic	19.3	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:19	7440-38-2	
Cadmium	0.26J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:19	7440-43-9	B
Chromium	0.71J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:19	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:19	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:19	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:55	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	96.9	mg/L	20.0	10.5	1		05/24/23 14:15		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	632	mg/L	10.0	10.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.023J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:28	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-5D Lab ID: 60428744011 Collected: 05/19/23 11:57 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.82	mg/L	0.050	0.016	1		05/26/23 13:13	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	23.9	mg/L	20.0	10.5	20		06/13/23 21:57	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 21:44	16984-48-8	
Sulfate	292	mg/L	20.0	11.0	20		06/13/23 21:57	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-6D Lab ID: 60428744012 Collected: 05/19/23 09:32 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	84.4	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:22	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:22	7440-41-7	
Boron	9240	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:22	7440-42-8	
Calcium	122000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:22	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:22	7440-48-4	
Iron	478	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:22	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:22	7439-92-1	
Lithium	12.8	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:22	7439-93-2	
Magnesium	3820	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:22	7439-95-4	
Manganese	376	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:22	7439-96-5	
Molybdenum	544	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:22	7439-98-7	
Potassium	16200	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:22	7440-09-7	
Sodium	132000	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:22	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:22	7440-36-0	
Arsenic	15.8	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:22	7440-38-2	
Cadmium	0.22J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:22	7440-43-9	B
Chromium	0.81J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:22	7440-47-3	B
Selenium	0.20J	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:22	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:22	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:02	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	69.5	mg/L	20.0	10.5	1		05/24/23 14:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	989	mg/L	13.3	13.3	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.48	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:27	15438-31-0	1e,H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-6D Lab ID: 60428744012 Collected: 05/19/23 09:32 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.072	mg/L	0.050	0.016	1		05/26/23 13:13	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	19.9	mg/L	1.0	0.53	1		06/13/23 22:11	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 22:11	16984-48-8	
Sulfate	734	mg/L	100	55.0	100		06/15/23 19:26	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-DUP-2 Lab ID: 60428744013 Collected: 05/19/23 00:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	84.8	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:24	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:24	7440-41-7	
Boron	9230	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:24	7440-42-8	
Calcium	122000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:24	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:24	7440-48-4	
Iron	507	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:24	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:24	7439-92-1	
Lithium	10.7	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:24	7439-93-2	
Magnesium	3860	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:24	7439-95-4	
Manganese	382	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:24	7439-96-5	
Molybdenum	544	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:24	7439-98-7	
Potassium	16000	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:24	7440-09-7	
Sodium	132000	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:24	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:25	7440-36-0	
Arsenic	15.8	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:25	7440-38-2	
Cadmium	0.22J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:25	7440-43-9	B
Chromium	0.68J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:25	7440-47-3	B
Selenium	0.21J	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:25	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:25	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:04	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	63.8	mg/L	20.0	10.5	1		05/24/23 14:39		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	980	mg/L	13.3	13.3	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.51	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:26	15438-31-0	1e,H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-DUP-2 Lab ID: 60428744013 Collected: 05/19/23 00:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	0.067	mg/L	0.050	0.016	1		05/26/23 13:13	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	19.8	mg/L	1.0	0.53	1		06/13/23 22:37	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 22:37	16984-48-8	
Sulfate	815	mg/L	100	55.0	100		06/15/23 20:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-FB-1 Lab ID: 60428744014 Collected: 05/19/23 13:13 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:26	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:26	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:26	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:26	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:26	7440-48-4	
Iron	14.3J	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:26	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:26	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:26	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:26	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:26	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:26	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:26	7440-09-7	
Sodium	<115	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:26	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:27	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:27	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:27	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:27	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:27	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:27	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:06	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		05/24/23 14:44		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.014J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:30	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-FB-1 Lab ID: 60428744014 Collected: 05/19/23 13:13 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:14	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<0.53	mg/L	1.0	0.53	1		06/13/23 23:31	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 23:31	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/13/23 23:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-1D Lab ID: 60428744015 Collected: 05/22/23 17:18 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	517	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 12:49	7440-39-3	
Beryllium	0.20J	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 12:49	7440-41-7	
Boron	431	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 12:49	7440-42-8	
Calcium	150000	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 12:49	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 12:49	7440-48-4	
Iron	19500	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 12:49	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 12:49	7439-92-1	
Lithium	28.8	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 12:49	7439-93-2	
Magnesium	36900	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 12:49	7439-95-4	
Manganese	432	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 12:49	7439-96-5	
Molybdenum	3.8J	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 12:49	7439-98-7	
Potassium	6410	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 12:49	7440-09-7	
Sodium	19000	ug/L	500	115	1	05/26/23 09:27	06/12/23 12:49	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:37	7440-36-0	
Arsenic	46.8	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:37	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:37	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:37	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:37	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:37	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:02	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	572	mg/L	20.0	10.5	1		05/25/23 13:25		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	622	mg/L	10.0	10.0	1		05/26/23 16:10		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	19.3	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.16J	mg/L	0.20	0.041	1		06/05/23 15:51	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-1D Lab ID: 60428744015 Collected: 05/22/23 17:18 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:21	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.2	mg/L	1.0	0.53	1		06/14/23 17:24	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/14/23 17:24	16984-48-8	
Sulfate	20.4	mg/L	2.0	1.1	2		06/15/23 16:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-3D Lab ID: 60428744016 Collected: 05/23/23 09:28 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	65.3	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 12:51	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 12:51	7440-41-7	
Boron	9640	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 12:51	7440-42-8	
Calcium	85000	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 12:51	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 12:51	7440-48-4	
Iron	194	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 12:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 12:51	7439-92-1	
Lithium	18.8	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 12:51	7439-93-2	
Magnesium	5490	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 12:51	7439-95-4	
Manganese	154	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 12:51	7439-96-5	
Molybdenum	228	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 12:51	7439-98-7	
Potassium	9440	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 12:51	7440-09-7	
Sodium	64200	ug/L	500	115	1	05/26/23 09:27	06/12/23 12:51	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:40	7440-36-0	
Arsenic	5.8	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:40	7440-38-2	
Cadmium	0.071J	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:40	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:40	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:40	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:04	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	61.4	mg/L	20.0	10.5	1		05/31/23 18:32		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	608	mg/L	10.0	10.0	1		05/30/23 13:30		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.19	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/05/23 15:53	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-3D Lab ID: 60428744016 Collected: 05/23/23 09:28 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.059	mg/L	0.050	0.016	1		05/30/23 10:34	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	25.1	mg/L	20.0	10.5	20		06/15/23 19:19	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/15/23 19:06	16984-48-8	
Sulfate	99.2	mg/L	20.0	11.0	20		06/15/23 19:19	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: UMW-FB-2 Lab ID: 60428744017 Collected: 05/22/23 17:33 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	3.5J	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 12:53	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 12:53	7440-41-7	
Boron	9.5J	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 12:53	7440-42-8	
Calcium	35.9J	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 12:53	7440-70-2	B
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 12:53	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 12:53	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 12:53	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 12:53	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 12:53	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 12:53	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 12:53	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 12:53	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/26/23 09:27	06/12/23 12:53	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:43	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:43	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:43	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:43	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:43	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:43	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:07	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		05/25/23 13:32		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		05/26/23 16:10		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0081J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/05/23 15:52	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: **UMW-FB-2** Lab ID: **60428744017** Collected: 05/22/23 17:33 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:22	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<0.53	mg/L	1.0	0.53	1		06/14/23 17:51	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/14/23 17:51	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/14/23 17:51	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	850765	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

METHOD BLANK: 3369590 Matrix: Water

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/06/23 12:20	

LABORATORY CONTROL SAMPLE: 3369591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3369592 3369593

Parameter	Units	60428744001		3369593		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Mercury	ug/L	<0.096	5	5	5.0	4.8	100	97	75-125	3	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	851874	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3373988 Matrix: Water
 Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/23 12:34	

LABORATORY CONTROL SAMPLE: 3373989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3373990 3373991

Parameter	Units	60429091008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L		5	5	5.3	5.2	107	105	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	851875	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 3373994 Matrix: Water

Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/23 11:57	

LABORATORY CONTROL SAMPLE: 3373995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3373996 3373997

Parameter	Units	60428743019		3373997		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.096	5	5	5.0	4.9	101	99	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	847355	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

METHOD BLANK: 3357531 Matrix: Water

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.75J	5.0	0.64	06/01/23 11:39	
Beryllium	ug/L	<0.12	1.0	0.12	06/01/23 11:39	
Boron	ug/L	<6.4	100	6.4	06/01/23 11:39	
Calcium	ug/L	28.4J	200	26.9	06/01/23 11:39	
Cobalt	ug/L	<1.2	5.0	1.2	06/01/23 11:39	
Iron	ug/L	16.0J	50.0	9.1	06/01/23 11:39	
Lead	ug/L	<3.8	10.0	3.8	06/01/23 11:39	
Lithium	ug/L	<3.7	10.0	3.7	06/01/23 11:39	
Magnesium	ug/L	<20.1	50.0	20.1	06/01/23 11:39	
Manganese	ug/L	1.9J	5.0	0.39	06/01/23 11:39	
Molybdenum	ug/L	<1.0	20.0	1.0	06/01/23 11:39	
Potassium	ug/L	<69.7	500	69.7	06/01/23 11:39	
Sodium	ug/L	<115	500	115	06/01/23 11:39	

LABORATORY CONTROL SAMPLE: 3357532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	966	97	85-115	
Boron	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	10900	109	85-115	
Cobalt	ug/L	1000	950	95	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	10700	107	85-115	
Manganese	ug/L	1000	942	94	85-115	
Molybdenum	ug/L	1000	980	98	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10600	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357533 3357534

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428744001	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	127	1000	1000	1100	1090	97	96	70-130	1	20
Beryllium	ug/L	<0.12	1000	1000	995	999	99	100	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357533 3357534												
Parameter	Units	60428744001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Boron	ug/L	1040	1000	1000	1970	1950	92	90	70-130	1	20	
Calcium	ug/L	118000	10000	10000	123000	122000	49	37	70-130	1	20	M1
Cobalt	ug/L	<1.2	1000	1000	973	974	97	97	70-130	0	20	
Iron	ug/L	3580	10000	10000	13600	13400	100	98	70-130	1	20	
Lead	ug/L	<3.8	1000	1000	977	985	98	98	70-130	1	20	
Lithium	ug/L	28.8	1000	1000	1020	1010	99	98	70-130	1	20	
Magnesium	ug/L	25000	10000	10000	34100	33700	91	87	70-130	1	20	
Manganese	ug/L	409	1000	1000	1360	1360	95	95	70-130	0	20	
Molybdenum	ug/L	35.1	1000	1000	1050	1060	101	102	70-130	1	20	
Potassium	ug/L	7650	10000	10000	17800	17500	101	98	70-130	2	20	
Sodium	ug/L	60900	10000	10000	68500	67700	76	68	70-130	1	20	M1

MATRIX SPIKE SAMPLE: 3357535								
Parameter	Units	60428744007		Spike Conc.	MS	MS	% Rec Limits	Qualifiers
		Result	Conc.		Result	% Rec		
Barium	ug/L	474	1000	1000	1510	103	70-130	
Beryllium	ug/L	<0.12	1000	1000	1050	105	70-130	
Boron	ug/L	79.4J	1000	1000	1070	99	70-130	
Calcium	ug/L	111000	10000	10000	125000	144	70-130	M1
Cobalt	ug/L	<1.2	1000	1000	1020	102	70-130	
Iron	ug/L	22600	10000	10000	33900	113	70-130	
Lead	ug/L	<3.8	1000	1000	1010	101	70-130	
Lithium	ug/L	17.3	1000	1000	1040	102	70-130	
Magnesium	ug/L	29900	10000	10000	41500	117	70-130	
Manganese	ug/L	371	1000	1000	1390	102	70-130	
Molybdenum	ug/L	1.2J	1000	1000	1060	106	70-130	
Potassium	ug/L	4000	10000	10000	14600	106	70-130	
Sodium	ug/L	13400	10000	10000	24500	111	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849318	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 3364751 Matrix: Water

Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/12/23 12:45	
Beryllium	ug/L	<0.12	1.0	0.12	06/12/23 12:45	
Boron	ug/L	<6.4	100	6.4	06/12/23 12:45	
Calcium	ug/L	71.0J	200	26.9	06/12/23 12:45	
Cobalt	ug/L	<1.2	5.0	1.2	06/12/23 12:45	
Iron	ug/L	16.0J	50.0	9.1	06/12/23 12:45	
Lead	ug/L	<3.8	10.0	3.8	06/12/23 12:45	
Lithium	ug/L	<3.7	10.0	3.7	06/12/23 12:45	
Magnesium	ug/L	<20.1	50.0	20.1	06/12/23 12:45	
Manganese	ug/L	<0.39	5.0	0.39	06/12/23 12:45	
Molybdenum	ug/L	<1.0	20.0	1.0	06/12/23 12:45	
Potassium	ug/L	<69.7	500	69.7	06/12/23 12:45	
Sodium	ug/L	<115	500	115	06/12/23 12:45	

LABORATORY CONTROL SAMPLE: 3364752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	968	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1060	106	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364753 3364754

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428743019	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	66.0	1000	1000	1100	1070	104	101	70-130	3	20		
Beryllium	ug/L	<0.12	1000	1000	1050	1050	105	105	70-130	0	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364753 3364754												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		60428743019 Result	Spike Conc.	Spike Conc.	MS Result							
Boron	ug/L	8340	1000	1000	9430	9090	109	74	70-130	4	20	
Calcium	ug/L	109000	10000	10000	120000	116000	109	68	70-130	4	20	M1
Cobalt	ug/L	<1.2	1000	1000	1060	1060	106	106	70-130	0	20	
Iron	ug/L	5000	10000	10000	16000	15200	110	102	70-130	5	20	
Lead	ug/L	<3.8	1000	1000	1060	1040	106	104	70-130	2	20	
Lithium	ug/L	37.5	1000	1000	1090	1070	105	103	70-130	2	20	
Magnesium	ug/L	13300	10000	10000	23900	23300	106	100	70-130	3	20	
Manganese	ug/L	276	1000	1000	1330	1320	105	105	70-130	0	20	
Molybdenum	ug/L	328	1000	1000	1410	1400	108	107	70-130	1	20	
Potassium	ug/L	8960	10000	10000	19900	19500	109	105	70-130	2	20	
Sodium	ug/L	109000	10000	10000	121000	116000	116	69	70-130	4	20	M1

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	852043	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3374470 Matrix: Water

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.85J	5.0	0.64	06/19/23 08:50	
Beryllium	ug/L	0.17J	1.0	0.12	06/19/23 08:50	
Boron	ug/L	<6.4	100	6.4	06/19/23 08:50	
Calcium	ug/L	46.0J	200	26.9	06/19/23 08:50	
Cobalt	ug/L	<1.2	5.0	1.2	06/19/23 08:50	
Iron	ug/L	19.9J	50.0	9.1	06/19/23 08:50	
Lead	ug/L	<3.8	10.0	3.8	06/19/23 08:50	
Lithium	ug/L	<3.7	10.0	3.7	06/19/23 08:50	
Magnesium	ug/L	<20.1	50.0	20.1	06/19/23 08:50	
Manganese	ug/L	0.53J	5.0	0.39	06/19/23 08:50	
Molybdenum	ug/L	<1.0	20.0	1.0	06/19/23 08:50	
Potassium	ug/L	<69.7	500	69.7	06/19/23 08:50	
Sodium	ug/L	<115	500	115	06/19/23 08:50	

LABORATORY CONTROL SAMPLE: 3374471

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	2000	1870	93	85-115	
Beryllium	ug/L	2000	2040	102	85-115	
Boron	ug/L	2000	1840	92	85-115	
Calcium	ug/L	20000	19600	98	85-115	
Cobalt	ug/L	2000	1990	100	85-115	
Iron	ug/L	20000	19700	99	85-115	
Lead	ug/L	2000	1970	98	85-115	
Lithium	ug/L	2000	1890	94	85-115	
Magnesium	ug/L	20000	19300	96	85-115	
Manganese	ug/L	2000	1950	97	85-115	
Molybdenum	ug/L	2000	2010	100	85-115	
Potassium	ug/L	20000	18900	95	85-115	
Sodium	ug/L	20000	19300	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374472 3374473

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60429091008 Result	Spike Conc.	Spike Conc.	MS Result						
Barium	ug/L	2000	2000	2060	2120	94	97	70-130	3	20	
Beryllium	ug/L	2000	2000	1900	1980	95	99	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374472 3374473												
Parameter	Units	60429091008		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Boron	ug/L	45.6J	2000	2000	1890	1950	92	95	70-130	3	20	
Calcium	ug/L	140000	20000	20000	163000	164000	114	123	70-130	1	20	
Cobalt	ug/L		2000	2000	1820	1880	91	94	70-130	3	20	
Iron	ug/L	13.5J	20000	20000	19300	19600	96	98	70-130	2	20	
Lead	ug/L		2000	2000	1910	1980	95	99	70-130	4	20	
Lithium	ug/L		2000	2000	1960	2040	97	101	70-130	4	20	
Magnesium	ug/L	26000	20000	20000	45600	46700	98	104	70-130	2	20	
Manganese	ug/L	11.4	2000	2000	1830	1890	91	94	70-130	3	20	
Molybdenum	ug/L		2000	2000	1880	1950	94	98	70-130	4	20	
Potassium	ug/L	3970	20000	20000	23400	24300	97	102	70-130	4	20	
Sodium	ug/L	4910	20000	20000	24700	25400	99	103	70-130	3	20	

MATRIX SPIKE SAMPLE: 3374474								
Parameter	Units	60429254001		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Conc.					
Barium	ug/L			2000	1870	91	70-130	
Beryllium	ug/L			2000	1920	96	70-130	
Boron	ug/L		3180	2000	4940	88	70-130	
Calcium	ug/L		79600	20000	95300	78	70-130	
Cobalt	ug/L			2000	1910	96	70-130	
Iron	ug/L		25.7J	20000	19100	95	70-130	
Lead	ug/L			2000	1900	95	70-130	
Lithium	ug/L			2000	1900	95	70-130	
Magnesium	ug/L		104	20000	18700	93	70-130	
Manganese	ug/L		1.6J	2000	1880	94	70-130	
Molybdenum	ug/L			2000	2180	98	70-130	
Potassium	ug/L		9670	20000	28600	94	70-130	
Sodium	ug/L		69900	20000	86400	82	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	847356	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

METHOD BLANK: 3357538 Matrix: Water

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/05/23 21:45	
Arsenic	ug/L	<0.13	1.0	0.13	06/05/23 21:45	
Cadmium	ug/L	<0.050	0.50	0.050	06/05/23 21:45	
Chromium	ug/L	<0.30	1.0	0.30	06/05/23 21:45	
Selenium	ug/L	<0.18	1.0	0.18	06/05/23 21:45	
Thallium	ug/L	<0.14	1.0	0.14	06/05/23 21:45	

LABORATORY CONTROL SAMPLE: 3357539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.4	98	85-115	
Arsenic	ug/L	40	38.7	97	85-115	
Cadmium	ug/L	40	38.8	97	85-115	
Chromium	ug/L	40	40.1	100	85-115	
Selenium	ug/L	40	41.8	105	85-115	
Thallium	ug/L	40	39.0	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357540 3357541

Parameter	Units	60428744001		60428744006		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Antimony	ug/L	<0.12	40	40	40.0	40.6	100	101	70-130	1	20		
Arsenic	ug/L	0.88J	40	40	39.6	40.4	97	99	70-130	2	20		
Cadmium	ug/L	<0.050	40	40	38.0	38.9	95	97	70-130	2	20		
Chromium	ug/L	0.37J	40	40	39.4	39.9	98	99	70-130	1	20		
Selenium	ug/L	<0.18	40	40	39.4	39.4	98	98	70-130	0	20		
Thallium	ug/L	<0.14	40	40	40.8	41.6	102	104	70-130	2	20		

MATRIX SPIKE SAMPLE: 3357542

Parameter	Units	60428744006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.7	99	70-130	
Arsenic	ug/L	34.7	40	74.5	100	70-130	
Cadmium	ug/L	<0.050	40	38.4	96	70-130	
Chromium	ug/L	0.33J	40	40.3	100	70-130	
Selenium	ug/L	<0.18	40	39.4	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

MATRIX SPIKE SAMPLE:	3357542						
		60428744006	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Thallium	ug/L	<0.14	40	41.4	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849319	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 3364755 Matrix: Water

Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/07/23 16:22	
Arsenic	ug/L	<0.13	1.0	0.13	06/07/23 16:22	
Cadmium	ug/L	<0.050	0.50	0.050	06/07/23 16:22	
Chromium	ug/L	<0.30	1.0	0.30	06/07/23 16:22	
Selenium	ug/L	<0.18	1.0	0.18	06/07/23 16:22	
Thallium	ug/L	<0.14	1.0	0.14	06/07/23 16:22	

LABORATORY CONTROL SAMPLE: 3364756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.2	98	85-115	
Arsenic	ug/L	40	40.6	101	85-115	
Cadmium	ug/L	40	40.0	100	85-115	
Chromium	ug/L	40	39.9	100	85-115	
Selenium	ug/L	40	40.5	101	85-115	
Thallium	ug/L	40	40.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364757 3364758

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428743019 Result	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	<0.12	40	40	39.2	39.5	98	99	70-130	1	20
Arsenic	ug/L	3.1	40	40	44.1	43.9	103	102	70-130	1	20
Cadmium	ug/L	0.11J	40	40	38.0	38.1	95	95	70-130	0	20
Chromium	ug/L	0.41J	40	40	41.1	40.7	102	101	70-130	1	20
Selenium	ug/L	<0.18	40	40	39.7	39.3	99	98	70-130	1	20
Thallium	ug/L	<0.14	40	40	38.8	38.9	97	97	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	852044	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3374475 Matrix: Water

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/14/23 12:51	
Arsenic	ug/L	0.14J	1.0	0.13	06/14/23 12:51	
Cadmium	ug/L	0.15J	0.50	0.050	06/14/23 12:51	
Chromium	ug/L	0.74J	1.0	0.30	06/14/23 12:51	
Selenium	ug/L	<0.18	1.0	0.18	06/14/23 12:51	
Thallium	ug/L	<0.14	1.0	0.14	06/14/23 12:51	

LABORATORY CONTROL SAMPLE: 3374476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	73.6	92	85-115	
Arsenic	ug/L	80	73.0	91	85-115	
Cadmium	ug/L	80	73.9	92	85-115	
Chromium	ug/L	80	79.9	100	85-115	
Selenium	ug/L	80	68.2	85	85-115	
Thallium	ug/L	80	81.3	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374477 3374478

Parameter	Units	60428743010		60428743011		60428743012		60428743013		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Antimony	ug/L	<0.12	80	80	80	73.8	71.5	92	89	70-130	3	20	
Arsenic	ug/L	0.30J	80	80	80	74.2	72.4	92	90	70-130	2	20	
Cadmium	ug/L	0.18J	80	80	80	73.1	70.5	91	88	70-130	4	20	
Chromium	ug/L	1.4	80	80	80	76.8	75.1	94	92	70-130	2	20	
Selenium	ug/L	<0.18	80	80	80	66.9	65.9	84	82	70-130	2	20	
Thallium	ug/L	<0.14	80	80	80	83.4	81.2	104	101	70-130	3	20	

MATRIX SPIKE SAMPLE: 3374479

Parameter	Units	60428743011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.15J	80	72.8	91	70-130	
Arsenic	ug/L	0.59J	80	73.2	91	70-130	
Cadmium	ug/L	<0.050	80	73.2	92	70-130	
Chromium	ug/L	1.1	80	79.8	98	70-130	
Selenium	ug/L	26.0	80	92.1	83	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

MATRIX SPIKE SAMPLE:		3374479					
Parameter	Units	60428743011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	80	82.9	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	847594	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

METHOD BLANK: 3358236 Matrix: Water

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/17/23 13:59	

LABORATORY CONTROL SAMPLE: 3358237

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	511	102	90-110	

SAMPLE DUPLICATE: 3358238

Parameter	Units	60428567001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	436	435	0	10	

SAMPLE DUPLICATE: 3358239

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	330	338	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	848810	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3362804 Matrix: Water
 Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/24/23 13:54	

LABORATORY CONTROL SAMPLE: 3362805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	507	101	90-110	

SAMPLE DUPLICATE: 3362806

Parameter	Units	60428744010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	72.1	69.3	4	10	

SAMPLE DUPLICATE: 3362961

Parameter	Units	60429051010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	318	317	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849024

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744017

METHOD BLANK: 3363577

Matrix: Water

Associated Lab Samples: 60428744015, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/25/23 10:50	

LABORATORY CONTROL SAMPLE: 3363578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	498	100	90-110	

SAMPLE DUPLICATE: 3363579

Parameter	Units	10654006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	<10.5		10	

SAMPLE DUPLICATE: 3363580

Parameter	Units	60429303013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	448	449	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849897

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744016

METHOD BLANK: 3366540

Matrix: Water

Associated Lab Samples: 60428744016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/31/23 17:43	

LABORATORY CONTROL SAMPLE: 3366541

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	461	92	90-110	

SAMPLE DUPLICATE: 3366542

Parameter	Units	60429379011 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	187	187	0	10	

SAMPLE DUPLICATE: 3366543

Parameter	Units	60429254006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	224	222	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 847756

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744001, 60428744005, 60428744006

METHOD BLANK: 3358896

Matrix: Water

Associated Lab Samples: 60428744001, 60428744005, 60428744006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/18/23 11:26	

LABORATORY CONTROL SAMPLE: 3358897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1050	105	80-120	

SAMPLE DUPLICATE: 3358898

Parameter	Units	60428659001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	905	5	10	

SAMPLE DUPLICATE: 3358899

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	667	641	4	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	848073	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744002, 60428744003, 60428744004, 60428744007

METHOD BLANK: 3360160 Matrix: Water
 Associated Lab Samples: 60428744002, 60428744003, 60428744004, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/19/23 11:07	

LABORATORY CONTROL SAMPLE: 3360161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3360162

Parameter	Units	60428661001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	245	230	6	10	

SAMPLE DUPLICATE: 3360163

Parameter	Units	60428794008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	619	606	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849038	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428744010, 60428744011, 60428744012, 60428744013, 60428744014		

METHOD BLANK:	3363629	Matrix:	Water
Associated Lab Samples:	60428744010, 60428744011, 60428744012, 60428744013, 60428744014		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/25/23 12:05	

LABORATORY CONTROL SAMPLE: 3363630						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	991	99	80-120	

SAMPLE DUPLICATE: 3363631						
Parameter	Units	60429277007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1030	989	4	10	

SAMPLE DUPLICATE: 3363632						
Parameter	Units	60428744014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<5.0	<5.0		10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849292

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744017

METHOD BLANK: 3364652

Matrix: Water

Associated Lab Samples: 60428744015, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/26/23 16:09	

LABORATORY CONTROL SAMPLE: 3364653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3364654

Parameter	Units	60428743017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	559	590	5	10	

SAMPLE DUPLICATE: 3364655

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	856	800	7	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849617

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744016

METHOD BLANK: 3365966

Matrix: Water

Associated Lab Samples: 60428744016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/30/23 13:27	

LABORATORY CONTROL SAMPLE: 3365967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3365968

Parameter	Units	60429379009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1610	1590	1	10	

SAMPLE DUPLICATE: 3365969

Parameter	Units	60429254006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	677	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 847452

Analysis Method: SM 3500-Fe B#4

QC Batch Method: SM 3500-Fe B#4

Analysis Description: Iron, Ferrous

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744006

METHOD BLANK: 3357895

Matrix: Water

Associated Lab Samples: 60428744006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/18/23 08:48	H6

LABORATORY CONTROL SAMPLE: 3357896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 3357897

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.61	0.63	3	20	H6

SAMPLE DUPLICATE: 3357898

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.48	0.45	7	20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 847702 Analysis Method: SM 3500-Fe B#4
 QC Batch Method: SM 3500-Fe B#4 Analysis Description: Iron, Ferrous
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744007

METHOD BLANK: 3358762 Matrix: Water
 Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/18/23 08:29	H6

LABORATORY CONTROL SAMPLE: 3358763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 3358764

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.20	0.20	1	20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849845	Analysis Method:	SM 3500-Fe B#4
QC Batch Method:	SM 3500-Fe B#4	Analysis Description:	Iron, Ferrous
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3366442 Matrix: Water
 Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/07/23 14:19	H6

LABORATORY CONTROL SAMPLE: 3366443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	108	90-110	H6

SAMPLE DUPLICATE: 3366444

Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.054J	0.082J		20	H6

SAMPLE DUPLICATE: 3366445

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.062J	0.048J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 850307 Analysis Method: SM 3500-Fe B#4
 QC Batch Method: SM 3500-Fe B#4 Analysis Description: Iron, Ferrous
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 3368159 Matrix: Water
 Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/05/23 15:02	H6

LABORATORY CONTROL SAMPLE: 3368160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	98	90-110	H6

SAMPLE DUPLICATE: 3368161

Parameter	Units	60428744015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.16J	0.16J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	847767	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428744001, 60428744005, 60428744006		

METHOD BLANK: 3358940 Matrix: Water

Associated Lab Samples: 60428744001, 60428744005, 60428744006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/18/23 16:43	

LABORATORY CONTROL SAMPLE: 3358941

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3358942 3358943

Parameter	Units	60428744001		3358943		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.55	0.54	110	107	75-125	2	20

SAMPLE DUPLICATE: 3358944

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	848075	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples: 60428744002, 60428744003, 60428744004, 60428744007			

METHOD BLANK: 3360170 Matrix: Water
 Associated Lab Samples: 60428744002, 60428744003, 60428744004, 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/19/23 10:26	

LABORATORY CONTROL SAMPLE: 3360171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3360172 3360173

Parameter	Units	60428620003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	ND	0.5	0.5	0.14	0.13	28	27	75-125	6	20	M1

SAMPLE DUPLICATE: 3360174

Parameter	Units	60428620004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3360175

Parameter	Units	60428744003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.023J	0.030J		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849293	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428744010, 60428744011, 60428744012, 60428744013, 60428744014, 60428744015, 60428744017		

METHOD BLANK:	3364656	Matrix:	Water
Associated Lab Samples:	60428744010, 60428744011, 60428744012, 60428744013, 60428744014, 60428744015, 60428744017		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/26/23 13:07	

LABORATORY CONTROL SAMPLE: 3364657						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364659												3364660	
Parameter	Units	60428743019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.49	0.50	98	100	75-125	1	20		

SAMPLE DUPLICATE: 3364658						
Parameter	Units	60429347001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3364661						
Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849620

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744016

METHOD BLANK: 3365977

Matrix: Water

Associated Lab Samples: 60428744016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/30/23 10:10	

LABORATORY CONTROL SAMPLE: 3365978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3365979 3365980

Parameter	Units	60429368001		3365979		3365980		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Sulfide, Total	mg/L	0.63	0.63	0.5	0.5	1.1	1.2	99	107	75-125	4	20

SAMPLE DUPLICATE: 3365981

Parameter	Units	60428744016 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.059	0.067	13	20	

SAMPLE DUPLICATE: 3365982

Parameter	Units	60429592009 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 849825 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006

METHOD BLANK: 3366406 Matrix: Water
 Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/31/23 19:13	
Fluoride	mg/L	<0.12	0.20	0.12	05/31/23 19:13	
Sulfate	mg/L	<0.55	1.0	0.55	05/31/23 19:13	

LABORATORY CONTROL SAMPLE: 3366407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.2	88	90-110 L2	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366408 3366409

Parameter	Units	60428744001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	40.4	100	100	111	109	71	69	80-120	2	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	1.8	1.8	73	73	80-120	1	15	M0
Sulfate	mg/L	172	100	100	264	259	92	87	80-120	2	15	

SAMPLE DUPLICATE: 3366410

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	40.4	33.3	19	15	D6
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	172	165	4	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	849972	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744007

METHOD BLANK: 3366842 Matrix: Water

Associated Lab Samples: 60428744007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/01/23 17:53	
Fluoride	mg/L	<0.12	0.20	0.12	06/01/23 17:53	
Sulfate	mg/L	<0.55	1.0	0.55	06/01/23 17:53	

LABORATORY CONTROL SAMPLE: 3366843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366844 3366845

Parameter	Units	60429218002		3366845		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	19.5J	100	99.0	96.8	80	77	80-120	2	15	M1
Fluoride	mg/L	ND	50	45.0	44.0	90	88	80-120	2	15	
Sulfate	mg/L	121	100	219	215	98	94	80-120	2	15	

SAMPLE DUPLICATE: 3366846

Parameter	Units	60429218002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	19.5J	20.8		15	
Fluoride	mg/L	ND	<2.5		15	
Sulfate	mg/L	121	126	4	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	851545	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 3372733 Matrix: Water
 Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/13/23 18:23	
Fluoride	mg/L	<0.12	0.20	0.12	06/13/23 18:23	
Sulfate	mg/L	<0.55	1.0	0.55	06/13/23 18:23	

LABORATORY CONTROL SAMPLE: 3372734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3372735 3372736

Parameter	Units	60430373004		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result							
Chloride	mg/L	1.0	5	5	5.5	5.7	90	94	94	80-120	4	15		
Fluoride	mg/L	1.1	2.5	2.5	3.8	3.9	107	111	111	80-120	3	15		
Sulfate	mg/L	742	500	500	1320	1240	116	99	99	80-120	7	15		

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	852062	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744015, 60428744017

METHOD BLANK: 3374550 Matrix: Water

Associated Lab Samples: 60428744015, 60428744017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/14/23 16:04	
Fluoride	mg/L	<0.12	0.20	0.12	06/14/23 16:04	
Sulfate	mg/L	<0.55	1.0	0.55	06/14/23 16:04	

LABORATORY CONTROL SAMPLE: 3374551

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374552 3374553

Parameter	Units	60428743019		3374553		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	42.2	100	135	134	92	92	80-120	0	15 E	
Fluoride	mg/L	0.27	2.5	2.7	3.0	97	108	80-120	10	15	
Sulfate	mg/L	312	100	427	424	115	112	80-120	1	15 E	

SAMPLE DUPLICATE: 3374554

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	42.2	40.1	5	15	
Fluoride	mg/L	0.27	0.23	16	15 D6	
Sulfate	mg/L	312	308	1	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	852379	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428744016

METHOD BLANK: 3375535 Matrix: Water

Associated Lab Samples: 60428744016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/15/23 08:30	
Fluoride	mg/L	<0.12	0.20	0.12	06/15/23 08:30	
Sulfate	mg/L	<0.55	1.0	0.55	06/15/23 08:30	

LABORATORY CONTROL SAMPLE: 3375536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3375539 3375537

Parameter	Units	60429254006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	27.0	100	100	115	115	88	88	80-120	1	15	
Fluoride	mg/L	0.20	2.5	2.5	2.9	2.8	107	104	80-120	3	15	
Sulfate	mg/L	251	100	100	329	330	78	79	80-120	0	15 M1	

SAMPLE DUPLICATE: 3375538

Parameter	Units	60429254006 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	27.0	25.4	6	15	
Fluoride	mg/L	0.20	0.24	16	15 D6	
Sulfate	mg/L	251	229	9	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-2D **Lab ID: 60428744001** Collected: 05/11/23 15:30 Received: 05/13/23 04:43 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.861 ± 0.571 (0.752) C:NA T:92%	pCi/L	06/13/23 15:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.920 ± 0.436 (0.737) C:83% T:85%	pCi/L	06/07/23 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-7D **Lab ID: 60428744002** Collected: 05/12/23 09:57 Received: 05/13/23 04:43 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.673 ± 0.447 (0.203) C:NA T:97%	pCi/L	06/13/23 15:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.901 ± 0.398 (0.634) C:79% T:88%	pCi/L	06/07/23 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-8D **Lab ID: 60428744003** Collected: 05/12/23 11:24 Received: 05/13/23 04:43 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.0727 ± 0.377 (0.873) C:NA T:95%	pCi/L	06/13/23 15:10	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.237 ± 0.316 (0.673) C:80% T:86%	pCi/L	06/07/23 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-9D **Lab ID: 60428744004** Collected: 05/12/23 12:29 Received: 05/13/23 04:43 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.312 (0.700) C:NA T:99%	pCi/L	06/13/23 15:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.524 ± 0.334 (0.616) C:82% T:88%	pCi/L	06/07/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	1.63 ± 0.730 (0.632) C:NA T:99%	pCi/L	06/13/23 15:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.791 ± 0.386 (0.661) C:87% T:88%	pCi/L	06/07/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-BMW-2D **Lab ID: 60428744006** Collected: 05/11/23 09:32 Received: 05/13/23 04:43 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.285 ± 0.484 (0.855) C:NA T:90%	pCi/L	06/13/23 15:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.117 ± 0.309 (0.691) C:86% T:85%	pCi/L	06/07/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.345 ± 0.525 (0.904) C:NA T:97%	pCi/L	06/13/23 15:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.702 ± 0.398 (0.721) C:80% T:89%	pCi/L	06/07/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-MS-1 **Lab ID: 60428744008** Collected: 05/11/23 15:30 Received: 05/13/23 04:43 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	88.94 %REC ± NA (NA) C:NA T:NA	pCi/L	06/13/23 15:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	71.61 %REC ± NA (NA) C:NA T:NA	pCi/L	06/07/23 14:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-MSD-1 **Lab ID: 60428744009** Collected: 05/11/23 15:30 Received: 05/13/23 04:43 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	94.39 %REC 5.94RPD ± NA NA) C:NA T:NA	pCi/L	06/13/23 15:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	82.61 %REC 14.26RPD ± NA (NA) C:NA T:NA	pCi/L	06/07/23 14:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-4D **Lab ID: 60428744010** Collected: 05/19/23 12:58 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0908 ± 0.590 (1.28) C:NA T:90%	pCi/L	06/16/23 14:22	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.17 ± 0.517 (0.875) C:78% T:84%	pCi/L	06/14/23 12:23	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0937 ± 0.486 (1.13) C:NA T:89%	pCi/L	06/16/23 14:22	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.395 ± 0.480 (1.02) C:79% T:79%	pCi/L	06/14/23 12:23	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-6D **Lab ID: 60428744012** Collected: 05/19/23 09:32 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0897 ± 0.681 (1.42) C:NA T:89%	pCi/L	06/16/23 14:22	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.02 ± 0.483 (0.824) C:76% T:80%	pCi/L	06/14/23 12:24	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-DUP-2 **Lab ID: 60428744013** Collected: 05/19/23 00:00 Received: 05/20/23 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.361 ± 0.614 (1.08) C:NA T:95%	pCi/L	06/16/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.659 ± 0.362 (0.637) C:81% T:84%	pCi/L	06/14/23 12:24	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-FB-1 **Lab ID: 60428744014** Collected: 05/19/23 13:13 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.542 ± 0.711 (1.64) C:NA T:94%	pCi/L	06/16/23 14:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.283 ± 0.329 (0.692) C:79% T:89%	pCi/L	06/14/23 12:24	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Sample: L-UMW-1D **Lab ID: 60428744015** Collected: 05/22/23 17:18 Received: 05/24/23 04:46 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.572 ± 0.490 (0.664) C:NA T:92%	pCi/L	06/21/23 12:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.32 ± 0.487 (0.727) C:85% T:85%	pCi/L	06/19/23 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.293 ± 0.498 (0.879) C:NA T:91%	pCi/L	06/21/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.923 ± 0.452 (0.778) C:79% T:81%	pCi/L	06/19/23 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0675 ± 0.350 (0.811) C:NA T:96%	pCi/L	06/21/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.163 ± 0.295 (0.645) C:87% T:91%	pCi/L	06/19/23 17:12	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 592561

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 2879293

Matrix: Water

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.128 ± 0.292 (0.470) C:NA T:90%	pCi/L	06/16/23 13:57	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	592611	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 2879387 Matrix: Water

Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.346 ± 0.322 (0.659) C:86% T:87%	pCi/L	06/19/23 13:13	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch: 592610

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744015, 60428744016, 60428744017

METHOD BLANK: 2879385

Matrix: Water

Associated Lab Samples: 60428744015, 60428744016, 60428744017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.284 ± 0.297 (0.418) C:NA T:93%	pCi/L	06/21/23 12:23	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	591544	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007, 60428744008, 60428744009

METHOD BLANK:	2874430	Matrix:	Water
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Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007, 60428744008, 60428744009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0955 ± 0.295 (0.665) C:87% T:88%	pCi/L	06/07/23 14:35	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	592562	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

METHOD BLANK: 2879294 Matrix: Water

Associated Lab Samples: 60428744010, 60428744011, 60428744012, 60428744013, 60428744014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.225 ± 0.350 (0.757) C:82% T:80%	pCi/L	06/14/23 12:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60428744

QC Batch:	591543	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007, 60428744008, 60428744009

METHOD BLANK:	2874429	Matrix:	Water
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Associated Lab Samples: 60428744001, 60428744002, 60428744003, 60428744004, 60428744005, 60428744006, 60428744007, 60428744008, 60428744009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.283 ± 0.334 (0.526) C:NA T:90%	pCi/L	06/13/23 15:10	

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QUALIFIERS

Project: AMEREN LCPA

Pace Project No.: 60428744

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1e Ferrous Iron result is greater than the total iron. Data is within laboratory control limits.

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA
Pace Project No.: 60428744

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428744001	L-UMW-2D	EPA 200.7	847355	EPA 200.7	847429
60428744002	L-UMW-7D	EPA 200.7	847355	EPA 200.7	847429
60428744003	L-UMW-8D	EPA 200.7	847355	EPA 200.7	847429
60428744004	L-UMW-9D	EPA 200.7	847355	EPA 200.7	847429
60428744005	L-BMW-1D	EPA 200.7	847355	EPA 200.7	847429
60428744006	L-BMW-2D	EPA 200.7	847355	EPA 200.7	847429
60428744007	L-UMW-DUP-1	EPA 200.7	847355	EPA 200.7	847429
60428744010	L-UMW-4D	EPA 200.7	852043	EPA 200.7	852106
60428744011	L-UMW-5D	EPA 200.7	852043	EPA 200.7	852106
60428744012	L-UMW-6D	EPA 200.7	852043	EPA 200.7	852106
60428744013	L-UMW-DUP-2	EPA 200.7	852043	EPA 200.7	852106
60428744014	L-UMW-FB-1	EPA 200.7	852043	EPA 200.7	852106
60428744015	L-UMW-1D	EPA 200.7	849318	EPA 200.7	849452
60428744016	L-UMW-3D	EPA 200.7	849318	EPA 200.7	849452
60428744017	UMW-FB-2	EPA 200.7	849318	EPA 200.7	849452
60428744001	L-UMW-2D	EPA 200.8	847356	EPA 200.8	847431
60428744002	L-UMW-7D	EPA 200.8	847356	EPA 200.8	847431
60428744003	L-UMW-8D	EPA 200.8	847356	EPA 200.8	847431
60428744004	L-UMW-9D	EPA 200.8	847356	EPA 200.8	847431
60428744005	L-BMW-1D	EPA 200.8	847356	EPA 200.8	847431
60428744006	L-BMW-2D	EPA 200.8	847356	EPA 200.8	847431
60428744007	L-UMW-DUP-1	EPA 200.8	847356	EPA 200.8	847431
60428744010	L-UMW-4D	EPA 200.8	852044	EPA 200.8	852107
60428744011	L-UMW-5D	EPA 200.8	852044	EPA 200.8	852107
60428744012	L-UMW-6D	EPA 200.8	852044	EPA 200.8	852107
60428744013	L-UMW-DUP-2	EPA 200.8	852044	EPA 200.8	852107
60428744014	L-UMW-FB-1	EPA 200.8	852044	EPA 200.8	852107
60428744015	L-UMW-1D	EPA 200.8	849319	EPA 200.8	849453
60428744016	L-UMW-3D	EPA 200.8	849319	EPA 200.8	849453
60428744017	UMW-FB-2	EPA 200.8	849319	EPA 200.8	849453
60428744001	L-UMW-2D	EPA 7470	850765	EPA 7470	850863
60428744002	L-UMW-7D	EPA 7470	850765	EPA 7470	850863
60428744003	L-UMW-8D	EPA 7470	850765	EPA 7470	850863
60428744004	L-UMW-9D	EPA 7470	850765	EPA 7470	850863
60428744005	L-BMW-1D	EPA 7470	850765	EPA 7470	850863
60428744006	L-BMW-2D	EPA 7470	850765	EPA 7470	850863
60428744007	L-UMW-DUP-1	EPA 7470	850765	EPA 7470	850863
60428744010	L-UMW-4D	EPA 7470	851874	EPA 7470	852026
60428744011	L-UMW-5D	EPA 7470	851874	EPA 7470	852026
60428744012	L-UMW-6D	EPA 7470	851874	EPA 7470	852026
60428744013	L-UMW-DUP-2	EPA 7470	851874	EPA 7470	852026
60428744014	L-UMW-FB-1	EPA 7470	851874	EPA 7470	852026
60428744015	L-UMW-1D	EPA 7470	851875	EPA 7470	852028
60428744016	L-UMW-3D	EPA 7470	851875	EPA 7470	852028
60428744017	UMW-FB-2	EPA 7470	851875	EPA 7470	852028

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428744001	L-UMW-2D	EPA 903.1	591543		
60428744002	L-UMW-7D	EPA 903.1	591543		
60428744003	L-UMW-8D	EPA 903.1	591543		
60428744004	L-UMW-9D	EPA 903.1	591543		
60428744005	L-BMW-1D	EPA 903.1	591543		
60428744006	L-BMW-2D	EPA 903.1	591543		
60428744007	L-UMW-DUP-1	EPA 903.1	591543		
60428744008	L-UMW-MS-1	EPA 903.1	591543		
60428744009	L-UMW-MSD-1	EPA 903.1	591543		
60428744010	L-UMW-4D	EPA 903.1	592561		
60428744011	L-UMW-5D	EPA 903.1	592561		
60428744012	L-UMW-6D	EPA 903.1	592561		
60428744013	L-UMW-DUP-2	EPA 903.1	592561		
60428744014	L-UMW-FB-1	EPA 903.1	592561		
60428744015	L-UMW-1D	EPA 903.1	592610		
60428744016	L-UMW-3D	EPA 903.1	592610		
60428744017	UMW-FB-2	EPA 903.1	592610		
60428744001	L-UMW-2D	EPA 904.0	591544		
60428744002	L-UMW-7D	EPA 904.0	591544		
60428744003	L-UMW-8D	EPA 904.0	591544		
60428744004	L-UMW-9D	EPA 904.0	591544		
60428744005	L-BMW-1D	EPA 904.0	591544		
60428744006	L-BMW-2D	EPA 904.0	591544		
60428744007	L-UMW-DUP-1	EPA 904.0	591544		
60428744008	L-UMW-MS-1	EPA 904.0	591544		
60428744009	L-UMW-MSD-1	EPA 904.0	591544		
60428744010	L-UMW-4D	EPA 904.0	592562		
60428744011	L-UMW-5D	EPA 904.0	592562		
60428744012	L-UMW-6D	EPA 904.0	592562		
60428744013	L-UMW-DUP-2	EPA 904.0	592562		
60428744014	L-UMW-FB-1	EPA 904.0	592562		
60428744015	L-UMW-1D	EPA 904.0	592611		
60428744016	L-UMW-3D	EPA 904.0	592611		
60428744017	UMW-FB-2	EPA 904.0	592611		
60428744001	L-UMW-2D	SM 2320B	847594		
60428744002	L-UMW-7D	SM 2320B	847594		
60428744003	L-UMW-8D	SM 2320B	847594		
60428744004	L-UMW-9D	SM 2320B	847594		
60428744005	L-BMW-1D	SM 2320B	847594		
60428744006	L-BMW-2D	SM 2320B	847594		
60428744007	L-UMW-DUP-1	SM 2320B	847594		
60428744010	L-UMW-4D	SM 2320B	848810		
60428744011	L-UMW-5D	SM 2320B	848810		
60428744012	L-UMW-6D	SM 2320B	848810		
60428744013	L-UMW-DUP-2	SM 2320B	848810		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428744014	L-UMW-FB-1	SM 2320B	848810		
60428744015	L-UMW-1D	SM 2320B	849024		
60428744016	L-UMW-3D	SM 2320B	849897		
60428744017	UMW-FB-2	SM 2320B	849024		
60428744001	L-UMW-2D	SM 2540C	847756		
60428744002	L-UMW-7D	SM 2540C	848073		
60428744003	L-UMW-8D	SM 2540C	848073		
60428744004	L-UMW-9D	SM 2540C	848073		
60428744005	L-BMW-1D	SM 2540C	847756		
60428744006	L-BMW-2D	SM 2540C	847756		
60428744007	L-UMW-DUP-1	SM 2540C	848073		
60428744010	L-UMW-4D	SM 2540C	849038		
60428744011	L-UMW-5D	SM 2540C	849038		
60428744012	L-UMW-6D	SM 2540C	849038		
60428744013	L-UMW-DUP-2	SM 2540C	849038		
60428744014	L-UMW-FB-1	SM 2540C	849038		
60428744015	L-UMW-1D	SM 2540C	849292		
60428744016	L-UMW-3D	SM 2540C	849617		
60428744017	UMW-FB-2	SM 2540C	849292		
60428744001	L-UMW-2D	SM 3500-Fe B#4	851400		
60428744002	L-UMW-7D	SM 3500-Fe B#4	851400		
60428744003	L-UMW-8D	SM 3500-Fe B#4	851400		
60428744004	L-UMW-9D	SM 3500-Fe B#4	851400		
60428744005	L-BMW-1D	SM 3500-Fe B#4	851400		
60428744006	L-BMW-2D	SM 3500-Fe B#4	851400		
60428744007	L-UMW-DUP-1	SM 3500-Fe B#4	851400		
60428744010	L-UMW-4D	SM 3500-Fe B#4	853361		
60428744011	L-UMW-5D	SM 3500-Fe B#4	853361		
60428744012	L-UMW-6D	SM 3500-Fe B#4	853361		
60428744013	L-UMW-DUP-2	SM 3500-Fe B#4	853361		
60428744014	L-UMW-FB-1	SM 3500-Fe B#4	853361		
60428744015	L-UMW-1D	SM 3500-Fe B#4	853361		
60428744016	L-UMW-3D	SM 3500-Fe B#4	853361		
60428744017	UMW-FB-2	SM 3500-Fe B#4	853361		
60428744001	L-UMW-2D	SM 3500-Fe B#4	847702		
60428744002	L-UMW-7D	SM 3500-Fe B#4	847702		
60428744003	L-UMW-8D	SM 3500-Fe B#4	847702		
60428744004	L-UMW-9D	SM 3500-Fe B#4	847702		
60428744005	L-BMW-1D	SM 3500-Fe B#4	847702		
60428744006	L-BMW-2D	SM 3500-Fe B#4	847452		
60428744007	L-UMW-DUP-1	SM 3500-Fe B#4	847702		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60428744

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428744010	L-UMW-4D	SM 3500-Fe B#4	849845		
60428744011	L-UMW-5D	SM 3500-Fe B#4	849845		
60428744012	L-UMW-6D	SM 3500-Fe B#4	849845		
60428744013	L-UMW-DUP-2	SM 3500-Fe B#4	849845		
60428744014	L-UMW-FB-1	SM 3500-Fe B#4	849845		
60428744015	L-UMW-1D	SM 3500-Fe B#4	850307		
60428744016	L-UMW-3D	SM 3500-Fe B#4	850307		
60428744017	UMW-FB-2	SM 3500-Fe B#4	850307		
60428744001	L-UMW-2D	SM 4500-S-2 D	847767		
60428744002	L-UMW-7D	SM 4500-S-2 D	848075		
60428744003	L-UMW-8D	SM 4500-S-2 D	848075		
60428744004	L-UMW-9D	SM 4500-S-2 D	848075		
60428744005	L-BMW-1D	SM 4500-S-2 D	847767		
60428744006	L-BMW-2D	SM 4500-S-2 D	847767		
60428744007	L-UMW-DUP-1	SM 4500-S-2 D	848075		
60428744010	L-UMW-4D	SM 4500-S-2 D	849293		
60428744011	L-UMW-5D	SM 4500-S-2 D	849293		
60428744012	L-UMW-6D	SM 4500-S-2 D	849293		
60428744013	L-UMW-DUP-2	SM 4500-S-2 D	849293		
60428744014	L-UMW-FB-1	SM 4500-S-2 D	849293		
60428744015	L-UMW-1D	SM 4500-S-2 D	849293		
60428744016	L-UMW-3D	SM 4500-S-2 D	849620		
60428744017	UMW-FB-2	SM 4500-S-2 D	849293		
60428744001	L-UMW-2D	EPA 300.0	849825		
60428744002	L-UMW-7D	EPA 300.0	849825		
60428744003	L-UMW-8D	EPA 300.0	849825		
60428744004	L-UMW-9D	EPA 300.0	849825		
60428744005	L-BMW-1D	EPA 300.0	849825		
60428744006	L-BMW-2D	EPA 300.0	849825		
60428744007	L-UMW-DUP-1	EPA 300.0	849972		
60428744010	L-UMW-4D	EPA 300.0	851545		
60428744011	L-UMW-5D	EPA 300.0	851545		
60428744012	L-UMW-6D	EPA 300.0	851545		
60428744013	L-UMW-DUP-2	EPA 300.0	851545		
60428744014	L-UMW-FB-1	EPA 300.0	851545		
60428744015	L-UMW-1D	EPA 300.0	852062		
60428744016	L-UMW-3D	EPA 300.0	852379		
60428744017	UMW-FB-2	EPA 300.0	852062		

REPORT OF LABORATORY ANALYSIS

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WO#: 60428744



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geoen

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.8/0.3 Corr. Factor 10.2 Corrected 1.0/0.5/0.7

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 0.5/2.2/19.5

2.4/19.7

5/15/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: Rocksmith Geotechnical, LLC Address: 5233 Roanoke Drive St. Charles, MO 63304 Email To: mark.haddock@rocksmithgeo.com Phone: 314-974-6578 Fax: _____ Requested Due Date/TAT: _____ Standard		Section B Required Project Information: Report To: Mark Haddock Copy To: Jeffrey Ingram Purchase Order No.: _____ Project Name: AMEREN LCPA Project Number: COC #1		Section C Invoice Information: Attention: _____ Company Name: Rocksmith Address: _____ Pace Quote Reference: _____ Pace Project Manager: Jamie Church Pace Profile #: 15857, line 1	
REGULATORY AGENCY NPDES _____ GROUND WATER _____ DRINKING WATER _____ UST _____ RCRA _____ OTHER _____		Site Location _____ MO _____ STATE: _____		Page: 2 of 2	

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P LIQUID L SOLID S GAS GAS OTHER OT TS	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES		Requested Analysis Filtered (Y/N)
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	
1	L-UMW-DUP-2	WT G							
2	L-UMW-FB-1	WT G							
3	L-UMW-MS-1	WT G	5-11-23	1530	8	223	1	✓	Residual Chlorine (Y/N)
4	L-UMW-MSD-1	WT G	5-11-23	1530	8	223	1	✓	TOX
5		WT G						✓	COD/TOC
6		WT G						✓	UWL Metals**
7		WT G						✓	SM4500-S2D Sulfide
8		WT G						✓	Ferrous/Ferric Iron
9		WT G						✓	Radium 226/Radium 228
10		WT G						✓	Mercury
11		WT G						✓	Appendix IV Metals **
12		WT G						✓	TDS
								✓	Alkalinity
								✓	App III and Cat/An Metals
								✓	Chloride/Fluoride/Sulfate
								✓	Other
								✓	Methanol
								✓	NaOH
								✓	HCl
								✓	HNO ₃
								✓	H ₂ O ₄
								✓	Unpreserved

ADDITIONAL COMMENTS *App III and Cat/An Metals - EPA 2007-B, Ca, Fe, Mg, Mn, K, Na ** App IV Metals - EPA 2007-Ba, Bi, Co, Pb, Li, Mo 2008 Metals - Sb, As, Cd, Cr, Se, Tl ***Al, Cu, Ni, Ag, Zn + Hardness Radium 226/228 to Pace PA		RELINQUISHED BY / AFFILIATION Grant Mory / WSP	DATE 5-12-23	TIME 1530	ACCEPTED BY / AFFILIATION Grant Mory / WSP	DATE 5/13/23	TIME 0930	SAMPLE CONDITIONS Received Ice (Y/N) Y Sealed Cooler (Y/N) Y Custody Inact (Y/N) Y
SAMPLETEMP AT COLLECTION		SAMPLE START DATE 5-11-23	SAMPLE START TIME 1530	SAMPLE END DATE 5-11-23	SAMPLE END TIME 1530	Temp in (Y/N) Y 18.7	Temp in (Y/N) Y 18.7	Samples Inact (Y/N) Y

SAMPILER NAME AND SIGNATURE PRINT Name of SAMPILER: Grant Mory SIGNATURE of SAMPILER: Grant Mory		DATE Signed (MM/DD/YYYY): 05/12/23
--	--	---

1/2 log all test for L-UMW-9D.

Client: Racksmith Geoeng

Profile #: 15857-1

Notes: BPIN = Radium / AG26 = SE-21WET

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other					
1																																			
2	WT												3						3		3	2	3				3								
3																																			
4																																			
5																																			
6																																			
7													1									1	2	1											
8													1									1	2	1											
9													1									1	2	1											
10													1									1	2	1											
11													1									1	2	1											
12													1									1	2	1											

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	1L unreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	R	Terracore Kit
DG9U	40mL amber unreserved	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	BP2U	500mL unreserved plastic		
VG9U	40mL unreserved clear vial	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic		
BG1U	1liter unreserved glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	BP3U	250mL unreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S	250mL H2SO4 plastic	OL	OIL
		BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
		BP4U	125mL unreserved plastic	DW	Drinking Water
		BP4N	125mL HNO3 plastic		
		BP4S	125mL H2SO4 plastic		
		WPDU	16oz unreserved plastic		

Work Order Number: 60428744

2/2

Client: Recksmith Geoen

Profile # 15857-1

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2																														
3	WT																					2								
4	WT																					2								
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	BP3N 250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	SL Solid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	NAL Non-aqueous Liquid
		BP3Z 250mL NaOH, Zn Acetate	OL OIL
		BP4U 125mL unpreserved plastic	WP Wipe
		BP4N 125mL HNO3 plastic	DW Drinking Water
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number: 60018744



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

WO#: 60428744



Client Name: Rocsmiyn

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other zpic

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.6 Corr. Factor +0.2 Corrected 16.8

Date and initials of person examining contents: 05-20-2022

Temperature should be above freezing to 6°C 1.6, 1.0, 1.8, 1.2 1.8, 1.2, 2.0, 1.4

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>cooler w/16.8 had only</u>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>radism</u>
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
 Company: **Rocksmith Geotechnical, LLC.**
 Address: **5233 Roanoke Drive**
St. Charles, MO 63304
 Email To: mark.haddock@rocksmithgeo.com Fax: _____
 Phone: **314-974-6578** Standard
 Requested Due Date/TAT: _____

Section B
Required Project Information:
 Report To: **Mark Haddock**
 Copy To: **Jeffrey Ingram**
 Purchase Order No.: _____
 Project Name: **AMEREN LCPA**
 Project Number: **COO #1**

Section C
Invoice Information:
 Attention: _____
 Company Name: **Rocksmith**
 Address: _____
 Pace Quote Reference: _____
 Pace Project Manager: **Jamie Church**
 Pace Profile #: **15857, line 1**

Page: 1 of 2

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: MO STATE: MO

ITEM #	Section D Required Client Information	Valid Matrix Codes CODE MATRIX DW DRINKING WATER WT WASTE WATER WP WASTE WATER PRODUCT SL SOIL/SOLID OL OIL WP WASTE WATER PRODUCT AR AR OT OT TS TS	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	UNPRESERVED	PRESERVATIVES		Y/N	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB								NaOH	Na2S2O3			
1	L-UMW-1D															
2	L-UMW-2D															
3	L-UMW-3D															
4	L-UMW-4D				5-19-23	1258				8	223	1				60428744
5	L-UMW-5D				1	1157				8	223	1				
6	L-UMW-6D					0932				8	223	1				
7	L-UMW-7D															
8	L-UMW-8D															
9	L-UMW-9D															
10	L-BMW-1D															
11	L-BMW-2D															
12	L-UMW-DUP-1															

Requested Analysis Filtered (Y/N): TOX N, COD/TOC N, UVL Metals*** N, SM4500-S2D Sulfide N, Ferrous/Ferric Iron N, Radium 226/Radium 228 N, Mercury N, Appendix IV Metals** N, TDS N, Alkalinity N, App III and Cat/An Metals N, Chloride/Fluoride/Sulfate N

RELIQUISHED BY / AFFILIATION: Grant Morley/Rocksmith 5-19-23 1600
 DATE: 5-26-23 0440
 TIME: 1.8
 SAMPLE CONDITIONS: Y

ACCEPTED BY / AFFILIATION: _____
 DATE: 05/19/23
 TIME: 1.2
 SAMPLE CONDITIONS: Y

RELINQUISHED BY / AFFILIATION: _____
 DATE: 20
 TIME: 6:00
 SAMPLE CONDITIONS: Y

RELINQUISHED BY / AFFILIATION: _____
 DATE: _____
 TIME: _____
 SAMPLE CONDITIONS: _____

SAMPLER NAME AND SIGNATURE: Grant Morley
 PRINT Name of SAMPLER: Grant Morley
 SIGNATURE of SAMPLER: *[Signature]*
 DATE Signed (MM/DD/YYYY): 05/19/23

WO#: 60428744



DC#_Title: ENV-FRM-LENE-0009_Sample Cor

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitth Geo-ang

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Ice Blue None

Cooler Temperature (°C): As-read 1.5/1.7 Corr. Factor +0.2 Corrected 1.7/1.9/1.9.1

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 18.9

AV 5/24/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>pour 150 ml from BPIU into</u>
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>a BP32 for LUMW-ID and</u>
Pace containers used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>L-UMW-FB-2.</u>
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Section B
Required Project Information:

Section C
Invoice Information:

Section D
Requested Client Information:

Company: Rocksmith Geoenvironment, LLC
 Report To: Mark Haddock
 Copy To: Jeffrey Ingram
 Project Name: AMEREN LCPA
 Project Number: COC #1

Address: 5233 Roanoke Drive
 St. Charles, MO 63304
 Email To: mark.haddock@rocksmithgeo.com
 Phone: 314-974-6578 Fax:
 Requested Due Date/TAT: Standard

Company Name: Rocksmith
 Attention:
 Face Quote Reference: Jamie Church
 Manager:
 Face Profile #: 15857, line 1

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: MO

STATE: MO

SAMPLE ID
(A-Z, 0-9 / -)

Sample IDs MUST BE UNIQUE

60429744
Pace Project No./ Lab I.D.

ITEM #	Valid Matrix Codes	Matrix Code	Sample Code	Sample Type	Composite Start	Composite End/Grab	Collection Date/Time	Relinquished	Affiliation	Time	Accepted	Signature	Date	Time	Requested Analysis	Y/N	Requested Analysis	Y/N	Temp in C	Received on	Ice (Y/N)	Custody	Sealed Cooler	Samples Intact	
1	L-UMW-1D	WT	G	G	5-27-23	1718			Grant Morey	1530	Rocksmith	Grant Morey	5/24	0446	1.7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	L-UMW-2D	WT	G	G																					
3	L-UMW-3D	WT	G	G	5-27-23	0928																			
4	L-UMW-4D	WT	G	G																					
5	L-UMW-5D	WT	G	G																					
6	L-UMW-6D	WT	G	G																					
7	L-UMW-7D	WT	G	G																					
8	L-UMW-8D	WT	G	G																					
9	L-UMW-9D	WT	G	G																					
10	L-BMW-1D	WT	G	G																					
11	L-BMW-2D	WT	G	G																					
12	L-UMW-DUP-L-UMW-FB-A	WT	G	G	5-27-23	1733																			

Additional Comments: Grant Morey, Rocksmith, 5-23-23

Requested Analysis Filtered (Y/N):

Analysis Test	Y/N	Requested Analysis	Y/N
Chloride/Fluoride/Sulfate	N	Residual Chlorine (Y/N)	N
App III and Cat/An Metals	N	TOX	N
Alkalinity	N	COD/TOC	N
TDS	N	UWL Metals**	N
Appendix IV Metals**	N	SM4500-S2D Sulfide	N
Mercury	N	Ferrous/Ferric Iron	N
Radium 226/Radium 228	N		N
	N		N
	N		N

SAMPLER NAME AND SIGNATURE: Grant Morey
 PRINT Name of SAMPLER: Grant Morey
 SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YYYY): 05/23/23

Append to 60428744

Client: Rocksmith Geoenr

Profile #: AG25 = SF-21WET

Notes: BP1N = Radium / leave BP3C Blank

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																		1												1	
2																																
3	WT																			1												1
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12	WT																			1												1

Container Codes

Glass			Plastic			Misc.		
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab	
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate	
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag	
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter	
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes	
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit	
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can	
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic			
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic			
VG9U	40mL unpreserved clear vial	AG2U	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate			
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic			
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water	
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid	
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid	
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OIL	Oil	
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe	
				BP4U	125mL unpreserved plastic	DW	Drinking Water	
				BP4N	125mL HNO3 plastic			
				BP4S	125mL H2SO4 plastic			
				WPDU	16oz unpreserved plastic			

Work Order Number:

60428744



Memorandum

January 30, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23007

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Labadie Energy Center – LCPA – Data Package 60428744**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a laboratory control sample criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren LCPA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23007
 Validation Date: 1/30/2024

Laboratory: Pace Analytical SDG #: 60428744
 Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
 Matrix: Air Soil/Sed. Water Waste SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide); EPA 903.1/904.0 (Radium 226+228)
 Sample Names L-UMW-2D, L-UMW-7D, L-UMW-8D, L-UMW-9D, L-BMW-1D, L-BMW-2D, L-UMW-DUP-1, L-UMW-MS-1, L-UMW-MSD-1, L-UMW-4D,
L-UMW-5D, L-UMW-6D, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-1D, L-UMW-3D, UMW-FB-2

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>5/11/2023 - 5/23/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>
Note Deficiencies: <u>Revised lab packet only includes parameters required under the CCR rule.</u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Ferrous iron samples were all analyzed outside of hold time. Results qualified as estimates.

Chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3357531: barium (0.75J), calcium (28.4J), iron (16.0J), manganese (1.9J). Associated with samples -001 through -007.

Results > RL and 10x blank, no qualification necessary.

3364751: calcium (71.0J) and iron (16.0J). Associated with samples -015 through -017. Calcium result at -017 < RL, qualified as non-detect at RL.

3374470: barium (0.85J), beryllium (0.17J), calcium (46.0J), iron (19.9J), manganese (0.53J). Associated with samples -010 through -014. Iron results at -011 and -014 < RL, qualified as non-detect at RL.

3374475: arsenic (0.14J), cadmium (0.15J), chromium (0.74J). Associated with samples -010 through -014. Several results < RL, qualified as non-detect at RL.

Field Blanks:

L-UMW-FB-1 @ L-UMW-4D: iron (14.3J), chromium (0.73J), ferric iron (0.014J). Chromium qualified as non-detect.

UMW-FB-2 @ L-UMW-1D: barium (3.5J), boron (9.5J), calcium (35.9J), chromium (0.34J). No qualification necessary.

Laboratory Control Samples:

3366407: LCS recovery low for fluoride, associated with samples -001 through -006. Results qualified as estimates.

Duplicates:

L-UMW-DUP-1 @ L-UMW-9D: DUP RPD exceeds limit for chloride (39%), ferrous iron (24%), and TDS (11%).

L-UMW-DUP-2 @ L-UMW-6D: DUP RPD exceeds limit for radium-228 (43%).

Lab duplicate max RPD: 10%: alkalinity, TDS; 15%: chloride, fluoride, sulfate; 20%: ferrous Iron, sulfide

3366410: Lab DUP RPD exceeds limit for chloride, associated with sample -001, result qualified as estimate.

3374554: Lab DUP RPD exceeds limit for fluoride, associated with unrelated sample, no qualification necessary.

MS/MSD:

3357533/3357534: MS/MSD recovery low for calcium and sodium. Associated with sample -001, results qualified as estimates.

3357535: MS recovery high for calcium, no MSD. Associated with sample -007, result qualified as estimate.

3364753/3364754: MSD recovery low for calcium and sodium. Associated with unrelated sample, no qualification necessary.

3360172/3360173: MS/MSD recovery low for sulfide. Associated with unrelated sample, no qualification necessary.

3366408/3366409: MS/MSD recoveries low for chloride and fluoride. Associated with sample -001, results qualified as estimates.

3366844/3366845: MSD recovery low for chloride, only 1 QC indicator out of control limitst, no qualification necessary.

3374552/3374553: Analyte concentration exceeded calibration range, associated with unrelated sample, no qualification necessary.

3375539/3375537: MS/MSD recovery low for sulfate. Associated with unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-2D	Ferrous Iron	0.20	J	Analyzed outside of hold time
L-UMW-7D	"	0.54	J	"
L-UMW-8D	"	0.70	J	"
L-UMW-9D	"	1.1	J	"
L-BMW-1D	"	0.38	J	"
L-BMW-2D	"	0.23	J	"
L-UMW-DUP-1	"	0.86	J	"
L-UMW-4D	"	0.041	UJ	"
L-UMW-5D	"	0.041	UJ	"
L-UMW-6D	"	0.041	UJ	"
L-UMW-DUP-2	"	0.041	UJ	"
L-UMW-FB-1	"	0.041	UJ	"
L-UMW-1D	"	0.16	J	"
L-UMW-3D	"	0.041	UJ	"
UMW-FB-2	"	0.041	UJ	"
UMW-FB-1	Calcium	200	U	Detected in method blank, result < RL
L-UMW-5D	Iron	50	U	"
L-UMW-FB-1	"	50	U	"
L-UMW-4D	Arsenic	1.0	U	"
"	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-UMW-5D	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-UMW-6D	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-UMW-DUP-2	Cadmium	0.5	U	"
"	Chromium	1.0	U	"
L-UMW-FB-1	Chromium	1.0	U	"
L-UMW-2D	Fluoride	0.12	UJ	LCS recovery low
L-UMW-7D	"	0.12	UJ	"
L-UMW-8D	"	0.12	UJ	"
L-UMW-9D	"	0.12	UJ	"
L-BMW-1D	"	0.12	UJ	"
L-BMW-2D	Fluoride	0.12	UJ	"

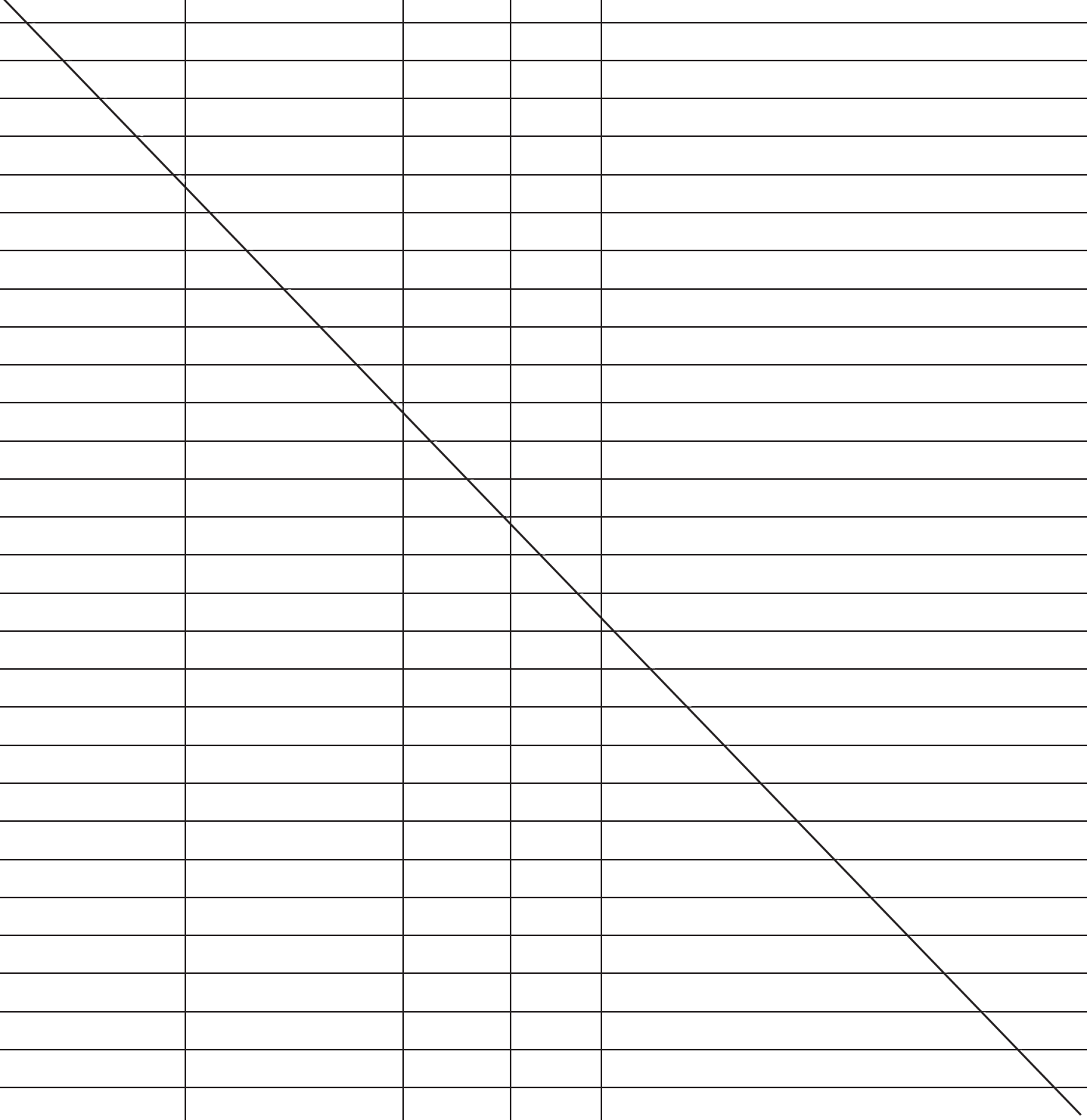
QA LEVEL II - iNORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-DUP-1	Chloride	33.8	J	Field DUP RPD exceeds limit
L-UMW-9D	"	22.7	J	"
L-UMW-DUP-1	Ferrous Iron	0.86	J	"
L-UMW-9D	"	1.1	J	"
L-UMW-DUP-1	TDS	787	J	"
L-UMW-9D	"	702	J	"
L-UMW-DUP-2	Radium-228	0.659	J	"
L-UMW-6D	"	1.02	J	"
L-UMW-2D	Chloride	40.4	J	Lab DUP RPD exceeds limit
"	Calcium	118000	J-	MS/MSD recoveries low
"	Sodium	60900	J-	"
L-UMW-DUP-1	Calcium	111000	J+	MS recovery high
L-UMW-2D	Chloride	40.4	J-	MS/MSD recoveries low
"	Fluoride	0.12	UJ	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
				

Signature: _____ *Grant Morey*

Date: 01/30/2024



January 31, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN LCPA-CA
Pace Project No.: 60428743

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 13, 2023 and May 26, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 1/30/24: Parameters not required under the CCR rule removed.

REV-2, 1/31/24: Excluded samples L-BMW-1S, L-BMW-2S, L-LMW-1S, L-LMW-2S, L-LMW-4S, L-LMW-7S, L-LMW-8S, and L-MW-26 added

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



CERTIFICATIONS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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**SAMPLE SUMMARY**

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60428743004	L-S-1	Water	05/16/23 17:23	05/18/23 05:13
60428743005	L-TP-1D	Water	05/16/23 09:17	05/18/23 05:13
60428743006	L-CA-DUP-1	Water	05/16/23 00:00	05/18/23 05:13
60428743007	L-MS-1	Water	05/16/23 09:17	05/18/23 05:13
60428743008	L-MSD-1	Water	05/16/23 09:17	05/18/23 05:13
60428743010	L-MW-35(D)	Water	05/18/23 09:54	05/20/23 04:40
60428743011	L-MW-24	Water	05/18/23 11:00	05/20/23 04:40
60428743016	L-TP-2M	Water	05/22/23 15:38	05/24/23 04:46
60428743017	L-TP-2D	Water	05/22/23 14:43	05/24/23 04:46
60428743018	L-AM-1S	Water	05/22/23 10:30	05/24/23 04:46
60428743019	L-AM-1D	Water	05/22/23 12:13	05/24/23 04:46
60428743020	L-CA-FB-1	Water	05/22/23 10:45	05/24/23 04:46
60428743021	L-MS-2	Water	05/22/23 12:13	05/24/23 04:46
60428743022	L-MSD-2	Water	05/22/23 12:13	05/24/23 04:46
60428743023	L-AMW-8	Water	05/24/23 18:57	05/26/23 04:34
60428743025	L-MW-33(D)	Water	05/24/23 12:10	05/26/23 04:34
60428743026	L-MW-34(D)	Water	05/24/23 13:57	05/26/23 04:34
60428743027	L-TP-3M	Water	05/25/23 10:05	05/26/23 04:34
60428743028	L-TP-3D	Water	05/25/23 11:14	05/26/23 04:34
60428743029	L-TP-4D	Water	05/24/23 10:06	05/26/23 04:34
60428743030	L-CA-DUP-2	Water	05/24/23 00:00	05/26/23 04:34
60428743031	L-CA-DUP-3	Water	05/25/23 00:00	05/26/23 04:34
60428743032	L-CA-FB-2	Water	05/24/23 12:25	05/26/23 04:34
60428743033	L-CA-FB-3	Water	05/24/23 18:37	05/26/23 04:34
60428743001	L-BMW-1S	Water	05/11/23 13:22	05/13/23 04:43
60428743002	L-BMW-2S	Water	05/11/23 10:34	05/13/23 04:43
60428743003	L-LMW-1S	Water	05/12/23 09:04	05/13/23 04:43
60429091008	L-MW-26	Water	05/18/23 12:35	05/20/23 04:40
60429254001	L-LMW-2S	Water	05/19/23 10:54	05/20/23 04:40
60429254003	L-LMW-7S	Water	05/18/23 15:23	05/20/23 04:40
60429254004	L-LMW-8S	Water	05/18/23 14:00	05/20/23 04:40
60428743024	L-LMW-4S	Water	05/24/23 17:13	05/26/23 04:34

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428743004	L-S-1	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	CRN2	1	PASI-K
60428743005	L-TP-1D	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60428743006	L-CA-DUP-1	SM 4500-S-2 D	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60428743007	L-MS-1	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428743008	L-MSD-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60428743010	L-MW-35(D)	EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	BDH1	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 4500-S-2 D	BDH1	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60428743011	L-MW-24	EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	BDH1			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 4500-S-2 D	BDH1			1	PASI-K		
EPA 300.0	BLA, CRN2			3	PASI-K		
60428743016	L-TP-2M			EPA 200.7	MA1	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	ZPC	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 4500-S-2 D	BDH1	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60428743017	L-TP-2D	EPA 200.7	MA1	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428743018	L-AM-1S	EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		60428743019	L-AM-1D	SM 3500-Fe B#4	BLA
SM 3500-Fe B#4	BLA			1	PASI-K
SM 4500-S-2 D	BDH1			1	PASI-K
EPA 300.0	CRN2			3	PASI-K
EPA 200.7	MA1			13	PASI-K
EPA 200.8	JGP			6	PASI-K
EPA 7470	ALH			1	PASI-K
EPA 903.1	JLJ			1	PASI-PA
EPA 904.0	ZPC			1	PASI-PA
SM 2320B	JS2			1	PASI-K
SM 2540C	CRN2			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 4500-S-2 D	BDH1			1	PASI-K
60428743020	L-CA-FB-1			EPA 300.0	CRN2
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428743021	L-MS-2	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60428743022	L-MSD-2	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60428743023	L-AMW-8	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60428743025	L-MW-33(D)	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60428743026	L-MW-34(D)	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428743027	L-TP-3M	SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60428743028	L-TP-3D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
60428743029	L-TP-4D	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
60428743030	L-CA-DUP-2	SM 2540C	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60428743031	L-CA-DUP-3	EPA 200.8	JGP	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	BDH1	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	BDH1	1	PASI-K		
		SM 4500-S-2 D	BDH1	1	PASI-K		
		EPA 300.0	BLA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	BDH1	1	PASI-K		
		60428743032	L-CA-FB-2	SM 3500-Fe B#4	BLA	1	PASI-K
SM 3500-Fe B#4	BDH1			1	PASI-K		
SM 4500-S-2 D	BDH1			1	PASI-K		
EPA 300.0	BLA			3	PASI-K		
EPA 200.7	JXD			13	PASI-K		
EPA 200.8	JGP			6	PASI-K		
EPA 7470	ALH			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	BDH1			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	BDH1			1	PASI-K		
SM 4500-S-2 D	BDH1			1	PASI-K		
EPA 300.0	BLA			3	PASI-K		
60428743033	L-CA-FB-3			EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
				EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428743001	L-BMW-1S	SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
SM 4500-S-2 D	BLA	1	PASI-K		
60428743002	L-BMW-2S	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
EPA 903.1	CLM	1	PASI-PA		
EPA 904.0	ZPC	1	PASI-PA		
60428743003	L-LMW-1S	SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	MA1	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60429091008	L-MW-26	SM 4500-S-2 D	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60429254001	L-LMW-2S	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
60429254003	L-LMW-7S	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
60429254004	L-LMW-8S	SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428743024	L-LMW-4S	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	BDH1	1	PASI-K
		EPA 300.0	BLA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-S-1 Lab ID: 60428743004 Collected: 05/16/23 17:23 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	366	ug/L	5.0	0.64	1	05/24/23 12:44	06/06/23 13:10	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/24/23 12:44	06/06/23 13:10	7440-41-7	
Boron	75.5J	ug/L	100	6.4	1	05/24/23 12:44	06/06/23 13:10	7440-42-8	
Calcium	149000	ug/L	200	26.9	1	05/24/23 12:44	06/06/23 13:10	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/24/23 12:44	06/06/23 13:10	7440-48-4	
Iron	23.7J	ug/L	50.0	9.1	1	05/24/23 12:44	06/06/23 13:10	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/24/23 12:44	06/06/23 13:10	7439-92-1	
Lithium	24.7	ug/L	10.0	3.7	1	05/24/23 12:44	06/06/23 13:10	7439-93-2	
Magnesium	21500	ug/L	50.0	20.1	1	05/24/23 12:44	06/06/23 13:10	7439-95-4	
Manganese	117	ug/L	5.0	0.39	1	05/24/23 12:44	06/06/23 13:10	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/24/23 12:44	06/06/23 13:10	7439-98-7	
Potassium	27700	ug/L	500	69.7	1	05/24/23 12:44	06/06/23 13:10	7440-09-7	
Sodium	6700	ug/L	500	115	1	05/24/23 12:44	06/06/23 13:10	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.15J	ug/L	1.0	0.12	1	05/24/23 12:44	06/07/23 13:52	7440-36-0	
Arsenic	0.57J	ug/L	1.0	0.13	1	05/24/23 12:44	06/07/23 13:52	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/24/23 12:44	06/07/23 13:52	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/24/23 12:44	06/07/23 13:52	7440-47-3	
Selenium	19.9	ug/L	1.0	0.18	1	05/24/23 12:44	06/07/23 13:52	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/24/23 12:44	06/07/23 13:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/07/23 14:11	06/08/23 13:33	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	474	mg/L	20.0	10.5	1		05/23/23 12:53		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	601	mg/L	10.0	10.0	1		05/23/23 10:32		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.024J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:24	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-S-1 Lab ID: 60428743004 Collected: 05/16/23 17:23 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/22/23 15:47	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	1.4	mg/L	1.0	0.53	1		06/06/23 01:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/06/23 01:32	16984-48-8	
Sulfate	18.3	mg/L	1.0	0.55	1		06/06/23 01:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-1D Lab ID: 60428743005 Collected: 05/16/23 09:17 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	1460	ug/L	5.0	0.64	1	05/24/23 12:44	06/06/23 12:30	7440-39-3	
Beryllium	0.16J	ug/L	1.0	0.12	1	05/24/23 12:44	06/06/23 12:30	7440-41-7	
Boron	63.5J	ug/L	100	6.4	1	05/24/23 12:44	06/06/23 12:30	7440-42-8	
Calcium	145000	ug/L	200	26.9	1	05/24/23 12:44	06/06/23 12:30	7440-70-2	M1
Cobalt	<1.2	ug/L	5.0	1.2	1	05/24/23 12:44	06/06/23 12:30	7440-48-4	
Iron	9010	ug/L	50.0	9.1	1	05/24/23 12:44	06/06/23 12:30	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/24/23 12:44	06/06/23 12:30	7439-92-1	
Lithium	25.2	ug/L	10.0	3.7	1	05/24/23 12:44	06/06/23 12:30	7439-93-2	
Magnesium	36400	ug/L	50.0	20.1	1	05/24/23 12:44	06/06/23 12:30	7439-95-4	
Manganese	257	ug/L	5.0	0.39	1	05/24/23 12:44	06/06/23 12:30	7439-96-5	
Molybdenum	3.5J	ug/L	20.0	1.0	1	05/24/23 12:44	06/06/23 12:30	7439-98-7	
Potassium	4330	ug/L	500	69.7	1	05/24/23 12:44	06/06/23 12:30	7440-09-7	
Sodium	11000	ug/L	500	115	1	05/24/23 12:44	06/06/23 12:30	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/24/23 12:44	06/07/23 13:29	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.13	1	05/24/23 12:44	06/07/23 13:29	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/24/23 12:44	06/07/23 13:29	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	05/24/23 12:44	06/07/23 13:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/24/23 12:44	06/07/23 13:29	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/24/23 12:44	06/07/23 13:29	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/07/23 14:11	06/08/23 13:35	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	510	mg/L	20.0	10.5	1		05/23/23 13:00		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	560	mg/L	10.0	10.0	1		05/23/23 10:32		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	9.0	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.054J	mg/L	0.20	0.041	1		06/07/23 14:22	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-1D Lab ID: 60428743005 Collected: 05/16/23 09:17 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/22/23 15:47	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	3.9	mg/L	1.0	0.53	1		06/06/23 01:45	16887-00-6	
Fluoride	0.14J	mg/L	0.20	0.12	1		06/06/23 01:45	16984-48-8	
Sulfate	16.6	mg/L	1.0	0.55	1		06/06/23 01:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-1 Lab ID: 60428743006 Collected: 05/16/23 00:00 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	357	ug/L	5.0	0.64	1	05/24/23 12:44	06/06/23 12:37	7440-39-3	
Beryllium	0.28J	ug/L	1.0	0.12	1	05/24/23 12:44	06/06/23 12:37	7440-41-7	
Boron	74.7J	ug/L	100	6.4	1	05/24/23 12:44	06/06/23 12:37	7440-42-8	
Calcium	146000	ug/L	200	26.9	1	05/24/23 12:44	06/06/23 12:37	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/24/23 12:44	06/06/23 12:37	7440-48-4	
Iron	16.3J	ug/L	50.0	9.1	1	05/24/23 12:44	06/06/23 12:37	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/24/23 12:44	06/06/23 12:37	7439-92-1	
Lithium	24.7	ug/L	10.0	3.7	1	05/24/23 12:44	06/06/23 12:37	7439-93-2	
Magnesium	21200	ug/L	50.0	20.1	1	05/24/23 12:44	06/06/23 12:37	7439-95-4	
Manganese	98.2	ug/L	5.0	0.39	1	05/24/23 12:44	06/06/23 12:37	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/24/23 12:44	06/06/23 12:37	7439-98-7	
Potassium	27400	ug/L	500	69.7	1	05/24/23 12:44	06/06/23 12:37	7440-09-7	
Sodium	6430	ug/L	500	115	1	05/24/23 12:44	06/06/23 12:37	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.15J	ug/L	1.0	0.12	1	05/24/23 12:44	06/07/23 13:37	7440-36-0	
Arsenic	0.55J	ug/L	1.0	0.13	1	05/24/23 12:44	06/07/23 13:37	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/24/23 12:44	06/07/23 13:37	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/24/23 12:44	06/07/23 13:37	7440-47-3	
Selenium	18.3	ug/L	1.0	0.18	1	05/24/23 12:44	06/07/23 13:37	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/24/23 12:44	06/07/23 13:37	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/07/23 14:11	06/08/23 13:42	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	478	mg/L	20.0	10.5	1		05/23/23 13:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	526	mg/L	10.0	10.0	1		05/23/23 10:32		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.016J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:21	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-1 Lab ID: 60428743006 Collected: 05/16/23 00:00 Received: 05/18/23 05:13 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/22/23 15:48	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	1.3	mg/L	1.0	0.53	1		06/08/23 09:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/08/23 09:32	16984-48-8	
Sulfate	18.0	mg/L	1.0	0.55	1		06/08/23 09:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-35(D) Lab ID: 60428743010 Collected: 05/18/23 09:54 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	46.5	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:28	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:28	7440-41-7	
Boron	7690	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:28	7440-42-8	
Calcium	119000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:28	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:28	7440-48-4	
Iron	5600	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:28	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:28	7439-92-1	
Lithium	28.5	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:28	7439-93-2	
Magnesium	27000	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:28	7439-95-4	
Manganese	403	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:28	7439-96-5	
Molybdenum	447	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:28	7439-98-7	
Potassium	5120	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:28	7440-09-7	
Sodium	70800	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:28	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:33	7440-36-0	
Arsenic	0.30J	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:33	7440-38-2	B
Cadmium	0.18J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:33	7440-43-9	B
Chromium	1.4	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:33	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:33	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:33	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:08	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	316	mg/L	20.0	10.5	1		05/24/23 14:48		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	715	mg/L	10.0	10.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	5.5	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.054J	mg/L	0.20	0.041	1		06/07/23 14:27	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-35(D) Lab ID: 60428743010 Collected: 05/18/23 09:54 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.024J	mg/L	0.050	0.016	1		05/26/23 13:14	18496-25-8	H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	13.9	mg/L	1.0	0.53	1		06/13/23 15:57	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 15:57	16984-48-8	
Sulfate	237	mg/L	20.0	11.0	20		06/13/23 16:10	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-24 Lab ID: 60428743011 Collected: 05/18/23 11:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	135	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:30	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:30	7440-41-7	
Boron	52.3J	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:30	7440-42-8	
Calcium	111000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:30	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:30	7440-48-4	
Iron	40.9J	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:30	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:30	7439-92-1	
Lithium	15.8	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:30	7439-93-2	
Magnesium	21800	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:30	7439-95-4	
Manganese	6.1	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:30	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:30	7439-98-7	
Potassium	3910	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:30	7440-09-7	
Sodium	6170	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:30	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.15J	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:41	7440-36-0	
Arsenic	0.59J	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:41	7440-38-2	B
Cadmium	<0.050	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:41	7440-43-9	
Chromium	1.1	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:41	7440-47-3	B
Selenium	26.0	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:41	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:41	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:11	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	98.1	mg/L	20.0	10.5	1		05/24/23 12:58		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	437	mg/L	10.0	10.0	1		05/24/23 09:12		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.041J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:24	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-24 Lab ID: 60428743011 Collected: 05/18/23 11:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/24/23 16:08	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.8	mg/L	1.0	0.53	1		06/13/23 16:23	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 16:23	16984-48-8	
Sulfate	25.1	mg/L	2.0	1.1	2		06/15/23 16:13	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2M Lab ID: 60428743016 Collected: 05/22/23 15:38 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	135	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 12:55	7440-39-3	
Beryllium	0.26J	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 12:55	7440-41-7	
Boron	1210	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 12:55	7440-42-8	
Calcium	109000	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 12:55	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 12:55	7440-48-4	
Iron	3330	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 12:55	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 12:55	7439-92-1	
Lithium	35.9	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 12:55	7439-93-2	
Magnesium	16800	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 12:55	7439-95-4	
Manganese	476	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 12:55	7439-96-5	
Molybdenum	74.8	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 12:55	7439-98-7	
Potassium	7120	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 12:55	7440-09-7	
Sodium	70100	ug/L	500	115	1	05/26/23 09:27	06/12/23 12:55	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:48	7440-36-0	
Arsenic	0.56J	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:48	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:48	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:48	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:48	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:09	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	285	mg/L	20.0	10.5	1		05/25/23 13:36		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	620	mg/L	10.0	10.0	1		05/26/23 16:10		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	3.3	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:33	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2M Lab ID: 60428743016 Collected: 05/22/23 15:38 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.049J	mg/L	0.050	0.016	1		05/26/23 13:22	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	24.4	mg/L	20.0	10.5	20		06/14/23 18:31	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.12	1		06/14/23 18:18	16984-48-8	
Sulfate	163	mg/L	20.0	11.0	20		06/14/23 18:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2D Lab ID: 60428743017 Collected: 05/22/23 14:43 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	114	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 12:57	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 12:57	7440-41-7	
Boron	1440	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 12:57	7440-42-8	
Calcium	97500	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 12:57	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 12:57	7440-48-4	
Iron	3530	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 12:57	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 12:57	7439-92-1	
Lithium	41.8	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 12:57	7439-93-2	
Magnesium	17300	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 12:57	7439-95-4	
Manganese	322	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 12:57	7439-96-5	
Molybdenum	109	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 12:57	7439-98-7	
Potassium	5780	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 12:57	7440-09-7	
Sodium	59700	ug/L	500	115	1	05/26/23 09:27	06/12/23 12:57	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:51	7440-36-0	
Arsenic	11.3	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:51	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:51	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:51	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:51	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:11	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	273	mg/L	20.0	10.5	1		05/25/23 16:04		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	559	mg/L	10.0	10.0	1		05/26/23 16:10		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	3.5	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:33	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2D Lab ID: 60428743017 Collected: 05/22/23 14:43 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:23	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.3	mg/L	20.0	10.5	20		06/14/23 18:45	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.12	1		06/14/23 19:25	16984-48-8	
Sulfate	151	mg/L	20.0	11.0	20		06/14/23 18:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1S Lab ID: 60428743018 Collected: 05/22/23 10:30 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	615	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 13:00	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 13:00	7440-41-7	
Boron	305	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 13:00	7440-42-8	
Calcium	189000	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 13:00	7440-70-2	
Cobalt	2.2J	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 13:00	7440-48-4	
Iron	14900	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 13:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 13:00	7439-92-1	
Lithium	41.0	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 13:00	7439-93-2	
Magnesium	35800	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 13:00	7439-95-4	
Manganese	1920	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 13:00	7439-96-5	
Molybdenum	3.8J	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 13:00	7439-98-7	
Potassium	7530	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 13:00	7440-09-7	
Sodium	69100	ug/L	500	115	1	05/26/23 09:27	06/12/23 13:00	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:53	7440-36-0	
Arsenic	7.1	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:53	7440-38-2	
Cadmium	0.10J	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:53	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:53	7440-47-3	
Selenium	0.26J	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:53	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:53	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:13	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	584	mg/L	20.0	10.5	1		05/25/23 16:10		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	836	mg/L	13.3	13.3	1		05/26/23 16:10		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	14.7	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.19J	mg/L	0.20	0.041	1		06/07/23 14:31	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1S Lab ID: 60428743018 Collected: 05/22/23 10:30 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:23	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	125	mg/L	20.0	10.5	20		06/14/23 19:51	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/14/23 19:38	16984-48-8	
Sulfate	2.6	mg/L	1.0	0.55	1		06/14/23 19:38	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1D Lab ID: 60428743019 Collected: 05/22/23 12:13 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	66.0	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 13:02	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 13:02	7440-41-7	
Boron	8340	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 13:02	7440-42-8	
Calcium	109000	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 13:02	7440-70-2	M1
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 13:02	7440-48-4	
Iron	5000	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 13:02	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 13:02	7439-92-1	
Lithium	37.5	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 13:02	7439-93-2	
Magnesium	13300	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 13:02	7439-95-4	
Manganese	276	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 13:02	7439-96-5	
Molybdenum	328	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 13:02	7439-98-7	
Potassium	8960	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 13:02	7440-09-7	
Sodium	109000	ug/L	500	115	1	05/26/23 09:27	06/12/23 13:02	7440-23-5	M1
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:26	7440-36-0	
Arsenic	3.1	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:26	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:26	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:26	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:26	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:26	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:16	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	182	mg/L	20.0	10.5	1		05/25/23 16:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	856	mg/L	13.3	13.3	1		05/26/23 16:11		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	4.9	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.062J	mg/L	0.20	0.041	1		06/07/23 14:32	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1D Lab ID: 60428743019 Collected: 05/22/23 12:13 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:23	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	42.2	mg/L	20.0	10.5	20		06/14/23 20:58	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.12	1		06/14/23 20:05	16984-48-8	D6
Sulfate	312	mg/L	20.0	11.0	20		06/14/23 20:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-1 Lab ID: 60428743020 Collected: 05/22/23 10:45 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	05/26/23 09:27	06/12/23 13:15	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/12/23 13:15	7440-41-7	
Boron	10.3J	ug/L	100	6.4	1	05/26/23 09:27	06/12/23 13:15	7440-42-8	
Calcium	44.5J	ug/L	200	26.9	1	05/26/23 09:27	06/12/23 13:15	7440-70-2	B
Cobalt	<1.2	ug/L	5.0	1.2	1	05/26/23 09:27	06/12/23 13:15	7440-48-4	
Iron	13.9J	ug/L	50.0	9.1	1	05/26/23 09:27	06/12/23 13:15	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	05/26/23 09:27	06/12/23 13:15	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/26/23 09:27	06/12/23 13:15	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/26/23 09:27	06/12/23 13:15	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/26/23 09:27	06/12/23 13:15	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	1.0	1	05/26/23 09:27	06/12/23 13:15	7439-98-7	
Potassium	73.3J	ug/L	500	69.7	1	05/26/23 09:27	06/12/23 13:15	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/26/23 09:27	06/12/23 13:15	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/26/23 09:27	06/07/23 16:56	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/26/23 09:27	06/07/23 16:56	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/26/23 09:27	06/07/23 16:56	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/26/23 09:27	06/07/23 16:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/26/23 09:27	06/07/23 16:56	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/26/23 09:27	06/07/23 16:56	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:27	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		05/25/23 16:31		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		05/26/23 16:11		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.014J	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:31	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-1 Lab ID: 60428743020 Collected: 05/22/23 10:45 Received: 05/24/23 04:46 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:25	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		06/14/23 22:18	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/14/23 22:18	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/14/23 22:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AMW-8 Lab ID: 60428743023 Collected: 05/24/23 18:57 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	117	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:03	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:03	7440-41-7	
Boron	7220	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:03	7440-42-8	
Calcium	71600	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:03	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:03	7440-48-4	
Iron	2220	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:03	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:03	7439-92-1	
Lithium	17.1	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:03	7439-93-2	
Magnesium	11200	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:03	7439-95-4	
Manganese	334	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:03	7439-96-5	
Molybdenum	296	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:03	7439-98-7	
Potassium	6090	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:03	7440-09-7	
Sodium	78300	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:03	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:17	7440-36-0	
Arsenic	0.28J	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:17	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:17	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:17	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:17	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:17	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:27	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	93.8	mg/L	20.0	10.5	1		06/02/23 11:44		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	569	mg/L	10.0	10.0	1		05/31/23 13:13		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.2	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/05/23 15:59	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AMW-8 Lab ID: 60428743023 Collected: 05/24/23 18:57 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.020J	mg/L	0.050	0.016	1		05/31/23 15:13	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	24.2	mg/L	20.0	10.5	20		06/18/23 21:47	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.12	1		06/18/23 21:34	16984-48-8	
Sulfate	259	mg/L	20.0	11.0	20		06/18/23 21:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-33(D) Lab ID: 60428743025 Collected: 05/24/23 12:10 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	130	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:11	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:11	7440-41-7	
Boron	9710	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:11	7440-42-8	
Calcium	110000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:11	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:11	7440-48-4	
Iron	5990	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:11	7439-92-1	
Lithium	36.2	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:11	7439-93-2	
Magnesium	23000	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:11	7439-95-4	
Manganese	294	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:11	7439-96-5	
Molybdenum	819	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:11	7439-98-7	
Potassium	7560	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:11	7440-09-7	
Sodium	99600	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:11	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:30	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:30	7440-38-2	
Cadmium	0.26J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:30	7440-43-9	
Chromium	9.2	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:30	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:30	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:30	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:36	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	111	mg/L	20.0	10.5	1		06/02/23 12:06		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	784	mg/L	10.0	10.0	1		05/31/23 13:14		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	5.7	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.24	mg/L	0.20	0.041	1		06/05/23 15:55	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-33(D) Lab ID: 60428743025 Collected: 05/24/23 12:10 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.034J	mg/L	0.050	0.016	1		05/31/23 15:15	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	25.2	mg/L	20.0	10.5	20		06/18/23 22:40	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.12	1		06/18/23 22:27	16984-48-8	
Sulfate	420	mg/L	50.0	27.5	50		06/19/23 11:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-34(D) Lab ID: 60428743026 Collected: 05/24/23 13:57 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	113	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:15	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:15	7440-41-7	
Boron	10100	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:15	7440-42-8	
Calcium	121000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:15	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:15	7440-48-4	
Iron	6850	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:15	7439-92-1	
Lithium	38.1	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:15	7439-93-2	
Magnesium	29100	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:15	7439-95-4	
Manganese	305	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:15	7439-96-5	
Molybdenum	741	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:15	7439-98-7	
Potassium	7500	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:15	7440-09-7	
Sodium	83300	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:15	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:33	7440-36-0	
Arsenic	3.5	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:33	7440-38-2	
Cadmium	0.26J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:33	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:33	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:33	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:33	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:38	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	175	mg/L	20.0	10.5	1		06/02/23 12:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	778	mg/L	10.0	10.0	1		05/31/23 13:15		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	6.4	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.41	mg/L	0.20	0.041	1		06/05/23 15:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-34(D) Lab ID: 60428743026 Collected: 05/24/23 13:57 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.021J	mg/L	0.050	0.016	1		05/31/23 15:16	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.1	mg/L	20.0	10.5	20		06/18/23 23:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/18/23 22:54	16984-48-8	
Sulfate	370	mg/L	50.0	27.5	50		06/19/23 11:57	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3M Lab ID: 60428743027 Collected: 05/25/23 10:05 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	220	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:23	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:23	7440-41-7	
Boron	5980	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:23	7440-42-8	
Calcium	97200	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:23	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:23	7440-48-4	
Iron	6940	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:23	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:23	7439-92-1	
Lithium	29.3	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:23	7439-93-2	
Magnesium	20900	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:23	7439-95-4	
Manganese	938	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:23	7439-96-5	
Molybdenum	342	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:23	7439-98-7	
Potassium	5350	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:23	7440-09-7	
Sodium	75000	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:23	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:36	7440-36-0	
Arsenic	0.33J	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:36	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:36	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:36	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:40	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	217	mg/L	20.0	10.5	1		06/02/23 12:50		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	643	mg/L	10.0	10.0	1		05/31/23 13:16		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	6.5	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.47	mg/L	0.20	0.041	1		06/05/23 16:00	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3M Lab ID: 60428743027 Collected: 05/25/23 10:05 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		06/01/23 15:26	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.9	mg/L	20.0	10.5	20		06/19/23 16:36	16887-00-6	
Fluoride	0.19J	mg/L	0.20	0.12	1		06/19/23 16:23	16984-48-8	
Sulfate	215	mg/L	20.0	11.0	20		06/19/23 16:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3D Lab ID: 60428743028 Collected: 05/25/23 11:14 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	70.6	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:25	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:25	7440-41-7	
Boron	10500	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:25	7440-42-8	
Calcium	104000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:25	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:25	7440-48-4	
Iron	4450	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:25	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:25	7439-92-1	
Lithium	34.5	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:25	7439-93-2	
Magnesium	23100	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:25	7439-95-4	
Manganese	175	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:25	7439-96-5	
Molybdenum	474	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:25	7439-98-7	
Potassium	7500	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:25	7440-09-7	
Sodium	132000	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:25	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:41	7440-36-0	
Arsenic	8.4	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:41	7440-38-2	
Cadmium	0.18J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:41	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:41	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:41	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:41	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:43	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	119	mg/L	20.0	10.5	1		06/02/23 13:07		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	821	mg/L	10.0	10.0	1		05/31/23 13:17		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	4.2	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.22	mg/L	0.20	0.041	1		06/05/23 16:02	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3D Lab ID: 60428743028 Collected: 05/25/23 11:14 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		06/01/23 15:26	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.9	mg/L	20.0	10.5	20		06/19/23 17:03	16887-00-6	
Fluoride	0.17J	mg/L	0.20	0.12	1		06/19/23 16:50	16984-48-8	
Sulfate	404	mg/L	50.0	27.5	50		06/20/23 09:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-4D Lab ID: 60428743029 Collected: 05/24/23 10:06 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	417	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:27	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:27	7440-41-7	
Boron	6740	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:27	7440-42-8	
Calcium	131000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:27	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:27	7440-48-4	
Iron	5710	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:27	7439-92-1	
Lithium	23.0	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:27	7439-93-2	
Magnesium	34700	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:27	7439-95-4	
Manganese	356	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:27	7439-96-5	
Molybdenum	4.1J	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:27	7439-98-7	
Potassium	4880	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:27	7440-09-7	
Sodium	29100	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:27	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:44	7440-36-0	
Arsenic	7.5	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:44	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:44	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:44	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:44	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:44	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:50	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	296	mg/L	20.0	10.5	1		06/02/23 12:17		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	621	mg/L	10.0	10.0	1		05/31/23 13:16		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	5.4	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.28	mg/L	0.20	0.041	1		06/05/23 15:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-4D Lab ID: 60428743029 Collected: 05/24/23 10:06 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.024J	mg/L	0.050	0.016	1		05/31/23 15:16	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	13.6	mg/L	1.0	0.53	1		06/18/23 23:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/18/23 23:47	16984-48-8	
Sulfate	172	mg/L	20.0	11.0	20		06/19/23 00:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-2 Lab ID: 60428743030 Collected: 05/24/23 00:00 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	408	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:29	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:29	7440-41-7	
Boron	6710	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:29	7440-42-8	
Calcium	130000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:29	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:29	7440-48-4	
Iron	5730	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:29	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:29	7439-92-1	
Lithium	24.5	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:29	7439-93-2	
Magnesium	34700	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:29	7439-95-4	
Manganese	345	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:29	7439-96-5	
Molybdenum	2.4J	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:29	7439-98-7	
Potassium	4890	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:29	7440-09-7	
Sodium	28800	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:29	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:46	7440-36-0	
Arsenic	7.5	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:46	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:46	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:46	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:46	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:46	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:52	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	295	mg/L	20.0	10.5	1		06/02/23 12:23		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	632	mg/L	10.0	10.0	1		05/31/23 13:16		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	5.4	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.29	mg/L	0.20	0.041	1		06/05/23 15:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-2 Lab ID: 60428743030 Collected: 05/24/23 00:00 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/31/23 15:17	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.7	mg/L	1.0	0.53	1		06/19/23 11:30	16887-00-6	
Fluoride	0.15J	mg/L	0.20	0.12	1		06/19/23 11:30	16984-48-8	
Sulfate	169	mg/L	20.0	11.0	20		06/19/23 11:43	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-3 Lab ID: 60428743031 Collected: 05/25/23 00:00 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	67.9	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:31	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:31	7440-41-7	
Boron	10100	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:31	7440-42-8	
Calcium	100000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:31	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:31	7440-48-4	
Iron	4380	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:31	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:31	7439-92-1	
Lithium	32.1	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:31	7439-93-2	
Magnesium	22400	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:31	7439-95-4	
Manganese	172	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:31	7439-96-5	
Molybdenum	471	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:31	7439-98-7	
Potassium	7140	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:31	7440-09-7	
Sodium	128000	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:31	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:49	7440-36-0	
Arsenic	8.1	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:49	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:49	7440-43-9	
Chromium	0.43J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:49	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:49	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:49	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:54	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	121	mg/L	20.0	10.5	1		06/02/23 13:12		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	870	mg/L	10.0	10.0	1		05/31/23 13:17		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	4.2	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.16J	mg/L	0.20	0.041	1		06/05/23 16:00	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-3 Lab ID: 60428743031 Collected: 05/25/23 00:00 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		06/01/23 15:27	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	27.9	mg/L	20.0	10.5	20		06/19/23 17:56	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/19/23 17:43	16984-48-8	
Sulfate	401	mg/L	50.0	27.5	50		06/20/23 09:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-2 Lab ID: 60428743032 Collected: 05/24/23 12:25 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:33	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:33	7440-41-7	
Boron	13.9J	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:33	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:33	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:33	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:33	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:33	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:33	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:33	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:33	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:33	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:33	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:33	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:54	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:54	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:54	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:54	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:54	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:54	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:56	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		06/02/23 12:39		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	6.5	mg/L	5.0	5.0	1		05/31/23 13:16		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0026J	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/05/23 15:56	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-2 Lab ID: 60428743032 Collected: 05/24/23 12:25 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/31/23 15:18	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<0.53	mg/L	1.0	0.53	1		06/19/23 12:49	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/19/23 12:49	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/19/23 12:49	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-3 Lab ID: 60428743033 Collected: 05/24/23 18:37 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:35	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:35	7440-41-7	
Boron	10.3J	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:35	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:35	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:35	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:35	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:35	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:35	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:35	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:35	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:35	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:35	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:35	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:57	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:57	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:57	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:57	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:57	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:57	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:59	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<42.0	mg/L	80.0	42.0	4		06/02/23 12:47		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	9.0	mg/L	5.0	5.0	1		05/31/23 13:16		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0025J	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/05/23 15:59	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-3 Lab ID: 60428743033 Collected: 05/24/23 18:37 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/31/23 15:18	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		06/19/23 13:42	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/19/23 13:42	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		06/19/23 13:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-BMW-1S Lab ID: 60428743001 Collected: 05/11/23 13:22 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	307	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 11:45	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 11:45	7440-41-7	
Boron	88.2J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 11:45	7440-42-8	
Calcium	191000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 11:45	7440-70-2	
Cobalt	1.4J	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 11:45	7440-48-4	
Iron	24700	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 11:45	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 11:45	7439-92-1	
Lithium	18.3	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 11:45	7439-93-2	
Magnesium	42900	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 11:45	7439-95-4	
Manganese	2510	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 11:45	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 11:45	7439-98-7	
Potassium	5060	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 11:45	7440-09-7	
Sodium	15800	ug/L	500	115	1	05/16/23 14:40	06/01/23 11:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 21:50	7440-36-0	
Arsenic	26.9	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 21:50	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 21:50	7440-43-9	
Chromium	0.52J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 21:50	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 21:50	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 21:50	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 13:01	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	674	mg/L	20.0	10.5	1		05/17/23 14:28		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	801	mg/L	13.3	13.3	1		05/18/23 11:29		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	23.0	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.7	mg/L	0.20	0.041	1		05/18/23 08:31	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-BMW-1S **Lab ID: 60428743001** Collected: 05/11/23 13:22 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/18/23 16:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.6	mg/L	1.0	0.53	1		05/31/23 22:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/31/23 22:47	16984-48-8	L2
Sulfate	65.9	mg/L	10.0	5.5	10		06/01/23 11:00	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-BMW-2S Lab ID: 60428743002 Collected: 05/11/23 10:34 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	263	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 11:49	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 11:49	7440-41-7	
Boron	45.3J	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 11:49	7440-42-8	
Calcium	141000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 11:49	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 11:49	7440-48-4	
Iron	12.9J	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 11:49	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 11:49	7439-92-1	
Lithium	18.4	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 11:49	7439-93-2	
Magnesium	20900	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 11:49	7439-95-4	
Manganese	1.3J	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 11:49	7439-96-5	B
Molybdenum	2.2J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 11:49	7439-98-7	
Potassium	5800	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 11:49	7440-09-7	
Sodium	4580	ug/L	500	115	1	05/16/23 14:40	06/01/23 11:49	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.19J	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 21:53	7440-36-0	
Arsenic	0.44J	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 21:53	7440-38-2	
Cadmium	0.061J	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 21:53	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 21:53	7440-47-3	
Selenium	1.7	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 21:53	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 21:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 13:04	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	408	mg/L	20.0	10.5	1		05/17/23 14:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	607	mg/L	10.0	10.0	1		05/18/23 11:29		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.013J	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/18/23 08:30	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-BMW-2S Lab ID: 60428743002 Collected: 05/11/23 10:34 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	0.021J	mg/L	0.050	0.016	1		05/18/23 16:55	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.2	mg/L	1.0	0.53	1		05/31/23 23:00	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/31/23 23:00	16984-48-8	L2
Sulfate	39.7	mg/L	10.0	5.5	10		06/01/23 11:13	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA
Pace Project No.: 60428743

Sample: L-LMW-1S **Lab ID: 60428743003** Collected: 05/12/23 09:04 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	97.5	ug/L	5.0	0.64	1	05/16/23 14:40	06/01/23 11:52	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/01/23 11:52	7440-41-7	
Boron	930	ug/L	100	6.4	1	05/16/23 14:40	06/01/23 11:52	7440-42-8	
Calcium	109000	ug/L	200	26.9	1	05/16/23 14:40	06/01/23 11:52	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/16/23 14:40	06/01/23 11:52	7440-48-4	
Iron	430	ug/L	50.0	9.1	1	05/16/23 14:40	06/01/23 11:52	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/16/23 14:40	06/01/23 11:52	7439-92-1	
Lithium	12.9	ug/L	10.0	3.7	1	05/16/23 14:40	06/01/23 11:52	7439-93-2	
Magnesium	18800	ug/L	50.0	20.1	1	05/16/23 14:40	06/01/23 11:52	7439-95-4	
Manganese	587	ug/L	5.0	0.39	1	05/16/23 14:40	06/01/23 11:52	7439-96-5	
Molybdenum	3.7J	ug/L	20.0	1.0	1	05/16/23 14:40	06/01/23 11:52	7439-98-7	
Potassium	3440	ug/L	500	69.7	1	05/16/23 14:40	06/01/23 11:52	7440-09-7	
Sodium	7040	ug/L	500	115	1	05/16/23 14:40	06/01/23 11:52	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/16/23 14:40	06/05/23 21:56	7440-36-0	
Arsenic	2.1	ug/L	1.0	0.13	1	05/16/23 14:40	06/05/23 21:56	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/16/23 14:40	06/05/23 21:56	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/16/23 14:40	06/05/23 21:56	7440-47-3	
Selenium	4.6	ug/L	1.0	0.18	1	05/16/23 14:40	06/05/23 21:56	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/16/23 14:40	06/05/23 21:56	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/05/23 15:42	06/06/23 13:06	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	327	mg/L	20.0	10.5	1		05/17/23 15:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	597	mg/L	10.0	10.0	1		05/19/23 11:08		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.43	mg/L	0.050		1		06/08/23 12:55	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/18/23 08:35	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-1S Lab ID: 60428743003 Collected: 05/12/23 09:04 Received: 05/13/23 04:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/19/23 10:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.6	mg/L	1.0	0.53	1		05/31/23 23:12	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/31/23 23:12	16984-48-8	L2
Sulfate	40.3	mg/L	10.0	5.5	10		06/01/23 11:27	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-26 Lab ID: 60429091008 Collected: 05/18/23 12:35 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	183	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 08:54	7440-39-3	
Beryllium	0.20J	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 08:54	7440-41-7	B
Boron	45.6J	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 08:54	7440-42-8	
Calcium	140000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 08:54	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 08:54	7440-48-4	
Iron	13.5J	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 08:54	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 08:54	7439-92-1	
Lithium	26.3	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 08:54	7439-93-2	
Magnesium	26000	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 08:54	7439-95-4	
Manganese	11.4	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 08:54	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 08:54	7439-98-7	
Potassium	3970	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 08:54	7440-09-7	
Sodium	4910	ug/L	500	115	1	06/13/23 13:43	06/19/23 08:54	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.13J	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 12:55	7440-36-0	
Arsenic	0.56J	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 12:55	7440-38-2	B
Cadmium	<0.050	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 12:55	7440-43-9	
Chromium	0.78J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 12:55	7440-47-3	B
Selenium	8.1	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 12:55	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 12:55	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:39	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	435	mg/L	20.0	10.5	1		05/24/23 13:42		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	549	mg/L	10.0	10.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.013J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:29	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-26 Lab ID: 60429091008 Collected: 05/18/23 12:35 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:08	18496-25-8	H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.2	mg/L	1.0	0.53	1		06/13/23 13:16	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 13:16	16984-48-8	
Sulfate	44.4	mg/L	20.0	11.0	20		06/13/23 13:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA
Pace Project No.: 60428743

Sample: L-LMW-2S Lab ID: 60429254001 Collected: 05/19/23 10:54 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	49.7	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:00	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:00	7440-41-7	
Boron	3180	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:00	7440-42-8	
Calcium	79600	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:00	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:00	7440-48-4	
Iron	25.7J	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:00	7439-89-6	B
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:00	7439-92-1	
Lithium	14.0	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:00	7439-93-2	
Magnesium	104	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:00	7439-95-4	
Manganese	1.6J	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:00	7439-96-5	B
Molybdenum	228	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:00	7439-98-7	
Potassium	9670	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:00	7440-09-7	
Sodium	69900	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	0.27J	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 12:58	7440-36-0	
Arsenic	39.0	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 12:58	7440-38-2	
Cadmium	0.35J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 12:58	7440-43-9	B
Chromium	0.93J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 12:58	7440-47-3	B
Selenium	0.35J	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 12:58	7782-49-2	
Thallium	0.24J	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 12:58	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:45	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	44.6	mg/L	20.0	10.5	1		05/24/23 13:49		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	567	mg/L	10.0	10.0	1		05/25/23 12:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.026J	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:28	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-2S Lab ID: 60429254001 Collected: 05/19/23 10:54 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/26/23 13:08	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.6	mg/L	1.0	0.53	1		06/13/23 20:50	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 20:50	16984-48-8	
Sulfate	311	mg/L	20.0	11.0	20		06/13/23 21:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-7S Lab ID: 60429254003 Collected: 05/18/23 15:23 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	239	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:06	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:06	7440-41-7	
Boron	7890	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:06	7440-42-8	
Calcium	161000	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:06	7440-70-2	
Cobalt	4.1J	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:06	7440-48-4	
Iron	3630	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:06	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:06	7439-92-1	
Lithium	45.4	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:06	7439-93-2	
Magnesium	36200	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:06	7439-95-4	
Manganese	1580	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:06	7439-96-5	
Molybdenum	58.0	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:06	7439-98-7	
Potassium	7100	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:06	7440-09-7	
Sodium	50800	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:06	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:06	7440-36-0	
Arsenic	9.8	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:06	7440-38-2	
Cadmium	0.097J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:06	7440-43-9	B
Chromium	0.91J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:06	7440-47-3	B
Selenium	0.71J	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:48	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	431	mg/L	20.0	10.5	1		05/24/23 12:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	800	mg/L	10.0	10.0	1		05/24/23 09:11		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.6	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:25	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-7S Lab ID: 60429254003 Collected: 05/18/23 15:23 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/24/23 16:07	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	18.7	mg/L	1.0	0.53	1		06/13/23 14:10	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/13/23 14:10	16984-48-8	
Sulfate	209	mg/L	20.0	11.0	20		06/13/23 14:23	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-8S Lab ID: 60429254004 Collected: 05/18/23 14:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	103	ug/L	5.0	0.64	1	06/13/23 13:43	06/19/23 09:14	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/19/23 09:14	7440-41-7	
Boron	1050	ug/L	100	6.4	1	06/13/23 13:43	06/19/23 09:14	7440-42-8	
Calcium	81900	ug/L	200	26.9	1	06/13/23 13:43	06/19/23 09:14	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	06/13/23 13:43	06/19/23 09:14	7440-48-4	
Iron	742	ug/L	50.0	9.1	1	06/13/23 13:43	06/19/23 09:14	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	06/13/23 13:43	06/19/23 09:14	7439-92-1	
Lithium	14.6	ug/L	10.0	3.7	1	06/13/23 13:43	06/19/23 09:14	7439-93-2	
Magnesium	13200	ug/L	50.0	20.1	1	06/13/23 13:43	06/19/23 09:14	7439-95-4	
Manganese	48.1	ug/L	5.0	0.39	1	06/13/23 13:43	06/19/23 09:14	7439-96-5	
Molybdenum	102	ug/L	20.0	1.0	1	06/13/23 13:43	06/19/23 09:14	7439-98-7	
Potassium	3880	ug/L	500	69.7	1	06/13/23 13:43	06/19/23 09:14	7440-09-7	
Sodium	35300	ug/L	500	115	1	06/13/23 13:43	06/19/23 09:14	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	06/13/23 13:43	06/14/23 13:09	7440-36-0	
Arsenic	4.6	ug/L	1.0	0.13	1	06/13/23 13:43	06/14/23 13:09	7440-38-2	
Cadmium	0.059J	ug/L	0.50	0.050	1	06/13/23 13:43	06/14/23 13:09	7440-43-9	B
Chromium	0.71J	ug/L	1.0	0.30	1	06/13/23 13:43	06/14/23 13:09	7440-47-3	B
Selenium	11.2	ug/L	1.0	0.18	1	06/13/23 13:43	06/14/23 13:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/13/23 13:43	06/14/23 13:09	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 12:50	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	302	mg/L	20.0	10.5	1		05/24/23 12:39		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	400	mg/L	10.0	10.0	1		05/24/23 09:12		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.74	mg/L	0.050		1		06/20/23 17:27	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		06/07/23 14:25	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-8S Lab ID: 60429254004 Collected: 05/18/23 14:00 Received: 05/20/23 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.016	mg/L	0.050	0.016	1		05/24/23 16:07	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.6	mg/L	1.0	0.53	1		06/13/23 14:36	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.12	1		06/13/23 14:36	16984-48-8	
Sulfate	44.7	mg/L	20.0	11.0	20		06/13/23 14:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-4S Lab ID: 60428743024 Collected: 05/24/23 17:13 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	166	ug/L	5.0	0.64	1	05/31/23 09:57	06/07/23 09:05	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 09:05	7440-41-7	
Boron	4580	ug/L	100	6.4	1	05/31/23 09:57	06/07/23 09:05	7440-42-8	
Calcium	163000	ug/L	200	26.9	1	05/31/23 09:57	06/07/23 09:05	7440-70-2	M1
Cobalt	3.2J	ug/L	5.0	1.2	1	05/31/23 09:57	06/07/23 09:05	7440-48-4	
Iron	5840	ug/L	50.0	9.1	1	05/31/23 09:57	06/07/23 09:05	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/31/23 09:57	06/07/23 09:05	7439-92-1	
Lithium	35.0	ug/L	10.0	3.7	1	05/31/23 09:57	06/07/23 09:05	7439-93-2	
Magnesium	27600	ug/L	50.0	20.1	1	05/31/23 09:57	06/07/23 09:05	7439-95-4	
Manganese	1430	ug/L	5.0	0.39	1	05/31/23 09:57	06/07/23 09:05	7439-96-5	
Molybdenum	55.5	ug/L	20.0	1.0	1	05/31/23 09:57	06/07/23 09:05	7439-98-7	
Potassium	6570	ug/L	500	69.7	1	05/31/23 09:57	06/07/23 09:05	7440-09-7	
Sodium	74700	ug/L	500	115	1	05/31/23 09:57	06/07/23 09:05	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/31/23 09:57	06/07/23 14:28	7440-36-0	
Arsenic	16.8	ug/L	1.0	0.13	1	05/31/23 09:57	06/07/23 14:28	7440-38-2	
Cadmium	0.080J	ug/L	0.50	0.050	1	05/31/23 09:57	06/07/23 14:28	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	05/31/23 09:57	06/07/23 14:28	7440-47-3	
Selenium	0.92J	ug/L	1.0	0.18	1	05/31/23 09:57	06/07/23 14:28	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/31/23 09:57	06/07/23 14:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	06/12/23 15:12	06/13/23 13:34	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	414	mg/L	20.0	10.5	1		06/02/23 11:49		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	767	mg/L	10.0	10.0	1		05/31/23 13:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	5.7	mg/L	0.050		1		06/20/23 17:28	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.18J	mg/L	0.20	0.041	1		06/05/23 15:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-4S Lab ID: 60428743024 Collected: 05/24/23 17:13 Received: 05/26/23 04:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	0.016J	mg/L	0.050	0.016	1		05/31/23 15:15	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	66.0	mg/L	20.0	10.5	20		06/18/23 22:14	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/18/23 22:00	16984-48-8	
Sulfate	133	mg/L	20.0	11.0	20		06/18/23 22:14	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	850767	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743001, 60428743002, 60428743003		

METHOD BLANK: 3369598 Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/06/23 12:54	

LABORATORY CONTROL SAMPLE: 3369599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3369600 3369601

Parameter	Units	60429254006		3369601		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	5	5	4.7	4.6	94	92	75-125	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	851103	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743004, 60428743005, 60428743006		

METHOD BLANK: 3370902 Matrix: Water

Associated Lab Samples: 60428743004, 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/08/23 13:05	

LABORATORY CONTROL SAMPLE: 3370903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3370904 3370905

Parameter	Units	60428743005		3370905		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.096	5	5	4.8	4.6	95	93	75-125	3	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	851874	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004		

METHOD BLANK: 3373988 Matrix: Water
 Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/23 12:34	

LABORATORY CONTROL SAMPLE: 3373989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3373990 3373991

Parameter	Units	60429091008		3373991		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Mercury	ug/L	<0.096	5	5	5.3	5.2	107	105	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	851875	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3373994 Matrix: Water
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/23 11:57	

LABORATORY CONTROL SAMPLE: 3373995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3373996 3373997

Parameter	Units	60428743019		3373997		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.096	5	5	5.0	4.9	101	99	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 851877 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033

METHOD BLANK: 3374004 Matrix: Water
 Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/23 13:22	

LABORATORY CONTROL SAMPLE: 3374005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374006 3374007

Parameter	Units	60428743023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.9	4.8	97	95	75-125	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 847355 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 3357531 Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.75J	5.0	0.64	06/01/23 11:39	
Beryllium	ug/L	<0.12	1.0	0.12	06/01/23 11:39	
Boron	ug/L	<6.4	100	6.4	06/01/23 11:39	
Calcium	ug/L	28.4J	200	26.9	06/01/23 11:39	
Cobalt	ug/L	<1.2	5.0	1.2	06/01/23 11:39	
Iron	ug/L	16.0J	50.0	9.1	06/01/23 11:39	
Lead	ug/L	<3.8	10.0	3.8	06/01/23 11:39	
Lithium	ug/L	<3.7	10.0	3.7	06/01/23 11:39	
Magnesium	ug/L	<20.1	50.0	20.1	06/01/23 11:39	
Manganese	ug/L	1.9J	5.0	0.39	06/01/23 11:39	
Molybdenum	ug/L	<1.0	20.0	1.0	06/01/23 11:39	
Potassium	ug/L	<69.7	500	69.7	06/01/23 11:39	
Sodium	ug/L	<115	500	115	06/01/23 11:39	

LABORATORY CONTROL SAMPLE: 3357532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	966	97	85-115	
Boron	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	10900	109	85-115	
Cobalt	ug/L	1000	950	95	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	10700	107	85-115	
Manganese	ug/L	1000	942	94	85-115	
Molybdenum	ug/L	1000	980	98	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10600	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357533 3357534

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428744001	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	127	1000	1000	1100	1090	97	96	70-130	1	20		
Beryllium	ug/L	<0.12	1000	1000	995	999	99	100	70-130	0	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357533 3357534												
Parameter	Units	60428744001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Boron	ug/L	1040	1000	1000	1970	1950	92	90	70-130	1	20	
Calcium	ug/L	118000	10000	10000	123000	122000	49	37	70-130	1	20	M1
Cobalt	ug/L	<1.2	1000	1000	973	974	97	97	70-130	0	20	
Iron	ug/L	3580	10000	10000	13600	13400	100	98	70-130	1	20	
Lead	ug/L	<3.8	1000	1000	977	985	98	98	70-130	1	20	
Lithium	ug/L	28.8	1000	1000	1020	1010	99	98	70-130	1	20	
Magnesium	ug/L	25000	10000	10000	34100	33700	91	87	70-130	1	20	
Manganese	ug/L	409	1000	1000	1360	1360	95	95	70-130	0	20	
Molybdenum	ug/L	35.1	1000	1000	1050	1060	101	102	70-130	1	20	
Potassium	ug/L	7650	10000	10000	17800	17500	101	98	70-130	2	20	
Sodium	ug/L	60900	10000	10000	68500	67700	76	68	70-130	1	20	M1

MATRIX SPIKE SAMPLE: 3357535							
Parameter	Units	60428744007	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	474	1000	1510	103	70-130	
Beryllium	ug/L	<0.12	1000	1050	105	70-130	
Boron	ug/L	79.4J	1000	1070	99	70-130	
Calcium	ug/L	111000	10000	125000	144	70-130	M1
Cobalt	ug/L	<1.2	1000	1020	102	70-130	
Iron	ug/L	22600	10000	33900	113	70-130	
Lead	ug/L	<3.8	1000	1010	101	70-130	
Lithium	ug/L	17.3	1000	1040	102	70-130	
Magnesium	ug/L	29900	10000	41500	117	70-130	
Manganese	ug/L	371	1000	1390	102	70-130	
Molybdenum	ug/L	1.2J	1000	1060	106	70-130	
Potassium	ug/L	4000	10000	14600	106	70-130	
Sodium	ug/L	13400	10000	24500	111	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848866

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004

METHOD BLANK: 3363075

Matrix: Water

Associated Lab Samples: 60428743004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/06/23 12:45	
Beryllium	ug/L	<0.12	1.0	0.12	06/06/23 12:45	
Boron	ug/L	<6.4	100	6.4	06/06/23 12:45	
Calcium	ug/L	<26.9	200	26.9	06/06/23 12:45	
Cobalt	ug/L	<1.2	5.0	1.2	06/06/23 12:45	
Iron	ug/L	<9.1	50.0	9.1	06/06/23 12:45	
Lead	ug/L	<3.8	10.0	3.8	06/06/23 12:45	
Lithium	ug/L	<3.7	10.0	3.7	06/06/23 12:45	
Magnesium	ug/L	<20.1	50.0	20.1	06/06/23 12:45	
Manganese	ug/L	<0.39	5.0	0.39	06/06/23 12:45	
Molybdenum	ug/L	<1.0	20.0	1.0	06/06/23 12:45	
Potassium	ug/L	<69.7	500	69.7	06/06/23 12:45	
Sodium	ug/L	<115	500	115	06/06/23 12:45	

LABORATORY CONTROL SAMPLE: 3363076

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1070	107	85-115	
Boron	ug/L	1000	991	99	85-115	
Calcium	ug/L	10000	10700	107	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	985	99	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363102 3363103

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60429091003	Result	Spike Conc.	Spike Conc.						
Barium	ug/L		1000	1000	1210	1190	100	99	70-130	1	20
Beryllium	ug/L		1000	1000	1060	1050	106	105	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363102 3363103												
Parameter	Units	60429091003		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Boron	ug/L	94.3J	1000	1000	1070	1070	97	98	70-130	1	20	
Calcium	ug/L	122000	10000	10000	128000	128000	65	61	70-130	0	20	M1
Cobalt	ug/L		1000	1000	1030	1000	103	100	70-130	3	20	
Iron	ug/L	217	10000	10000	10800	10600	106	103	70-130	2	20	
Lead	ug/L		1000	1000	1040	1010	104	101	70-130	3	20	
Lithium	ug/L		1000	1000	1040	1030	101	100	70-130	0	20	
Magnesium	ug/L	24000	10000	10000	33600	33600	96	96	70-130	0	20	
Manganese	ug/L	113	1000	1000	1150	1120	104	101	70-130	3	20	
Molybdenum	ug/L		1000	1000	1050	1030	105	103	70-130	2	20	
Potassium	ug/L	5330	10000	10000	15500	15600	102	103	70-130	0	20	
Sodium	ug/L	6250	10000	10000	16300	16400	101	102	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	848874	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743005, 60428743006

METHOD BLANK: 3363112 Matrix: Water

Associated Lab Samples: 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/06/23 12:26	
Beryllium	ug/L	<0.12	1.0	0.12	06/06/23 12:26	
Boron	ug/L	<6.4	100	6.4	06/06/23 12:26	
Calcium	ug/L	<26.9	200	26.9	06/06/23 12:26	
Cobalt	ug/L	<1.2	5.0	1.2	06/06/23 12:26	
Iron	ug/L	<9.1	50.0	9.1	06/06/23 12:26	
Lead	ug/L	<3.8	10.0	3.8	06/06/23 12:26	
Lithium	ug/L	<3.7	10.0	3.7	06/06/23 12:26	
Magnesium	ug/L	<20.1	50.0	20.1	06/06/23 12:26	
Manganese	ug/L	<0.39	5.0	0.39	06/06/23 12:26	
Molybdenum	ug/L	<1.0	20.0	1.0	06/06/23 12:26	
Potassium	ug/L	<69.7	500	69.7	06/06/23 12:26	
Sodium	ug/L	<115	500	115	06/06/23 12:26	

LABORATORY CONTROL SAMPLE: 3363113

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	980	98	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	951	95	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	947	95	85-115	
Magnesium	ug/L	10000	9910	99	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9800	98	85-115	
Sodium	ug/L	10000	9980	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363114 3363115

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428743005	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	1460	1000	1000	2420	2490	97	103	70-130	3	20
Beryllium	ug/L	0.16J	1000	1000	1040	1060	104	106	70-130	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363114 3363115														
Parameter	Units	60428743005		MS	MSD	3363115		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result							
Boron	ug/L	63.5J	1000	1000	1040	1070	98	101	70-130	2	20			
Calcium	ug/L	145000	10000	10000	151000	154000	62	89	70-130	2	20	M1		
Cobalt	ug/L	<1.2	1000	1000	1010	1060	101	106	70-130	5	20			
Iron	ug/L	9010	10000	10000	19700	20200	107	112	70-130	3	20			
Lead	ug/L	<3.8	1000	1000	1020	1050	102	105	70-130	3	20			
Lithium	ug/L	25.2	1000	1000	1040	1080	101	105	70-130	4	20			
Magnesium	ug/L	36400	10000	10000	46100	46800	97	104	70-130	2	20			
Manganese	ug/L	257	1000	1000	1270	1320	101	106	70-130	4	20			
Molybdenum	ug/L	3.5J	1000	1000	1040	1090	104	108	70-130	4	20			
Potassium	ug/L	4330	10000	10000	14800	15100	104	108	70-130	2	20			
Sodium	ug/L	11000	10000	10000	21300	21900	103	109	70-130	3	20			

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 849318 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3364751 Matrix: Water
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/12/23 12:45	
Beryllium	ug/L	<0.12	1.0	0.12	06/12/23 12:45	
Boron	ug/L	<6.4	100	6.4	06/12/23 12:45	
Calcium	ug/L	71.0J	200	26.9	06/12/23 12:45	
Cobalt	ug/L	<1.2	5.0	1.2	06/12/23 12:45	
Iron	ug/L	16.0J	50.0	9.1	06/12/23 12:45	
Lead	ug/L	<3.8	10.0	3.8	06/12/23 12:45	
Lithium	ug/L	<3.7	10.0	3.7	06/12/23 12:45	
Magnesium	ug/L	<20.1	50.0	20.1	06/12/23 12:45	
Manganese	ug/L	<0.39	5.0	0.39	06/12/23 12:45	
Molybdenum	ug/L	<1.0	20.0	1.0	06/12/23 12:45	
Potassium	ug/L	<69.7	500	69.7	06/12/23 12:45	
Sodium	ug/L	<115	500	115	06/12/23 12:45	

LABORATORY CONTROL SAMPLE: 3364752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	968	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1060	106	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364753 3364754

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428743019	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	66.0	1000	1000	1100	1070	104	101	70-130	3	20		
Beryllium	ug/L	<0.12	1000	1000	1050	1050	105	105	70-130	0	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364753 3364754												
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		60428743019	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Boron	ug/L	8340	1000	1000	9430	9090	109	74	70-130	4	20	
Calcium	ug/L	109000	10000	10000	120000	116000	109	68	70-130	4	20	M1
Cobalt	ug/L	<1.2	1000	1000	1060	1060	106	106	70-130	0	20	
Iron	ug/L	5000	10000	10000	16000	15200	110	102	70-130	5	20	
Lead	ug/L	<3.8	1000	1000	1060	1040	106	104	70-130	2	20	
Lithium	ug/L	37.5	1000	1000	1090	1070	105	103	70-130	2	20	
Magnesium	ug/L	13300	10000	10000	23900	23300	106	100	70-130	3	20	
Manganese	ug/L	276	1000	1000	1330	1320	105	105	70-130	0	20	
Molybdenum	ug/L	328	1000	1000	1410	1400	108	107	70-130	1	20	
Potassium	ug/L	8960	10000	10000	19900	19500	109	105	70-130	2	20	
Sodium	ug/L	109000	10000	10000	121000	116000	116	69	70-130	4	20	M1

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849921	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

METHOD BLANK:	3366629	Matrix:	Water
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/07/23 08:59	
Beryllium	ug/L	<0.12	1.0	0.12	06/07/23 08:59	
Boron	ug/L	<6.4	100	6.4	06/07/23 08:59	
Calcium	ug/L	<26.9	200	26.9	06/07/23 08:59	
Cobalt	ug/L	<1.2	5.0	1.2	06/07/23 08:59	
Iron	ug/L	<9.1	50.0	9.1	06/07/23 08:59	
Lead	ug/L	<3.8	10.0	3.8	06/07/23 08:59	
Lithium	ug/L	<3.7	10.0	3.7	06/07/23 08:59	
Magnesium	ug/L	<20.1	50.0	20.1	06/07/23 08:59	
Manganese	ug/L	0.79J	5.0	0.39	06/07/23 08:59	
Molybdenum	ug/L	<1.0	20.0	1.0	06/07/23 08:59	
Potassium	ug/L	<69.7	500	69.7	06/07/23 08:59	
Sodium	ug/L	<115	500	115	06/07/23 08:59	

LABORATORY CONTROL SAMPLE: 3366630

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	998	100	85-115	
Calcium	ug/L	10000	10600	106	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	11100	111	85-115	
Lead	ug/L	1000	998	100	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10400	104	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366631 3366632

Parameter	Units	60428743024 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Barium	ug/L	166	1000	1000	1180	1190	102	102	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366631 3366632												
Parameter	Units	60428743024		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Beryllium	ug/L	<0.12	1000	1000	1030	1040	103	104	70-130	1	20	
Boron	ug/L	4580	1000	1000	5470	5560	89	97	70-130	2	20	
Calcium	ug/L	163000	10000	10000	170000	172000	69	89	70-130	1	20	M1
Cobalt	ug/L	3.2J	1000	1000	1000	1020	100	101	70-130	1	20	
Iron	ug/L	5840	10000	10000	16500	17000	106	111	70-130	3	20	
Lead	ug/L	<3.8	1000	1000	1010	1020	101	102	70-130	1	20	
Lithium	ug/L	35.0	1000	1000	1080	1090	104	106	70-130	1	20	
Magnesium	ug/L	27600	10000	10000	37700	37800	101	102	70-130	0	20	
Manganese	ug/L	1430	1000	1000	2380	2410	95	98	70-130	1	20	
Molybdenum	ug/L	55.5	1000	1000	1080	1100	102	104	70-130	2	20	
Potassium	ug/L	6570	10000	10000	17100	17400	106	108	70-130	1	20	
Sodium	ug/L	74700	10000	10000	84200	85200	95	105	70-130	1	20	

MATRIX SPIKE SAMPLE: 3366633							
Parameter	Units	60428743025	Spike	MS	MS	% Rec	
		Result	Conc.	Result	% Rec	Limits	Qualifiers
Barium	ug/L	130	1000	1160	103	70-130	
Beryllium	ug/L	<0.12	1000	1050	105	70-130	
Boron	ug/L	9710	1000	10700	98	70-130	
Calcium	ug/L	110000	10000	120000	97	70-130	
Cobalt	ug/L	<1.2	1000	1030	102	70-130	
Iron	ug/L	5990	10000	16300	103	70-130	
Lead	ug/L	<3.8	1000	1010	101	70-130	
Lithium	ug/L	36.2	1000	1090	106	70-130	
Magnesium	ug/L	23000	10000	33500	105	70-130	
Manganese	ug/L	294	1000	1290	100	70-130	
Molybdenum	ug/L	819	1000	1820	100	70-130	
Potassium	ug/L	7560	10000	18400	109	70-130	
Sodium	ug/L	99600	10000	110000	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	852043	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

METHOD BLANK: 3374470 Matrix: Water

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.85J	5.0	0.64	06/19/23 08:50	
Beryllium	ug/L	0.17J	1.0	0.12	06/19/23 08:50	
Boron	ug/L	<6.4	100	6.4	06/19/23 08:50	
Calcium	ug/L	46.0J	200	26.9	06/19/23 08:50	
Cobalt	ug/L	<1.2	5.0	1.2	06/19/23 08:50	
Iron	ug/L	19.9J	50.0	9.1	06/19/23 08:50	
Lead	ug/L	<3.8	10.0	3.8	06/19/23 08:50	
Lithium	ug/L	<3.7	10.0	3.7	06/19/23 08:50	
Magnesium	ug/L	<20.1	50.0	20.1	06/19/23 08:50	
Manganese	ug/L	0.53J	5.0	0.39	06/19/23 08:50	
Molybdenum	ug/L	<1.0	20.0	1.0	06/19/23 08:50	
Potassium	ug/L	<69.7	500	69.7	06/19/23 08:50	
Sodium	ug/L	<115	500	115	06/19/23 08:50	

LABORATORY CONTROL SAMPLE: 3374471

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	2000	1870	93	85-115	
Beryllium	ug/L	2000	2040	102	85-115	
Boron	ug/L	2000	1840	92	85-115	
Calcium	ug/L	20000	19600	98	85-115	
Cobalt	ug/L	2000	1990	100	85-115	
Iron	ug/L	20000	19700	99	85-115	
Lead	ug/L	2000	1970	98	85-115	
Lithium	ug/L	2000	1890	94	85-115	
Magnesium	ug/L	20000	19300	96	85-115	
Manganese	ug/L	2000	1950	97	85-115	
Molybdenum	ug/L	2000	2010	100	85-115	
Potassium	ug/L	20000	18900	95	85-115	
Sodium	ug/L	20000	19300	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374472 3374473

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60429091008	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	183	2000	2000	2060	2120	94	97	70-130	3	20		
Beryllium	ug/L	0.20J	2000	2000	1900	1980	95	99	70-130	4	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374472 3374473												
Parameter	Units	60429091008		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Boron	ug/L	45.6J	2000	2000	1890	1950	92	95	70-130	3	20	
Calcium	ug/L	140000	20000	20000	163000	164000	114	123	70-130	1	20	
Cobalt	ug/L	<1.2	2000	2000	1820	1880	91	94	70-130	3	20	
Iron	ug/L	13.5J	20000	20000	19300	19600	96	98	70-130	2	20	
Lead	ug/L	<3.8	2000	2000	1910	1980	95	99	70-130	4	20	
Lithium	ug/L	26.3	2000	2000	1960	2040	97	101	70-130	4	20	
Magnesium	ug/L	26000	20000	20000	45600	46700	98	104	70-130	2	20	
Manganese	ug/L	11.4	2000	2000	1830	1890	91	94	70-130	3	20	
Molybdenum	ug/L	<1.0	2000	2000	1880	1950	94	98	70-130	4	20	
Potassium	ug/L	3970	20000	20000	23400	24300	97	102	70-130	4	20	
Sodium	ug/L	4910	20000	20000	24700	25400	99	103	70-130	3	20	

MATRIX SPIKE SAMPLE: 3374474								
Parameter	Units	60429254001		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Conc.					
Barium	ug/L	49.7	2000	2000	1870	91	70-130	
Beryllium	ug/L	<0.12	2000	2000	1920	96	70-130	
Boron	ug/L	3180	2000	2000	4940	88	70-130	
Calcium	ug/L	79600	20000	20000	95300	78	70-130	
Cobalt	ug/L	<1.2	2000	2000	1910	96	70-130	
Iron	ug/L	25.7J	20000	20000	19100	95	70-130	
Lead	ug/L	<3.8	2000	2000	1900	95	70-130	
Lithium	ug/L	14.0	2000	2000	1900	95	70-130	
Magnesium	ug/L	104	20000	20000	18700	93	70-130	
Manganese	ug/L	1.6J	2000	2000	1880	94	70-130	
Molybdenum	ug/L	228	2000	2000	2180	98	70-130	
Potassium	ug/L	9670	20000	20000	28600	94	70-130	
Sodium	ug/L	69900	20000	20000	86400	82	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	847356	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 3357538 Matrix: Water
 Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/05/23 21:45	
Arsenic	ug/L	<0.13	1.0	0.13	06/05/23 21:45	
Cadmium	ug/L	<0.050	0.50	0.050	06/05/23 21:45	
Chromium	ug/L	<0.30	1.0	0.30	06/05/23 21:45	
Selenium	ug/L	<0.18	1.0	0.18	06/05/23 21:45	
Thallium	ug/L	<0.14	1.0	0.14	06/05/23 21:45	

LABORATORY CONTROL SAMPLE: 3357539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.4	98	85-115	
Arsenic	ug/L	40	38.7	97	85-115	
Cadmium	ug/L	40	38.8	97	85-115	
Chromium	ug/L	40	40.1	100	85-115	
Selenium	ug/L	40	41.8	105	85-115	
Thallium	ug/L	40	39.0	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357540 3357541

Parameter	Units	60428744001		60428744006		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Result	Spike Conc.	Result	Result	% Rec	% Rec				
Antimony	ug/L	<0.12	40	40	40.0	40.6	100	101	70-130	1	20		
Arsenic	ug/L	0.88J	40	40	39.6	40.4	97	99	70-130	2	20		
Cadmium	ug/L	<0.050	40	40	38.0	38.9	95	97	70-130	2	20		
Chromium	ug/L	0.37J	40	40	39.4	39.9	98	99	70-130	1	20		
Selenium	ug/L	<0.18	40	40	39.4	39.4	98	98	70-130	0	20		
Thallium	ug/L	<0.14	40	40	40.8	41.6	102	104	70-130	2	20		

MATRIX SPIKE SAMPLE: 3357542

Parameter	Units	60428744006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.7	99	70-130	
Arsenic	ug/L	34.7	40	74.5	100	70-130	
Cadmium	ug/L	<0.050	40	38.4	96	70-130	
Chromium	ug/L	0.33J	40	40.3	100	70-130	
Selenium	ug/L	<0.18	40	39.4	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE SAMPLE:		3357542					
Parameter	Units	60428744006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	40	41.4	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848867

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004

METHOD BLANK: 3363082

Matrix: Water

Associated Lab Samples: 60428743004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/07/23 13:43	
Arsenic	ug/L	<0.13	1.0	0.13	06/07/23 13:43	
Cadmium	ug/L	<0.050	0.50	0.050	06/07/23 13:43	
Chromium	ug/L	<0.30	1.0	0.30	06/07/23 13:43	
Selenium	ug/L	<0.18	1.0	0.18	06/07/23 13:43	
Thallium	ug/L	<0.14	1.0	0.14	06/07/23 13:43	

LABORATORY CONTROL SAMPLE: 3363083

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.9	97	85-115	
Arsenic	ug/L	40	39.6	99	85-115	
Cadmium	ug/L	40	39.6	99	85-115	
Chromium	ug/L	40	39.7	99	85-115	
Selenium	ug/L	40	39.3	98	85-115	
Thallium	ug/L	40	39.8	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363110 3363111

Parameter	Units	60429091003		3363110		3363111		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Antimony	ug/L		40	40	39.7	38.6	99	96	96	70-130	3	20		
Arsenic	ug/L		40	40	41.5	41.2	101	101	101	70-130	1	20		
Cadmium	ug/L		40	40	39.5	39.3	99	98	98	70-130	0	20		
Chromium	ug/L		40	40	41.7	41.4	103	103	103	70-130	1	20		
Selenium	ug/L		40	40	49.0	49.7	96	98	98	70-130	1	20		
Thallium	ug/L		40	40	39.4	39.2	98	98	98	70-130	0	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848875

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743005, 60428743006

METHOD BLANK: 3363116

Matrix: Water

Associated Lab Samples: 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/07/23 13:24	
Arsenic	ug/L	<0.13	1.0	0.13	06/07/23 13:24	
Cadmium	ug/L	<0.050	0.50	0.050	06/07/23 13:24	
Chromium	ug/L	<0.30	1.0	0.30	06/07/23 13:24	
Selenium	ug/L	<0.18	1.0	0.18	06/07/23 13:24	
Thallium	ug/L	<0.14	1.0	0.14	06/07/23 13:24	

LABORATORY CONTROL SAMPLE: 3363117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.5	101	85-115	
Arsenic	ug/L	40	41.7	104	85-115	
Cadmium	ug/L	40	41.8	104	85-115	
Chromium	ug/L	40	41.4	103	85-115	
Selenium	ug/L	40	41.6	104	85-115	
Thallium	ug/L	40	41.3	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363118 3363119

Parameter	Units	60428743005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Antimony	ug/L	<0.12	40	40	39.7	39.6	99	99	70-130	0	20		
Arsenic	ug/L	1.2	40	40	41.3	41.7	100	101	70-130	1	20		
Cadmium	ug/L	<0.050	40	40	38.5	38.5	96	96	70-130	0	20		
Chromium	ug/L	0.32J	40	40	42.2	42.5	105	105	70-130	1	20		
Selenium	ug/L	<0.18	40	40	38.2	38.9	95	97	70-130	2	20		
Thallium	ug/L	<0.14	40	40	39.3	39.4	98	99	70-130	0	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849319	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3364755 Matrix: Water
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/07/23 16:22	
Arsenic	ug/L	<0.13	1.0	0.13	06/07/23 16:22	
Cadmium	ug/L	<0.050	0.50	0.050	06/07/23 16:22	
Chromium	ug/L	<0.30	1.0	0.30	06/07/23 16:22	
Selenium	ug/L	<0.18	1.0	0.18	06/07/23 16:22	
Thallium	ug/L	<0.14	1.0	0.14	06/07/23 16:22	

LABORATORY CONTROL SAMPLE: 3364756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.2	98	85-115	
Arsenic	ug/L	40	40.6	101	85-115	
Cadmium	ug/L	40	40.0	100	85-115	
Chromium	ug/L	40	39.9	100	85-115	
Selenium	ug/L	40	40.5	101	85-115	
Thallium	ug/L	40	40.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364757 3364758

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60428743019	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	<0.12	40	40	39.2	39.5	98	99	70-130	1	20
Arsenic	ug/L	3.1	40	40	44.1	43.9	103	102	70-130	1	20
Cadmium	ug/L	0.11J	40	40	38.0	38.1	95	95	70-130	0	20
Chromium	ug/L	0.41J	40	40	41.1	40.7	102	101	70-130	1	20
Selenium	ug/L	<0.18	40	40	39.7	39.3	99	98	70-130	1	20
Thallium	ug/L	<0.14	40	40	38.8	38.9	97	97	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849920	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

METHOD BLANK:	3366624	Matrix:	Water
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/07/23 14:13	
Arsenic	ug/L	<0.13	1.0	0.13	06/07/23 14:13	
Cadmium	ug/L	<0.050	0.50	0.050	06/07/23 14:13	
Chromium	ug/L	<0.30	1.0	0.30	06/07/23 14:13	
Selenium	ug/L	<0.18	1.0	0.18	06/07/23 14:13	
Thallium	ug/L	<0.14	1.0	0.14	06/07/23 14:13	

LABORATORY CONTROL SAMPLE: 3366625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.3	98	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	40.7	102	85-115	
Chromium	ug/L	40	40.2	101	85-115	
Selenium	ug/L	40	39.4	98	85-115	
Thallium	ug/L	40	41.0	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366626 3366627

Parameter	Units	60428743023		60428743027		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	ug/L	<0.12	40	40	39.2	39.2	98	98	70-130	0	20		
Arsenic	ug/L	0.28J	40	40	40.4	40.4	100	100	70-130	0	20		
Cadmium	ug/L	0.11J	40	40	38.6	38.7	96	97	70-130	0	20		
Chromium	ug/L	0.49J	40	40	40.9	40.7	101	101	70-130	1	20		
Selenium	ug/L	<0.18	40	40	38.4	38.4	96	96	70-130	0	20		
Thallium	ug/L	<0.14	40	40	39.2	38.4	98	96	70-130	2	20		

MATRIX SPIKE SAMPLE: 3366628

Parameter	Units	60428743033 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	38.7	97	70-130	
Arsenic	ug/L	<0.13	40	39.4	98	70-130	
Cadmium	ug/L	<0.050	40	40.3	101	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE SAMPLE:	3366628	60428743033	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chromium	ug/L	0.51J	40	40.3	99	70-130	
Selenium	ug/L	<0.18	40	38.7	97	70-130	
Thallium	ug/L	<0.14	40	40.7	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	852044	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

METHOD BLANK: 3374475 Matrix: Water

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/14/23 12:51	
Arsenic	ug/L	0.14J	1.0	0.13	06/14/23 12:51	
Cadmium	ug/L	0.15J	0.50	0.050	06/14/23 12:51	
Chromium	ug/L	0.74J	1.0	0.30	06/14/23 12:51	
Selenium	ug/L	<0.18	1.0	0.18	06/14/23 12:51	
Thallium	ug/L	<0.14	1.0	0.14	06/14/23 12:51	

LABORATORY CONTROL SAMPLE: 3374476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	73.6	92	85-115	
Arsenic	ug/L	80	73.0	91	85-115	
Cadmium	ug/L	80	73.9	92	85-115	
Chromium	ug/L	80	79.9	100	85-115	
Selenium	ug/L	80	68.2	85	85-115	
Thallium	ug/L	80	81.3	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374477 3374478

Parameter	Units	60428743010		60428743011		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	ug/L	<0.12	80	80	73.8	71.5	92	89	70-130	3	20		
Arsenic	ug/L	0.30J	80	80	74.2	72.4	92	90	70-130	2	20		
Cadmium	ug/L	0.18J	80	80	73.1	70.5	91	88	70-130	4	20		
Chromium	ug/L	1.4	80	80	76.8	75.1	94	92	70-130	2	20		
Selenium	ug/L	<0.18	80	80	66.9	65.9	84	82	70-130	2	20		
Thallium	ug/L	<0.14	80	80	83.4	81.2	104	101	70-130	3	20		

MATRIX SPIKE SAMPLE: 3374479

Parameter	Units	60428743011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.15J	80	72.8	91	70-130	
Arsenic	ug/L	0.59J	80	73.2	91	70-130	
Cadmium	ug/L	<0.050	80	73.2	92	70-130	
Chromium	ug/L	1.1	80	79.8	98	70-130	
Selenium	ug/L	26.0	80	92.1	83	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

MATRIX SPIKE SAMPLE:		3374479					
Parameter	Units	60428743011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	80	82.9	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 847594

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 3358236

Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/17/23 13:59	

LABORATORY CONTROL SAMPLE: 3358237

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	511	102	90-110	

SAMPLE DUPLICATE: 3358238

Parameter	Units	60428567001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	436	435	0	10	

SAMPLE DUPLICATE: 3358239

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	330	338	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848549

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004, 60428743005, 60428743006

METHOD BLANK: 3361950

Matrix: Water

Associated Lab Samples: 60428743004, 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/23/23 12:45	

LABORATORY CONTROL SAMPLE: 3361951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	506	101	90-110	

SAMPLE DUPLICATE: 3361952

Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	510	517	1	10	

SAMPLE DUPLICATE: 3361953

Parameter	Units	60429277006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	74.1	77.5	4	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848809

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

METHOD BLANK: 3362800

Matrix: Water

Associated Lab Samples: 60428743011, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/24/23 11:08	

LABORATORY CONTROL SAMPLE: 3362801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	511	102	90-110	

SAMPLE DUPLICATE: 3362802

Parameter	Units	10653909001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	491	488	1	10	

SAMPLE DUPLICATE: 3362803

Parameter	Units	60429254004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	302	310	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848810	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743010

METHOD BLANK: 3362804 Matrix: Water

Associated Lab Samples: 60428743010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/24/23 13:54	

LABORATORY CONTROL SAMPLE: 3362805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	507	101	90-110	

SAMPLE DUPLICATE: 3362806

Parameter	Units	60428744010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	72.1	69.3	4	10	

SAMPLE DUPLICATE: 3362961

Parameter	Units	60429051010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	318	317	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 849024

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743016

METHOD BLANK: 3363577

Matrix: Water

Associated Lab Samples: 60428743016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/25/23 10:50	

LABORATORY CONTROL SAMPLE: 3363578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	498	100	90-110	

SAMPLE DUPLICATE: 3363579

Parameter	Units	10654006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	<10.5		10	

SAMPLE DUPLICATE: 3363580

Parameter	Units	60429303013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	448	449	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 849026

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3363585

Matrix: Water

Associated Lab Samples: 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/25/23 13:42	

LABORATORY CONTROL SAMPLE: 3363586

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	493	99	90-110	

SAMPLE DUPLICATE: 3363587

Parameter	Units	60429303014 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	456	453	1	10	

SAMPLE DUPLICATE: 3363588

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	182	185	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	850364	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743029, 60428743030

METHOD BLANK: 3368319 Matrix: Water

Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743029, 60428743030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	06/02/23 09:48	

LABORATORY CONTROL SAMPLE: 3368320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	490	98	90-110	

SAMPLE DUPLICATE: 3368321

Parameter	Units	60429414001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	389	390	0	10	

SAMPLE DUPLICATE: 3368322

Parameter	Units	60429499002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	92.4	89.5	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 850365 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743027, 60428743028, 60428743031, 60428743032, 60428743033

METHOD BLANK: 3368323 Matrix: Water
 Associated Lab Samples: 60428743027, 60428743028, 60428743031, 60428743032, 60428743033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	06/02/23 12:29	

LABORATORY CONTROL SAMPLE: 3368324

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	474	95	90-110	

SAMPLE DUPLICATE: 3368325

Parameter	Units	60428743032 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	<10.5		10	

SAMPLE DUPLICATE: 3368326

Parameter	Units	60429930001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	26.9	24.5	9	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 847756

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002

METHOD BLANK: 3358896

Matrix: Water

Associated Lab Samples: 60428743001, 60428743002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/18/23 11:26	

LABORATORY CONTROL SAMPLE: 3358897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1050	105	80-120	

SAMPLE DUPLICATE: 3358898

Parameter	Units	60428659001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	905	5	10	

SAMPLE DUPLICATE: 3358899

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	667	641	4	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848073

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743003

METHOD BLANK: 3360160

Matrix: Water

Associated Lab Samples: 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/19/23 11:07	

LABORATORY CONTROL SAMPLE: 3360161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3360162

Parameter	Units	60428661001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	245	230	6	10	

SAMPLE DUPLICATE: 3360163

Parameter	Units	60428794008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	619	606	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	848506	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004, 60428743005, 60428743006

METHOD BLANK: 3361832 Matrix: Water

Associated Lab Samples: 60428743004, 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/23/23 10:31	

LABORATORY CONTROL SAMPLE: 3361833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1060	106	80-120	

SAMPLE DUPLICATE: 3361834

Parameter	Units	60429091003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	512	539	5	10	

SAMPLE DUPLICATE: 3361835

Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	560	573	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	848758	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743011, 60429254003, 60429254004

METHOD BLANK: 3362666 Matrix: Water

Associated Lab Samples: 60428743011, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/24/23 09:08	

LABORATORY CONTROL SAMPLE: 3362667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1070	107	80-120	

SAMPLE DUPLICATE: 3362668

Parameter	Units	60429277005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	121	119	2	10	

SAMPLE DUPLICATE: 3362669

Parameter	Units	60429277006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1060	1050	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 849038

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743010, 60429091008, 60429254001

METHOD BLANK: 3363629

Matrix: Water

Associated Lab Samples: 60428743010, 60429091008, 60429254001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/25/23 12:05	

LABORATORY CONTROL SAMPLE: 3363630

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	991	99	80-120	

SAMPLE DUPLICATE: 3363631

Parameter	Units	60429277007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1030	989	4	10	

SAMPLE DUPLICATE: 3363632

Parameter	Units	60428744014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<5.0	<5.0		10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849292	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3364652 Matrix: Water
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/26/23 16:09	

LABORATORY CONTROL SAMPLE: 3364653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3364654

Parameter	Units	60428743017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	559	590	5	10	

SAMPLE DUPLICATE: 3364655

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	856	800	7	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849982	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

METHOD BLANK:	3366861	Matrix:	Water
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/31/23 13:13	

LABORATORY CONTROL SAMPLE: 3366862						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 3366863						
Parameter	Units	60428743023 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	569	551	3	10	

SAMPLE DUPLICATE: 3366864						
Parameter	Units	60428743031 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	870	870	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 847702

Analysis Method: SM 3500-Fe B#4

QC Batch Method: SM 3500-Fe B#4

Analysis Description: Iron, Ferrous

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 3358762

Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/18/23 08:29	H6

LABORATORY CONTROL SAMPLE: 3358763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 3358764

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.20	0.20	1	20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849845	Analysis Method:	SM 3500-Fe B#4
QC Batch Method:	SM 3500-Fe B#4	Analysis Description:	Iron, Ferrous
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743004, 60428743005, 60428743006, 60428743010, 60428743011, 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60429091008, 60429254001, 60429254003, 60429254004		

METHOD BLANK:	3366442	Matrix:	Water
Associated Lab Samples:	60428743004, 60428743005, 60428743006, 60428743010, 60428743011, 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60429091008, 60429254001, 60429254003, 60429254004		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/07/23 14:19	H6

LABORATORY CONTROL SAMPLE: 3366443						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	108	90-110	H6

SAMPLE DUPLICATE: 3366444						
Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.054J	0.082J		20	H6

SAMPLE DUPLICATE: 3366445						
Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.062J	0.048J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 850307 Analysis Method: SM 3500-Fe B#4
 QC Batch Method: SM 3500-Fe B#4 Analysis Description: Iron, Ferrous
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033

METHOD BLANK: 3368159 Matrix: Water
 Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/05/23 15:02	H6

LABORATORY CONTROL SAMPLE: 3368160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	98	90-110	H6

SAMPLE DUPLICATE: 3368161

Parameter	Units	60428744015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.16J	0.16J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	847767	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743001, 60428743002

METHOD BLANK: 3358940 Matrix: Water

Associated Lab Samples: 60428743001, 60428743002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/18/23 16:43	

LABORATORY CONTROL SAMPLE: 3358941

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3358942 3358943

Parameter	Units	60428744001		3358943		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.55	0.54	110	107	75-125	2	20

SAMPLE DUPLICATE: 3358944

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 848075	Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D	Analysis Description: 4500S2D Sulfide, Total
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743003

METHOD BLANK: 3360170 Matrix: Water

Associated Lab Samples: 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/19/23 10:26	

LABORATORY CONTROL SAMPLE: 3360171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3360172 3360173

Parameter	Units	60428620003		3360172		3360173		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Sulfide, Total	mg/L	ND	0.5	0.5	0.14	0.13	28	27	75-125	6	20 M1

SAMPLE DUPLICATE: 3360174

Parameter	Units	60428620004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3360175

Parameter	Units	60428744003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.023J	0.030J		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	848375	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004, 60428743005, 60428743006

METHOD BLANK: 3361479 Matrix: Water
 Associated Lab Samples: 60428743004, 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/22/23 15:26	

LABORATORY CONTROL SAMPLE: 3361480

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361481 3361482

Parameter	Units	60429159005		3361482		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide, Total	mg/L	ND	0.5	0.52	0.54	101	106	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3362222 3362223

Parameter	Units	60428743005		3362223		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide, Total	mg/L	<0.016	0.5	0.52	0.54	101	107	75-125	5	20	

SAMPLE DUPLICATE: 3361483

Parameter	Units	60429159005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3361484

Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	848817	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743011, 60429254003, 60429254004		

METHOD BLANK: 3362844 Matrix: Water
 Associated Lab Samples: 60428743011, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/24/23 15:14	

LABORATORY CONTROL SAMPLE: 3362845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3362847 3362848

Parameter	Units	60429277006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	ND	0.5	0.5	0.53	0.54	103	105	75-125	1	20	

SAMPLE DUPLICATE: 3362846

Parameter	Units	60429153001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3362849

Parameter	Units	60429277006 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 849293 Analysis Method: SM 4500-S-2 D
 QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743010, 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60429091008, 60429254001

METHOD BLANK: 3364656 Matrix: Water
 Associated Lab Samples: 60428743010, 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60429091008, 60429254001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/26/23 13:07	

LABORATORY CONTROL SAMPLE: 3364657

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364659 3364660

Parameter	Units	60428743019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.49	0.50	98	100	75-125	1	20	

SAMPLE DUPLICATE: 3364658

Parameter	Units	60429347001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3364661

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	849983	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743029, 60428743030, 60428743032, 60428743033

METHOD BLANK: 3366866 Matrix: Water

Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743029, 60428743030, 60428743032, 60428743033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/31/23 14:59	

LABORATORY CONTROL SAMPLE: 3366867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366868 3366869

Parameter	Units	60428743023		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Result	Conc.	Result	Result				
Sulfide, Total	mg/L	0.020J	0.5	0.5	0.43	0.45	81	85	75-125	5	20

SAMPLE DUPLICATE: 3366870

Parameter	Units	60428743023 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.020J	0.020J		20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 850271 Analysis Method: SM 4500-S-2 D
 QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743027, 60428743028, 60428743031

METHOD BLANK: 3367979 Matrix: Water
 Associated Lab Samples: 60428743027, 60428743028, 60428743031

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/01/23 15:25	

LABORATORY CONTROL SAMPLE: 3367980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.48	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3367981 3367982

Parameter	Units	60429616002		3367981		3367982		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Sulfide, Total	mg/L	0.43	0.5	0.5	0.5	0.84	0.87	83	88	75-125	3	20

SAMPLE DUPLICATE: 3367983

Parameter	Units	60429655002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.061	0.10	51	20	D6

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA
Pace Project No.: 60428743

QC Batch: 849825 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 3366406 Matrix: Water
Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/31/23 19:13	
Fluoride	mg/L	<0.12	0.20	0.12	05/31/23 19:13	
Sulfate	mg/L	<0.55	1.0	0.55	05/31/23 19:13	

LABORATORY CONTROL SAMPLE: 3366407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.2	88	90-110 L2	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3366408 3366409

Parameter	Units	60428744001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	40.4	100	100	111	109	71	69	80-120	2	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	1.8	1.8	73	73	80-120	1	15	M0
Sulfate	mg/L	172	100	100	264	259	92	87	80-120	2	15	

SAMPLE DUPLICATE: 3366410

Parameter	Units	60428744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	40.4	33.3	19	15	D6
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	172	165	4	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	850451	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743004, 60428743005, 60428743006

METHOD BLANK: 3368653 Matrix: Water
 Associated Lab Samples: 60428743004, 60428743005, 60428743006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/05/23 15:44	
Fluoride	mg/L	<0.12	0.20	0.12	06/05/23 15:44	
Sulfate	mg/L	<0.55	1.0	0.55	06/05/23 15:44	

LABORATORY CONTROL SAMPLE: 3368654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3368655 3368656

Parameter	Units	60429091003		3368655		3368656		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	1.5	5	5	6.3	5.9	97	88	80-120	7	15		
Fluoride	mg/L	0.13J	2.5	2.5	2.8	2.5	105	96	80-120	8	15		
Sulfate	mg/L	27.2	100	100	125	124	97	96	80-120	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3368658 3368659

Parameter	Units	60428743005		3368658		3368659		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	3.9	5	5	9.1	9.3	104	108	80-120	2	15		
Fluoride	mg/L	0.14J	2.5	2.5	2.7	2.8	103	107	80-120	3	15		
Sulfate	mg/L	16.6	100	100	114	114	98	98	80-120	0	15		

SAMPLE DUPLICATE: 3368657

Parameter	Units	60429091003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.5	1.5	5	15	
Fluoride	mg/L	0.13J	<0.12		15	
Sulfate	mg/L	27.2	27.8	2	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

SAMPLE DUPLICATE: 3368660

Parameter	Units	60428743005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	3.9	3.9	0	15	
Fluoride	mg/L	0.14J	0.15J		15	
Sulfate	mg/L	16.6	16.6	0	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 851544

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254003, 60429254004

METHOD BLANK: 3372729

Matrix: Water

Associated Lab Samples: 60428743010, 60428743011, 60429091008, 60429254003, 60429254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/13/23 09:55	
Fluoride	mg/L	<0.12	0.20	0.12	06/13/23 09:55	
Sulfate	mg/L	<0.55	1.0	0.55	06/13/23 09:55	

LABORATORY CONTROL SAMPLE: 3372730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3372731 3372732

Parameter	Units	60430287001		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	158	5	5	159	159	18	21	80-120	0	15	E,M1		
Fluoride	mg/L	<0.20	2.5	2.5	2.8	2.6	107	103	80-120	4	15			
Sulfate	mg/L	723	5	5	727	731	83	159	80-120	1	15	E,M1		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	851545	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60429254001

METHOD BLANK: 3372733 Matrix: Water

Associated Lab Samples: 60429254001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/13/23 18:23	
Fluoride	mg/L	<0.12	0.20	0.12	06/13/23 18:23	
Sulfate	mg/L	<0.55	1.0	0.55	06/13/23 18:23	

LABORATORY CONTROL SAMPLE: 3372734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3372735 3372736

Parameter	Units	60430373004		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Chloride	mg/L	1.0	5	5	5.5	5.7	90	94	80-120	4	15				
Fluoride	mg/L	1.1	2.5	2.5	3.8	3.9	107	111	80-120	3	15				
Sulfate	mg/L	742	500	500	1320	1240	116	99	80-120	7	15				

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	852062	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

METHOD BLANK: 3374550 Matrix: Water
 Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/14/23 16:04	
Fluoride	mg/L	<0.12	0.20	0.12	06/14/23 16:04	
Sulfate	mg/L	<0.55	1.0	0.55	06/14/23 16:04	

LABORATORY CONTROL SAMPLE: 3374551

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3374552 3374553

Parameter	Units	60428743019		3374552		3374553		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chloride	mg/L	42.2	100	135	100	134	92	92	80-120	0	15 E
Fluoride	mg/L	0.27	2.5	2.7	2.5	3.0	97	108	80-120	10	15
Sulfate	mg/L	312	100	427	100	424	115	112	80-120	1	15 E

SAMPLE DUPLICATE: 3374554

Parameter	Units	60428743019 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	42.2	40.1	5	15	
Fluoride	mg/L	0.27	0.23	16	15 D6	
Sulfate	mg/L	312	308	1	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	852884	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60428743023, 60428743024, 60428743025, 60428743026, 60428743029		

METHOD BLANK: 3377816 Matrix: Water
 Associated Lab Samples: 60428743023, 60428743024, 60428743025, 60428743026, 60428743029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/18/23 12:32	
Fluoride	mg/L	<0.12	0.20	0.12	06/18/23 12:32	
Sulfate	mg/L	<0.55	1.0	0.55	06/18/23 12:32	

LABORATORY CONTROL SAMPLE: 3377817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3377818 3377819

Parameter	Units	60430518007		60430570005		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Chloride	mg/L	173	100	100	268	268	95	95	80-120	0	15		
Fluoride	mg/L	ND	50	50	48.2	48.0	96	96	80-120	0	15		
Sulfate	mg/L	ND	100	100	107	105	94	93	80-120	2	15		

MATRIX SPIKE SAMPLE: 3377820

Parameter	Units	60430570005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	220	100	323	102	80-120	
Fluoride	mg/L	ND	25	24.7	99	80-120	
Sulfate	mg/L	82.1	50	133	102	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 852947 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428743027, 60428743028, 60428743030, 60428743031, 60428743032, 60428743033

METHOD BLANK: 3377961 Matrix: Water
 Associated Lab Samples: 60428743027, 60428743028, 60428743030, 60428743031, 60428743032, 60428743033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/19/23 09:10	
Fluoride	mg/L	<0.12	0.20	0.12	06/19/23 09:10	
Sulfate	mg/L	<0.55	1.0	0.55	06/19/23 09:10	

LABORATORY CONTROL SAMPLE: 3377962

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3377963 3377964

Parameter	Units	60428743030 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.7	5	5	19.4	19.6	93	98	80-120	1	15	
Fluoride	mg/L	0.15J	2.5	2.5	2.5	2.7	95	100	80-120	5	15	
Sulfate	mg/L	169	100	100	269	266	101	97	80-120	1	15	

MATRIX SPIKE SAMPLE: 3377965

Parameter	Units	60428743028 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	26.9	100	117	90	80-120	
Fluoride	mg/L	0.17J	2.5	2.4	89	80-120	
Sulfate	mg/L	404	250	654	100	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-S-1 **Lab ID: 60428743004** Collected: 05/16/23 17:23 Received: 05/18/23 05:13 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.490 ± 0.535 (0.841) C:NA T:101%	pCi/L	06/19/23 16:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.673 ± 0.337 (0.571) C:90% T:83%	pCi/L	06/15/23 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-1D **Lab ID: 60428743005** Collected: 05/16/23 09:17 Received: 05/18/23 05:13 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	1.59 ± 0.656 (0.617) C:NA T:99%	pCi/L	06/19/23 16:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	2.16 ± 0.573 (0.561) C:87% T:93%	pCi/L	06/15/23 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.267 ± 0.322 (0.491) C:NA T:97%	pCi/L	06/19/23 16:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.836 ± 0.354 (0.556) C:87% T:94%	pCi/L	06/15/23 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MS-1 **Lab ID: 60428743007** Collected: 05/16/23 09:17 Received: 05/18/23 05:13 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	99.00 %REC ± NA (NA) C:NA T:NA	pCi/L	06/19/23 16:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	97.02 %REC ± NA (NA) C:NA T:NA	pCi/L	06/15/23 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	121.43 %REC 20.35RPD ± NA (NA) C:NA T:NA	pCi/L	06/19/23 16:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	105.99 %REC 8.84RPD ± NA (NA) C:NA T:NA	pCi/L	06/15/23 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-35(D) **Lab ID: 60428743010** Collected: 05/18/23 09:54 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.310 ± 0.570 (1.02) C:NA T:87%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.737 ± 0.434 (0.794) C:76% T:76%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-24 **Lab ID: 60428743011** Collected: 05/18/23 11:00 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0688 ± 0.404 (0.826) C:NA T:94%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.154 ± 0.317 (0.701) C:73% T:87%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2M **Lab ID: 60428743016** Collected: 05/22/23 15:38 Received: 05/24/23 04:46 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.353 ± 0.664 (1.17) C:NA T:97%	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.952 ± 0.455 (0.794) C:89% T:82%	pCi/L	06/19/23 17:17	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-2D **Lab ID: 60428743017** Collected: 05/22/23 14:43 Received: 05/24/23 04:46 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.217 ± 0.585 (1.09) C:NA T:88%	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.894 ± 0.517 (0.933) C:85% T:90%	pCi/L	06/19/23 20:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1S **Lab ID: 60428743018** Collected: 05/22/23 10:30 Received: 05/24/23 04:46 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.195 ± 0.494 (1.08) C:NA T:97%	pCi/L	06/21/23 12:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.259 ± 0.378 (0.812) C:88% T:88%	pCi/L	06/19/23 20:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AM-1D **Lab ID: 60428743019** Collected: 05/22/23 12:13 Received: 05/24/23 04:46 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.462 (0.935) C:NA T:89%	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.10 ± 0.422 (0.642) C:88% T:84%	pCi/L	06/19/23 13:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.269 ± 0.417 (0.723) C:NA T:96%	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.191 ± 0.366 (0.915) C:82% T:92%	pCi/L	06/19/23 20:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MS-2 **Lab ID: 60428743021** Collected: 05/22/23 12:13 Received: 05/24/23 04:46 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	105.85 %REC ± NA (NA) C:NA T:NA	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	85.94 %REC ± NA (NA) C:NA T:NA	pCi/L	06/19/23 13:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MSD-2	Lab ID: 60428743022	Collected: 05/22/23 12:13	Received: 05/24/23 04:46	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	113.90 %REC 7.33RPD ± NA (NA) C:NA T:NA	pCi/L	06/21/23 12:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	86.30 %REC 0.42RPD ± NA (NA) C:NA T:NA	pCi/L	06/19/23 13:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-AMW-8 **Lab ID: 60428743023** Collected: 05/24/23 18:57 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.875 ± 1.01 (1.65) C:NA T:83%	pCi/L	06/20/23 12:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.906 ± 0.472 (0.853) C:81% T:80%	pCi/L	06/15/23 12:28	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-33(D) **Lab ID: 60428743025** Collected: 05/24/23 12:10 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.336 ± 0.660 (1.18) C:NA T:84%	pCi/L	06/20/23 13:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.645 ± 0.480 (0.931) C:77% T:81%	pCi/L	06/15/23 15:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: L-MW-34(D) Lab ID: 60428743026 Collected: 05/24/23 13:57 Received: 05/26/23 04:34 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0753 ± 0.390 (0.810) C:NA T:87%	pCi/L	06/20/23 13:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.35 ± 0.508 (0.795) C:91% T:81%	pCi/L	06/15/23 15:45	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3M **Lab ID: 60428743027** Collected: 05/25/23 10:05 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.0743 ± 0.600 (1.18) C:NA T:88%	pCi/L	06/20/23 13:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.22 ± 0.499 (0.810) C:88% T:80%	pCi/L	06/15/23 15:45	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-3D **Lab ID: 60428743028** Collected: 05/25/23 11:14 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.579 ± 0.496 (1.26) C:NA T:87%	pCi/L	06/20/23 13:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.536 ± 0.416 (0.830) C:89% T:79%	pCi/L	06/15/23 15:46	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-TP-4D **Lab ID: 60428743029** Collected: 05/24/23 10:06 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	1.94 ± 1.03 (1.24) C:NA T:83%	pCi/L	06/20/23 13:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.77 ± 0.595 (0.874) C:90% T:83%	pCi/L	06/15/23 15:46	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-2 **Lab ID: 60428743030** Collected: 05/24/23 00:00 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.353 ± 0.774 (1.40) C:NA T:85%	pCi/L	06/20/23 13:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.481 ± 0.341 (0.658) C:90% T:82%	pCi/L	06/15/23 15:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-DUP-3 **Lab ID: 60428743031** Collected: 05/25/23 00:00 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.0837 ± 0.786 (1.57) C:NA T:82%	pCi/L	06/20/23 13:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.585 ± 0.343 (0.623) C:88% T:85%	pCi/L	06/15/23 15:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-2 **Lab ID: 60428743032** Collected: 05/24/23 12:25 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.355 ± 0.541 (0.931) C:NA T:92%	pCi/L	06/20/23 13:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0643 ± 0.304 (0.693) C:87% T:85%	pCi/L	06/15/23 15:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-CA-FB-3 **Lab ID: 60428743033** Collected: 05/24/23 18:37 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.296 ± 0.460 (0.796) C:NA T:93%	pCi/L	06/20/23 13:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.691 ± 0.429 (0.819) C:89% T:84%	pCi/L	06/15/23 15:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.308 ± 0.620 (0.996) C:NA T:94%	pCi/L	06/04/23 12:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.739 ± 0.412 (0.737) C:79% T:80%	pCi/L	05/30/23 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.249 ± 0.500 (0.804) C:NA T:98%	pCi/L	06/04/23 12:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.519 ± 0.329 (0.605) C:82% T:86%	pCi/L	05/30/23 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-1S **Lab ID: 60428743003** Collected: 05/12/23 09:04 Received: 05/13/23 04:43 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.557 ± 0.457 (0.609) C:NA T:90%	pCi/L	06/04/23 12:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.171 ± 0.275 (0.691) C:80% T:85%	pCi/L	05/30/23 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-MW-26 **Lab ID: 60429091008** Collected: 05/18/23 12:35 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.535 (1.08) C:NA T:94%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.192 ± 0.331 (0.723) C:78% T:87%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.237 ± 0.465 (1.11) C:NA T:80%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.518 ± 0.474 (0.973) C:75% T:79%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0855 ± 0.503 (1.12) C:NA T:86%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.800 ± 0.460 (0.859) C:82% T:79%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-8S **Lab ID: 60429254004** Collected: 05/18/23 14:00 Received: 05/20/23 04:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0744 ± 0.386 (0.894) C:NA T:91%	pCi/L	06/20/23 12:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.578 ± 0.398 (0.774) C:84% T:83%	pCi/L	06/15/23 12:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Sample: L-LMW-4S **Lab ID: 60428743024** Collected: 05/24/23 17:13 Received: 05/26/23 04:34 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.229 ± 0.579 (1.08) C:NA T:90%	pCi/L	06/20/23 13:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.258 ± 0.322 (0.676) C:81% T:82%	pCi/L	06/15/23 15:01	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	592611	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60428743021, 60428743022

METHOD BLANK:	2879387	Matrix:	Water
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Associated Lab Samples: 60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60428743021, 60428743022

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.346 ± 0.322 (0.659) C:86% T:87%	pCi/L	06/19/23 13:13	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	592593	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743010, 60428743011, 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033, 60429091008, 60429254001, 60429254003, 60429254004

METHOD BLANK:	2879344	Matrix:	Water
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Associated Lab Samples: 60428743010, 60428743011, 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.512 ± 0.336 (0.628) C:77% T:85%	pCi/L	06/15/23 12:27	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	592579	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743004, 60428743005, 60428743006, 60428743007, 60428743008

METHOD BLANK: 2879318 Matrix: Water

Associated Lab Samples: 60428743004, 60428743005, 60428743006, 60428743007, 60428743008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.156 ± 0.265 (0.654) C:90% T:86%	pCi/L	06/15/23 15:42	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 592577

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743004, 60428743005, 60428743006, 60428743007, 60428743008

METHOD BLANK: 2879316

Matrix: Water

Associated Lab Samples: 60428743004, 60428743005, 60428743006, 60428743007, 60428743008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.230 (0.371) C:NA T:99%	pCi/L	06/19/23 16:04	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 589280

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 2863817

Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0341 ± 0.267 (0.480) C:NA T:99%	pCi/L	06/04/23 11:44	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	592610	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60428743021, 60428743022		

METHOD BLANK:	2879385	Matrix:	Water
Associated Lab Samples:	60428743016, 60428743017, 60428743018, 60428743019, 60428743020, 60428743021, 60428743022		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.284 ± 0.297 (0.418) C:NA T:93%	pCi/L	06/21/23 12:23	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch: 589281

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743001, 60428743002, 60428743003

METHOD BLANK: 2863818

Matrix: Water

Associated Lab Samples: 60428743001, 60428743002, 60428743003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0118 ± 0.290 (0.679) C:83% T:80%	pCi/L	05/30/23 14:52	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

QC Batch:	592591	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60428743010, 60428743011, 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033, 60429091008, 60429254001, 60429254003, 60429254004

METHOD BLANK:	2879343	Matrix:	Water
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Associated Lab Samples: 60428743010, 60428743011, 60428743023, 60428743024, 60428743025, 60428743026, 60428743027, 60428743028, 60428743029, 60428743030, 60428743031, 60428743032, 60428743033, 60429091008, 60429254001, 60429254003, 60429254004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.245 (0.144) C:NA T:100%	pCi/L	06/20/23 12:59	

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QUALIFIERS

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H1 Analysis conducted outside the EPA method holding time.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743001	L-BMW-1S	EPA 200.7	847355	EPA 200.7	847429
60428743002	L-BMW-2S	EPA 200.7	847355	EPA 200.7	847429
60428743003	L-LMW-1S	EPA 200.7	847355	EPA 200.7	847429
60428743004	L-S-1	EPA 200.7	848866	EPA 200.7	848950
60428743005	L-TP-1D	EPA 200.7	848874	EPA 200.7	848947
60428743006	L-CA-DUP-1	EPA 200.7	848874	EPA 200.7	848947
60429091008	L-MW-26	EPA 200.7	852043	EPA 200.7	852106
60429254001	L-LMW-2S	EPA 200.7	852043	EPA 200.7	852106
60429254003	L-LMW-7S	EPA 200.7	852043	EPA 200.7	852106
60429254004	L-LMW-8S	EPA 200.7	852043	EPA 200.7	852106
60428743010	L-MW-35(D)	EPA 200.7	852043	EPA 200.7	852106
60428743011	L-MW-24	EPA 200.7	852043	EPA 200.7	852106
60428743016	L-TP-2M	EPA 200.7	849318	EPA 200.7	849452
60428743017	L-TP-2D	EPA 200.7	849318	EPA 200.7	849452
60428743018	L-AM-1S	EPA 200.7	849318	EPA 200.7	849452
60428743019	L-AM-1D	EPA 200.7	849318	EPA 200.7	849452
60428743020	L-CA-FB-1	EPA 200.7	849318	EPA 200.7	849452
60428743023	L-AMW-8	EPA 200.7	849921	EPA 200.7	849977
60428743024	L-LMW-4S	EPA 200.7	849921	EPA 200.7	849977
60428743025	L-MW-33(D)	EPA 200.7	849921	EPA 200.7	849977
60428743026	L-MW-34(D)	EPA 200.7	849921	EPA 200.7	849977
60428743027	L-TP-3M	EPA 200.7	849921	EPA 200.7	849977
60428743028	L-TP-3D	EPA 200.7	849921	EPA 200.7	849977
60428743029	L-TP-4D	EPA 200.7	849921	EPA 200.7	849977
60428743030	L-CA-DUP-2	EPA 200.7	849921	EPA 200.7	849977
60428743031	L-CA-DUP-3	EPA 200.7	849921	EPA 200.7	849977
60428743032	L-CA-FB-2	EPA 200.7	849921	EPA 200.7	849977
60428743033	L-CA-FB-3	EPA 200.7	849921	EPA 200.7	849977
60428743001	L-BMW-1S	EPA 200.8	847356	EPA 200.8	847431
60428743002	L-BMW-2S	EPA 200.8	847356	EPA 200.8	847431
60428743003	L-LMW-1S	EPA 200.8	847356	EPA 200.8	847431
60428743004	L-S-1	EPA 200.8	848867	EPA 200.8	848949
60428743005	L-TP-1D	EPA 200.8	848875	EPA 200.8	848948
60428743006	L-CA-DUP-1	EPA 200.8	848875	EPA 200.8	848948
60429091008	L-MW-26	EPA 200.8	852044	EPA 200.8	852107
60429254001	L-LMW-2S	EPA 200.8	852044	EPA 200.8	852107
60429254003	L-LMW-7S	EPA 200.8	852044	EPA 200.8	852107
60429254004	L-LMW-8S	EPA 200.8	852044	EPA 200.8	852107
60428743010	L-MW-35(D)	EPA 200.8	852044	EPA 200.8	852107
60428743011	L-MW-24	EPA 200.8	852044	EPA 200.8	852107
60428743016	L-TP-2M	EPA 200.8	849319	EPA 200.8	849453
60428743017	L-TP-2D	EPA 200.8	849319	EPA 200.8	849453
60428743018	L-AM-1S	EPA 200.8	849319	EPA 200.8	849453
60428743019	L-AM-1D	EPA 200.8	849319	EPA 200.8	849453

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743020	L-CA-FB-1	EPA 200.8	849319	EPA 200.8	849453
60428743023	L-AMW-8	EPA 200.8	849920	EPA 200.8	849976
60428743024	L-LMW-4S	EPA 200.8	849920	EPA 200.8	849976
60428743025	L-MW-33(D)	EPA 200.8	849920	EPA 200.8	849976
60428743026	L-MW-34(D)	EPA 200.8	849920	EPA 200.8	849976
60428743027	L-TP-3M	EPA 200.8	849920	EPA 200.8	849976
60428743028	L-TP-3D	EPA 200.8	849920	EPA 200.8	849976
60428743029	L-TP-4D	EPA 200.8	849920	EPA 200.8	849976
60428743030	L-CA-DUP-2	EPA 200.8	849920	EPA 200.8	849976
60428743031	L-CA-DUP-3	EPA 200.8	849920	EPA 200.8	849976
60428743032	L-CA-FB-2	EPA 200.8	849920	EPA 200.8	849976
60428743033	L-CA-FB-3	EPA 200.8	849920	EPA 200.8	849976
60428743001	L-BMW-1S	EPA 7470	850767	EPA 7470	850864
60428743002	L-BMW-2S	EPA 7470	850767	EPA 7470	850864
60428743003	L-LMW-1S	EPA 7470	850767	EPA 7470	850864
60428743004	L-S-1	EPA 7470	851103	EPA 7470	851259
60428743005	L-TP-1D	EPA 7470	851103	EPA 7470	851259
60428743006	L-CA-DUP-1	EPA 7470	851103	EPA 7470	851259
60429091008	L-MW-26	EPA 7470	851874	EPA 7470	852026
60429254001	L-LMW-2S	EPA 7470	851874	EPA 7470	852026
60429254003	L-LMW-7S	EPA 7470	851874	EPA 7470	852026
60429254004	L-LMW-8S	EPA 7470	851874	EPA 7470	852026
60428743010	L-MW-35(D)	EPA 7470	851874	EPA 7470	852026
60428743011	L-MW-24	EPA 7470	851874	EPA 7470	852026
60428743016	L-TP-2M	EPA 7470	851875	EPA 7470	852028
60428743017	L-TP-2D	EPA 7470	851875	EPA 7470	852028
60428743018	L-AM-1S	EPA 7470	851875	EPA 7470	852028
60428743019	L-AM-1D	EPA 7470	851875	EPA 7470	852028
60428743020	L-CA-FB-1	EPA 7470	851875	EPA 7470	852028
60428743023	L-AMW-8	EPA 7470	851877	EPA 7470	852029
60428743024	L-LMW-4S	EPA 7470	851877	EPA 7470	852029
60428743025	L-MW-33(D)	EPA 7470	851877	EPA 7470	852029
60428743026	L-MW-34(D)	EPA 7470	851877	EPA 7470	852029
60428743027	L-TP-3M	EPA 7470	851877	EPA 7470	852029
60428743028	L-TP-3D	EPA 7470	851877	EPA 7470	852029
60428743029	L-TP-4D	EPA 7470	851877	EPA 7470	852029
60428743030	L-CA-DUP-2	EPA 7470	851877	EPA 7470	852029
60428743031	L-CA-DUP-3	EPA 7470	851877	EPA 7470	852029
60428743032	L-CA-FB-2	EPA 7470	851877	EPA 7470	852029
60428743033	L-CA-FB-3	EPA 7470	851877	EPA 7470	852029
60428743001	L-BMW-1S	EPA 903.1	589280		
60428743002	L-BMW-2S	EPA 903.1	589280		
60428743003	L-LMW-1S	EPA 903.1	589280		
60428743004	L-S-1	EPA 903.1	592577		
60428743005	L-TP-1D	EPA 903.1	592577		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743006	L-CA-DUP-1	EPA 903.1	592577		
60428743007	L-MS-1	EPA 903.1	592577		
60428743008	L-MSD-1	EPA 903.1	592577		
60429091008	L-MW-26	EPA 903.1	592591		
60429254001	L-LMW-2S	EPA 903.1	592591		
60429254003	L-LMW-7S	EPA 903.1	592591		
60429254004	L-LMW-8S	EPA 903.1	592591		
60428743010	L-MW-35(D)	EPA 903.1	592591		
60428743011	L-MW-24	EPA 903.1	592591		
60428743016	L-TP-2M	EPA 903.1	592610		
60428743017	L-TP-2D	EPA 903.1	592610		
60428743018	L-AM-1S	EPA 903.1	592610		
60428743019	L-AM-1D	EPA 903.1	592610		
60428743020	L-CA-FB-1	EPA 903.1	592610		
60428743021	L-MS-2	EPA 903.1	592610		
60428743022	L-MSD-2	EPA 903.1	592610		
60428743023	L-AMW-8	EPA 903.1	592591		
60428743024	L-LMW-4S	EPA 903.1	592591		
60428743025	L-MW-33(D)	EPA 903.1	592591		
60428743026	L-MW-34(D)	EPA 903.1	592591		
60428743027	L-TP-3M	EPA 903.1	592591		
60428743028	L-TP-3D	EPA 903.1	592591		
60428743029	L-TP-4D	EPA 903.1	592591		
60428743030	L-CA-DUP-2	EPA 903.1	592591		
60428743031	L-CA-DUP-3	EPA 903.1	592591		
60428743032	L-CA-FB-2	EPA 903.1	592591		
60428743033	L-CA-FB-3	EPA 903.1	592591		
60428743001	L-BMW-1S	EPA 904.0	589281		
60428743002	L-BMW-2S	EPA 904.0	589281		
60428743003	L-LMW-1S	EPA 904.0	589281		
60428743004	L-S-1	EPA 904.0	592579		
60428743005	L-TP-1D	EPA 904.0	592579		
60428743006	L-CA-DUP-1	EPA 904.0	592579		
60428743007	L-MS-1	EPA 904.0	592579		
60428743008	L-MSD-1	EPA 904.0	592579		
60429091008	L-MW-26	EPA 904.0	592593		
60429254001	L-LMW-2S	EPA 904.0	592593		
60429254003	L-LMW-7S	EPA 904.0	592593		
60429254004	L-LMW-8S	EPA 904.0	592593		
60428743010	L-MW-35(D)	EPA 904.0	592593		
60428743011	L-MW-24	EPA 904.0	592593		
60428743016	L-TP-2M	EPA 904.0	592611		
60428743017	L-TP-2D	EPA 904.0	592611		
60428743018	L-AM-1S	EPA 904.0	592611		
60428743019	L-AM-1D	EPA 904.0	592611		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743020	L-CA-FB-1	EPA 904.0	592611		
60428743021	L-MS-2	EPA 904.0	592611		
60428743022	L-MSD-2	EPA 904.0	592611		
60428743023	L-AMW-8	EPA 904.0	592593		
60428743024	L-LMW-4S	EPA 904.0	592593		
60428743025	L-MW-33(D)	EPA 904.0	592593		
60428743026	L-MW-34(D)	EPA 904.0	592593		
60428743027	L-TP-3M	EPA 904.0	592593		
60428743028	L-TP-3D	EPA 904.0	592593		
60428743029	L-TP-4D	EPA 904.0	592593		
60428743030	L-CA-DUP-2	EPA 904.0	592593		
60428743031	L-CA-DUP-3	EPA 904.0	592593		
60428743032	L-CA-FB-2	EPA 904.0	592593		
60428743033	L-CA-FB-3	EPA 904.0	592593		
60428743001	L-BMW-1S	SM 2320B	847594		
60428743002	L-BMW-2S	SM 2320B	847594		
60428743003	L-LMW-1S	SM 2320B	847594		
60428743004	L-S-1	SM 2320B	848549		
60428743005	L-TP-1D	SM 2320B	848549		
60428743006	L-CA-DUP-1	SM 2320B	848549		
60429091008	L-MW-26	SM 2320B	848809		
60429254001	L-LMW-2S	SM 2320B	848809		
60429254003	L-LMW-7S	SM 2320B	848809		
60429254004	L-LMW-8S	SM 2320B	848809		
60428743010	L-MW-35(D)	SM 2320B	848810		
60428743011	L-MW-24	SM 2320B	848809		
60428743016	L-TP-2M	SM 2320B	849024		
60428743017	L-TP-2D	SM 2320B	849026		
60428743018	L-AM-1S	SM 2320B	849026		
60428743019	L-AM-1D	SM 2320B	849026		
60428743020	L-CA-FB-1	SM 2320B	849026		
60428743023	L-AMW-8	SM 2320B	850364		
60428743024	L-LMW-4S	SM 2320B	850364		
60428743025	L-MW-33(D)	SM 2320B	850364		
60428743026	L-MW-34(D)	SM 2320B	850364		
60428743027	L-TP-3M	SM 2320B	850365		
60428743028	L-TP-3D	SM 2320B	850365		
60428743029	L-TP-4D	SM 2320B	850364		
60428743030	L-CA-DUP-2	SM 2320B	850364		
60428743031	L-CA-DUP-3	SM 2320B	850365		
60428743032	L-CA-FB-2	SM 2320B	850365		
60428743033	L-CA-FB-3	SM 2320B	850365		

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743001	L-BMW-1S	SM 2540C	847756		
60428743002	L-BMW-2S	SM 2540C	847756		
60428743003	L-LMW-1S	SM 2540C	848073		
60428743004	L-S-1	SM 2540C	848506		
60428743005	L-TP-1D	SM 2540C	848506		
60428743006	L-CA-DUP-1	SM 2540C	848506		
60429091008	L-MW-26	SM 2540C	849038		
60429254001	L-LMW-2S	SM 2540C	849038		
60429254003	L-LMW-7S	SM 2540C	848758		
60429254004	L-LMW-8S	SM 2540C	848758		
60428743010	L-MW-35(D)	SM 2540C	849038		
60428743011	L-MW-24	SM 2540C	848758		
60428743016	L-TP-2M	SM 2540C	849292		
60428743017	L-TP-2D	SM 2540C	849292		
60428743018	L-AM-1S	SM 2540C	849292		
60428743019	L-AM-1D	SM 2540C	849292		
60428743020	L-CA-FB-1	SM 2540C	849292		
60428743023	L-AMW-8	SM 2540C	849982		
60428743024	L-LMW-4S	SM 2540C	849982		
60428743025	L-MW-33(D)	SM 2540C	849982		
60428743026	L-MW-34(D)	SM 2540C	849982		
60428743027	L-TP-3M	SM 2540C	849982		
60428743028	L-TP-3D	SM 2540C	849982		
60428743029	L-TP-4D	SM 2540C	849982		
60428743030	L-CA-DUP-2	SM 2540C	849982		
60428743031	L-CA-DUP-3	SM 2540C	849982		
60428743032	L-CA-FB-2	SM 2540C	849982		
60428743033	L-CA-FB-3	SM 2540C	849982		
60428743001	L-BMW-1S	SM 3500-Fe B#4	851400		
60428743002	L-BMW-2S	SM 3500-Fe B#4	851400		
60428743003	L-LMW-1S	SM 3500-Fe B#4	851400		
60428743004	L-S-1	SM 3500-Fe B#4	853361		
60428743005	L-TP-1D	SM 3500-Fe B#4	853361		
60428743006	L-CA-DUP-1	SM 3500-Fe B#4	853361		
60429091008	L-MW-26	SM 3500-Fe B#4	853361		
60429254001	L-LMW-2S	SM 3500-Fe B#4	853361		
60429254003	L-LMW-7S	SM 3500-Fe B#4	853361		
60429254004	L-LMW-8S	SM 3500-Fe B#4	853361		
60428743010	L-MW-35(D)	SM 3500-Fe B#4	853361		
60428743011	L-MW-24	SM 3500-Fe B#4	853361		
60428743016	L-TP-2M	SM 3500-Fe B#4	853361		
60428743017	L-TP-2D	SM 3500-Fe B#4	853361		
60428743018	L-AM-1S	SM 3500-Fe B#4	853361		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743019	L-AM-1D	SM 3500-Fe B#4	853362		
60428743020	L-CA-FB-1	SM 3500-Fe B#4	853362		
60428743023	L-AMW-8	SM 3500-Fe B#4	853362		
60428743024	L-LMW-4S	SM 3500-Fe B#4	853362		
60428743025	L-MW-33(D)	SM 3500-Fe B#4	853362		
60428743026	L-MW-34(D)	SM 3500-Fe B#4	853362		
60428743027	L-TP-3M	SM 3500-Fe B#4	853362		
60428743028	L-TP-3D	SM 3500-Fe B#4	853362		
60428743029	L-TP-4D	SM 3500-Fe B#4	853362		
60428743030	L-CA-DUP-2	SM 3500-Fe B#4	853362		
60428743031	L-CA-DUP-3	SM 3500-Fe B#4	853362		
60428743032	L-CA-FB-2	SM 3500-Fe B#4	853362		
60428743033	L-CA-FB-3	SM 3500-Fe B#4	853362		
60428743001	L-BMW-1S	SM 3500-Fe B#4	847702		
60428743002	L-BMW-2S	SM 3500-Fe B#4	847702		
60428743003	L-LMW-1S	SM 3500-Fe B#4	847702		
60428743004	L-S-1	SM 3500-Fe B#4	849845		
60428743005	L-TP-1D	SM 3500-Fe B#4	849845		
60428743006	L-CA-DUP-1	SM 3500-Fe B#4	849845		
60429091008	L-MW-26	SM 3500-Fe B#4	849845		
60429254001	L-LMW-2S	SM 3500-Fe B#4	849845		
60429254003	L-LMW-7S	SM 3500-Fe B#4	849845		
60429254004	L-LMW-8S	SM 3500-Fe B#4	849845		
60428743010	L-MW-35(D)	SM 3500-Fe B#4	849845		
60428743011	L-MW-24	SM 3500-Fe B#4	849845		
60428743016	L-TP-2M	SM 3500-Fe B#4	849845		
60428743017	L-TP-2D	SM 3500-Fe B#4	849845		
60428743018	L-AM-1S	SM 3500-Fe B#4	849845		
60428743019	L-AM-1D	SM 3500-Fe B#4	849845		
60428743020	L-CA-FB-1	SM 3500-Fe B#4	849845		
60428743023	L-AMW-8	SM 3500-Fe B#4	850307		
60428743024	L-LMW-4S	SM 3500-Fe B#4	850307		
60428743025	L-MW-33(D)	SM 3500-Fe B#4	850307		
60428743026	L-MW-34(D)	SM 3500-Fe B#4	850307		
60428743027	L-TP-3M	SM 3500-Fe B#4	850307		
60428743028	L-TP-3D	SM 3500-Fe B#4	850307		
60428743029	L-TP-4D	SM 3500-Fe B#4	850307		
60428743030	L-CA-DUP-2	SM 3500-Fe B#4	850307		
60428743031	L-CA-DUP-3	SM 3500-Fe B#4	850307		
60428743032	L-CA-FB-2	SM 3500-Fe B#4	850307		
60428743033	L-CA-FB-3	SM 3500-Fe B#4	850307		
60428743001	L-BMW-1S	SM 4500-S-2 D	847767		
60428743002	L-BMW-2S	SM 4500-S-2 D	847767		
60428743003	L-LMW-1S	SM 4500-S-2 D	848075		
60428743004	L-S-1	SM 4500-S-2 D	848375		
60428743005	L-TP-1D	SM 4500-S-2 D	848375		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743006	L-CA-DUP-1	SM 4500-S-2 D	848375		
60429091008	L-MW-26	SM 4500-S-2 D	849293		
60429254001	L-LMW-2S	SM 4500-S-2 D	849293		
60429254003	L-LMW-7S	SM 4500-S-2 D	848817		
60429254004	L-LMW-8S	SM 4500-S-2 D	848817		
60428743010	L-MW-35(D)	SM 4500-S-2 D	849293		
60428743011	L-MW-24	SM 4500-S-2 D	848817		
60428743016	L-TP-2M	SM 4500-S-2 D	849293		
60428743017	L-TP-2D	SM 4500-S-2 D	849293		
60428743018	L-AM-1S	SM 4500-S-2 D	849293		
60428743019	L-AM-1D	SM 4500-S-2 D	849293		
60428743020	L-CA-FB-1	SM 4500-S-2 D	849293		
60428743023	L-AMW-8	SM 4500-S-2 D	849983		
60428743024	L-LMW-4S	SM 4500-S-2 D	849983		
60428743025	L-MW-33(D)	SM 4500-S-2 D	849983		
60428743026	L-MW-34(D)	SM 4500-S-2 D	849983		
60428743027	L-TP-3M	SM 4500-S-2 D	850271		
60428743028	L-TP-3D	SM 4500-S-2 D	850271		
60428743029	L-TP-4D	SM 4500-S-2 D	849983		
60428743030	L-CA-DUP-2	SM 4500-S-2 D	849983		
60428743031	L-CA-DUP-3	SM 4500-S-2 D	850271		
60428743032	L-CA-FB-2	SM 4500-S-2 D	849983		
60428743033	L-CA-FB-3	SM 4500-S-2 D	849983		
60428743001	L-BMW-1S	EPA 300.0	849825		
60428743002	L-BMW-2S	EPA 300.0	849825		
60428743003	L-LMW-1S	EPA 300.0	849825		
60428743004	L-S-1	EPA 300.0	850451		
60428743005	L-TP-1D	EPA 300.0	850451		
60428743006	L-CA-DUP-1	EPA 300.0	850451		
60429091008	L-MW-26	EPA 300.0	851544		
60429254001	L-LMW-2S	EPA 300.0	851545		
60429254003	L-LMW-7S	EPA 300.0	851544		
60429254004	L-LMW-8S	EPA 300.0	851544		
60428743010	L-MW-35(D)	EPA 300.0	851544		
60428743011	L-MW-24	EPA 300.0	851544		
60428743016	L-TP-2M	EPA 300.0	852062		
60428743017	L-TP-2D	EPA 300.0	852062		
60428743018	L-AM-1S	EPA 300.0	852062		
60428743019	L-AM-1D	EPA 300.0	852062		
60428743020	L-CA-FB-1	EPA 300.0	852062		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60428743

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428743023	L-AMW-8	EPA 300.0	852884		
60428743024	L-LMW-4S	EPA 300.0	852884		
60428743025	L-MW-33(D)	EPA 300.0	852884		
60428743026	L-MW-34(D)	EPA 300.0	852884		
60428743027	L-TP-3M	EPA 300.0	852947		
60428743028	L-TP-3D	EPA 300.0	852947		
60428743029	L-TP-4D	EPA 300.0	852884		
60428743030	L-CA-DUP-2	EPA 300.0	852947		
60428743031	L-CA-DUP-3	EPA 300.0	852947		
60428743032	L-CA-FB-2	EPA 300.0	852947		
60428743033	L-CA-FB-3	EPA 300.0	852947		

REPORT OF LABORATORY ANALYSIS

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WO#: 60428743



DC#_Title: ENV-FRM-LENE-0009_Sample Con

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Recksmith Geoenig

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 08/05 Corr. Factor +0.2 Corrected 1.0/0.7/19.7

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 19.5

W 5/15/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>NT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Client: Rocksmitth Geoeny

Profile # 15857-1

Site:

Notes AG2S=SI-21WET / BPIN= Radium

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT												1						1			2	1			1				1
3	WT												1						1			2	1			1				1
4	WT												1						1			2	1			1				1
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass		Plastic										Misc.					
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab										
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate										
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag										
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter										
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes										
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit										
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can										
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic												
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic												
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate												
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic												
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water										
BG3H	250mL HCl Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid										
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid										
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL										
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe										
				BP4U	125mL unpreserved plastic	DW	Drinking Water										
				BP4N	125mL HNO3 plastic												
				BP4S	125mL H2SO4 plastic												
				WPDU	16oz unpreserved plastic												

Work Order Number: 10005143

Work Order Number:



DC#_Title: ENV-FRM-LENE-0009_Sample C

Revision: 2

Effective Date: 01/12/2022

WO#: 60428743



Client Name: Rocksmitz Geoen9

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.8/2.1 Corr. Factor +0.2 Corrected 2.0/2.3

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 1.7/15.9 1-9/161

PV 5/18/23

Chain of Custody present: Yes No N/A

Chain of Custody relinquished: Yes No N/A

Samples arrived within holding time: Yes No N/A

Short Hold Time analyses (<72hr): Yes No N/A

Rush Turn Around Time requested: Yes No N/A

Sufficient volume: Yes No N/A

Correct containers used: Yes No N/A

Pace containers used: Yes No N/A

Containers intact: Yes No N/A

Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A

Filtered volume received for dissolved tests? Yes No N/A

Sample labels match COC: Date / time / ID / analyses Yes No N/A

Samples contain multiple phases? Matrix: Yes No N/A

Containers requiring pH preservation in compliance? Yes No N/A
(HNO₃, H₂SO₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide)
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67181/62071

List sample IDs, volumes, lot #'s of preservative and the date/time added.

Cyanide water sample checks:

Lead acetate strip turns dark? (Record only) Yes No

Potassium iodide test strip turns blue/purple? (Preserve) Yes No

Trip Blank present: Yes No N/A

Headspace in VOA vials (>6mm): Yes No N/A

Samples from USDA Regulated Area: State: Yes No N/A

Additional labels attached to 5035A / TX1005 vials in the field? Yes No N/A

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

1/2
 A625 = SI-211WET

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count
 Revision: 3 | Effective Date: | Issued by: Lenexa

Client: Rocksmith Green

Profile # BP1N = Radium / leave BP3C blank

Notes: Approved to 60428743

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT												1						1		1	2	1		1		1			1
3	WT											3							3		3	2	3		3		3			3
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11	WT												1						1		1	2	1				1			1
12																														

Container Codes

Glass		Plastic										Misc.																			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab																								
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Collform Na Thiosulfate																								
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag																								
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter																								
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes																								
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit																								
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can																								
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic																										
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic																										
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate																										
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic																										
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water																								
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid																								
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid																								
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	Oil																								
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe																								
				BP4U	125mL unpreserved plastic	DW	Drinking Water																								
				BP4N	125mL HNO3 plastic																										
				BP4S	125mL H2SO4 plastic																										
				WPDU	16oz unpreserved plastic																										

Work Order Number: 60428743

2/2

Client: Rocksmitn Geong

Profile #

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2																														
3																														
4																														
5	WT																					2								
6	WT																					2								
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	
BG3H	250mL HCl Clear glass	BP3N 250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	SL Solid
WGDU	16oz clear soil jar	BP3Z 250mL H2SO4 plastic	NAL Non-aqueous Liquid
		BP4U 125mL unpreserved plastic	OL OIL
		BP4N 125mL HNO3 plastic	WP Wipe
		BP4S 125mL H2SO4 plastic	DW Drinking Water
		WPDU 16oz unpreserved plastic	

Work Order Number:

60428743



DC#_Title: ENV-FRM-LENE-0009_Samp

Revision: 2

Effective Date: 01/12/202

WO#: 60428743



Client Name: Rocksmitz

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other Ziploc

Thermometer Used: TDS Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.6 Corr. Factor +0.2 Corrected 16.8

Date and initials of person examining contents: 05-20-2013

Temperature should be above freezing to 6°C 1.6, 1.0, 1.8, 1.2 1.8, 1.2, 2.0, 1.4

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Cooler w/16.8 had only radium
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) <input type="checkbox"/> Yes <input type="checkbox"/> No Potassium iodide test strip turns blue/purple? (Preserve) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 67187, 62071

Client Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company: Rocksmith Geengineers, LLC.
Address: 5233 Roanoke Drive
St. Charles, MO 63304
Email To: mark.haddock@rocksmithgeo.com
Phone: 314-974-6678 Fax: Standard
Requested Due Date/TAT:

Section B
Required Project Information:

Report To: Mark Haddock
Copy To: Jeffrey Ingram
Purchase Order No.:
Project Name: AMEREN LCPC-CA
Project Number: COC #2

Section C
Invoice Information:

Attention:
Company Name: Rocksmith
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #: 15857, line 1

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location
STATE: MO

Requested Analysis Filtered (Y/N)

ITEM #	Valid Matrix Codes MATRIX CODE	Required Client Information	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	PRESERVATIVES				# OF CONTAINERS	UNPRESERVED	ANALYSIS TESTS	DATE	TIME	RECEIVED ON	SEALING	SAMPLING
				COMPOSITE START	COMPOSITE END/GRAB				NaOH	HCl	Na ₂ S ₂ O ₃	Methanol								
1	L-AMW-8		WT G																	
2	L-BMW-1S		WT G																	
3	L-BMW-2S		WT G																	
4	L-LMW-1S		WT G																	
5	L-LMW-2S		WT G	5-19-23	1059				9	2	2	3								
6	L-LMW-4S		WT G	5-18-23	1523				8	2	2	3								
7	L-LMW-7S		WT G	-	1400				8	2	2	3								
8	L-LMW-8S		WT G	5-18-23	1100				8	2	2	3								
9	L-MW-24		WT G	-	1235				8	2	2	3								
10	L-MW-26		WT G																	
11	L-MW-33(D)		WT G																	
12	L-MW-34(D)		WT G																	

Residual Chlorine (Y/N)

Temp In

Received on

Custody

Sealed Cooler

Samples In tact

ADDITIONAL COMMENTS

Grant Moran/Rocksmith 5-19-23 1600 N. Ridge

Grant Moran
Signature of SAMPLER: *Grant Moran*
Signature of SAMPLER: *Grant Moran*

PRINT Name of SAMPLER: Grant Moran
DATE Signed (MM/DD/YYYY): 05/19/23

SAMPLER NAME AND SIGNATURE

DATE Signed (MM/DD/YYYY): 05/19/23



www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
Company: **Rocksmith Geomechanics, LLC.**
Address: **5233 Roanoke Drive**
St. Charles, MO 63304
Email To: mark.haddock@rocksmithgeo.com
Phone: **314-974-6578** Fax: _____
Requested Due Date/TAT: **Standard**

Section B
Required Project Information:
Report To: **Mark Haddock**
Copy To: **Jeffrey Ingram**
Purchase Order No.: _____
Project Name: **AMEREN LCRA-CA**
Project Number: **COC #2**

Section C
Invoice Information:
Attention: _____
Company Name: **Rocksmith**
Address: _____
Pace Quote Reference: _____
Pace Project Manager: **Jamie Church**
Pace Profile #: **15857, line 1**

REGULATORY AGENCY
NPDES _____ GROUND WATER _____ DRINKING WATER _____
UST _____ RCRA _____ OTHER _____
Site Location _____ STATE: **MO**

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WT WATER WW WASTE WATER P PRODUCT SOL SOLID OL AS OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	PRESERVATIVES		Requested Analysis Filtered (Y/N)
		COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	
1	L-MW-35(D)			G	WT			<input checked="" type="checkbox"/>
2	L-S-1			G	WT			<input checked="" type="checkbox"/>
3	L-TP-1D			G	WT			<input checked="" type="checkbox"/>
4	L-TP-2M			G	WT			<input checked="" type="checkbox"/>
5	L-TP-2D			G	WT			<input checked="" type="checkbox"/>
6	L-TP-3M			G	WT			<input checked="" type="checkbox"/>
7	L-TP-3D			G	WT			<input checked="" type="checkbox"/>
8	L-TP-4D			G	WT			<input checked="" type="checkbox"/>
9	L-AM-1S			G	WT			<input checked="" type="checkbox"/>
10	L-AM-1D			G	WT			<input checked="" type="checkbox"/>
11	L-CA-DUP-1			G	WT			<input checked="" type="checkbox"/>
12	L-CA-DUP-2			G	WT			<input checked="" type="checkbox"/>

SECTION D
Additional Comments: _____
*App III and CatVan Metals - EPA 200.7 - Bi, Ca, Fe, Mg, Mn, K, Ni
** App IV Metals - EPA 200.7 - Ba, Be, Co, Cr, Pb, Li, Mo
200.9 Metals - Sb, As, Cd, Cr, Se, Tl
*** Al, Cu, Ni, Ag, Zn + Hardness
Resilium: 226/228 to Pace PA

DATE: **5-19-23** TIME: **1600** ACCEPTED BY / AFFILIATION: *Grant Morry*
DATE: **5-23-23** TIME: **0915** # OF CONTAINERS: **8**
SAMPLE TEMP AT COLLECTION: _____
RELINQUISHED BY / AFFILIATION: _____
DATE: _____ TIME: _____
ACCEPTED BY / AFFILIATION: _____
DATE: **5-23-23** TIME: **0946**
Temp In: **16.8**
Sealed Cooler (Y/N): **N**
Custody (Y/N): **N**
Samples Intact (Y/N): **N**

SAMPLE ID
(A-Z, 0-9 / -)
Sample IDs MUST BE UNIQUE
60428743

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: *Grant Morry*
DATE Signed (MM/DD/YYYY): **05/19/23**
SIGNATURE of SAMPLER: *[Signature]*

WO#: 60428743



60428743



DC#_Title: ENV-FRM-LENE-0009_Sam

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geoen?

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0/1.7/1.9 Corr. Factor +0.2 Corrected 2.2/1.9/2.1

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 1.5/1.8.9/17.1

1.7/1.9.1/17.3

PV 5/24/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>Pour 150ml from BPLU into a BP32 for L-Am-15.</u>
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <u>25/24</u>	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

1/2 Append to 60428743

Client: Rocksmitz Geberg

AG25 = ST-21WET

Profile #

Site:

Notes: BP1N = Sodium / leave BP3C blank.

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other						
1																																				
2																																				
3																																				
4	WT												1							1																
5	WT											1								1																
6																																				
7																																				
8																																				
9	WT												1							1																
10	WT											3								3																
11																																				
12																																				

Container Codes

Glass		Plastic										Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	WT	Water								
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SL	Solid								
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	NAL	Non-aqueous Liquid								
DG9Q	40mL TSP amber vial	BP1U	1L unpreserved plastic	OL	OIL								
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	WP	Wipe								
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	DW	Drinking Water								
DG9U	40mL amber unpreserved	BP2N	500mL HNO3 plastic										
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic										
VG9T	40mL Na Thio. clear vial	BP2U	500mL unpreserved plastic										
VG9U	40mL unpreserved clear vial	BP2Z	500mL NaOH, Zn Acetate										
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic										
BG1U	1liter unpres glass	BP3F	250mL HNO3 plastic - field filtered										
BG3H	250mL HCl Clear glass	BP3N	250mL HNO3 plastic										
BG3U	250mL Unpres Clear glass	BP3U	250mL unpreserved plastic										
WGDU	16oz clear soil jar	BP3Z	250mL H2SO4 plastic										
		BP4U	125mL unpreserved plastic										
		BP4N	125mL HNO3 plastic										
		BP4S	125mL H2SO4 plastic										
		WPDU	16oz unpreserved plastic										

Work Order Number: 60428743

WO#: 60428743



60428743

	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmitth Geoeng

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.9/1.7 Corr. Factor 10.2 Corrected 1.1/1.9

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 1.9/16.9 2.1/17.1

5/26/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
Company: Rocksmith Geotechnicians, LLC.
Address: 5233 Roanoke Drive
St. Charles, MO 63304
Email To: mark.haddock@rocksmithgeo.com
Phone: 314-974-6578
Requested Due Date/TAT: Standard

Section B
Required Project Information:
Report To: Mark Haddock
Copy To: Jeffrey Ingram
Purchase Order No.:
Project Name: AMEREN LCPA-CA
Project Number: COC #2

Section C
Invoice Information:
Attention:
Company Name: Rocksmith
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #: 15857, line 1

REGULATORY AGENCY
NPDES: GROUND WATER
UST: RCRA
OTHER: DRINKING WATER

Site Location: MO
STATE:

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER: DW, WT WASTE WATER: WW PRODUCT LIQUID: P, SL SOLID: OL AIR: AP OTHER: OT, TS	Required Client Information	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	PRESERVATIVES				Requested Analysis Filtered (Y/N)	SAMPLE CONDITIONS																										
				DATE	TIME		DATE	TIME	UNPRESERVED	H ₂ SO ₄		HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226/Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide	UWL Metals***	COD/TOC	TOX	Residual Chlorine (Y/N)								
1	L-MW-35(D)		WT G	5-23-23	10:05	8																																
2	L-S-1		WT G	5-23-23	11:14	8																																
3	L-TP-1D		WT G	5-24-23	10:10	8																																
4	L-TP-2M		WT G																																			
5	L-TP-2D		WT G																																			
6	L-TP-3M		WT G																																			
7	L-TP-3D		WT G																																			
8	L-TP-4D		WT G																																			
9	L-AM-1S		WT G																																			
10	L-AM-1D		WT G																																			
11	L-CA-DUP-1		WT G																																			
12	L-CA-DUP-2		WT G																																			

60428743
Pace Project No./ Lab I.D.

RELEASING BY / AFFILIATION
Grant Mary/Rocksmith 5-23-23 14:30

ACCEPTED BY / AFFILIATION
[Signature]

DATE SIGNED (MM/DD/YY): 05/25/23

PRINT Name of SAMPLER: Grant Mary

SIGNATURE of SAMPLER: [Signature]

DATE SIGNED (MM/DD/YY): 05/25/23

RELINQUISHED BY / AFFILIATION
Grant Mary/Rocksmith 5-23-23 14:30

ACCEPTED BY / AFFILIATION
[Signature]

DATE SIGNED (MM/DD/YY): 05/25/23

PRINT Name of SAMPLER: Grant Mary

SIGNATURE of SAMPLER: [Signature]

DATE SIGNED (MM/DD/YY): 05/25/23

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Mary

SIGNATURE of SAMPLER: [Signature]

DATE SIGNED (MM/DD/YY): 05/25/23



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: **3** of **3**

Section A

Required Client Information:

Company: **Rocksmith Geotechnical, LLC**Address: **5233 Roanoke Drive**City: **St. Charles, MO 63304**Email To: **mark.haddock@rocksmithgeo.com**Phone: **314-974-6578**Requested Due Date/TAT: **Standard****Section B**

Required Project Information:

Report To: **Mark Haddock**Copy To: **Jeffrey Ingram**

Purchase Order No.:

Project Name: **AMEREN LCPA-CA**Project Number: **COC #2****Section C**

Invoice Information:

Attention:

Company Name: **Rocksmith**

Address:

Pace Quote Reference:

Pace Project Manager: **Jamie Church**Pace Profile #: **15857, line 1****REGULATORY AGENCY**NPDES GROUND WATER DRINKING WATER UST RCRA OTHER Site Location MO STATE: **Section D**

Required Client Information

Valid Matrix Codes

MATRIX CODE

DW WT DRINKING WATER
 WW WATER
 P WASTE WATER
 SL PRODUCT
 OL LIQUID
 WP WET
 WT WET
 OT OTHER
 TS SOLID

SAMPLE ID

(A-Z, 0-9 / -)

Sample IDs MUST BE UNIQUE

ITEM #	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Requested Analysis Filtered (Y/N)										SAMPLE CONDITIONS																				
			COMPOSITE START	COMPOSITE END/GRAB		Analysis Test ↑	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226/Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide		UWL Metals **	COD/TOC	TOX	Residual Chlorine (Y/N)																
1	L-CA-DUP-3	WT G	5-25-23	-	8	Unpreserved	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes									
2	L-CA-FB-1	WT G	5-24-23	19:25	8	H2SO4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes								
3	L-CA-FB-2	WT G	5-24-23	18:37	8	Unpreserved	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes								
4	L-CA-FB-3	WT G																																		
5	L-MS-1	WT G																																		
6	L-MSD-1	WT G																																		
7	L-MS-2	WT G																																		
8	L-MSD-2	WT G																																		
9		WT G																																		
10		WT G																																		
11		WT G																																		
12		WT G																																		

60428143
Pace Project No./ Lab I.D.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on	Ice (Y/N)	Custody	Sealed Cooler	Samples In tact
Gant Morey / Pace Labs	5-25-23	1430	Grant Morey	5/26/23	0434	1.9	X	Y	Y	Y	Y
						2.1	Y	Y	Y	Y	Y
						17.1	Y	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: *Grant Morey*

SIGNATURE of SAMPLER: *Grant Morey*

DATE Signed (MM/DD/YY): *05/25/23*

Client: Rocksmitth Geoenig

Profile #

Site:

Notes

2/3 Same as page 1.

COC Line Item	Matrix	DG9H	VG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5																																
6	W												1						1		1	1	2	1							1	
7	W												1						1		1	1	2	1							1	
8	W												1						1		1	1	2	1							1	
9																																
10																																
11																																
12	W												1						1		1	1	2	1							1	

Container Codes

		Glass																Plastic							Misc.														
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic																																		
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic																																		
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic																																		
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic																																		
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate																																		
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic																																		
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic																																		
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic																																		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic																																		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate																																		
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic																																		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered																																		
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic																																		
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic																																		
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic																																		
		AG5U	100mL unpres amber glass	BP3Z	250mL H2SO4 plastic																																		
				BP4U	125mL NaOH, Zn Acetate																																		
				BP4N	125mL unpreserved plastic																																		
				BP4S	125mL H2SO4 plastic																																		
				WPDU	16oz unpreserved plastic																																		

Work Order Number:

60412143

3/3 Same as page 1.

Client: Rocks with beeng Profile #

Site: Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other						
1	WT												1						1			2	1				1									
2																			1			2	1													
3	WT												1						1			2	1													
4	WT												1						1			2	1													
5																			1			2	1													
6																																				
7																																				
8																																				
9																																				
10																																				
11																																				
12																																				

Container Codes

Glass	Plastic	Misc.
DG9B 40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H 40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate -
DG9M 40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q 40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S 40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T 40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U 40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H 40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T 40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U 40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S 1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U 1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H 250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U 250mL Unpres Clear glass	BP3J 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU 16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL Oil
	BP3Z 250mL NaOH, Zn Acetate	WP Wipe
	BP4U 125mL unpreserved plastic	DW Drinking Water
	BP4N 125mL HNO3 plastic	
	BP4S 125mL H2SO4 plastic	
	WPDU 16oz unpreserved plastic	

Work Order Number: 60162743



Memorandum

January 31, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23007

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Labadie Energy Center – LCPA-CA – Data Package 60428743**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a laboratory control sample criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren LCPA-CA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23007
 Validation Date: 1/31/2024

Laboratory: Pace Analytical SDG #: 60428743
 Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
 Matrix: Air Soil/Sed. Water Waste SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide); EPA 903.1/904.0 (Radium 226+228)
 Sample Names L-BMW-1S, L-BMW-2S, L-LMW-1S, L-S-1, L-TP-1D, L-CA-DUP-1, L-MS-1, L-MSD-1, L-MW-35(D), L-MW-24, L-LMW-2S, L-LMW-7S,
L-LMW-8S, L-MW-26, L-TP-2M, L-TP-2D, L-AM-1S, L-AM-1D, L-CA-FB-1, L-MS-2, L-MSD-2, L-AMW-8, L-LMW-4S, L-MW-33(D), L-MW-34(D),
L-TP-3M, L-TP-3D, L-TP-4D, L-CA-DUP-2, L-CA-DUP-3, L-CA-FB-2, L-CA-FB-3

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>5/11/2023 - 5/25/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>
Note Deficiencies: <u>Revised lab data packet includes only parameters relevant to CCR rule sampling.</u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Ferrous iron samples were all analyzed outside of hold time controls. Results qualified as estimates.

Chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3357531: barium (0.75J), calcium (28.4J), iron (16.0J), manganese (1.9J). Associated with samples -001 through -003. Iron and manganese results at -002 < RL, qualified as non-detect at RL.

3364751: calcium (71.0J), iron (16.0J). Associated with samples -016 through -020. Calcium and iron results at -020 < RL, qualified as non-detects at RL's.

3366629: manganese (0.79J). Associated with samples -023 through -033. No qualification necessary.

3374475: arsenic (0.14J), cadmium (0.15J), chromium (0.74J). Associated with samples -010, -011, -008, -001, -003, -004. Several results < RL or < 10x blank, results qualified as estimates.

3374470: barium (0.85J), beryllium (0.17J), calcium (46.0J), iron (19.9J), manganese (0.53J). Associated with samples -010, -011, -008, -001, -003, -004. Several results < RL or < 10x blank, results qualified as estimates.

Field Blanks:

L-CA-FB-1 @ L-AM-1S: calcium (44.5J), boron (10.3J), iron (13.9J), molybdenum (2.3J), ferric iron (0.014J).

L-CA-FB-2 @ L-MW-33(D): boron (13.9J), chromium (0.44J), TDS (6.5), ferric iron (0.0026J).

L-CA-FB-3: boron (10.3J), chromium (0.51J), TDS (9.0), ferric iron (0.0025J).

All field blank-associated results > 10x field blank, no qualification necessary.

Laboratory Control Samples:

3366407: fluoride LCS recovery low, associated with samples -001, -002, -003. All results ND, qualified as UJ.

Duplicates:

L-CA-DUP-1 @ L-S-1: field DUP RPD exceeds limit for ferric iron (40%), iron (37%), radium-228 (22%), and TDS (10%). Results qualified as estimates. Beryllium detected in duplicate and not in parent sample, results qualified as estimates. Chromium detected in parent sample and not in duplicate, results qualified as estimates.

L-CA-DUP-2 @ L-TP-4D: field DUP RPD exceeds control limit for molybdenum (52%), results qualified as estimates. Fluoride detected in duplicate and not in parent sample, results qualified as estimates. Radium-226, radium-228, and sulfide detected in parent sample and not in duplicate, results qualified as estimates.

L-CA-DUP-3 @ L-TP-3D: field DUP RPD exceeds control limit for ferrous iron (32%), results qualified as estimates. Fluoride detected in parent sample and not in duplicate, results qualified as estimates.

Lab duplicate max RPD: 10%: alkalinity, TDS; 15%: chloride, fluoride, sulfate; 20%: ferrous iron, sulfide

3367983: lab DUP RPD exceeds control limits for sulfide (51%), associated with unrelated sample, no qualification necessary.

3366410: lab DUP RPD exceeds control limits for chloride (19%), associated with unrelated sample, no qualification necessary.

3374554: lab DUP RPD exceeds control limits for fluoride (16%), associated with sample -019, result qualified as estimate.

MS/MSD:

3357533/3357534: MS/MSD recovery low for calcium and sodium, associated with unrelated sample, no qualification necessary.

3357535: MS recovery high for calcium, associated with unrelated sample, no qualification necessary.

3363102/3363103: MS/MSD recovery low for calcium, associated with unrelated sample, no qualification necessary.

3363114/3363115: MS recovery low for calcium, MSD recovery and RPD are OK, no qualification necessary.

3364753/3364754: MSD recoveries low for calcium and sodium, MS recoveries and RPD are OK, no qualification necessary.

3366631/3366632: MS recovery low for calcium, MSD recovery and RPD are OK, no qualification necessary.

3360172/3360173: MS/MSD recovery low for sulfide, associated with unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-BMW-1S	Ferrous Iron	1.7	J	Analyzed outside of hold time
L-BMW-2S	"	0.041	UJ	"
L-LMW-1S	"	0.041	UJ	"
L-S-1	"	0.041	UJ	"
L-TP-1D	"	0.054	J	"
L-CA-DUP-1	"	0.041	UJ	"
L-MW-35(D)	"	0.054	J	"
L-MW-24	"	0.041	UJ	"
L-LMW-2S	"	0.041	UJ	"
L-LMW-7S	"	0.041	UJ	"
L-LMW-8S	"	0.041	UJ	"
L-MW-26	"	0.041	UJ	"
L-TP-2M	"	0.041	UJ	"
L-TP-2D	"	0.041	UJ	"
L-AM-1S	"	0.19	J	"
L-AM-1D	"	0.062	J	"
L-CA-FB-1	"	0.041	UJ	"
L-AMW-8	"	0.041	UJ	"
L-LMW-4S	"	0.18	J	"
L-MW-33(D)	"	0.24	J	"
L-MW-34(D)	"	0.41	J	"
L-TP-3M	"	0.47	J	"
L-TP-3D	"	0.22	J	"
L-TP-4D	"	0.28	J	"
L-CA-DUP-2	"	0.29	J	"
L-CA-DUP-3	"	0.16	J	"
L-CA-FB-2	"	0.041	UJ	"
L-CA-FB-3	"	0.041	UJ	"
L-BMW-2S	Iron	50	U	Detected in method blank, result < RL
"	Manganese	5.0	U	"
L-CA-FB-1	Calcium	200	U	"
"	Iron	50	U	"
L-MW-35(D)	Arsenic	1.0	U	Detected in method blank, result < RL
"	Cadmium	0.50	U	"

QA LEVEL II - iNORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-MW-35(D)	Chromium	1.4	J	Detected in method blank, result < 10x blank
L-MW-24	"	1.1	J	"
"	Arsenic	1.0	U	Detected in method blank, result < RL
L-MW-26	"	1.0	U	"
"	Chromium	1.0	U	"
L-LMW-2S	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-LMW-7S	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-LMW-8S	Cadmium	0.50	U	"
"	Chromium	1.0	U	"
L-MW-24	Iron	50	U	"
L-MW-26	Beryllium	1.0	U	"
"	Iron	50	U	"
L-LMW-2S	Iron	50	U	"
"	Manganese	5.0	U	"
L-BMW-1S	Fluoride	0.12	UJ	LCS recovery low
L-BMW-2S	"	0.12	UJ	"
L-LMW-1S	"	0.12	UJ	"
L-CA-DUP-1	Ferric Iron	0.016	J	Field DUP RPD exceeds control limits
L-S-1	"	0.024	J	"
L-CA-DUP-1	Iron	16.3	J	"
L-S-1	"	23.7	J	"
L-CA-DUP-1	Radium-228	0.836	J	"
L-S-1	"	0.673	J	"
L-CA-DUP-1	TDS	526	J	"
L-S-1	"	601	J	"
L-CA-DUP-1	Beryllium	0.28	J	Detected in field DUP, ND in parent sample
L-S-1	"	0.12	UJ	"
L-CA-DUP-1	Chromium	0.3	UJ	Detected in parent sample, ND in field DUP
L-S-1	"	0.36	J	"
L-CA-DUP-2	Molybdenum	2.4	J	Field DUP RPD exceeds control limits
L-TP-4D	"	4.1	J	"
L-CA-DUP-2	Fluoride	0.15	J	Detected in field DUP, ND in parent sample

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TP-4D	Fluoride	0.12	UJ	Detected in field DUP, ND in parent sample
L-CA-DUP-2	Radium-226	1.4	UJ	Detected in parent sample, ND in field DUP
L-TP-4D	"	1.94	J	"
L-CA-DUP-2	Radium-228	0.658	UJ	"
L-TP-4D	"	1.77	J	"
L-CA-DUP-2	Sulfide	0.016	UJ	"
L-TP-4D	"	0.024	J	"
L-CA-DUP-3	Ferrous Iron	0.16	J	Field DUP RPD exceeds control limits
L-TP-3D	"	0.22	J	"
L-CA-DUP-3	Fluoride	0.12	UJ	Detected in parent sample, ND in field DUP
L-TP-3D	"	0.17	J	"
L-AM-1D	Fluoride	0.27	J	Lab DUP RPD exceeds control limits

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ *Grant Morey*

Date: 1/31/2024



August 10, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
5233 Roanoke Drive
Saint Charles, MO 63304

RE: Project: AMEREN-VERIFICATION, LCPA
Pace Project No.: 60433254

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on July 15, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
 Missouri Inorganic Drinking Water Certification #: 10090
 Arkansas Drinking Water
 Arkansas Certification #: 88-00679
 Illinois Certification #: 2000302023-5
 Iowa Certification #: 118
 Kansas/NELAP Certification #: E-10116
 Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1
 Oklahoma Certification #: 2022-057
 Florida: Cert E871149 SEKS WET
 Texas Certification #: T104704407-22-16
 Utah Certification #: KS000212022-12
 Illinois Certification #: 004592
 Kansas Field Laboratory Accreditation: # E-92587
 Missouri SEKS Micro Certification: 10070

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
 Alabama Certification #: 40660
 Alaska Certification 17-026
 Arizona Certification #: AZ0612
 Arkansas Certification #: 88-0469
 California Certification #: 2932
 Canada Certification #: 1461.01
 Colorado Certification #: TN00003
 Connecticut Certification #: PH-0197
 DOD Certification: #1461.01
 EPA# TN00003
 Florida Certification #: E87487
 Georgia DW Certification #: 923
 Georgia Certification: NELAP
 Idaho Certification #: TN00003
 Illinois Certification #: 200008
 Indiana Certification #: C-TN-01
 Iowa Certification #: 364
 Kansas Certification #: E-10277
 Kentucky UST Certification #: 16
 Kentucky Certification #: 90010
 Louisiana Certification #: AI30792
 Louisiana DW Certification #: LA180010
 Maine Certification #: TN0002
 Maryland Certification #: 324
 Massachusetts Certification #: M-TN003
 Michigan Certification #: 9958
 Minnesota Certification #: 047-999-395
 Mississippi Certification #: TN00003
 Missouri Certification #: 340
 Montana Certification #: CERT0086
 Nebraska Certification #: NE-OS-15-05

Nevada Certification #: TN-03-2002-34
 New Hampshire Certification #: 2975
 New Jersey Certification #: TN002
 New Mexico DW Certification
 New York Certification #: 11742
 North Carolina Aquatic Toxicity Certification #: 41
 North Carolina Drinking Water Certification #: 21704
 North Carolina Environmental Certificate #: 375
 North Dakota Certification #: R-140
 Ohio VAP Certification #: CL0069
 Oklahoma Certification #: 9915
 Oregon Certification #: TN200002
 Pennsylvania Certification #: 68-02979
 Rhode Island Certification #: LAO00356
 South Carolina Certification #: 84004
 South Dakota Certification
 Tennessee DW/Chem/Micro Certification #: 2006
 Texas Certification #: T 104704245-17-14
 Texas Mold Certification #: LAB0152
 USDA Soil Permit #: P330-15-00234
 Utah Certification #: TN00003
 Vermont Dept. of Health: ID# VT-2006
 Virginia Certification #: VT2006
 Virginia Certification #: 460132
 Washington Certification #: C847
 West Virginia Certification #: 233
 Wisconsin Certification #: 998093910
 Wyoming UST Certification #: via A2LA 2926.01
 A2LA-ISO 17025 Certification #: 1461.01
 A2LA-ISO 17025 Certification #: 1461.02
 AIHA-LAP/LLC EMLAP Certification #:100789

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SAMPLE SUMMARY

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60433254001	L-UMW-7D	Water	07/14/23 11:08	07/15/23 05:15
60433254002	L-UMW-DUP-1	Water	07/14/23 00:00	07/15/23 05:15
60433254003	L-UMW-9D	Water	07/14/23 11:58	07/15/23 05:15
60433254004	L-UMW-1D	Water	07/13/23 15:49	07/15/23 05:15
60433254005	L-UMW-3D	Water	07/13/23 09:24	07/15/23 05:15
60433254006	L-UMW-5D	Water	07/13/23 10:31	07/15/23 05:15
60433254007	L-UMW-FB-1	Water	07/13/23 10:29	07/15/23 05:15

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SAMPLE ANALYTE COUNT

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60433254001	L-UMW-7D	EPA 200.7	MA1	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
60433254002	L-UMW-DUP-1	EPA 200.7	MA1	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
60433254003	L-UMW-9D	EPA 200.7	MA1	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
60433254004	L-UMW-1D	EPA 200.7	MA1	1	PASI-K
		EPA 9020	SJF	1	PAN
60433254005	L-UMW-3D	EPA 9020	SJF	1	PAN
60433254006	L-UMW-5D	EPA 200.7	MA1	1	PASI-K
		SM 2540C	BDH1	1	PASI-K
60433254007	L-UMW-FB-1	EPA 200.7	MA1	1	PASI-K
		SM 2540C	BDH1	1	PASI-K

PAN = Pace National - Mt. Juliet

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-7D Lab ID: 60433254001 Collected: 07/14/23 11:08 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	133000	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:18	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	495	mg/L	10.0	10.0	1		07/20/23 10:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-DUP-1 Lab ID: 60433254002 Collected: 07/14/23 00:00 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	131000	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:28	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	494	mg/L	10.0	10.0	1		07/20/23 10:03		

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-9D Lab ID: 60433254003 Collected: 07/14/23 11:58 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	110000	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:30	7440-70-2	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	475	mg/L	10.0	10.0	1		07/20/23 10:03		

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-1D Lab ID: 60433254004 Collected: 07/13/23 15:49 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	143000	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:33	7440-70-2	
Wet Chemistry 9020B	Analytical Method: EPA 9020 Preparation Method: 9020B Pace National - Mt. Juliet								
Total Organic Halides	<27.7	ug/L	100	27.7	1	08/03/23 10:14	08/03/23 10:14		

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-3D Lab ID: 60433254005 Collected: 07/13/23 09:24 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Wet Chemistry 9020B									
Analytical Method: EPA 9020 Preparation Method: 9020B									
Pace National - Mt. Juliet									
Total Organic Halides	<27.7	ug/L	100	27.7	1	08/07/23 19:10	08/07/23 19:10		

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-5D Lab ID: 60433254006 Collected: 07/13/23 10:31 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	82100	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:35	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	626	mg/L	10.0	10.0	1		07/20/23 10:02		

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Sample: L-UMW-FB-1 Lab ID: 60433254007 Collected: 07/13/23 10:29 Received: 07/15/23 05:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	37.6J	ug/L	200	26.9	1	07/19/23 12:42	07/24/23 18:37	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	11.5	mg/L	5.0	5.0	1		07/20/23 10:02		

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

QC Batch:	857119	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60433254001, 60433254002, 60433254003, 60433254004, 60433254006, 60433254007

METHOD BLANK: 3394170 Matrix: Water
 Associated Lab Samples: 60433254001, 60433254002, 60433254003, 60433254004, 60433254006, 60433254007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<26.9	200	26.9	07/24/23 17:32	

LABORATORY CONTROL SAMPLE: 3394171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9780	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3394172 3394173

Parameter	Units	60433254003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	110000	10000	10000	116000	119000	65	94	70-130	3	20	M1

MATRIX SPIKE SAMPLE: 3394174

Parameter	Units	60433188001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	312000	10000	326000	140	70-130	M1

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

QC Batch: 2100968

Analysis Method: EPA 9020

QC Batch Method: 9020B

Analysis Description: Wet Chemistry 9020B

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 60433254004

METHOD BLANK: R3957112-2

Matrix: Water

Associated Lab Samples: 60433254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/03/23 00:26	

METHOD BLANK: R3957115-2

Matrix: Water

Associated Lab Samples: 60433254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/04/23 00:41	

METHOD BLANK: R3957118-2

Matrix: Water

Associated Lab Samples: 60433254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/01/23 14:55	

LABORATORY CONTROL SAMPLE: R3957112-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	237	94.9	85.0-115	

LABORATORY CONTROL SAMPLE: R3957115-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	226	90.3	85.0-115	

LABORATORY CONTROL SAMPLE: R3957118-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	261	104	85.0-115	

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3957115-4												
R3957115-5												
Parameter	Units	L1634874-01 MS Spike Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Halides	ug/L	ND	250	250	223	265	89.0	106	80.0-120	17.2	20	

SAMPLE DUPLICATE: R3957112-3						
Parameter	Units	L1636287-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	162	164	1.07	20	

SAMPLE DUPLICATE: R3957112-4						
Parameter	Units	L1636287-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	32.5	32.5J	0.141	20	J

SAMPLE DUPLICATE: R3957112-5						
Parameter	Units	L1636330-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	32.6J	200	20	D8,J

SAMPLE DUPLICATE: R3957112-6						
Parameter	Units	60433254004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3957115-3						
Parameter	Units	L1634874-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3957115-6						
Parameter	Units	L1634874-11 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	70.1	<27.7	200	20	D8

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

SAMPLE DUPLICATE: R3957115-7

Parameter	Units	L1634874-12 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3957115-8

Parameter	Units	L1635426-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	36.0	40.2J	11.1	20	J

SAMPLE DUPLICATE: R3957115-9

Parameter	Units	L1635717-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	49.8	54.5J	8.94	20	J

SAMPLE DUPLICATE: R3957118-3

Parameter	Units	L1634874-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	28.0J	200	20	D8,J

SAMPLE DUPLICATE: R3957118-4

Parameter	Units	L1634874-03 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	39.7J	200	20	D8,J

SAMPLE DUPLICATE: R3957118-5

Parameter	Units	L1634874-04 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	45.8J	200	20	D8,J

SAMPLE DUPLICATE: R3957118-6

Parameter	Units	L1634874-05 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	28.0	32.4J	14.8	20	J

SAMPLE DUPLICATE: R3957118-7

Parameter	Units	L1634874-06 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	56.6	32.3J	54.8	20	D8,J

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

SAMPLE DUPLICATE: R3957118-8

Parameter	Units	L1634874-07 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	31.3	35.0J	11.0	20	J

SAMPLE DUPLICATE: R3957118-9

Parameter	Units	L1634874-08 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	32.4	30.9J	4.72	20	J

SAMPLE DUPLICATE: R3957115-10

Parameter	Units	L1636277-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3957115-11

Parameter	Units	L1636280-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3957118-10

Parameter	Units	L1634874-09 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	33.4	37.6J	11.9	20	J

SAMPLE DUPLICATE: R3957118-11

Parameter	Units	L1634874-10 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

QC Batch: 2100970

Analysis Method: EPA 9020

QC Batch Method: 9020B

Analysis Description: Wet Chemistry 9020B

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 60433254005

METHOD BLANK: R3959139-2

Matrix: Water

Associated Lab Samples: 60433254005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/07/23 15:36	

METHOD BLANK: R3959143-2

Matrix: Water

Associated Lab Samples: 60433254005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/08/23 14:51	

METHOD BLANK: R3959147-2

Matrix: Water

Associated Lab Samples: 60433254005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/09/23 16:40	

METHOD BLANK: R3959153-2

Matrix: Water

Associated Lab Samples: 60433254005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Halides	ug/L	<27.7	100	27.7	08/10/23 14:23	

LABORATORY CONTROL SAMPLE: R3959139-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	239	95.7	85.0-115	

LABORATORY CONTROL SAMPLE: R3959143-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	240	96.2	85.0-115	

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

LABORATORY CONTROL SAMPLE: R3959147-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	239	95.5	85.0-115	

LABORATORY CONTROL SAMPLE: R3959153-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Halides	ug/L	250	241	96.6	85.0-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3959153-5 R3959153-6

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		L1639460-04 Result	Spike Conc.	Spike Conc.	Result						
Total Organic Halides	ug/L	35.3	250	250	252	247	86.6	84.7	80.0-120	1.91	20

SAMPLE DUPLICATE: R3959139-3

Parameter	Units	L1635809-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<139	0.00	20	

SAMPLE DUPLICATE: R3959139-4

Parameter	Units	L1635809-07 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	47.7	36.3J	27.1	20	D8,J

SAMPLE DUPLICATE: R3959139-5

Parameter	Units	60433254005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959143-3

Parameter	Units	L1637448-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	114	99.2J	13.6	20	J

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

SAMPLE DUPLICATE: R3959147-3

Parameter	Units	L1637878-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	544	526	3.26	20	

SAMPLE DUPLICATE: R3959147-4

Parameter	Units	L1638316-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	44.0	96.0J	74.4	20	D8,J

SAMPLE DUPLICATE: R3959147-5

Parameter	Units	L1639460-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	53.3	57.1J	6.85	20	J

SAMPLE DUPLICATE: R3959147-6

Parameter	Units	L1638684-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	360	388	7.33	20	

SAMPLE DUPLICATE: R3959147-7

Parameter	Units	L1640036-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	388	379	2.44	20	

SAMPLE DUPLICATE: R3959153-3

Parameter	Units	L1639460-03 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959153-4

Parameter	Units	L1639460-04 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	35.3	41.5J	16.1	20	J

SAMPLE DUPLICATE: R3959147-11

Parameter	Units	L1639557-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	31.0	36.3J	15.8	20	J

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

SAMPLE DUPLICATE: R3959147-12

Parameter	Units	L1639557-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959147-13

Parameter	Units	L1639557-03 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959147-14

Parameter	Units	L1639557-04 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959147-15

Parameter	Units	L1639557-05 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959147-16

Parameter	Units	L1639557-06 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

SAMPLE DUPLICATE: R3959147-17

Parameter	Units	L1637824-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Halides	ug/L	ND	<27.7	0.00	20	

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

QC Batch:	857202	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60433254001, 60433254002, 60433254003, 60433254006, 60433254007

METHOD BLANK: 3394433 Matrix: Water

Associated Lab Samples: 60433254001, 60433254002, 60433254003, 60433254006, 60433254007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/20/23 10:01	

LABORATORY CONTROL SAMPLE: 3394434

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3394435

Parameter	Units	60433247004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	533	541	1	10	

SAMPLE DUPLICATE: 3394436

Parameter	Units	60433254003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	473	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: L1637878-01

[1] Wet Chemistry by Method 9020B - Breakthrough due to matrix interference.

Sample: L1638684-01

[1] Wet Chemistry by Method 9020B - Breakthrough due to matrix interference.

Sample: L1640036-01

[1] Wet Chemistry by Method 9020B - Breakthrough due to matrix interference.

ANALYTE QUALIFIERS

D8 The sample and duplicate results for this parameter are less than 5 times the reporting limit, the RPD may not be statistically valid.

J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN-VERIFICATION, LCPA

Pace Project No.: 60433254

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60433254001	L-UMW-7D	EPA 200.7	857119	EPA 200.7	857152
60433254002	L-UMW-DUP-1	EPA 200.7	857119	EPA 200.7	857152
60433254003	L-UMW-9D	EPA 200.7	857119	EPA 200.7	857152
60433254004	L-UMW-1D	EPA 200.7	857119	EPA 200.7	857152
60433254006	L-UMW-5D	EPA 200.7	857119	EPA 200.7	857152
60433254007	L-UMW-FB-1	EPA 200.7	857119	EPA 200.7	857152
60433254004	L-UMW-1D	9020B	2100968	EPA 9020	2100968
60433254005	L-UMW-3D	9020B	2100970	EPA 9020	2100970
60433254001	L-UMW-7D	SM 2540C	857202		
60433254002	L-UMW-DUP-1	SM 2540C	857202		
60433254003	L-UMW-9D	SM 2540C	857202		
60433254006	L-UMW-5D	SM 2540C	857202		
60433254007	L-UMW-FB-1	SM 2540C	857202		

REPORT OF LABORATORY ANALYSIS

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DC#_Title: ENV-FRM-LENE-0009_Sam

Revision: 2

Effective Date: 01/12/20

WO#: 60433254



Client Name: Rocksmitz

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: x-29d Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.0 Corr. Factor +0.2 Corrected 1.2

Date and initials of person examining contents: BC 7/15

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>LT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
 Company: Rocksmith Geoengeering, LLC
 Address: 5233 Roanoke Drive
St. Charles, MO 63304
 Email To: mark.haddock@rocksmithgeo.com
 Phone: 314-974-5678 Fax: _____

Section B
Required Project Information:
 Report To: Mark Haddock
 Copy To: Jeffery Ingram, Grant Morey
 Purchase Order No.: COC #1
 Project Name: Ameren - Verification Sampling
 Project Number: COC#1

Section C
Invoice Information:
 Attention: _____
 Company Name: Rocksmith
 Address: _____
 Pace Quote Reference: _____
 Pace Project Manager: Jamie Church
 Pace Profile #: 15856, line 1

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
 STATE: MO

Requested Due Date/TAT: Standard

Requested Analysis Filtered (Y/N)

Y	N	N	N	N	N	N	N	N	N	N
---	---	---	---	---	---	---	---	---	---	---

#	ITEM	Sample ID (A-Z, 0-9 / -)	Valid Matrix Codes	MATRIX CODE (see vild codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	Requested Analysis Filtered (Y/N)																										
					COMPOSITE START	COMPOSITE END		Y	N	U	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N									
1		L-UMW-7D	DRAINING WATER	WT G	DATE	TIME	7-14-23	1108	Unpreserved	H ₂ SO ₄		HCl		NaOH		Na ₂ S ₂ O ₃		Other		TDS		Sulfate		Chloride		Boron		TOX		Calcium		Residual Chlorine (Y/N)		
2		L-UMW-DUP-1	WASTE WATER	WT G	DATE	TIME	-	-																										
3		L-UMW-9D	WASTE WATER PRODUCT	WT G	DATE	TIME	1	1158																										
4		L-UMW-MS-1	SOIL/SOLID	WT G	DATE	TIME	1	1158																										
5		L-UMW-MSD-1	OIL	WT G	DATE	TIME	7-13-23	1549																										
6		L-UMW-1D		WT G	DATE	TIME	1	0934																										
7		L-UMW-3D		WT G	DATE	TIME	1	1031																										
8		L-UMW-5D		WT G	DATE	TIME	1	1029																										
9		L-UMW-FB-1		WT G																														
10				WT G																														
11				WT G																														
12				WT G																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Grant Morey/Rocksmith	7-14-23	1400	[Signature]	7/15	0715	12 Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Morey DATE Signed (MM/DD/YYYY): 07/14/23

SIGNATURE of SAMPLER: [Signature]

Client: Rachsmith

Profile # 15856 Ciel

Site: Amen LCPA

Notes: Sample 3 Logas RQS

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other	
1	SP5T																		1	1			1							4ABK	
2	SP5T																			1	1			1							
3	SP5T																			3	3			3							
4																															
5																															
6	SP5T																			1	1			1							1
7	SP5T																			1	1			1							1
8	SP5T																			1	1			1							1
9	SP5T																			1	1			1							1
10																															
11																															
12																															

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	BP3F	250mL HNO3 plastic - field filtered		
BG3H	250mL HCL Clear glass	BP3N	250mL HNO3 plastic	WT	Water
BG3U	250mL Unpres Clear glass	BP3U	250mL unpreserved plastic	SL	Solid
WGDU	16oz clear soil jar	BP3S	250mL H2SO4 plastic	NAL	Non-aqueous Liquid
		BP4U	125mL NaOH, Zn Acetate	OL	Oil
		BP4N	125mL unpreserved plastic	WP	Wipe
		BP4S	125mL HNO3 plastic	DW	Drinking Water
		WPDU	16oz unpreserved plastic		

Work Order Number: 60433254

Internal Transfer Chain of Custody

C175



Samples Pre-Logged into eCOC.

State Of Origin: MO

Cert. Needed: Yes

No

Workorder: 60433254

Workorder Name: AMEREN - VERIFICATION SAMPLING

Owner Received Date:

7/15/2023

Results Requested By: 7/31/2023

Report To		Subcontract To					Requested Analysis														
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223		Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858																			
						Preserved Containers								9020B TOX <div style="text-align: right;"> U636104 LAB USE ONLY o/ n </div>							
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other															
1	L-UMW-1D	PS	7/13/2023 15:49	60433254004	Water	1															
2	L-UMW-3D	PS	7/13/2023 09:24	60433254005	Water	1															
3																					
4																					
5																					
Transfers												Comments									
	Released By	Date/Time		Received By	Date/Time																
1	<i>[Signature]</i>	7-17-23	1700	GRACE BARRON <i>[Signature]</i>	7-18-23 0900																
2																					
3																					
Cooler Temperature on Receipt		Custody Seal			Received on Ice				Samples Intact												
0.0 °C		<input checked="" type="checkbox"/> or N			<input checked="" type="checkbox"/> or N				<input checked="" type="checkbox"/> or N												

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact: Y N If Applicable

COC Signed/Accurate: Y N VOA Zero Headpace: Y N

Bottles arrive intact: Y N Pres. Correct/Check: Y N

Correct bottles used: Y N GBA6 0.6+0.6

Sufficient volume sent: Y N

PAB Screen <0.5 mR/hr: Y N 6432 1389 5614



Memorandum

August 11, 2023

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23007

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Labadie Energy Center – LCPA Verification – Data Package 60433254**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren LCPA Verification
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23007
 Validation Date: 8/11/23

Laboratory: Pace Analytical

SDG #: 60433254

Analytical Method (type and no.): EPA 200.7 (Calcium); SM 2540C (TDS)

Matrix: Air Soil/Sed. Water Waste

Sample Names L-UMW-7D, LUMW-DUP-1, L-UMW-9D, L-UMW-1D, L-UMW-3D, L-UMW-5D, L-UMW-FB-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7/13/2023 - 7/14/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L-UMW-FB-1 @ L-UMW-5D
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L-UMW-DUP-1 @ L-UMW-7D
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Calcium: 1.5%; TDS: 0.2%
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TDS only
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

Field Blanks:

L-UMW-FB-1 @ L-UMW-5D: Calcium (37.6J), TDS (11.5). Results > 10x blank, no qualification necessary.

MS/MSD:

3394172/3394173: MS recovery low, MSD recovery and RPD OK, no qualification necessary. Associated with sample -003.

3394174: MS recovery high, associated with unrelated sample, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: Grant Morey

Date: 08/11/2023



January 30, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN LCPA
Pace Project No.: 60442420

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 18, 2023 and November 21, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 1/30/24: Parameters not required under the CCR rule removed.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN LCPA

Pace Project No.: 60442420

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60442420001	L-UMW-2D	Water	11/16/23 11:43	11/18/23 04:55
60442420002	L-UMW-4D	Water	11/17/23 13:42	11/18/23 04:55
60442420003	L-UMW-7D	Water	11/16/23 10:55	11/18/23 04:55
60442420004	L-UMW-8D	Water	11/16/23 12:18	11/18/23 04:55
60442420005	L-UMW-9D	Water	11/16/23 13:42	11/18/23 04:55
60442420006	L-BMW-1D	Water	11/16/23 09:33	11/18/23 04:55
60442420007	L-BMW-2D	Water	11/16/23 10:58	11/18/23 04:55
60442420008	L-UMW-DUP-1	Water	11/16/23 08:00	11/18/23 04:55
60442420009	L-UMW-FB-1	Water	11/16/23 12:28	11/18/23 04:55
60442420010	L-UMW-MS-1	Water	11/16/23 11:43	11/18/23 04:55
60442420011	L-UMW-MSD-1	Water	11/16/23 11:43	11/18/23 04:55
60442420012	L-UMW-1D	Water	11/20/23 11:15	11/21/23 06:02
60442420013	L-UMW-3D	Water	11/20/23 13:02	11/21/23 06:02
60442420014	L-UMW-5D	Water	11/20/23 10:15	11/21/23 06:02
60442420015	L-UMW-6D	Water	11/20/23 12:07	11/21/23 06:02
60442420016	L-UMW-DUP-2	Water	11/20/23 00:00	11/21/23 06:02
60442420017	L-UMW-FB-2	Water	11/20/23 11:07	11/21/23 06:02

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442420001	L-UMW-2D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60442420002	L-UMW-4D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60442420003	L-UMW-7D	SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60442420004	L-UMW-8D	SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
60442420005	L-UMW-9D	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
60442420005	L-UMW-9D	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442420006	L-BMW-1D	SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60442420007	L-BMW-2D	SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60442420008	L-UMW-DUP-1	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420009	L-UMW-FB-1	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 903.1	CLM	1	PASI-PA
60442420010	L-UMW-MS-1	EPA 904.0	VAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442420011	L-UMW-MSD-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60442420012	L-UMW-1D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420013	L-UMW-3D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420014	L-UMW-5D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420015	L-UMW-6D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420016	L-UMW-DUP-2	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442420017	L-UMW-FB-2	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Date: January 30, 2024

1e: Analysis performed at Pace Analytical STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042. TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389.

2e: Analysis performed at Pace Analytical STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042. TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389.

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 200.7

Description: 200.7 Metals, Total

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 875682

B: Analyte was detected in the associated method blank.

- BLANK for HBN 875682 [MPRP/803 (Lab ID: 3468002)
- Cobalt

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 875737

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
60442419016,60442423003,60442425003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3468158)
- Calcium

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 200.8

Description: 200.8 MET ICPMS

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for EPA 200.8 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 875747

B: Analyte was detected in the associated method blank.

- BLANK for HBN 875747 [MPRP/803 (Lab ID: 3468176)
- Cadmium

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 7470

Description: 7470 Mercury

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for EPA 7470 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 903.1

Description: 903.1 Radium 226

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

17 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 904.0

Description: 904.0 Radium 228

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

17 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: SM 2320B

Description: 2320B Alkalinity

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for SM 2320B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.

- L-UMW-1D (Lab ID: 60442420012)
- L-UMW-3D (Lab ID: 60442420013)
- L-UMW-FB-1 (Lab ID: 60442420009)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 878920

1e: See case narrative

- BLANK (Lab ID: 3481071)
 - Total Dissolved Solids
- L-BMW-1D (Lab ID: 60442420006)
 - Total Dissolved Solids
- L-BMW-2D (Lab ID: 60442420007)
 - Total Dissolved Solids
- L-UMW-2D (Lab ID: 60442420001)
 - Total Dissolved Solids
- L-UMW-4D (Lab ID: 60442420002)
 - Total Dissolved Solids
- L-UMW-7D (Lab ID: 60442420003)
 - Total Dissolved Solids
- L-UMW-8D (Lab ID: 60442420004)
 - Total Dissolved Solids

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

Analyte Comments:

QC Batch: 878920

1e: See case narrative

- L-UMW-9D (Lab ID: 60442420005)
 - Total Dissolved Solids
- L-UMW-DUP-1 (Lab ID: 60442420008)
 - Total Dissolved Solids
- LCS (Lab ID: 3481072)
 - Total Dissolved Solids

QC Batch: 880000

2e: See case narrative.

- BLANK (Lab ID: 3484907)
 - Total Dissolved Solids
- DUP (Lab ID: 3484909)
 - Total Dissolved Solids
- L-UMW-FB-1 (Lab ID: 60442420009)
 - Total Dissolved Solids
- LCS (Lab ID: 3484908)
 - Total Dissolved Solids

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

General Information:

15 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.

- L-UMW-5D (Lab ID: 60442420014)
- L-UMW-6D (Lab ID: 60442420015)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 875787

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3470527)
 - Fluoride

QC Batch: 876922

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3476789)
 - Fluoride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 875787

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
60442419016,60442420001,60442423003,60442425001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3468421)
 - Fluoride
- MS (Lab ID: 3468424)
 - Sulfate
- MS (Lab ID: 3468427)
 - Sulfate
- MS (Lab ID: 3468430)
 - Fluoride
- MSD (Lab ID: 3468425)
 - Sulfate

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PROJECT NARRATIVE

Project: AMEREN LCPA

Pace Project No.: 60442420

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: Rocksmith Geoengineering, LLC.

Date: January 30, 2024

QC Batch: 875787

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
60442419016,60442420001,60442423003,60442425001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3468428)
 - Sulfate
- MSD (Lab ID: 3468431)
 - Fluoride

R1: RPD value was outside control limits.

- MSD (Lab ID: 3468431)
 - Fluoride

QC Batch: 876922

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60443033003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3473233)
 - Chloride
- MSD (Lab ID: 3473234)
 - Chloride

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-2D Lab ID: 60442420001 Collected: 11/16/23 11:43 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	134	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 09:38	7440-39-3	
Beryllium	0.15J	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 09:38	7440-41-7	
Boron	1080	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 09:38	7440-42-8	
Calcium	128000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 09:38	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 09:38	7440-48-4	
Iron	4050	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 09:38	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 09:38	7439-92-1	
Lithium	30.6	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 09:38	7439-93-2	
Magnesium	26100	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 09:38	7439-95-4	
Manganese	471	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 09:38	7439-96-5	
Molybdenum	31.2	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 09:38	7439-98-7	
Potassium	7760	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 09:38	7440-09-7	
Sodium	59200	ug/L	500	115	1	12/05/23 10:23	12/06/23 09:38	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:36	7440-36-0	
Arsenic	0.89J	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:36	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:36	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:36	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:23	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	383	mg/L	20.0	10.5	1		11/27/23 12:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	615	mg/L	17.0	17.0	1		11/22/23 17:28		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	27.2	mg/L	5.0	2.6	5		12/06/23 20:15	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 15:35	16984-48-8	L1,M1
Sulfate	130	mg/L	20.0	11.0	20		12/05/23 16:21	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-4D Lab ID: 60442420002 Collected: 11/17/23 13:42 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	76.3	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 08:59	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 08:59	7440-41-7	
Boron	6090	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 08:59	7440-42-8	
Calcium	62800	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 08:59	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 08:59	7440-48-4	
Iron	265	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 08:59	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 08:59	7439-92-1	
Lithium	29.9	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 08:59	7439-93-2	
Magnesium	7000	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 08:59	7439-95-4	
Manganese	326	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 08:59	7439-96-5	
Molybdenum	335	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 08:59	7439-98-7	
Potassium	8090	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 08:59	7440-09-7	
Sodium	96600	ug/L	500	115	1	12/05/23 10:23	12/06/23 08:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:00	7440-36-0	
Arsenic	0.13J	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:00	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:00	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:00	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:00	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:30	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	64.9	mg/L	20.0	10.5	1		11/28/23 11:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	565	mg/L	17.0	17.0	1		11/22/23 18:57		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.3	mg/L	5.0	2.6	5		12/06/23 21:00	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 17:31	16984-48-8	L1
Sulfate	293	mg/L	20.0	11.0	20		12/05/23 17:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-7D Lab ID: 60442420003 Collected: 11/16/23 10:55 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	143	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:19	7440-39-3	
Beryllium	0.18J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:19	7440-41-7	
Boron	803	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:19	7440-42-8	
Calcium	140000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:19	7440-70-2	
Cobalt	1.6J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:19	7440-48-4	B
Iron	14100	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:19	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:19	7439-92-1	
Lithium	27.2	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:19	7439-93-2	
Magnesium	23700	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:19	7439-95-4	
Manganese	1690	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:19	7439-96-5	
Molybdenum	85.8	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:19	7439-98-7	
Potassium	4380	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:19	7440-09-7	
Sodium	14900	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:19	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:14	7440-36-0	
Arsenic	29.7	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:14	7440-43-9	
Chromium	0.39J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:14	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:14	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:32	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	466	mg/L	20.0	10.5	1		11/27/23 13:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	465	mg/L	17.0	17.0	1		11/22/23 17:28		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.4	mg/L	1.0	0.53	1		12/05/23 17:53	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 17:53	16984-48-8	L1
Sulfate	6.4	mg/L	1.0	0.55	1		12/05/23 17:53	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-8D Lab ID: 60442420004 Collected: 11/16/23 12:18 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	124	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:23	7440-39-3	
Beryllium	0.16J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:23	7440-41-7	
Boron	619	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:23	7440-42-8	
Calcium	36800	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:23	7440-70-2	
Cobalt	1.3J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:23	7440-48-4	B
Iron	5490	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:23	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:23	7439-92-1	
Lithium	16.0	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:23	7439-93-2	
Magnesium	9150	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:23	7439-95-4	
Manganese	222	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:23	7439-96-5	
Molybdenum	14.3J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:23	7439-98-7	
Potassium	2830	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:23	7440-09-7	
Sodium	9950	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:23	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:19	7440-36-0	
Arsenic	38.4	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:19	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:19	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:19	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:19	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:34	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	150	mg/L	20.0	10.5	1		11/27/23 13:24		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	128	mg/L	17.0	17.0	1		11/22/23 17:28		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.5	mg/L	1.0	0.53	1		12/05/23 18:05	16887-00-6	
Fluoride	0.20J	mg/L	0.20	0.12	1		12/05/23 18:05	16984-48-8	L1
Sulfate	8.4	mg/L	1.0	0.55	1		12/05/23 18:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA
Pace Project No.: 60442420

Sample: L-UMW-9D **Lab ID: 60442420005** Collected: 11/16/23 13:42 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	496	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:25	7440-39-3	
Beryllium	0.20J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:25	7440-41-7	
Boron	86.5J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:25	7440-42-8	
Calcium	115000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:25	7440-70-2	
Cobalt	1.2J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:25	7440-48-4	B
Iron	23500	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:25	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:25	7439-92-1	
Lithium	18.3	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:25	7439-93-2	
Magnesium	30800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:25	7439-95-4	
Manganese	404	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:25	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:25	7439-98-7	
Potassium	4090	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:25	7440-09-7	
Sodium	14400	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:24	7440-36-0	
Arsenic	32.2	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:24	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:24	7440-43-9	
Chromium	0.53J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:24	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:24	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:24	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:37	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	410	mg/L	20.0	10.5	1		11/27/23 13:29		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	445	mg/L	17.0	17.0	1		11/22/23 17:28		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.9	mg/L	2.0	1.1	2		12/05/23 18:27	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 18:16	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/05/23 18:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-BMW-1D Lab ID: 60442420006 Collected: 11/16/23 09:33 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	951	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:27	7440-39-3	
Beryllium	0.21J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:27	7440-41-7	
Boron	72.5J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:27	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:27	7440-70-2	
Cobalt	1.3J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:27	7440-48-4	B
Iron	9520	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:27	7439-92-1	
Lithium	29.3	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:27	7439-93-2	
Magnesium	26200	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:27	7439-95-4	
Manganese	559	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:27	7439-96-5	
Molybdenum	1.4J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:27	7439-98-7	
Potassium	4020	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:27	7440-09-7	
Sodium	7380	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:27	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:29	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:29	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:29	7440-43-9	
Chromium	0.76J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:29	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:29	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:39	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	393	mg/L	20.0	10.5	1		11/27/23 13:35		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	182	mg/L	17.0	17.0	1		11/22/23 18:57		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.2	mg/L	1.0	0.53	1		12/05/23 18:39	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 18:39	16984-48-8	L1
Sulfate	16.7	mg/L	1.0	0.55	1		12/05/23 18:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-BMW-2D Lab ID: 60442420007 Collected: 11/16/23 10:58 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	311	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:36	7440-39-3	
Beryllium	0.20J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:36	7440-41-7	
Boron	63.6J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:36	7440-42-8	
Calcium	135000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:36	7440-70-2	
Cobalt	1.8J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:36	7440-48-4	B
Iron	7250	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:36	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:36	7439-92-1	
Lithium	46.3	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:36	7439-93-2	
Magnesium	27500	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:36	7439-95-4	
Manganese	299	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:36	7439-96-5	
Molybdenum	1.3J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:36	7439-98-7	
Potassium	3480	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:36	7440-09-7	
Sodium	6110	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:36	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:32	7440-36-0	
Arsenic	39.4	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:32	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:32	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:32	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:32	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:32	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:46	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	418	mg/L	20.0	10.5	1		11/27/23 13:42		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	325	mg/L	17.0	17.0	1		11/22/23 18:57		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.0	mg/L	1.0	0.53	1		12/05/23 19:01	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 19:01	16984-48-8	L1
Sulfate	45.9	mg/L	10.0	5.5	10		12/05/23 19:13	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-DUP-1 Lab ID: 60442420008 Collected: 11/16/23 08:00 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	145	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:38	7440-39-3	
Beryllium	0.25J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:38	7440-41-7	
Boron	820	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:38	7440-42-8	
Calcium	140000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:38	7440-70-2	
Cobalt	1.9J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:38	7440-48-4	B
Iron	14300	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:38	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:38	7439-92-1	
Lithium	26.2	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:38	7439-93-2	
Magnesium	23600	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:38	7439-95-4	
Manganese	1690	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:38	7439-96-5	
Molybdenum	86.9	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:38	7439-98-7	
Potassium	4380	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:38	7440-09-7	
Sodium	15400	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:38	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:34	7440-36-0	
Arsenic	30.2	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:34	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:34	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:34	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:34	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:34	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:48	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	472	mg/L	20.0	10.5	1		11/27/23 13:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	475	mg/L	17.0	17.0	1		11/22/23 18:57		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.4	mg/L	1.0	0.53	1		12/05/23 19:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 19:47	16984-48-8	L1
Sulfate	6.7	mg/L	1.0	0.55	1		12/05/23 19:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-FB-1 Lab ID: 60442420009 Collected: 11/16/23 12:28 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:40	7440-39-3	
Beryllium	0.14J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:40	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:40	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:40	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:40	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:40	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:40	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:40	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:40	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:40	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:40	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:40	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:40	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:37	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:37	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:37	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:37	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:37	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:37	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:50	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/27/23 13:55		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<17.0	mg/L	17.0	17.0	1		11/28/23 10:59		2e,H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		12/05/23 20:10	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 20:10	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/05/23 20:10	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-1D Lab ID: 60442420012 Collected: 11/20/23 11:15 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	551	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 09:51	7440-39-3	
Beryllium	0.19J	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 09:51	7440-41-7	
Boron	485	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 09:51	7440-42-8	
Calcium	156000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 09:51	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 09:51	7440-48-4	
Iron	20900	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 09:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 09:51	7439-92-1	
Lithium	28.2	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 09:51	7439-93-2	
Magnesium	37500	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 09:51	7439-95-4	
Manganese	486	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 09:51	7439-96-5	
Molybdenum	2.8J	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 09:51	7439-98-7	
Potassium	6680	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 09:51	7440-09-7	
Sodium	21600	ug/L	500	115	1	12/05/23 10:23	12/06/23 09:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:46	7440-36-0	
Arsenic	53.1	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:46	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:46	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:46	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:46	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:46	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:53	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	555	mg/L	20.0	10.5	1		11/29/23 12:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	596	mg/L	10.0	10.0	1		12/29/23 14:10		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	10.5	mg/L	1.0	0.53	1		12/14/23 16:20	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 16:20	16984-48-8	L1
Sulfate	17.9	mg/L	2.0	1.1	2		12/14/23 16:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-3D Lab ID: 60442420013 Collected: 11/20/23 13:02 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	63.4	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 09:59	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 09:59	7440-41-7	
Boron	10800	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 09:59	7440-42-8	
Calcium	75500	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 09:59	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 09:59	7440-48-4	
Iron	110	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 09:59	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 09:59	7439-92-1	
Lithium	12.0	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 09:59	7439-93-2	
Magnesium	3510	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 09:59	7439-95-4	
Manganese	100	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 09:59	7439-96-5	
Molybdenum	289	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 09:59	7439-98-7	
Potassium	10100	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 09:59	7440-09-7	
Sodium	68600	ug/L	500	115	1	12/05/23 10:23	12/06/23 09:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:49	7440-36-0	
Arsenic	10.9	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:49	7440-38-2	
Cadmium	0.10J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:49	7440-43-9	B
Chromium	0.53J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:49	7440-47-3	
Selenium	0.30J	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:49	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:49	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:55	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	49.2	mg/L	20.0	10.5	1		11/29/23 12:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	515	mg/L	10.0	10.0	1		12/29/23 14:11		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.0	mg/L	10.0	5.3	10		12/15/23 15:43	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 16:42	16984-48-8	L1
Sulfate	263	mg/L	20.0	11.0	20		12/14/23 16:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-5D Lab ID: 60442420014 Collected: 11/20/23 10:15 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	88.8	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:01	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:01	7440-41-7	
Boron	11100	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:01	7440-42-8	
Calcium	91700	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:01	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:01	7440-48-4	
Iron	13.7J	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:01	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:01	7439-92-1	
Lithium	17.1	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:01	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:01	7439-95-4	
Manganese	10.2	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:01	7439-96-5	
Molybdenum	683	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:01	7439-98-7	
Potassium	14200	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:01	7440-09-7	
Sodium	84400	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:01	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:51	7440-36-0	
Arsenic	19.2	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:51	7440-38-2	
Cadmium	0.22J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:51	7440-43-9	B
Chromium	0.46J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:51	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:51	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:57	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	91.0	mg/L	20.0	10.5	1		11/29/23 12:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	645	mg/L	34.0	34.0	1		11/27/23 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	20.8	mg/L	5.0	2.6	5		12/19/23 13:29	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 17:05	16984-48-8	L1
Sulfate	303	mg/L	50.0	27.5	50		12/15/23 15:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-6D Lab ID: 60442420015 Collected: 11/20/23 12:07 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	89.7	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:03	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:03	7440-41-7	
Boron	9650	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:03	7440-42-8	
Calcium	125000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:03	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:03	7440-48-4	
Iron	437	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:03	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:03	7439-92-1	
Lithium	8.6J	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:03	7439-93-2	
Magnesium	3260	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:03	7439-95-4	
Manganese	340	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:03	7439-96-5	
Molybdenum	525	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:03	7439-98-7	
Potassium	17300	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:03	7440-09-7	
Sodium	148000	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:03	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:54	7440-36-0	
Arsenic	19.9	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:54	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:54	7440-43-9	B
Chromium	0.31J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:54	7440-47-3	
Selenium	0.26J	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:54	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 13:59	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	59.4	mg/L	20.0	10.5	1		11/29/23 13:03		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	961	mg/L	45.3	45.3	1		11/27/23 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	19.6	mg/L	5.0	2.6	5		12/19/23 13:41	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 17:26	16984-48-8	L1
Sulfate	648	mg/L	100	55.0	100		12/14/23 17:37	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-DUP-2 Lab ID: 60442420016 Collected: 11/20/23 00:00 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	89.4	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:05	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:05	7440-41-7	
Boron	11100	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:05	7440-42-8	
Calcium	91400	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:05	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:05	7440-48-4	
Iron	14.1J	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:05	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:05	7439-92-1	
Lithium	19.1	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:05	7439-93-2	
Magnesium	27.3J	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:05	7439-95-4	
Manganese	10.2	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:05	7439-96-5	
Molybdenum	677	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:05	7439-98-7	
Potassium	14300	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:05	7440-09-7	
Sodium	83900	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:05	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 12:59	7440-36-0	
Arsenic	19.4	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 12:59	7440-38-2	
Cadmium	0.22J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 12:59	7440-43-9	B
Chromium	0.40J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 12:59	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 12:59	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 12:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 14:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	92.9	mg/L	20.0	10.5	1		11/29/23 13:08		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	672	mg/L	34.0	34.0	1		11/27/23 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	20.9	mg/L	10.0	5.3	10		12/15/23 16:51	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 17:48	16984-48-8	L1
Sulfate	357	mg/L	100	55.0	100		12/14/23 18:22	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-FB-2 Lab ID: 60442420017 Collected: 11/20/23 11:07 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:07	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:07	7440-41-7	
Boron	16.6J	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:07	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:07	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:07	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:07	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:07	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:07	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:07	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:07	7439-98-7	
Potassium	84.6J	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:07	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:07	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:02	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:02	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:02	7440-43-9	
Chromium	0.42J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:02	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:02	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:23	12/13/23 14:04	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/29/23 13:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<136	mg/L	136	136	1		11/27/23 13:45		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.1	mg/L	1.0	0.53	1		12/14/23 18:34	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 18:34	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/14/23 18:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 876711 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK: 3472414 Matrix: Water
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	12/13/23 13:18	

LABORATORY CONTROL SAMPLE: 3472415

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472416 3472417

Parameter	Units	60442420001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.1	5.1	102	103	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	875682	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

METHOD BLANK: 3468002 Matrix: Water

Associated Lab Samples: 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/05/23 10:47	
Beryllium	ug/L	<0.12	1.0	0.12	12/05/23 10:47	
Boron	ug/L	<6.4	100	6.4	12/05/23 10:47	
Calcium	ug/L	<26.9	200	26.9	12/05/23 10:47	
Cobalt	ug/L	1.6J	5.0	1.2	12/05/23 10:47	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 10:47	
Lead	ug/L	<3.8	10.0	3.8	12/05/23 10:47	
Lithium	ug/L	<3.7	10.0	3.7	12/05/23 10:47	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 10:47	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 10:47	
Molybdenum	ug/L	<1.0	20.0	1.0	12/05/23 10:47	
Potassium	ug/L	<69.7	500	69.7	12/05/23 10:47	
Sodium	ug/L	<115	500	115	12/05/23 10:47	

LABORATORY CONTROL SAMPLE: 3468003

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	969	97	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Cobalt	ug/L	1000	1090	109	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1070	107	85-115	
Lithium	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	9890	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9690	97	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468004 3468005

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442419012	Spike Conc.	Spike Conc.	Result						
Barium	ug/L	52.9	1000	1000	1060	1070	101	102	70-130	1	20
Beryllium	ug/L	0.14J	1000	1000	1030	1040	103	104	70-130	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468004 3468005											
Parameter	Units	60442419012		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Boron	ug/L	7640	1000	1000	8550	8740	91	110	70-130	2	20
Calcium	ug/L	120000	10000	10000	128000	131000	85	114	70-130	2	20
Cobalt	ug/L	1.7J	1000	1000	1050	1070	105	106	70-130	1	20
Iron	ug/L	5550	10000	10000	15700	15900	101	104	70-130	1	20
Lead	ug/L	<3.8	1000	1000	1040	1050	104	105	70-130	1	20
Lithium	ug/L	28.4	1000	1000	1090	1080	106	105	70-130	0	20
Magnesium	ug/L	27300	10000	10000	37100	37800	98	105	70-130	2	20
Manganese	ug/L	422	1000	1000	1450	1470	103	105	70-130	2	20
Molybdenum	ug/L	463	1000	1000	1500	1530	104	106	70-130	2	20
Potassium	ug/L	5330	10000	10000	15800	15800	104	105	70-130	0	20
Sodium	ug/L	75600	10000	10000	85600	87600	99	119	70-130	2	20

MATRIX SPIKE SAMPLE: 3468006							
Parameter	Units	60442420003		MS	MS	% Rec	Qualifiers
		Result	Spike	Result	% Rec	Limits	
Barium	ug/L	143	1000	1140	100	70-130	
Beryllium	ug/L	0.18J	1000	1040	104	70-130	
Boron	ug/L	803	1000	1780	97	70-130	
Calcium	ug/L	140000	10000	149000	94	70-130	
Cobalt	ug/L	1.6J	1000	1070	107	70-130	
Iron	ug/L	14100	10000	24300	102	70-130	
Lead	ug/L	<3.8	1000	1050	105	70-130	
Lithium	ug/L	27.2	1000	1070	104	70-130	
Magnesium	ug/L	23700	10000	33700	99	70-130	
Manganese	ug/L	1690	1000	2730	104	70-130	
Molybdenum	ug/L	85.8	1000	1140	105	70-130	
Potassium	ug/L	4380	10000	14500	101	70-130	
Sodium	ug/L	14900	10000	25700	108	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 875737

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420002

METHOD BLANK: 3468152

Matrix: Water

Associated Lab Samples: 60442420002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/06/23 08:45	
Beryllium	ug/L	<0.12	1.0	0.12	12/06/23 08:45	
Boron	ug/L	<6.4	100	6.4	12/06/23 08:45	
Calcium	ug/L	<26.9	200	26.9	12/06/23 08:45	
Cobalt	ug/L	<1.2	5.0	1.2	12/06/23 08:45	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 08:45	
Lead	ug/L	<3.8	10.0	3.8	12/06/23 08:45	
Lithium	ug/L	<3.7	10.0	3.7	12/06/23 08:45	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 08:45	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 08:45	
Molybdenum	ug/L	<1.0	20.0	1.0	12/06/23 08:45	
Potassium	ug/L	<69.7	500	69.7	12/06/23 08:45	
Sodium	ug/L	<115	500	115	12/06/23 08:45	

LABORATORY CONTROL SAMPLE: 3468153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	976	98	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468154 3468155

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442419016	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	250	1000	1000	1260	1260	101	101	70-130	1	20		
Beryllium	ug/L	0.16J	1000	1000	1040	1030	104	103	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468154												3468155	
Parameter	Units	60442419016		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Boron	ug/L	5040	1000	1000	1000	6010	6060	97	103	70-130	1	20	
Calcium	ug/L	108000	10000	10000	10000	117000	118000	97	99	70-130	0	20	
Cobalt	ug/L	<1.2	1000	1000	1000	1040	1030	104	103	70-130	1	20	
Iron	ug/L	7970	10000	10000	10000	18200	18100	102	102	70-130	0	20	
Lead	ug/L	<3.8	1000	1000	1000	1050	1040	105	104	70-130	0	20	
Lithium	ug/L	33.7	1000	1000	1000	1060	1060	103	103	70-130	0	20	
Magnesium	ug/L	22900	10000	10000	10000	32800	32900	99	101	70-130	1	20	
Manganese	ug/L	1270	1000	1000	1000	2290	2300	102	102	70-130	0	20	
Molybdenum	ug/L	259	1000	1000	1000	1310	1300	105	104	70-130	0	20	
Potassium	ug/L	5310	10000	10000	10000	15300	15500	100	102	70-130	1	20	
Sodium	ug/L	62400	10000	10000	10000	72500	72600	101	102	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468156												3468157	
Parameter	Units	60442423003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Barium	ug/L		1000	1000	1000	1270	1270	101	101	70-130	0	20	
Beryllium	ug/L		1000	1000	1000	1040	1030	104	103	70-130	1	20	
Boron	ug/L	114	1000	1000	1000	1090	1090	98	98	70-130	0	20	
Calcium	ug/L	145000	10000	10000	10000	154000	155000	88	98	70-130	1	20	
Cobalt	ug/L		1000	1000	1000	1030	1030	103	103	70-130	0	20	
Iron	ug/L	1220	10000	10000	10000	11500	11500	102	102	70-130	0	20	
Lead	ug/L		1000	1000	1000	1050	1060	105	106	70-130	1	20	
Lithium	ug/L		1000	1000	1000	1070	1080	103	104	70-130	1	20	
Magnesium	ug/L	30400	10000	10000	10000	40200	40100	98	97	70-130	0	20	
Manganese	ug/L	1190	1000	1000	1000	2220	2220	103	103	70-130	0	20	
Molybdenum	ug/L		1000	1000	1000	1030	1030	103	103	70-130	0	20	
Potassium	ug/L	5980	10000	10000	10000	16000	16100	100	101	70-130	1	20	
Sodium	ug/L	6400	10000	10000	10000	16500	16400	101	100	70-130	0	20	

MATRIX SPIKE SAMPLE: 3468158											
Parameter	Units	60442425003		Spike	MS	MS	% Rec	Qualifiers			
		Result	Conc.						Result	% Rec	Limits
Barium	ug/L			1000		1230	100	70-130			
Beryllium	ug/L			1000		1040	104	70-130			
Boron	ug/L		828	1000		1770	94	70-130			
Calcium	ug/L		133000	10000		137000	42	70-130 M1			
Cobalt	ug/L			1000		1040	104	70-130			
Iron	ug/L		6510	10000		16500	100	70-130			
Lead	ug/L			1000		1060	106	70-130			
Lithium	ug/L			1000		1060	103	70-130			
Magnesium	ug/L		23400	10000		32100	87	70-130			
Manganese	ug/L		1130	1000		2120	99	70-130			

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE SAMPLE:		3468158					
Parameter	Units	60442425003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L		1000	1050	104	70-130	
Potassium	ug/L	5300	10000	15000	97	70-130	
Sodium	ug/L	10800	10000	20500	96	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	875741	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420001, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK:	3468169	Matrix:	Water
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Associated Lab Samples: 60442420001, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.67J	5.0	0.64	12/06/23 09:34	
Beryllium	ug/L	<0.12	1.0	0.12	12/06/23 09:34	
Boron	ug/L	<6.4	100	6.4	12/06/23 09:34	
Calcium	ug/L	<26.9	200	26.9	12/06/23 09:34	
Cobalt	ug/L	<1.2	5.0	1.2	12/06/23 09:34	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 09:34	
Lead	ug/L	<3.8	10.0	3.8	12/06/23 09:34	
Lithium	ug/L	<3.7	10.0	3.7	12/06/23 09:34	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 09:34	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 09:34	
Molybdenum	ug/L	<1.0	20.0	1.0	12/06/23 09:34	
Potassium	ug/L	<69.7	500	69.7	12/06/23 09:34	
Sodium	ug/L	<115	500	115	12/06/23 09:34	

LABORATORY CONTROL SAMPLE: 3468170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1080	108	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1070	107	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468171 3468172

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442420001	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	134	1000	1000	1150	1150	102	101	70-130	0	20
Beryllium	ug/L	0.15J	1000	1000	1040	1040	104	104	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468171 3468172												
Parameter	Units	60442420001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Boron	ug/L	1080	1000	1000	1000	2060	2050	98	98	70-130	0	20
Calcium	ug/L	128000	10000	10000	10000	138000	135000	102	75	70-130	2	20
Cobalt	ug/L	<1.2	1000	1000	1000	1040	1040	104	104	70-130	0	20
Iron	ug/L	4050	10000	10000	10000	14400	14300	104	103	70-130	1	20
Lead	ug/L	<3.8	1000	1000	1000	1080	1060	108	106	70-130	2	20
Lithium	ug/L	30.6	1000	1000	1000	1060	1060	103	103	70-130	0	20
Magnesium	ug/L	26100	10000	10000	10000	35800	35500	98	94	70-130	1	20
Manganese	ug/L	471	1000	1000	1000	1520	1510	105	104	70-130	0	20
Molybdenum	ug/L	31.2	1000	1000	1000	1080	1080	105	105	70-130	0	20
Potassium	ug/L	7760	10000	10000	10000	17800	17800	101	101	70-130	0	20
Sodium	ug/L	59200	10000	10000	10000	68900	68100	97	88	70-130	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468173 3468174												
Parameter	Units	60442425001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Barium	ug/L		1000	1000	1000	1370	1370	101	102	70-130	1	20
Beryllium	ug/L		1000	1000	1000	1060	1060	106	106	70-130	0	20
Boron	ug/L	55.0J	1000	1000	1000	1040	1030	98	98	70-130	0	20
Calcium	ug/L	154000	10000	10000	10000	163000	164000	91	105	70-130	1	20
Cobalt	ug/L		1000	1000	1000	1050	1050	105	105	70-130	0	20
Iron	ug/L	20.5J	10000	10000	10000	10500	10500	105	104	70-130	0	20
Lead	ug/L		1000	1000	1000	1070	1070	107	107	70-130	0	20
Lithium	ug/L		1000	1000	1000	1060	1050	105	104	70-130	0	20
Magnesium	ug/L	14600	10000	10000	10000	24400	24600	98	100	70-130	1	20
Manganese	ug/L	8.6	1000	1000	1000	1060	1060	106	105	70-130	0	20
Molybdenum	ug/L		1000	1000	1000	1060	1050	106	105	70-130	1	20
Potassium	ug/L	3590	10000	10000	10000	13900	13800	103	102	70-130	1	20
Sodium	ug/L	7500	10000	10000	10000	17700	17600	102	101	70-130	1	20

MATRIX SPIKE SAMPLE: 3468175							
Parameter	Units	60442419028		Spike Conc.	MS	MS	% Rec
		Result	Conc.		Result	% Rec	Limits
Barium	ug/L		367	1000	1380	102	70-130
Beryllium	ug/L		<0.12	1000	1060	106	70-130
Boron	ug/L		83.6J	1000	1060	98	70-130
Calcium	ug/L		143000	10000	153000	108	70-130
Cobalt	ug/L		1.2J	1000	1050	105	70-130
Iron	ug/L		13.1J	10000	10400	104	70-130
Lead	ug/L		<3.8	1000	1060	106	70-130
Lithium	ug/L		23.3	1000	1040	102	70-130
Magnesium	ug/L		20900	10000	30700	98	70-130
Manganese	ug/L		179	1000	1240	106	70-130

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE SAMPLE:		3468175					
Parameter	Units	60442419028 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	<1.0	1000	1050	105	70-130	
Potassium	ug/L	31200	10000	41100	99	70-130	
Sodium	ug/L	2960	10000	13100	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 875739

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420002

METHOD BLANK: 3468159

Matrix: Water

Associated Lab Samples: 60442420002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 11:40	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 11:40	
Cadmium	ug/L	<0.050	0.50	0.050	12/11/23 11:40	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 11:40	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 11:40	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 11:40	

LABORATORY CONTROL SAMPLE: 3468160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	34.8	87	85-115	
Arsenic	ug/L	40	41.8	104	85-115	
Cadmium	ug/L	40	41.5	104	85-115	
Chromium	ug/L	40	42.1	105	85-115	
Selenium	ug/L	40	42.2	106	85-115	
Thallium	ug/L	40	38.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468161 3468162

Parameter	Units	60442419016		3468161		3468162		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result							
Antimony	ug/L	<0.12	40	40	34.3	34.6	86	86	86	70-130	1	20		
Arsenic	ug/L	0.42J	40	40	42.2	42.6	104	106	106	70-130	1	20		
Cadmium	ug/L	0.095J	40	40	39.4	39.8	98	99	99	70-130	1	20		
Chromium	ug/L	0.41J	40	40	40.4	40.7	100	101	101	70-130	1	20		
Selenium	ug/L	<0.18	40	40	39.5	41.0	98	102	102	70-130	4	20		
Thallium	ug/L	<0.14	40	40	40.1	40.6	100	101	101	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468163 3468164

Parameter	Units	60442423003		3468163		3468164		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result							
Antimony	ug/L		40	40	34.8	34.7	87	86	86	70-130	1	20		
Arsenic	ug/L		40	40	42.6	42.9	104	105	105	70-130	1	20		
Cadmium	ug/L		40	40	40.5	40.6	101	101	101	70-130	0	20		
Chromium	ug/L		40	40	41.9	42.2	104	104	104	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468163 3468164											
Parameter	Units	60442423003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Selenium	ug/L		40	40	41.5	41.8	100	101	70-130	1	20
Thallium	ug/L		40	40	40.6	41.2	101	103	70-130	2	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	875747	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420001, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK: 3468176 Matrix: Water

Associated Lab Samples: 60442420001, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 12:31	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 12:31	
Cadmium	ug/L	0.21J	0.50	0.050	12/11/23 12:31	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 12:31	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 12:31	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 12:31	

LABORATORY CONTROL SAMPLE: 3468177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.7	89	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	42.3	106	85-115	
Chromium	ug/L	40	42.6	107	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	39.6	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468178 3468179

Parameter	Units	60442420001		3468179		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.12	40	40	35.1	35.4	88	89	70-130	1	20
Arsenic	ug/L	0.89J	40	40	43.3	43.0	106	105	70-130	1	20
Cadmium	ug/L	<0.050	40	40	40.3	40.4	101	101	70-130	0	20
Chromium	ug/L	0.51J	40	40	41.6	41.7	103	103	70-130	0	20
Selenium	ug/L	<0.18	40	40	40.7	41.0	102	102	70-130	1	20
Thallium	ug/L	<0.14	40	40	41.1	41.4	103	103	70-130	1	20

MATRIX SPIKE SAMPLE: 3468180

Parameter	Units	60442419030 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	36.1	90	70-130	
Arsenic	ug/L	3.9	40	47.3	109	70-130	
Cadmium	ug/L	0.30J	40	41.0	102	70-130	
Chromium	ug/L	1.0	40	42.3	103	70-130	
Selenium	ug/L	<0.18	40	41.6	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE SAMPLE:		3468180					
Parameter	Units	60442419030 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	40	41.7	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	875783	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

METHOD BLANK: 3468379 Matrix: Water

Associated Lab Samples: 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 13:35	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 13:35	
Cadmium	ug/L	<0.050	0.50	0.050	12/11/23 13:35	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 13:35	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 13:35	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 13:35	

LABORATORY CONTROL SAMPLE: 3468380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	36.5	91	85-115	
Arsenic	ug/L	40	43.1	108	85-115	
Cadmium	ug/L	40	43.3	108	85-115	
Chromium	ug/L	40	43.4	108	85-115	
Selenium	ug/L	40	43.3	108	85-115	
Thallium	ug/L	40	40.6	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468381 3468382

Parameter	Units	60442419012		60442420004		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Antimony	ug/L	<0.12	40	40	35.8	36.4	90	91	70-130	2	20		
Arsenic	ug/L	0.20J	40	40	43.0	44.2	107	110	70-130	3	20		
Cadmium	ug/L	0.17J	40	40	40.6	41.9	101	104	70-130	3	20		
Chromium	ug/L	0.49J	40	40	41.4	43.2	102	107	70-130	4	20		
Selenium	ug/L	<0.18	40	40	41.4	42.0	103	105	70-130	2	20		
Thallium	ug/L	<0.14	40	40	41.7	42.8	104	107	70-130	3	20		

MATRIX SPIKE SAMPLE: 3468383

Parameter	Units	60442420004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	36.8	92	70-130	
Arsenic	ug/L	38.4	40	82.3	110	70-130	
Cadmium	ug/L	<0.050	40	42.7	107	70-130	
Chromium	ug/L	0.51J	40	44.0	109	70-130	
Selenium	ug/L	<0.18	40	42.8	107	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE SAMPLE:		3468383		60442420004		Spike	MS	MS	% Rec		
Parameter	Units	Result	Conc.	Result	% Rec	Result	% Rec	Limits	Qualifiers		
Thallium	ug/L	<0.14	40	42.0	105			70-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3468384		3468385		60442425001		MS	MSD	MS	MSD	% Rec	Max		
Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	Limits	RPD	RPD	Qual			
Antimony	ug/L		40	40	35.8	36.0	89	90	70-130	1	20				
Arsenic	ug/L		40	40	43.9	43.7	108	108	70-130	1	20				
Cadmium	ug/L		40	40	42.0	41.4	105	103	70-130	2	20				
Chromium	ug/L		40	40	42.7	42.4	106	105	70-130	1	20				
Selenium	ug/L		40	40	44.4	45.1	103	104	70-130	2	20				
Thallium	ug/L		40	40	42.1	42.1	105	105	70-130	0	20				

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 874727

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420001, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

METHOD BLANK: 3464569

Matrix: Water

Associated Lab Samples: 60442420001, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/23 12:21	

LABORATORY CONTROL SAMPLE: 3464570

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3464571

Parameter	Units	60442420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	383	385	1	10	

SAMPLE DUPLICATE: 3464572

Parameter	Units	60442425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	447	450	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 874879

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420002

METHOD BLANK: 3465019

Matrix: Water

Associated Lab Samples: 60442420002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/28/23 10:06	

LABORATORY CONTROL SAMPLE: 3465020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	484	97	90-110	

SAMPLE DUPLICATE: 3465021

Parameter	Units	60442419012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	343	346	1	10	

SAMPLE DUPLICATE: 3465022

Parameter	Units	60442423003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	448	452	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	875083	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK: 3465735 Matrix: Water
 Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/29/23 10:42	

LABORATORY CONTROL SAMPLE: 3465736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	486	97	90-110	

SAMPLE DUPLICATE: 3465737

Parameter	Units	60439754002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	266	264	1	10	H1

SAMPLE DUPLICATE: 3465738

Parameter	Units	60442466005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	403	405	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 874689	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420014, 60442420015, 60442420016

METHOD BLANK: 3464486 Matrix: Water

Associated Lab Samples: 60442420014, 60442420015, 60442420016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/27/23 14:47	

LABORATORY CONTROL SAMPLE: 3464487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	973	97	80-120	

SAMPLE DUPLICATE: 3464488

Parameter	Units	60442464001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	218	219	0	10	

SAMPLE DUPLICATE: 3464489

Parameter	Units	60442466003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1930	2110	9	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 874691

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420017

METHOD BLANK: 3464490

Matrix: Water

Associated Lab Samples: 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/27/23 13:45	

LABORATORY CONTROL SAMPLE: 3464491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3464492

Parameter	Units	60442420017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<136	<136		10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 878803	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420012, 60442420013

METHOD BLANK: 3480675 Matrix: Water

Associated Lab Samples: 60442420012, 60442420013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/29/23 14:10	

LABORATORY CONTROL SAMPLE: 3480676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3480677

Parameter	Units	60442425002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	479	480	0	10	H1

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 878920

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008

METHOD BLANK: 3481071

Matrix: Water

Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/22/23 18:57	1e

LABORATORY CONTROL SAMPLE: 3481072

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	936	94	80-120	1e

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 880000

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442420009

METHOD BLANK: 3484907

Matrix: Water

Associated Lab Samples: 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/28/23 10:59	2e

LABORATORY CONTROL SAMPLE: 3484908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	2e

SAMPLE DUPLICATE: 3484909

Parameter	Units	60442420009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<17.0	<25.4		10	2e,H1

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 875787 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

METHOD BLANK: 3468419 Matrix: Water
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/05/23 09:23	
Fluoride	mg/L	<0.12	0.20	0.12	12/05/23 09:23	
Sulfate	mg/L	<0.55	1.0	0.55	12/05/23 09:23	

METHOD BLANK: 3470526 Matrix: Water
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/06/23 22:54	
Fluoride	mg/L	<0.12	0.20	0.12	12/06/23 22:54	
Sulfate	mg/L	<0.55	1.0	0.55	12/06/23 22:54	

METHOD BLANK: 3470833 Matrix: Water
 Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/07/23 19:09	
Fluoride	mg/L	<0.12	0.20	0.12	12/07/23 19:09	
Sulfate	mg/L	<0.55	1.0	0.55	12/07/23 19:09	

LABORATORY CONTROL SAMPLE: 3468420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 3470527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.8	114	90-110 L1	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

LABORATORY CONTROL SAMPLE: 3470527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	94	90-110	

LABORATORY CONTROL SAMPLE: 3470834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468421 3468422

Parameter	Units	60442420001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	27.2	25	25	51.3	50.2	96	92	80-120	2	15		
Fluoride	mg/L	<0.12	2.5	2.5	1.9	2.0	78	81	80-120	5	15	M1	
Sulfate	mg/L	130	100	100	232	227	101	96	80-120	2	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468424 3468425

Parameter	Units	60442423003		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	3.3	5	5	8.4	8.4	102	102	80-120	0	15		
Fluoride	mg/L	<0.12	2.5	2.5	2.4	2.4	97	97	80-120	0	15		
Sulfate	mg/L	44.8	25	25	71.7	71.9	108	108	80-120	0	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468427 3468428

Parameter	Units	60442425001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	3.9	5	5	8.8	8.8	98	98	80-120	0	15		
Fluoride	mg/L	<0.12	2.5	2.5	2.4	2.4	97	97	80-120	0	15		
Sulfate	mg/L	7.9	5	5	11.2	11.6	67	75	80-120	4	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468430 3468431

Parameter	Units	60442419016		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	19.5	25	25	45.1	44.1	103	98	80-120	2	15		
Fluoride	mg/L	<0.12	2.5	2.5	1.7	1.4	68	58	80-120	16	15	M1,R1	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468430												3468431	
Parameter	Units	60442419016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Sulfate	mg/L	189	100	100	283	284	94	95	80-120	0	15		

SAMPLE DUPLICATE: 3468423

Parameter	Units	60442420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	27.2	27.4	1	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	130	125	4	15	

SAMPLE DUPLICATE: 3468426

Parameter	Units	60442423003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	3.3	3.5	4	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	44.8	45.7	2	15	

SAMPLE DUPLICATE: 3468429

Parameter	Units	60442425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	3.9	3.9	0	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	7.9	7.6	3	15	

SAMPLE DUPLICATE: 3468432

Parameter	Units	60442419016 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	19.5	19.7	1	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	189	186	2	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch: 876922 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK: 3473231 Matrix: Water
 Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 08:55	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 08:55	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 08:55	

METHOD BLANK: 3475667 Matrix: Water
 Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/15/23 15:09	
Fluoride	mg/L	<0.12	0.20	0.12	12/15/23 15:09	
Sulfate	mg/L	<0.55	1.0	0.55	12/15/23 15:09	

METHOD BLANK: 3476788 Matrix: Water
 Associated Lab Samples: 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/19/23 13:06	
Fluoride	mg/L	<0.12	0.20	0.12	12/19/23 13:06	
Sulfate	mg/L	<0.55	1.0	0.55	12/19/23 13:06	

LABORATORY CONTROL SAMPLE: 3473232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

LABORATORY CONTROL SAMPLE: 3475668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

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QUALITY CONTROL DATA

Project: AMEREN LCPA

Pace Project No.: 60442420

LABORATORY CONTROL SAMPLE: 3476789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	3.0	118	90-110	L1
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3473233 3473234

Parameter	Units	60443033003		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Chloride	mg/L	73.7	100	100	150	151	76	77	80-120	0	15	M1	
Fluoride	mg/L	ND	50	50	45.6	46.6	91	93	80-120	2	15		
Sulfate	mg/L	81.6	100	100	172	172	91	91	80-120	0	15		

SAMPLE DUPLICATE: 3473235

Parameter	Units	60443033003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	73.7	72.4	2	15	
Fluoride	mg/L	ND	<2.5		15	
Sulfate	mg/L	81.6	80.1	2	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.403 ± 0.459 (0.746) C:NA T:85%	pCi/L	12/19/23 14:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.993 ± 0.396 (0.598) C:82% T:86%	pCi/L	12/13/23 11:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.485 ± 0.411 (0.510) C:NA T:78%	pCi/L	12/19/23 14:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.01 ± 0.453 (0.769) C:84% T:82%	pCi/L	12/13/23 11:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-7D **Lab ID: 60442420003** Collected: 11/16/23 10:55 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	-0.132 ± 0.516 (1.10) C:NA T:92%	pCi/L	12/19/23 14:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.626 ± 0.447 (0.884) C:83% T:81%	pCi/L	12/13/23 11:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.400 ± 0.491 (0.806) C:NA T:85%	pCi/L	12/19/23 14:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.356 ± 0.312 (0.633) C:84% T:92%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.264 ± 0.312 (0.491) C:NA T:91%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.234 ± 0.292 (0.618) C:81% T:86%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.612 ± 0.660 (1.07) C:NA T:81%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.811 ± 0.372 (0.602) C:83% T:80%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-BMW-2D **Lab ID: 60442420007** Collected: 11/16/23 10:58 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.109 ± 0.399 (0.768) C:NA T:92%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.637 ± 0.369 (0.670) C:81% T:82%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.251 ± 0.461 (0.823) C:NA T:82%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.597 ± 0.329 (0.593) C:89% T:87%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-FB-1 **Lab ID: 60442420009** Collected: 11/16/23 12:28 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.111 ± 0.409 (0.786) C:NA T:89%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.128 ± 0.260 (0.574) C:87% T:83%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-MS-1 **Lab ID: 60442420010** Collected: 11/16/23 11:43 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	99.87 %REC ± NA (NA) C:NA T:NA	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	87.34 %REC ± NA (NA) C:NA T:NA	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-MSD-1	Lab ID: 60442420011	Collected: 11/16/23 11:43	Received: 11/18/23 04:55	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	83.12 %REC 18.31 RPD ± NA (NA) C:NA T:NA	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	89.88 %REC 2.86RPD ± NA (NA) C:NA T:NA	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.775 ± 0.723 (1.12) C:NA T:82%	pCi/L	12/19/23 14:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.47 ± 0.465 (0.584) C:80% T:89%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.350 (0.759) C:NA T:86%	pCi/L	12/19/23 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.292 ± 0.348 (0.733) C:80% T:79%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Sample: L-UMW-5D **Lab ID: 60442420014** Collected: 11/20/23 10:15 Received: 11/21/23 06:02 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.548 (1.12) C:NA T:74%	pCi/L	12/19/23 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.603 ± 0.481 (0.972) C:82% T:74%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.236 ± 0.590 (1.07) C:NA T:91%	pCi/L	12/19/23 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.819 ± 0.404 (0.713) C:86% T:84%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.644 (1.26) C:NA T:85%	pCi/L	12/19/23 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.685 ± 0.469 (0.910) C:76% T:77%	pCi/L	12/13/23 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.384 ± 0.774 (1.36) C:NA T:91%	pCi/L	12/19/23 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.685 ± 0.432 (0.824) C:84% T:83%	pCi/L	12/13/23 11:40	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	633880	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420010, 60442420011, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK:	3090203	Matrix:	Water
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Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420010, 60442420011, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0586 ± 0.248 (0.567) C:80% T:89%	pCi/L	12/13/23 11:40	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA

Pace Project No.: 60442420

QC Batch:	633879	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420010, 60442420011, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

METHOD BLANK:	3090201	Matrix:	Water
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Associated Lab Samples: 60442420001, 60442420002, 60442420003, 60442420004, 60442420005, 60442420006, 60442420007, 60442420008, 60442420009, 60442420010, 60442420011, 60442420012, 60442420013, 60442420014, 60442420015, 60442420016, 60442420017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0809 ± 0.185 (0.376) C:NA T:94%	pCi/L	12/19/23 14:42	

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QUALIFIERS

Project: AMEREN LCPA

Pace Project No.: 60442420

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1e See case narrative

2e See case narrative.

B Analyte was detected in the associated method blank.

H1 Analysis conducted outside the EPA method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442420001	L-UMW-2D	EPA 200.7	875741	EPA 200.7	875776
60442420002	L-UMW-4D	EPA 200.7	875737	EPA 200.7	875772
60442420003	L-UMW-7D	EPA 200.7	875682	EPA 200.7	875700
60442420004	L-UMW-8D	EPA 200.7	875682	EPA 200.7	875700
60442420005	L-UMW-9D	EPA 200.7	875682	EPA 200.7	875700
60442420006	L-BMW-1D	EPA 200.7	875682	EPA 200.7	875700
60442420007	L-BMW-2D	EPA 200.7	875682	EPA 200.7	875700
60442420008	L-UMW-DUP-1	EPA 200.7	875682	EPA 200.7	875700
60442420009	L-UMW-FB-1	EPA 200.7	875682	EPA 200.7	875700
60442420012	L-UMW-1D	EPA 200.7	875741	EPA 200.7	875776
60442420013	L-UMW-3D	EPA 200.7	875741	EPA 200.7	875776
60442420014	L-UMW-5D	EPA 200.7	875741	EPA 200.7	875776
60442420015	L-UMW-6D	EPA 200.7	875741	EPA 200.7	875776
60442420016	L-UMW-DUP-2	EPA 200.7	875741	EPA 200.7	875776
60442420017	L-UMW-FB-2	EPA 200.7	875741	EPA 200.7	875776
60442420001	L-UMW-2D	EPA 200.8	875747	EPA 200.8	875777
60442420002	L-UMW-4D	EPA 200.8	875739	EPA 200.8	875771
60442420003	L-UMW-7D	EPA 200.8	875783	EPA 200.8	875810
60442420004	L-UMW-8D	EPA 200.8	875783	EPA 200.8	875810
60442420005	L-UMW-9D	EPA 200.8	875783	EPA 200.8	875810
60442420006	L-BMW-1D	EPA 200.8	875783	EPA 200.8	875810
60442420007	L-BMW-2D	EPA 200.8	875783	EPA 200.8	875810
60442420008	L-UMW-DUP-1	EPA 200.8	875783	EPA 200.8	875810
60442420009	L-UMW-FB-1	EPA 200.8	875783	EPA 200.8	875810
60442420012	L-UMW-1D	EPA 200.8	875747	EPA 200.8	875777
60442420013	L-UMW-3D	EPA 200.8	875747	EPA 200.8	875777
60442420014	L-UMW-5D	EPA 200.8	875747	EPA 200.8	875777
60442420015	L-UMW-6D	EPA 200.8	875747	EPA 200.8	875777
60442420016	L-UMW-DUP-2	EPA 200.8	875747	EPA 200.8	875777
60442420017	L-UMW-FB-2	EPA 200.8	875747	EPA 200.8	875777
60442420001	L-UMW-2D	EPA 7470	876711	EPA 7470	876798
60442420002	L-UMW-4D	EPA 7470	876711	EPA 7470	876798
60442420003	L-UMW-7D	EPA 7470	876711	EPA 7470	876798
60442420004	L-UMW-8D	EPA 7470	876711	EPA 7470	876798
60442420005	L-UMW-9D	EPA 7470	876711	EPA 7470	876798
60442420006	L-BMW-1D	EPA 7470	876711	EPA 7470	876798
60442420007	L-BMW-2D	EPA 7470	876711	EPA 7470	876798
60442420008	L-UMW-DUP-1	EPA 7470	876711	EPA 7470	876798
60442420009	L-UMW-FB-1	EPA 7470	876711	EPA 7470	876798
60442420012	L-UMW-1D	EPA 7470	876711	EPA 7470	876798
60442420013	L-UMW-3D	EPA 7470	876711	EPA 7470	876798
60442420014	L-UMW-5D	EPA 7470	876711	EPA 7470	876798
60442420015	L-UMW-6D	EPA 7470	876711	EPA 7470	876798
60442420016	L-UMW-DUP-2	EPA 7470	876711	EPA 7470	876798
60442420017	L-UMW-FB-2	EPA 7470	876711	EPA 7470	876798

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442420001	L-UMW-2D	EPA 903.1	633879		
60442420002	L-UMW-4D	EPA 903.1	633879		
60442420003	L-UMW-7D	EPA 903.1	633879		
60442420004	L-UMW-8D	EPA 903.1	633879		
60442420005	L-UMW-9D	EPA 903.1	633879		
60442420006	L-BMW-1D	EPA 903.1	633879		
60442420007	L-BMW-2D	EPA 903.1	633879		
60442420008	L-UMW-DUP-1	EPA 903.1	633879		
60442420009	L-UMW-FB-1	EPA 903.1	633879		
60442420010	L-UMW-MS-1	EPA 903.1	633879		
60442420011	L-UMW-MSD-1	EPA 903.1	633879		
60442420012	L-UMW-1D	EPA 903.1	633879		
60442420013	L-UMW-3D	EPA 903.1	633879		
60442420014	L-UMW-5D	EPA 903.1	633879		
60442420015	L-UMW-6D	EPA 903.1	633879		
60442420016	L-UMW-DUP-2	EPA 903.1	633879		
60442420017	L-UMW-FB-2	EPA 903.1	633879		
60442420001	L-UMW-2D	EPA 904.0	633880		
60442420002	L-UMW-4D	EPA 904.0	633880		
60442420003	L-UMW-7D	EPA 904.0	633880		
60442420004	L-UMW-8D	EPA 904.0	633880		
60442420005	L-UMW-9D	EPA 904.0	633880		
60442420006	L-BMW-1D	EPA 904.0	633880		
60442420007	L-BMW-2D	EPA 904.0	633880		
60442420008	L-UMW-DUP-1	EPA 904.0	633880		
60442420009	L-UMW-FB-1	EPA 904.0	633880		
60442420010	L-UMW-MS-1	EPA 904.0	633880		
60442420011	L-UMW-MSD-1	EPA 904.0	633880		
60442420012	L-UMW-1D	EPA 904.0	633880		
60442420013	L-UMW-3D	EPA 904.0	633880		
60442420014	L-UMW-5D	EPA 904.0	633880		
60442420015	L-UMW-6D	EPA 904.0	633880		
60442420016	L-UMW-DUP-2	EPA 904.0	633880		
60442420017	L-UMW-FB-2	EPA 904.0	633880		
60442420001	L-UMW-2D	SM 2320B	874727		
60442420002	L-UMW-4D	SM 2320B	874879		
60442420003	L-UMW-7D	SM 2320B	874727		
60442420004	L-UMW-8D	SM 2320B	874727		
60442420005	L-UMW-9D	SM 2320B	874727		
60442420006	L-BMW-1D	SM 2320B	874727		
60442420007	L-BMW-2D	SM 2320B	874727		
60442420008	L-UMW-DUP-1	SM 2320B	874727		
60442420009	L-UMW-FB-1	SM 2320B	874727		
60442420012	L-UMW-1D	SM 2320B	875083		
60442420013	L-UMW-3D	SM 2320B	875083		
60442420014	L-UMW-5D	SM 2320B	875083		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA

Pace Project No.: 60442420

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442420015	L-UMW-6D	SM 2320B	875083		
60442420016	L-UMW-DUP-2	SM 2320B	875083		
60442420017	L-UMW-FB-2	SM 2320B	875083		
60442420001	L-UMW-2D	SM 2540C	878920		
60442420002	L-UMW-4D	SM 2540C	878920		
60442420003	L-UMW-7D	SM 2540C	878920		
60442420004	L-UMW-8D	SM 2540C	878920		
60442420005	L-UMW-9D	SM 2540C	878920		
60442420006	L-BMW-1D	SM 2540C	878920		
60442420007	L-BMW-2D	SM 2540C	878920		
60442420008	L-UMW-DUP-1	SM 2540C	878920		
60442420009	L-UMW-FB-1	SM 2540C	880000		
60442420012	L-UMW-1D	SM 2540C	878803		
60442420013	L-UMW-3D	SM 2540C	878803		
60442420014	L-UMW-5D	SM 2540C	874689		
60442420015	L-UMW-6D	SM 2540C	874689		
60442420016	L-UMW-DUP-2	SM 2540C	874689		
60442420017	L-UMW-FB-2	SM 2540C	874691		
60442420001	L-UMW-2D	EPA 300.0	875787		
60442420002	L-UMW-4D	EPA 300.0	875787		
60442420003	L-UMW-7D	EPA 300.0	875787		
60442420004	L-UMW-8D	EPA 300.0	875787		
60442420005	L-UMW-9D	EPA 300.0	875787		
60442420006	L-BMW-1D	EPA 300.0	875787		
60442420007	L-BMW-2D	EPA 300.0	875787		
60442420008	L-UMW-DUP-1	EPA 300.0	875787		
60442420009	L-UMW-FB-1	EPA 300.0	875787		
60442420012	L-UMW-1D	EPA 300.0	876922		
60442420013	L-UMW-3D	EPA 300.0	876922		
60442420014	L-UMW-5D	EPA 300.0	876922		
60442420015	L-UMW-6D	EPA 300.0	876922		
60442420016	L-UMW-DUP-2	EPA 300.0	876922		
60442420017	L-UMW-FB-2	EPA 300.0	876922		

REPORT OF LABORATORY ANALYSIS

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WO# : 60442420



60442420



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geoenig

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.1/1.1/2.4 Corr. Factor 0.3 Corrected 1.8/0.8/2.1

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 14.5/14.9

14.2/14.6

1/12/2022

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>NT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) <input type="checkbox"/> Yes <input type="checkbox"/> No Potassium iodide test strip turns blue/purple? (Preserve) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 62187

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



Scan QR Code for instructions

60442420

CHAIN-OF-CUSTODY Analytical Request Document
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace®
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

Company Name: Rocksmith Geoeengineering, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
CC E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com
Customer Project #: AMEREN LCPA
Project Name: AMEREN LCPA

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET [] Missouri
Data Deliverables:
[] Level II [] Level III [] Level IV
[] EQUIS
[] Other _____
Rush (Pre-approval required):
[] 2 Day [] 3 day [] 5 day [] Other _____
Date Results Requested:
Field Filtered (if applicable): [] Yes [] No
Analysis: _____
Regulatory Program (DW, RCRA, etc.) as applicable: Missouri
DW PWSID # or WW Permit # as applicable: _____
Matrix * (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (for Composite Start)		Composite End		Res. CLZ	Number & Type of Containers	
			Date	Time	Date	Time		Plastic	Glass
L-UMW-1D	WT								
L-UMW-2D	WT	G	11-16-23	1143				4	2
L-UMW-3D	WT								
L-UMW-4D	WT	G	11-17-23	1342				4	2
L-UMW-5D	WT								
L-UMW-6D	WT								
L-UMW-7D	WT	G	11-16-23	1055				4	2
L-UMW-8D	WT	G	11-16-23	1218				4	2
L-UMW-9D	WT	G	11-16-23	1342				4	2
L-BMW-1D	WT	G	11-16-23	0933				4	2

Customer Remarks / Special Conditions / Possible Hazards:
* App III and Cat/An Metals - EPA 200.7; Fe, Mg, Mn, K, Ca, B
** App IV Metals - EPA 200.7; Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
*** UWL Metals - 200.7; Al, Cu, Ni, Ag, Zn

Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓

Lab Use Only
Proj. Mgr: **Jamie Church**
AcctNum / Client ID:
Table #:
Profile / Template: **15857, Line 1**
Prelog / Bottle Ord. ID: **EZ 3011894**
Sample Comment: **Sample time: 1342**

Additional Instructions from Pace®:
Collected By: **Grant Morey**
Printed Name: **Grant Morey**
Signature: *Grant Morey*
Received by/Company: (Signature) *Jeff Ingram*
Received by/Company: (Signature) *Jeff Ingram*
Received by/Company: (Signature) _____
Received by/Company: (Signature) _____
Received by/Company: (Signature) _____

Date/Time: 11-17-23 / 1545
Date/Time: _____
Date/Time: _____
Date/Time: _____

CHAIN-OF-CUSTODY Analytical Request Document
 Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace® Location Requested (City/State):
 Pace Analytical Kansas
 9608 Loiret Blvd., Lenexa, KS 66219

Company Name: Rocksmith Geoenjineering, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: jeff.ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Customer Project #:
Project Name: AMEREN LCPC

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET []

Data Deliverables:
 Level II Level III Level IV
 EQUIS
 Other

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

Rush (Pre-approval required):
 2 Day [] 3 day [] 5 day [] Other

Date Results Requested:
 DW PWSID # or WW Permit # as applicable:
 Field Filtered (if applicable): [] Yes [] No
 Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SD), Sludge (SL), Caulk

Customer Sample ID

Matrix *

Comp / Grab

Collected (or Composite Start) Date

Time

Res. CL2

Composite End Date

Time

Number & Type of Containers

Plastic

Glass

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Res. CL2	Composite End Date	Time	Number & Type of Containers	Plastic	Glass
L-BMW-2D	WT	G	11-16-23	1058				4	2	
L-UMW-DUP-1	WT	G	11-16-23	-				4	2	
L-UMW-DUP-2	WT									
L-UMW-FB-1	WT	G	11-16-23	1228				4	2	
L-UMW-FB-2	WT									
L-UMW-MS-1	WT	G	11-16-23	1143				4	2	
L-UMW-MSD-1	WT	G	11-16-23	1143				4	2	

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti +7470 Hg
 *** UJWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Collected By: Grant Mery
Printed Name:
Signature:

Received by/Company (Signature): Jeff My
Date/Time: 11-17-23/1545

Received by/Company (Signature):
Date/Time:

Received by/Company (Signature):
Date/Time:

Received by/Company (Signature):
Date/Time:

Additional Instructions from Pace®:

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C) Corrected Temp. (°C)

Tracking Number: 11/16/23 0455

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 2 of 2

boyano

Scan QR Code for instructions

Specify Container Size **

Identify Container Preservative Type ***

Analysis Requested

Proj. Mgr: **Jamie Church**
 Acct/Num / Client ID:
 Table #:
 Profile / Template:
15857, Line 1
 Preleg / Bottle Ord. ID:
EZ 3011894

Chloride/Fluoride/Sulfate

Alkalinity

TDS

App III and Cat/An Metals (200.7)*

Appendix IV Metals (200.7/200.8/7470)**

Radium 226 & Radium 228

*****UWL Metals (200.7)**

TOX

✓ TOC+COD

Preservation non-conformance identified for sample

Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Sample Comment:
 Collected @ L-UMW-2D
 I

1/2

Recksmiths Geology

Profile #

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other				
1																																		
2	WT												3						3			2	3							M				
3													1						1			↓	↓											
4	WT																																	
5																																		
6																																		
7	WT																																	
8																																		
9																																		
10																																		
11																																		
12																																		

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	120mL Colliform Na Thiosulfate
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	1L unpreserved plastic	Ziploc Bag
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	Air Filter
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	Air Cassettes
DG9U	40mL amber unpreserved	500mL HNO3 plastic	Terracore Kit
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	Summa Can
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	
WGDU	16oz clear soil jar	250mL H2SO4 plastic	
		250mL NaOH, Zn Acetate	
		125mL unpreserved plastic	
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

604420

Work Order Number:

2/2

Client: Rocks with Greeng

Profile #

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT												→						→			→	→						Ag2S	
2	→												→						→			→	→						←	
3													→						→			→	→							
4	→												→						→			→	→							
5													→						→			→	→							
6																			→			→	→							
7																			→			→	→							
8																			→			→	→							
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T 120mL Colliform Na Thiosulfate
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCl Clear glass	250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	250mL H2SO4 plastic	OIL OIL
		250mL NaOH, Zn Acetate	WP Wipe
		125mL unpreserved plastic	DW Drinking Water
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

Work Order Number: 10442420

WO#: 60442420



60442420

	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geomg

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0/1.7 Corr. Factor -0.7 Corrected 1.7/1.4

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12.5/14.2 12.4/13.9

PV 11/21/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY Analytical Request Document
 Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: Rocksmith Geoenvironmental, LLC
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: jeff.ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Customer Project #: AMEREN LCPC
Project Name: AMEREN LCPC
Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] MT [] CT [] ET
Data Deliverables: Regulatory Program (DW, RCRA, etc.) as applicable:
 Level II Level III Level IV
 EQUIS Other

Rush (Pre-approval required): DW PWSID # or WW Permit # as applicable:
 12 Day 15 day Other

Date Results Requested:
 Field Filtered (if applicable): [] Yes [] No
 Analysis:

County / State of origin of sample(s): Missouri

Matrix * (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End Date	Res. CLZ	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cal/An Metals (200.7)*	Appendix IV Metals (200.7) **	Radium 226 & Radium 228	****UWL Metals (200.7)	CED + TOC	TOX	Preservation non-conformance identified for sample.
			Date	Time			Plastic	Glass										
L-UMW-1D	WT	G	11-20-23	1115			4	2										
L-UMW-2D	WT																	
L-UMW-3D	WT	G	11-20-23	1302			4	2										
L-UMW-4D	WT																	
L-UMW-5D	WT	G	11-20-23	1015			4	2										
L-UMW-6D	WT	G	11-20-23	1207			4	2										
L-UMW-7D	WT																	
L-UMW-8D	WT																	
L-UMW-9D	WT																	
L-BMW-1D	WT																	

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cal/An Metals - EPA 200.7: Fe, Mg, Mn, K, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Tl + 7470 Hg
 *** UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Additional Instructions from Pace:

Coolers: 4
Thermometer ID: T298
Correction Factor (°C): -0.3
Obs. Temp. (°C): 1.7
Corrected Temp. (°C): 1.7

Tracking Number: 112127 4600
Date/Time: 11/20/23 1500
Received by/Company (Signature): [Signature]
Received by/Company (Signature): [Signature]
Received by/Company (Signature): [Signature]
Received by/Company (Signature): [Signature]
Received by/Company (Signature): [Signature]

Delivered by: [] In-Person [] Courier
Page: 9 of 2



Scan QR Code for instructions

60442420

Specify Container Size **
 25mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other
 Identify Container Preservative Type ***
 *** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested
 Proj. Mgr: Jamie Church
 Acct/Num / Client ID:
 Table #:
 Profile / Template: 15857, Line 1
 Preg / Bottle Ord. ID: EZ 3011894
 Lab Use Only
 Sample Comment

Scan QR Code for Instructions

60442420

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: Rocksmith Geoeengineering, LLC
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Ct. E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Customer Project #: AMEREN LCPA
Project Name: AMEREN LCPA
Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET []
Data Deliverables:
 Level II Level III Level IV
 EQUIS Other _____
Rush (Pre-approval required):
 1 Day 3 day 5 day Other _____
Date Results Requested: _____
County / State origin of sample(s): Missouri

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (O), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Res. CLZ	Composite End Date	Time	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)	CD+TDC TOX	Preservation non-conformance identified for sample
			Date	Time				Plastic	Glass									
L-BMW-2D	WT																	
L-UMW-DUP-1	WT																	
L-UMW-DUP-2	WT	G	11-20-23	1107				4	2									
L-UMW-FB-1	WT																	
L-UMW-FB-2	WT	G	11-20-23	1107				4	2									
L-UMW-MS-1	WT																	
L-UMW-MSD-1	WT																	

Customer Remarks / Special Conditions / Possible Hazards:
 ** App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Ca, B
 *** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 ****UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Collected By: Grant Morey
Printed Name: Grant Morey
Signature: *Grant Morey*

Received by/Company (Signature): *Grant Morey*
Date/Time: 11-20-23 / 1500

Received by/Company (Signature): _____
Date/Time: _____

Received by/Company (Signature): _____
Date/Time: _____

Received by/Company (Signature): _____
Date/Time: _____

Additional Instructions from Pace*:
 # Coolers: 4 Thermometer ID: T298 Correction Factor (°C): -0.3
 Date/Time: 11/21/23 Tracking Number: 0602
 Date/Time: 11/21/23

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 2 of 2

1/2 ONLY print what you log.

Client: Racksmith Geoeny

Profile # AG35 SI-11WET / BPN = SE-38 CAD / RADD

Site: _____

Notes: Append to 60442420

COC Line Item	Matrix	VG9H	DG9H	DG9Q	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other	
1	WT																	1			2	1							Ag35	
2																														
3	WT																				2	1								
4																														
5	WT																				2	1								
6	WT																				2	1								
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	1L unpreserved plastic	AF
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R
DG9U	40mL amber unpreserved	500mL HNO3 plastic	U
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL unpreserved plastic	
BG3U	250mL Unpres Clear glass	250mL H2SO4 plastic	
WGDU	16oz clear soil jar	250mL NaOH, Zn Acetate	
		125mL unpreserved plastic	
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

Work Order Number:

60442420

Client: Rocksmitth Geveing

Profile # _____

Site: _____

Notes _____

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other	
1																															
2																															
3	WT												1							1			2	1							1
4																															
5	WT												1							1			2	1							1
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	1L unpreserved plastic	AF
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R
DG9U	40mL amber unpreserved	500mL HNO3 plastic	U
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCl Clear glass	250mL HNO3 plastic	WT
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	SL
WGDU	16oz clear soil jar	250mL H2SO4 plastic	NAL
		250mL NaOH, Zn Acetate	OL
		125mL unpres plastic	WP
		100mL unpres plastic	DW
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	
			Matrix
			Water
			Solid
			Non-aqueous Liquid
			OIL
			Wipe
			Drinking Water

Work Order Number:

60042420



Internal Transfer Chain of Custody



Rush Multiplier X
 Samples Pre-Logged into eCOC
 Workorder Name: AMEREN LCPA

State Of Origin: MO
 Cert. Needed: Yes No
 Owner Received Date: 11/18/2023 Results Requested By: 12/6/2023

Workorder: 60442420 Report To: Subcontract To: Requested Analysis:

Jamie Church
 Pace Analytical Kansas
 9608 Loiret Blvd.
 Lenexa, KS 66219
 Phone 314-838-7223

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY											
						HNO3													
1	L-UMW-2D	RQS	11/16/2023 11:43	60442420001	Water			X	Radium 226										001
2	L-UMW-4D	PS	11/17/2023 13:42	60442420002	Water			X	Radium 228										002
3	L-UMW-7D	PS	11/16/2023 10:55	60442420003	Water			X											003
4	L-UMW-8D	PS	11/16/2023 12:18	60442420004	Water			X											004
5	L-UMW-9D	PS	11/16/2023 13:42	60442420005	Water			X											005
6	L-BMW-1D	PS	11/16/2023 09:33	60442420006	Water			X											006
7	L-BMW-2D	PS	11/16/2023 10:58	60442420007	Water			X											007
8	L-UMW-DUP-1	PS	11/16/2023 08:00	60442420008	Water			X											008
9	L-UMW-FB-1	PS	11/16/2023 12:28	60442420009	Water			X											009
10	L-UMW-MS-1	PS	11/16/2023 11:43	60442420010	Water			X											010
11	L-UMW-MSD-1	PS	11/16/2023 11:43	60442420011	Water			X											011
12	L-UMW-1D	PS	11/20/2023 11:15	60442420012	Water			X											012
13	L-UMW-3D	PS	11/20/2023 13:02	60442420013	Water			X											013
14	L-UMW-5D	PS	11/20/2023 10:15	60442420014	Water			X											014
15	L-UMW-6D	PS	11/20/2023 12:07	60442420015	Water			X											015
16	L-UMW-DUP-2	PS	11/20/2023 00:00	60442420016	Water			X											016
17	L-UMW-FB-2	PS	11/20/2023 11:07	60442420017	Water			X											017

WO#: 30643051




Transfers		Released By	Date/Time	Received By	Date/Time	Comments	
1		<i>[Signature]</i>	11-27-23 17:00	<i>[Signature]</i>	11/28/23 9:33	Note: 001 is parent sample for MS/MSD samples 010/011.	
2						KS sample location: Receiving	
3						Samples Intact <input checked="" type="radio"/> Y or <input type="radio"/> N	

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO# : 30643051

PM: MAR Due Date: 12/19/23

CLIENT: PACE_60_LEKS


**DC#_Title: ENV-FRM-GBUR-0088 v06_Sample Condition Upon Receipt-
Pittsburgh**
 Effective Date: 09/20/2023

WO#: 30643051

Client Name: Pace - KS

PM: MAR Due Date: 12/19/23
CLIENT: PACE_60_LEKS

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking Number: 6432 1395 2555

Examined By: PS 11/30/23
Labeled By: PS 11/30/23
Temped By: _____

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No
Thermometer Used: _____ Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>1000831</u>	_____
Chain of Custody Present	/				
Chain of Custody Filled Out: -Were client corrections present on COC	/				
Chain of Custody Relinquished	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	/				
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):		/			
Rush Turn Around Time Requested:		/			
Sufficient Volume:	/				
Correct Containers Used: -Pace Containers Used	/				
Containers Intact:	/				
Orthophosphate field filtered:			/		
Hex Cr Aqueous samples field filtered:			/		
Organic Samples checked for dechlorination			/		
Filtered volume received for dissolved tests:			/		
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	/				
All containers meet method preservation requirements:	/			Initial when completed <u>PS</u>	Date/Time of Preservation
8260C/D: Headspace in VOA Vials (> 6mm)			/	Lot# of added Preservative	
624.1: Headspace in VOA Vials (0mm)			/		
Trip Blank Present:			/	Trip blank custody seal present? YES or NO	
Rad Samples Screened <.05 mrem/hr.	/			Initial when completed <u>PS</u>	Date: <u>11/28/23</u> Survey Meter SN: <u>25014380</u>
Comments:					

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office. PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.



Memorandum

January 30, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23007

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Labadie Energy Center – LCPA – Data Package 60442420**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time controls, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a laboratory control sample criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren LCPA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23007
 Validation Date: 1/30/2024

Laboratory: Pace Analytical SDG #: 60442420
 Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
 Matrix: Air Soil/Sed. Water Waste EPA 903.1/904.0 (Radium 226+228)
 Sample Names L-UMW-2D, L-UMW-4D, L-UMW-7D, L-UMW-8D, L-UMW-9D, L-BMW-1D, L-BMW-2D, L-UMW-DUP-1, L-UMW-FB-1, L-UMW-MS-1, L-UMW-MSD-1, L-UMW-1D, L-UMW-3D, L-UMW-5D, L-UMW-6D, L-UMW-DUP-2, L-UMW-FB-2

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/16/2023 - 11/20/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/JSI</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

Note Deficiencies: Criteria were not met for some method blanks, hold time, laboratory control samples, and matrix spike/matrix spike duplicates. Specific deficiencies explained in detail below.

Revised data packet only includes parameters required under the CCR rule.

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Some chloride and TDS samples were analyzed outside of hold time. Results qualified as estimates.

Chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3468002: cobalt (1.6J). Associated with samples -003 through -009. Results < RL reported as ND at RL.

3468169: barium (0.67J). Associated with samples -001 and -012 through -017. No qualification necessary, results > RL and 10x blank, one result a non-detect.

3468176: cadmium (0.21J). Associated with samples -001 and -012 and -017. Results < RL reported as ND at RL.

Field Blanks:

L-UMW-FB-1 @ L-UMW-8D: beryllium (0.14J). Result < RL, qualified as ND at RL.

L-UMW-FB-2 @ L-UMW-1D: boron (16.6J), potassium (84.6J), chromium (0.42J), chloride (1.1). Chromium result < RL, qualified as ND at RL. No other qualification necessary.

Laboratory Control Samples:

3470527: LCS recovery high for fluoride, associated with samples -001 through -009. Detected results (1) qualified as estimates.

3476789: LCS recovery high for fluoride, associated with samples -012 through -017. All results are non-detects, no qualification necessary.

Duplicates:

L-UMW-DUP-1 @ L-UMW-7D: DUP RPD exceeds limit for beryllium (33%). Radium 228 detected in field duplicate and not in parent sample, results qualified as estimates.

L-UMW-DUP-2 @ L-UMW-5D: DUP RPD exceeds limit for sulfate (16%). Magnesium detected in field duplicate and not in parent sample, results qualified as estimates.

Lab duplicate max RPD: 10%: alkalinity, TDS; 15%: chloride, fluoride, sulfate

MS/MSD:

3468158: MS recovery low for calcium, associated with unrelated sample, no qualification necessary.

3468421/3468422: MS recovery low for fluoride, MSD recovery and RPD within control limits, no qualification necessary.

3468427/3468428: MS/MSD recoveries low for sulfate associated with unrelated sample, no qualification necessary.

3468430/3468431: MS/MSD recoveries low and RPD exceeds control limit for fluoride, associated with unrelated sample, no qualification necessary.

3473233/3473234: MS/MSD recoveries low for chloride, associated with unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-FB-1	TDS	17	UJ	Analyzed outside of hold time controls
L-UMW-1D	"	596	J	"
L-UMW-3D	"	515	J	"
L-UMW-5D	Chloride	20.8	J	"
L-UMW-6D	"	19.6	J	"
L-UMW-7D	Cobalt	5	U	Detected in method blank, result < RL
L-UMW-8D	Cobalt	5	U	"
L-UMW-9D	Cobalt	5	U	"
L-BMW-1D	Cobalt	5	U	"
L-BMW-2D	Cobalt	5	U	"
L-UMW-DUP-1	Cobalt	5	U	"
L-UMW-3D	Cadmium	0.50	U	"
L-UMW-5D	"	0.50	U	"
L-UMW-6D	"	0.50	U	"
L-UMW-DUP-2	"	0.50	U	"
L-UMW-8D	Beryllium	1.0	U	Detected in field blank, result < RL
L-UMW-1D	Chromium	1.0	U	"
L-UMW-8D	Fluoride	0.20	J+	LCS recovery high
L-UMW-7D	Beryllium	0.18	J	Field duplicate RPD exceeds control limits
L-UMW-DUP-1	"	0.25	J	"
L-UMW-7D	Radium 228	0.884	UJ	Detected in field duplicate, ND in parent sample
L-UMW-DUP-1	"	0.597	J	"
L-UMW-5D	Magnesium	20.1	UJ	"
L-UMW-DUP-2	"	27.3	J	"
L-UMW-5D	Sulfate	303	J	Field duplicate RPD exceeds control limits
L-UMW-DUP-2	"	357	J	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: Grant Morey

Date: 1/30/2024



January 31, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN LCPA-CA
Pace Project No.: 60442419

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 18, 2023 and November 21, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 1/30/24: Parameters not required under the CCR rule removed.

REV-2, 1/31/24: Excluded samples L-LMW-1S, L-LMW-2S, L-LMW-4S, L-LMW-7S, and L-LMW-8S added.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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**SAMPLE SUMMARY**

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60442419001	L-AMW-8	Water	11/16/23 16:38	11/18/23 04:55
60442419008	L-MW-24	Water	11/17/23 09:30	11/18/23 04:55
60442419010	L-MW-33(D)	Water	11/16/23 13:05	11/18/23 04:55
60442419011	L-MW-34(D)	Water	11/16/23 14:13	11/18/23 04:55
60442419012	L-MW-35(D)	Water	11/17/23 10:17	11/18/23 04:55
60442419013	L-TP-1D	Water	11/15/23 12:38	11/18/23 04:55
60442419014	L-TP-2M	Water	11/17/23 09:08	11/18/23 04:55
60442419015	L-TP-2D	Water	11/17/23 10:09	11/18/23 04:55
60442419016	L-TP-3M	Water	11/15/23 15:18	11/18/23 04:55
60442419017	L-TP-3D	Water	11/15/23 14:32	11/18/23 04:55
60442419018	L-TP-4D	Water	11/15/23 13:38	11/18/23 04:55
60442419019	L-CA-DUP-1	Water	11/16/23 08:00	11/18/23 04:55
60442419020	L-CA-DUP-2	Water	11/17/23 08:00	11/18/23 04:55
60442419021	L-CA-FB-1	Water	11/16/23 14:10	11/18/23 04:55
60442419022	L-CA-FB-2	Water	11/16/23 16:40	11/18/23 04:55
60442419023	L-MS-1	Water	11/15/23 15:18	11/18/23 04:55
60442419024	L-MSD-1	Water	11/15/23 15:18	11/18/23 04:55
60442419025	L-MS-2	Water	11/17/23 10:17	11/18/23 04:55
60442419026	L-MSD-2	Water	11/17/23 10:17	11/18/23 04:55
60442419028	L-S-1	Water	11/20/23 11:38	11/21/23 06:02
60442419029	L-AM-1S	Water	11/20/23 09:46	11/21/23 06:02
60442419030	L-AM-1D	Water	11/20/23 08:58	11/21/23 06:02
60442419031	L-CA-DUP-3	Water	11/20/23 00:00	11/21/23 06:02
60442419032	L-CA-FB-3	Water	11/20/23 08:40	11/21/23 06:02
60442419002	L-BMW-1S	Water	11/16/23 08:50	11/18/23 04:55
60442419003	L-BMW-2S	Water	11/16/23 10:18	11/18/23 04:55
60442419009	L-MW-26	Water	11/17/23 11:27	11/18/23 04:55
60442419004	L-LMW-1S	Water	11/16/23 10:06	11/18/23 04:55
60442419005	L-LMW-4S	Water	11/17/23 12:46	11/18/23 04:55
60442419006	L-LMW-7S	Water	11/15/23 15:39	11/18/23 04:55
60442419007	L-LMW-8S	Water	11/16/23 08:54	11/18/23 04:55
60442419027	L-LMW-2S	Water	11/20/23 09:12	11/21/23 06:02

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442419001	L-AMW-8	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60442419008	L-MW-24	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60442419010	L-MW-33(D)	SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60442419011	L-MW-34(D)	SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
60442419012	L-MW-35(D)	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
60442419012	L-MW-35(D)	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442419013	L-TP-1D	SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60442419014	L-TP-2M	SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60442419015	L-TP-2D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419016	L-TP-3M	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
60442419017	L-TP-3D	EPA 200.8	JGP	6	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419018	L-TP-4D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419019	L-CA-DUP-1	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419020	L-CA-DUP-2	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419021	L-CA-FB-1	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442419022	L-CA-FB-2	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60442419023	L-MS-1	EPA 300.0	RKA	3	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60442419024	L-MSD-1	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60442419025	L-MS-2	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60442419026	L-MSD-2	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60442419028	L-S-1	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419029	L-AM-1S	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419030	L-AM-1D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442419031	L-CA-DUP-3	EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60442419032	L-CA-FB-3	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442419002	L-BMW-1S	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
60442419003	L-BMW-2S	EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
60442419009	L-MW-26	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60442419004	L-LMW-1S	EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	BMT	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
60442419005	L-LMW-4S	SM 2320B	BMT	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	BMT	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		60442419006	L-LMW-7S	EPA 200.7	JXD	13	PASI-K
EPA 200.8	JGP			6	PASI-K		
EPA 7470	MRV			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	BMT			1	PASI-K		
SM 2540C	CRN2			1	PASI-K		
EPA 300.0	RKA			3	PASI-K		
60442419007	L-LMW-8S			EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
				EPA 7470	MRV	1	PASI-K
				EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	BMT	1	PASI-K		

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442419027	L-LMW-2S	SM 2540C	CRN2	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Date: January 31, 2024

2e: Analysis performed at Pace Analytical STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042. TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389.

3e: Analysis performed at Pace Analytical STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042. TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 200.7

Description: 200.7 Metals, Total

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 875682

B: Analyte was detected in the associated method blank.

- BLANK for HBN 875682 [MPRP/803 (Lab ID: 3468002)
- Cobalt

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 875680

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60442374001,60442419007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3467997)
 - Potassium
- MSD (Lab ID: 3467998)
 - Potassium

QC Batch: 875737

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):

60442419016,60442423003,60442425003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3468158)
 - Calcium

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA
Pace Project No.: 60442419

Method: EPA 200.7
Description: 200.7 Metals, Total
Client: Rocksmith Geoengineering, LLC.
Date: January 31, 2024

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 200.8

Description: 200.8 MET ICPMS

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for EPA 200.8 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 875747

B: Analyte was detected in the associated method blank.

- BLANK for HBN 875747 [MPRP/803 (Lab ID: 3468176)
- Cadmium

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 7470

Description: 7470 Mercury

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for EPA 7470 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 903.1

Description: 903.1 Radium 226

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

32 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 904.0

Description: 904.0 Radium 228

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

32 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: SM 2320B

Description: 2320B Alkalinity

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for SM 2320B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.

- L-CA-FB-1 (Lab ID: 60442419021)
- L-LMW-2S (Lab ID: 60442419027)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 874691

1e: Achieving a constant weight was not met for this sample.

- L-AM-1D (Lab ID: 60442419030)
 - Total Dissolved Solids

QC Batch: 878919

2e: See case narrative

- BLANK (Lab ID: 3481069)
 - Total Dissolved Solids
- L-AMW-8 (Lab ID: 60442419001)
 - Total Dissolved Solids
- L-BMW-1S (Lab ID: 60442419002)
 - Total Dissolved Solids
- L-BMW-2S (Lab ID: 60442419003)
 - Total Dissolved Solids
- L-CA-DUP-1 (Lab ID: 60442419019)
 - Total Dissolved Solids

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

Analyte Comments:

QC Batch: 878919

2e: See case narrative

- L-CA-DUP-2 (Lab ID: 60442419020)
 - Total Dissolved Solids
- L-LMW-1S (Lab ID: 60442419004)
 - Total Dissolved Solids
- L-LMW-4S (Lab ID: 60442419005)
 - Total Dissolved Solids
- L-LMW-7S (Lab ID: 60442419006)
 - Total Dissolved Solids
- L-LMW-8S (Lab ID: 60442419007)
 - Total Dissolved Solids
- L-MW-24 (Lab ID: 60442419008)
 - Total Dissolved Solids
- L-MW-26 (Lab ID: 60442419009)
 - Total Dissolved Solids
- L-MW-33(D) (Lab ID: 60442419010)
 - Total Dissolved Solids
- L-MW-34(D) (Lab ID: 60442419011)
 - Total Dissolved Solids
- L-MW-35(D) (Lab ID: 60442419012)
 - Total Dissolved Solids
- L-TP-1D (Lab ID: 60442419013)
 - Total Dissolved Solids
- L-TP-2D (Lab ID: 60442419015)
 - Total Dissolved Solids
- L-TP-2M (Lab ID: 60442419014)
 - Total Dissolved Solids
- L-TP-3D (Lab ID: 60442419017)
 - Total Dissolved Solids
- L-TP-3M (Lab ID: 60442419016)
 - Total Dissolved Solids
- L-TP-4D (Lab ID: 60442419018)
 - Total Dissolved Solids
- LCS (Lab ID: 3481070)
 - Total Dissolved Solids

QC Batch: 878920

2e: See case narrative

- BLANK (Lab ID: 3481071)
 - Total Dissolved Solids
- L-CA-FB-2 (Lab ID: 60442419022)
 - Total Dissolved Solids
- LCS (Lab ID: 3481072)
 - Total Dissolved Solids

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

Analyte Comments:

QC Batch: 880000

3e: See case narrative.

- BLANK (Lab ID: 3484907)
 - Total Dissolved Solids
- DUP (Lab ID: 3484909)
 - Total Dissolved Solids
- L-CA-FB-1 (Lab ID: 60442419021)
 - Total Dissolved Solids
- LCS (Lab ID: 3484908)
 - Total Dissolved Solids

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

General Information:

28 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 875610

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 3467696)
- Fluoride

QC Batch: 875787

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3470527)
- Fluoride

QC Batch: 876922

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3476789)
- Fluoride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 875610

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60442419012

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3467697)
 - Fluoride
 - Sulfate
- MSD (Lab ID: 3467698)
 - Fluoride

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PROJECT NARRATIVE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: Rocksmith Geoengineering, LLC.

Date: January 31, 2024

QC Batch: 875787

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
60442419016,60442420001,60442423003,60442425001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3468421)
 - Fluoride
- MS (Lab ID: 3468424)
 - Sulfate
- MS (Lab ID: 3468427)
 - Sulfate
- MS (Lab ID: 3468430)
 - Fluoride
- MSD (Lab ID: 3468425)
 - Sulfate
- MSD (Lab ID: 3468428)
 - Sulfate
- MSD (Lab ID: 3468431)
 - Fluoride

R1: RPD value was outside control limits.

- MSD (Lab ID: 3468431)
 - Fluoride

QC Batch: 876922

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60443033003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3473233)
 - Chloride
- MSD (Lab ID: 3473234)
 - Chloride

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AMW-8 Lab ID: 60442419001 Collected: 11/16/23 16:38 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	117	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:42	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:42	7440-41-7	
Boron	6670	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:42	7440-42-8	
Calcium	68200	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:42	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:42	7440-48-4	
Iron	2640	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:42	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:42	7439-92-1	
Lithium	15.8	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:42	7439-93-2	
Magnesium	11000	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:42	7439-95-4	
Manganese	327	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:42	7439-96-5	
Molybdenum	280	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:42	7439-98-7	
Potassium	6480	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:42	7440-09-7	
Sodium	76500	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:42	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:05	7440-36-0	
Arsenic	0.28J	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:05	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:05	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:05	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:05	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:05	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:38	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	95.6	mg/L	20.0	10.5	1		11/24/23 18:44		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	510	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.1	mg/L	5.0	2.6	5		12/07/23 09:53	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 09:41	16984-48-8	L2
Sulfate	273	mg/L	20.0	11.0	20		12/04/23 12:09	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-24 Lab ID: 60442419008 Collected: 11/17/23 09:30 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	175	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:04	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:04	7440-41-7	
Boron	71.9J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:04	7440-42-8	
Calcium	128000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:04	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:04	7440-48-4	
Iron	66.2	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:04	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:04	7439-92-1	
Lithium	18.9	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:04	7439-93-2	
Magnesium	24800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:04	7439-95-4	
Manganese	6.2	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:04	7439-96-5	
Molybdenum	2.1J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:04	7439-98-7	
Potassium	5220	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:04	7440-09-7	
Sodium	7280	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:04	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.15J	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:25	7440-36-0	
Arsenic	0.66J	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:25	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:25	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:25	7440-47-3	
Selenium	28.5	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:25	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:54	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	380	mg/L	20.0	10.5	1		11/27/23 14:53		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	439	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.3	mg/L	1.0	0.53	1	12/04/23 15:03	16887-00-6		
Fluoride	<0.12	mg/L	0.20	0.12	1	12/04/23 15:03	16984-48-8		L2
Sulfate	29.9	mg/L	2.0	1.1	2	12/04/23 15:15	14808-79-8		

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-33(D) Lab ID: 60442419010 Collected: 11/16/23 13:05 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	137	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:08	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:08	7440-41-7	
Boron	9340	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:08	7440-42-8	
Calcium	117000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:08	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:08	7440-48-4	
Iron	5710	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:08	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:08	7439-92-1	
Lithium	34.5	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:08	7439-93-2	
Magnesium	23800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:08	7439-95-4	
Manganese	309	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:08	7439-96-5	
Molybdenum	782	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:08	7439-98-7	
Potassium	7650	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:08	7440-09-7	
Sodium	99100	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:08	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:31	7440-36-0	
Arsenic	3.2	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:31	7440-38-2	
Cadmium	0.26J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:31	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:31	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:31	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:03	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	114	mg/L	20.0	10.5	1		11/24/23 19:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	834	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.3	mg/L	5.0	2.6	5		12/07/23 10:51	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 16:57	16984-48-8	L2
Sulfate	477	mg/L	50.0	27.5	50		12/04/23 17:20	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-34(D) Lab ID: 60442419011 Collected: 11/16/23 14:13 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	116	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:51	7440-39-3	
Beryllium	0.21J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:51	7440-41-7	
Boron	9760	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:51	7440-42-8	
Calcium	121000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:51	7440-70-2	
Cobalt	1.2J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:51	7440-48-4	B
Iron	7020	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:51	7439-92-1	
Lithium	39.1	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:51	7439-93-2	
Magnesium	29200	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:51	7439-95-4	
Manganese	329	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:51	7439-96-5	
Molybdenum	750	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:51	7439-98-7	
Potassium	7450	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:51	7440-09-7	
Sodium	87600	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 13:40	7440-36-0	
Arsenic	3.6	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 13:40	7440-38-2	
Cadmium	0.25J	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 13:40	7440-43-9	
Chromium	0.43J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 13:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 13:40	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 13:40	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:05	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	186	mg/L	20.0	10.5	1		11/24/23 19:21		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	817	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	19.6	mg/L	1.0	0.53	1		12/04/23 17:31	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 17:31	16984-48-8	L2
Sulfate	394	mg/L	50.0	27.5	50		12/04/23 17:54	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-35(D) Lab ID: 60442419012 Collected: 11/17/23 10:17 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	52.9	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:53	7440-39-3	
Beryllium	0.14J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:53	7440-41-7	
Boron	7640	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:53	7440-42-8	
Calcium	120000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:53	7440-70-2	
Cobalt	1.7J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:53	7440-48-4	B
Iron	5550	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:53	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:53	7439-92-1	
Lithium	28.4	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:53	7439-93-2	
Magnesium	27300	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:53	7439-95-4	
Manganese	422	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:53	7439-96-5	
Molybdenum	463	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:53	7439-98-7	
Potassium	5330	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:53	7440-09-7	
Sodium	75600	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:53	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 13:43	7440-36-0	
Arsenic	0.20J	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 13:43	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 13:43	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 13:43	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 13:43	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 13:43	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:07	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	343	mg/L	20.0	10.5	1		11/28/23 10:33		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	700	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.0	mg/L	1.0	0.53	1	12/04/23 18:06	16887-00-6		
Fluoride	<0.12	mg/L	0.20	0.12	1	12/04/23 18:06	16984-48-8		L2,M1
Sulfate	219	mg/L	20.0	11.0	20	12/04/23 19:16	14808-79-8		M1

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-1D Lab ID: 60442419013 Collected: 11/15/23 12:38 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	1480	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:59	7440-39-3	
Beryllium	0.15J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:59	7440-41-7	
Boron	65.8J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:59	7440-42-8	
Calcium	141000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:59	7440-70-2	
Cobalt	2.0J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:59	7440-48-4	B
Iron	8560	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:59	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:59	7439-92-1	
Lithium	26.8	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:59	7439-93-2	
Magnesium	35700	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:59	7439-95-4	
Manganese	264	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:59	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:59	7439-98-7	
Potassium	4300	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:59	7440-09-7	
Sodium	12700	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 13:53	7440-36-0	
Arsenic	1.4	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 13:53	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 13:53	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 13:53	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 13:53	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 13:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:14	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	505	mg/L	20.0	10.5	1		11/24/23 16:11		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	498	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.7	mg/L	1.0	0.53	1		12/04/23 20:02	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 20:02	16984-48-8	L2
Sulfate	13.3	mg/L	1.0	0.55	1		12/04/23 20:02	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-2M Lab ID: 60442419014 Collected: 11/17/23 09:08 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	162	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:01	7440-39-3	
Beryllium	0.18J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:01	7440-41-7	
Boron	1190	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:01	7440-42-8	
Calcium	128000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:01	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:01	7440-48-4	
Iron	3750	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:01	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:01	7439-92-1	
Lithium	37.8	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:01	7439-93-2	
Magnesium	19000	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:01	7439-95-4	
Manganese	570	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:01	7439-96-5	
Molybdenum	68.2	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:01	7439-98-7	
Potassium	7510	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:01	7440-09-7	
Sodium	79200	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:01	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 13:56	7440-36-0	
Arsenic	0.75J	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 13:56	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 13:56	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 13:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 13:56	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 13:56	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:16	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	286	mg/L	20.0	10.5	1		11/28/23 10:45		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	685	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.3	mg/L	5.0	2.6	5		12/07/23 11:37	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 11:26	16984-48-8	L2
Sulfate	241	mg/L	20.0	11.0	20		12/04/23 20:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-2D Lab ID: 60442419015 Collected: 11/17/23 10:09 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	121	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:03	7440-39-3	
Beryllium	0.17J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:03	7440-41-7	
Boron	1320	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:03	7440-42-8	
Calcium	101000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:03	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:03	7440-48-4	
Iron	3750	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:03	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:03	7439-92-1	
Lithium	43.6	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:03	7439-93-2	
Magnesium	18100	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:03	7439-95-4	
Manganese	358	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:03	7439-96-5	
Molybdenum	109	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:03	7439-98-7	
Potassium	5950	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:03	7440-09-7	
Sodium	64000	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:03	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 13:58	7440-36-0	
Arsenic	12.0	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 13:58	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 13:58	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 13:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 13:58	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 13:58	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:19	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	271	mg/L	20.0	10.5	1		11/28/23 10:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	520	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.6	mg/L	5.0	2.6	5		12/07/23 12:00	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 11:49	16984-48-8	L2
Sulfate	165	mg/L	20.0	11.0	20		12/04/23 21:12	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-3M Lab ID: 60442419016 Collected: 11/15/23 15:18 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	250	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 08:49	7440-39-3	
Beryllium	0.16J	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 08:49	7440-41-7	
Boron	5040	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 08:49	7440-42-8	
Calcium	108000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 08:49	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 08:49	7440-48-4	
Iron	7970	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 08:49	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 08:49	7439-92-1	
Lithium	33.7	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 08:49	7439-93-2	
Magnesium	22900	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 08:49	7439-95-4	
Manganese	1270	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 08:49	7439-96-5	
Molybdenum	259	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 08:49	7439-98-7	
Potassium	5310	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 08:49	7440-09-7	
Sodium	62400	ug/L	500	115	1	12/05/23 10:23	12/06/23 08:49	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 11:45	7440-36-0	
Arsenic	0.42J	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 11:45	7440-38-2	
Cadmium	0.095J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 11:45	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 11:45	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 11:45	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 11:45	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:46	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	271	mg/L	20.0	10.5	1		11/24/23 16:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	604	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	19.5	mg/L	5.0	2.6	5		12/07/23 19:33	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 13:19	16984-48-8	L1,M1, R1
Sulfate	189	mg/L	20.0	11.0	20		12/05/23 14:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-3D Lab ID: 60442419017 Collected: 11/15/23 14:32 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	64.9	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 08:55	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 08:55	7440-41-7	
Boron	9620	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 08:55	7440-42-8	
Calcium	94600	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 08:55	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 08:55	7440-48-4	
Iron	4080	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 08:55	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 08:55	7439-92-1	
Lithium	33.2	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 08:55	7439-93-2	
Magnesium	20700	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 08:55	7439-95-4	
Manganese	173	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 08:55	7439-96-5	
Molybdenum	471	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 08:55	7439-98-7	
Potassium	6710	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 08:55	7440-09-7	
Sodium	122000	ug/L	500	115	1	12/05/23 10:23	12/06/23 08:55	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 11:55	7440-36-0	
Arsenic	8.6	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 11:55	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 11:55	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 11:55	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 11:55	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 11:55	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:53	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	119	mg/L	20.0	10.5	1		11/24/23 16:42		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	792	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.5	mg/L	5.0	2.6	5		12/07/23 12:12	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 21:23	16984-48-8	L2
Sulfate	457	mg/L	50.0	27.5	50		12/04/23 21:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-4D **Lab ID: 60442419018** Collected: 11/15/23 13:38 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	404	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 08:57	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 08:57	7440-41-7	
Boron	6510	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 08:57	7440-42-8	
Calcium	125000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 08:57	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 08:57	7440-48-4	
Iron	5430	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 08:57	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 08:57	7439-92-1	
Lithium	25.3	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 08:57	7439-93-2	
Magnesium	32900	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 08:57	7439-95-4	
Manganese	347	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 08:57	7439-96-5	
Molybdenum	3.5J	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 08:57	7439-98-7	
Potassium	4810	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 08:57	7440-09-7	
Sodium	28500	ug/L	500	115	1	12/05/23 10:23	12/06/23 08:57	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 11:58	7440-36-0	
Arsenic	8.0	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 11:58	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 11:58	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 11:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 11:58	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 11:58	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:21	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	310	mg/L	20.0	10.5	1		11/24/23 16:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	526	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.0	mg/L	1.0	0.53	1		12/04/23 21:58	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 21:58	16984-48-8	L2
Sulfate	183	mg/L	20.0	11.0	20		12/04/23 22:10	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-DUP-1 Lab ID: 60442419019 Collected: 11/16/23 08:00 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	137	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:11	7440-39-3	
Beryllium	0.18J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:11	7440-41-7	
Boron	9570	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:11	7440-42-8	
Calcium	117000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:11	7440-70-2	
Cobalt	1.5J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:11	7440-48-4	B
Iron	5620	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:11	7439-92-1	
Lithium	37.5	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:11	7439-93-2	
Magnesium	23800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:11	7439-95-4	
Manganese	314	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:11	7439-96-5	
Molybdenum	779	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:11	7439-98-7	
Potassium	7720	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:11	7440-09-7	
Sodium	105000	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:11	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:01	7440-36-0	
Arsenic	3.4	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:01	7440-38-2	
Cadmium	0.28J	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:01	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:01	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:01	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:01	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:28	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	106	mg/L	20.0	10.5	1		11/27/23 12:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	769	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.4	mg/L	5.0	2.6	5		12/07/23 12:24	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 22:21	16984-48-8	L2
Sulfate	504	mg/L	50.0	27.5	50		12/07/23 12:35	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-DUP-2 Lab ID: 60442419020 Collected: 11/17/23 08:00 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	158	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:13	7440-39-3	
Beryllium	0.15J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:13	7440-41-7	
Boron	1170	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:13	7440-42-8	
Calcium	126000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:13	7440-70-2	
Cobalt	1.4J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:13	7440-48-4	B
Iron	3700	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:13	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:13	7439-92-1	
Lithium	37.6	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:13	7439-93-2	
Magnesium	18500	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:13	7439-95-4	
Manganese	559	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:13	7439-96-5	
Molybdenum	67.2	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:13	7439-98-7	
Potassium	7360	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:13	7440-09-7	
Sodium	77500	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:13	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:06	7440-36-0	
Arsenic	0.75J	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:06	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:06	7440-43-9	
Chromium	0.85J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:06	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:30	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	281	mg/L	20.0	10.5	1		11/28/23 10:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	670	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.6	mg/L	5.0	2.6	5		12/07/23 12:58	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 12:46	16984-48-8	L2
Sulfate	260	mg/L	20.0	11.0	20		12/04/23 22:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-FB-1 Lab ID: 60442419021 Collected: 11/16/23 14:10 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:15	7440-39-3	
Beryllium	0.13J	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:15	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:15	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:15	7440-70-2	
Cobalt	1.3J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:15	7440-48-4	B
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:15	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:15	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:15	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:15	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:15	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:15	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:09	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:09	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:09	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:09	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:32	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/27/23 12:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<17.0	mg/L	17.0	17.0	1		11/28/23 10:59		3e,H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		12/05/23 15:13	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 15:13	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/05/23 15:13	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-FB-2 Lab ID: 60442419022 Collected: 11/16/23 16:40 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:17	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:17	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:17	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:17	7440-70-2	
Cobalt	1.2J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:17	7440-48-4	B
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:17	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:17	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:17	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:17	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:17	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:17	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:17	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:17	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 11:40	12/11/23 14:11	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	12/05/23 11:40	12/11/23 14:11	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 11:40	12/11/23 14:11	7440-43-9	
Chromium	1.0J	ug/L	1.0	0.30	1	12/05/23 11:40	12/11/23 14:11	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 11:40	12/11/23 14:11	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 11:40	12/11/23 14:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:35	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/27/23 12:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	17.0	mg/L	17.0	17.0	1		11/22/23 17:28		2e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		12/05/23 15:24	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/05/23 15:24	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/05/23 15:24	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-S-1 Lab ID: 60442419028 Collected: 11/20/23 11:38 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	367	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:11	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:11	7440-41-7	
Boron	83.6J	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:11	7440-42-8	
Calcium	143000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:11	7440-70-2	
Cobalt	1.2J	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:11	7440-48-4	
Iron	13.1J	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:11	7439-92-1	
Lithium	23.3	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:11	7439-93-2	
Magnesium	20900	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:11	7439-95-4	
Manganese	179	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:11	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:11	7439-98-7	
Potassium	31200	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:11	7440-09-7	
Sodium	2960	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:11	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:07	7440-36-0	
Arsenic	0.59J	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:07	7440-38-2	
Cadmium	0.075J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:07	7440-43-9	B
Chromium	0.42J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:07	7440-47-3	
Selenium	8.2	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:07	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:07	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:58	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	473	mg/L	20.0	10.5	1		11/30/23 11:00		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	523	mg/L	34.0	34.0	1		11/27/23 13:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.6	mg/L	1.0	0.53	1		12/14/23 19:19	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 19:19	16984-48-8	L1
Sulfate	15.5	mg/L	1.0	0.55	1		12/14/23 19:19	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AM-1S **Lab ID: 60442419029** Collected: 11/20/23 09:46 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	647	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:15	7440-39-3	
Beryllium	0.20J	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:15	7440-41-7	
Boron	327	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:15	7440-42-8	
Calcium	188000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:15	7440-70-2	
Cobalt	3.6J	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:15	7440-48-4	
Iron	11800	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:15	7439-92-1	
Lithium	37.2	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:15	7439-93-2	
Magnesium	37800	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:15	7439-95-4	
Manganese	1700	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:15	7439-96-5	
Molybdenum	2.8J	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:15	7439-98-7	
Potassium	7380	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:15	7440-09-7	
Sodium	50300	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:12	7440-36-0	
Arsenic	5.6	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:12	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:12	7440-43-9	B
Chromium	0.45J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:12	7440-47-3	
Selenium	1.3	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:12	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 13:00	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	635	mg/L	20.0	10.5	1		11/30/23 11:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	767	mg/L	45.3	45.3	1		11/27/23 13:49		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	86.0	mg/L	20.0	10.5	20		12/14/23 19:42	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 19:31	16984-48-8	L1
Sulfate	5.0	mg/L	1.0	0.55	1		12/14/23 19:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AM-1D Lab ID: 60442419030 Collected: 11/20/23 08:58 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	67.9	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:24	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:24	7440-41-7	
Boron	8410	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:24	7440-42-8	
Calcium	106000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:24	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:24	7440-48-4	
Iron	4820	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:24	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:24	7439-92-1	
Lithium	38.2	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:24	7439-93-2	
Magnesium	13100	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:24	7439-95-4	
Manganese	281	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:24	7439-96-5	
Molybdenum	344	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:24	7439-98-7	
Potassium	9270	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:24	7440-09-7	
Sodium	107000	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:24	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:15	7440-36-0	
Arsenic	3.9	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:15	7440-38-2	
Cadmium	0.30J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:15	7440-43-9	B
Chromium	1.0	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:15	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:15	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:15	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 13:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	162	mg/L	20.0	10.5	1		11/30/23 11:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	753	mg/L	45.3	45.3	1		11/27/23 13:49		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	35.8	mg/L	10.0	5.3	10		12/15/23 17:03	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 19:53	16984-48-8	L1
Sulfate	329	mg/L	20.0	11.0	20		12/14/23 20:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-DUP-3 **Lab ID: 60442419031** Collected: 11/20/23 00:00 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	363	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:26	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:26	7440-41-7	
Boron	96.3J	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:26	7440-42-8	
Calcium	141000	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:26	7440-70-2	
Cobalt	1.5J	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:26	7440-48-4	
Iron	12.3J	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:26	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:26	7439-92-1	
Lithium	20.2	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:26	7439-93-2	
Magnesium	20500	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:26	7439-95-4	
Manganese	176	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:26	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:26	7439-98-7	
Potassium	30900	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:26	7440-09-7	
Sodium	2970	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:26	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:22	7440-36-0	
Arsenic	0.59J	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:22	7440-38-2	
Cadmium	0.082J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:22	7440-43-9	B
Chromium	0.43J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:22	7440-47-3	
Selenium	7.8	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:22	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:22	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 13:09	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	478	mg/L	20.0	10.5	1		11/30/23 11:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	527	mg/L	34.0	34.0	1		11/27/23 13:49		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.1	mg/L	1.0	0.53	1		12/14/23 20:39	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 20:39	16984-48-8	L1
Sulfate	15.4	mg/L	1.0	0.55	1		12/14/23 20:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-FB-3 **Lab ID: 60442419032** Collected: 11/20/23 08:40 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:28	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:28	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:28	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:28	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:28	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:28	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:28	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:28	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:28	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:28	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:28	7439-98-7	
Potassium	73.7J	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:28	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:28	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:25	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:25	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:25	7440-43-9	
Chromium	0.48J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:25	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:25	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 13:11	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/30/23 11:38		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<17.0	mg/L	17.0	17.0	1		11/27/23 13:49		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.53	mg/L	1.0	0.53	1		12/14/23 21:13	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 21:13	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/14/23 21:13	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-BMW-1S Lab ID: 60442419002 Collected: 11/16/23 08:50 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	342	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:44	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:44	7440-41-7	
Boron	113	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:44	7440-42-8	
Calcium	208000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:44	7440-70-2	
Cobalt	1.7J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:44	7440-48-4	
Iron	29900	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:44	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:44	7439-92-1	
Lithium	15.9	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:44	7439-93-2	
Magnesium	40600	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:44	7439-95-4	
Manganese	2720	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:44	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:44	7439-98-7	
Potassium	5770	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:44	7440-09-7	
Sodium	13100	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:44	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:08	7440-36-0	
Arsenic	22.2	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:08	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:08	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:08	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:08	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:40	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	646	mg/L	20.0	10.5	1		11/24/23 18:49		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	692	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.3	mg/L	1.0	0.53	1		12/04/23 12:21	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 12:21	16984-48-8	L2
Sulfate	72.4	mg/L	10.0	5.5	10		12/04/23 12:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-BMW-2S Lab ID: 60442419003 Collected: 11/16/23 10:18 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	307	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:52	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:52	7440-41-7	
Boron	50.8J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:52	7440-42-8	
Calcium	150000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:52	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:52	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:52	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:52	7439-92-1	
Lithium	20.3	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:52	7439-93-2	
Magnesium	23100	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:52	7439-95-4	
Manganese	9.7	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:52	7439-96-5	
Molybdenum	2.6J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:52	7439-98-7	
Potassium	6920	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:52	7440-09-7	
Sodium	4290	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:52	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.21J	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:11	7440-36-0	
Arsenic	0.51J	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:11	7440-38-2	
Cadmium	0.075J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:11	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:11	7440-47-3	
Selenium	2.8	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:11	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:42	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	381	mg/L	20.0	10.5	1		11/24/23 18:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	471	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.8	mg/L	1.0	0.53	1	12/04/23 12:44	16887-00-6		
Fluoride	<0.12	mg/L	0.20	0.12	1	12/04/23 12:44	16984-48-8		L2
Sulfate	38.3	mg/L	10.0	5.5	10	12/04/23 12:55	14808-79-8		

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-26 Lab ID: 60442419009 Collected: 11/17/23 11:27 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	205	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:06	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:06	7440-41-7	
Boron	69.9J	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:06	7440-42-8	
Calcium	147000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:06	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:06	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:06	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:06	7439-92-1	
Lithium	31.5	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:06	7439-93-2	
Magnesium	27500	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:06	7439-95-4	
Manganese	241	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:06	7439-96-5	
Molybdenum	1.3J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:06	7439-98-7	
Potassium	5170	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:06	7440-09-7	
Sodium	5980	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:06	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:28	7440-36-0	
Arsenic	0.58J	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:28	7440-38-2	
Cadmium	0.082J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:28	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:28	7440-47-3	
Selenium	3.6	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:28	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:00	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	424	mg/L	20.0	10.5	1		11/27/23 14:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	434	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	10	mg/L	1.0	0.53	1		12/07/23 10:27	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 10:27	16984-48-8	L2
Sulfate	37.2	mg/L	10.0	5.5	10		12/07/23 10:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-1S Lab ID: 60442419004 Collected: 11/16/23 10:06 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	111	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:54	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:54	7440-41-7	
Boron	1060	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:54	7440-42-8	
Calcium	103000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:54	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:54	7440-48-4	
Iron	348	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:54	7439-92-1	
Lithium	12.2	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:54	7439-93-2	
Magnesium	17400	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:54	7439-95-4	
Manganese	504	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:54	7439-96-5	
Molybdenum	4.0J	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:54	7439-98-7	
Potassium	3810	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:54	7440-09-7	
Sodium	7330	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:54	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:14	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:14	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:14	7440-47-3	
Selenium	18.6	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:14	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:14	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:44	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	298	mg/L	20.0	10.5	1		11/24/23 19:03		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	348	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.0	mg/L	1.0	0.53	1		12/04/23 13:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 13:07	16984-48-8	L2
Sulfate	41.2	mg/L	10.0	5.5	10		12/04/23 13:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-4S Lab ID: 60442419005 Collected: 11/17/23 12:46 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	178	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:56	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:56	7440-41-7	
Boron	3470	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:56	7440-42-8	
Calcium	178000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:56	7440-70-2	
Cobalt	2.6J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:56	7440-48-4	
Iron	7670	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:56	7439-92-1	
Lithium	35.4	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:56	7439-93-2	
Magnesium	30200	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:56	7439-95-4	
Manganese	1840	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:56	7439-96-5	
Molybdenum	50.3	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:56	7439-98-7	
Potassium	7080	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:56	7440-09-7	
Sodium	61400	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:56	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:16	7440-36-0	
Arsenic	16.4	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:16	7440-38-2	
Cadmium	0.054J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:16	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:16	7440-47-3	
Selenium	0.49J	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:16	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:16	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:47	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	494	mg/L	20.0	10.5	1		11/27/23 14:46		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	722	mg/L	17.0	17.0	1		11/22/23 18:57		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	60.7	mg/L	20.0	10.5	20		12/04/23 14:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/04/23 13:53	16984-48-8	L2
Sulfate	116	mg/L	20.0	11.0	20		12/04/23 14:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-7S Lab ID: 60442419006 Collected: 11/15/23 15:39 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	269	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 10:58	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 10:58	7440-41-7	
Boron	6580	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 10:58	7440-42-8	
Calcium	184000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 10:58	7440-70-2	
Cobalt	3.6J	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 10:58	7440-48-4	
Iron	4480	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 10:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 10:58	7439-92-1	
Lithium	48.2	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 10:58	7439-93-2	
Magnesium	38800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 10:58	7439-95-4	
Manganese	1490	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 10:58	7439-96-5	
Molybdenum	38.6	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 10:58	7439-98-7	
Potassium	7950	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 10:58	7440-09-7	
Sodium	39600	ug/L	500	115	1	12/04/23 15:56	12/05/23 10:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 12:21	7440-36-0	
Arsenic	13.6	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 12:21	7440-38-2	
Cadmium	0.061J	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 12:21	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 12:21	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 12:21	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 12:21	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:49	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	481	mg/L	20.0	10.5	1		11/24/23 16:04		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	607	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.5	mg/L	1.0	0.53	1	12/04/23 14:17	16887-00-6		
Fluoride	<0.12	mg/L	0.20	0.12	1	12/04/23 14:17	16984-48-8		L2
Sulfate	192	mg/L	20.0	11.0	20	12/04/23 14:28	14808-79-8		

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-8S Lab ID: 60442419007 Collected: 11/16/23 08:54 Received: 11/18/23 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	171	ug/L	5.0	0.64	1	12/04/23 15:56	12/05/23 11:00	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/04/23 15:56	12/05/23 11:00	7440-41-7	
Boron	1550	ug/L	100	6.4	1	12/04/23 15:56	12/05/23 11:00	7440-42-8	
Calcium	118000	ug/L	200	26.9	1	12/04/23 15:56	12/05/23 11:00	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 15:56	12/05/23 11:00	7440-48-4	
Iron	454	ug/L	50.0	9.1	1	12/04/23 15:56	12/05/23 11:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/04/23 15:56	12/05/23 11:00	7439-92-1	
Lithium	17.6	ug/L	10.0	3.7	1	12/04/23 15:56	12/05/23 11:00	7439-93-2	
Magnesium	18800	ug/L	50.0	20.1	1	12/04/23 15:56	12/05/23 11:00	7439-95-4	
Manganese	30.2	ug/L	5.0	0.39	1	12/04/23 15:56	12/05/23 11:00	7439-96-5	
Molybdenum	49.1	ug/L	20.0	1.0	1	12/04/23 15:56	12/05/23 11:00	7439-98-7	
Potassium	5380	ug/L	500	69.7	1	12/04/23 15:56	12/05/23 11:00	7440-09-7	
Sodium	38300	ug/L	500	115	1	12/04/23 15:56	12/05/23 11:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	12/04/23 10:10	12/05/23 13:22	7440-36-0	
Arsenic	3.0	ug/L	1.0	0.13	1	12/04/23 10:10	12/05/23 13:22	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	12/04/23 10:10	12/05/23 13:22	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	12/04/23 10:10	12/05/23 13:22	7440-47-3	
Selenium	14.8	ug/L	1.0	0.18	1	12/04/23 10:10	12/05/23 13:22	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/04/23 10:10	12/05/23 13:22	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 11:51	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	365	mg/L	20.0	10.5	1		11/24/23 19:09		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	462	mg/L	17.0	17.0	1		11/22/23 17:28		2e,B0
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.9	mg/L	1.0	0.53	1		12/07/23 10:04	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 10:04	16984-48-8	L2
Sulfate	79.2	mg/L	20.0	11.0	20		12/07/23 10:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-2S Lab ID: 60442419027 Collected: 11/20/23 09:12 Received: 11/21/23 06:02 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	55.5	ug/L	5.0	0.64	1	12/05/23 10:23	12/06/23 10:09	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/06/23 10:09	7440-41-7	
Boron	3450	ug/L	100	6.4	1	12/05/23 10:23	12/06/23 10:09	7440-42-8	
Calcium	84300	ug/L	200	26.9	1	12/05/23 10:23	12/06/23 10:09	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/05/23 10:23	12/06/23 10:09	7440-48-4	
Iron	17.0J	ug/L	50.0	9.1	1	12/05/23 10:23	12/06/23 10:09	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	12/05/23 10:23	12/06/23 10:09	7439-92-1	
Lithium	11.6	ug/L	10.0	3.7	1	12/05/23 10:23	12/06/23 10:09	7439-93-2	
Magnesium	76.6	ug/L	50.0	20.1	1	12/05/23 10:23	12/06/23 10:09	7439-95-4	
Manganese	1.9J	ug/L	5.0	0.39	1	12/05/23 10:23	12/06/23 10:09	7439-96-5	
Molybdenum	281	ug/L	20.0	1.0	1	12/05/23 10:23	12/06/23 10:09	7439-98-7	
Potassium	10300	ug/L	500	69.7	1	12/05/23 10:23	12/06/23 10:09	7440-09-7	
Sodium	72700	ug/L	500	115	1	12/05/23 10:23	12/06/23 10:09	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	12/05/23 10:23	12/11/23 13:04	7440-36-0	
Arsenic	45.4	ug/L	1.0	0.13	1	12/05/23 10:23	12/11/23 13:04	7440-38-2	
Cadmium	0.094J	ug/L	0.50	0.050	1	12/05/23 10:23	12/11/23 13:04	7440-43-9	B
Chromium	0.51J	ug/L	1.0	0.30	1	12/05/23 10:23	12/11/23 13:04	7440-47-3	
Selenium	0.22J	ug/L	1.0	0.18	1	12/05/23 10:23	12/11/23 13:04	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/05/23 10:23	12/11/23 13:04	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	12/12/23 20:10	12/13/23 12:55	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	39.2	mg/L	20.0	10.5	1		11/29/23 13:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	533	mg/L	10.0	10.0	1		12/29/23 14:11		H1
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	15.0	mg/L	1.0	0.53	1		12/14/23 18:56	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 18:56	16984-48-8	L1
Sulfate	337	mg/L	20.0	11.0	20		12/14/23 19:08	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	876706	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419018, 60442419019, 60442419020, 60442419021, 60442419022		

METHOD BLANK:	3472402	Matrix:	Water
Associated Lab Samples:	60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419018, 60442419019, 60442419020, 60442419021, 60442419022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	12/13/23 11:33	

LABORATORY CONTROL SAMPLE:	3472403					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3472404			3472405								
Parameter	Units	60442419012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.2	5.0	104	100	75-125	4	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	876709	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419016, 60442419017, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3472410 Matrix: Water

Associated Lab Samples: 60442419016, 60442419017, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	12/13/23 12:42	

LABORATORY CONTROL SAMPLE: 3472411

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472412 3472413

Parameter	Units	60442419016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.0	5.2	99	103	75-125	4	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875680	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010		

METHOD BLANK:	3467995	Matrix:	Water
Associated Lab Samples:	60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/05/23 10:27	
Beryllium	ug/L	<0.12	1.0	0.12	12/05/23 10:27	
Boron	ug/L	<6.4	100	6.4	12/05/23 10:27	
Calcium	ug/L	<26.9	200	26.9	12/05/23 10:27	
Cobalt	ug/L	<1.2	5.0	1.2	12/05/23 10:27	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 10:27	
Lead	ug/L	<3.8	10.0	3.8	12/05/23 10:27	
Lithium	ug/L	<3.7	10.0	3.7	12/05/23 10:27	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 10:27	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 10:27	
Molybdenum	ug/L	<1.0	20.0	1.0	12/05/23 10:27	
Potassium	ug/L	<69.7	500	69.7	12/05/23 10:27	
Sodium	ug/L	<115	500	115	12/05/23 10:27	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	1080	108	85-115	
Boron	ug/L	1000	1000	100	85-115	
Calcium	ug/L	10000	10800	108	85-115	
Cobalt	ug/L	1000	1080	108	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1060	106	85-115	
Lithium	ug/L	1000	1070	107	85-115	
Magnesium	ug/L	10000	10600	106	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	10500	105	85-115	
Sodium	ug/L	10000	10700	107	85-115	

Parameter		Units	60442374001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium		ug/L	31.5	1000	1000	1020	1040	99	101	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467997 3467998												
Parameter	Units	60442374001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Beryllium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	0	20	
Boron	ug/L	345	1000	1000	1310	1330	97	98	70-130	1	20	
Calcium	ug/L	16500	10000	10000	26800	27200	103	107	70-130	2	20	
Cobalt	ug/L	ND	1000	1000	1030	1030	103	103	70-130	0	20	
Iron	ug/L	4260	10000	10000	14500	14900	103	107	70-130	3	20	
Lead	ug/L	ND	1000	1000	1000	1010	100	101	70-130	1	20	
Lithium	ug/L	33.1	1000	1000	1040	1040	100	101	70-130	1	20	
Magnesium	ug/L	9280	10000	10000	19300	19400	100	101	70-130	0	20	
Manganese	ug/L	1240	1000	1000	2230	2260	100	103	70-130	1	20	
Molybdenum	ug/L	ND	1000	1000	1030	1030	102	103	70-130	1	20	
Potassium	ug/L	662000	10000	10000	693000	710000	312	484	70-130	2	20 M1	
Sodium	ug/L	59600	10000	10000	70800	71700	112	122	70-130	1	20	

MATRIX SPIKE SAMPLE: 3467999							
Parameter	Units	60442419007	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	171	1000	1200	103	70-130	
Beryllium	ug/L	<0.12	1000	1060	106	70-130	
Boron	ug/L	1550	1000	2550	100	70-130	
Calcium	ug/L	118000	10000	128000	102	70-130	
Cobalt	ug/L	<1.2	1000	1050	105	70-130	
Iron	ug/L	454	10000	10900	104	70-130	
Lead	ug/L	<3.8	1000	1010	101	70-130	
Lithium	ug/L	17.6	1000	1070	105	70-130	
Magnesium	ug/L	18800	10000	28800	100	70-130	
Manganese	ug/L	30.2	1000	1070	104	70-130	
Molybdenum	ug/L	49.1	1000	1110	106	70-130	
Potassium	ug/L	5380	10000	15800	105	70-130	
Sodium	ug/L	38300	10000	48600	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875682	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419019, 60442419020, 60442419021, 60442419022		

METHOD BLANK:	3468002	Matrix:	Water
Associated Lab Samples:	60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419019, 60442419020, 60442419021, 60442419022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/05/23 10:47	
Beryllium	ug/L	<0.12	1.0	0.12	12/05/23 10:47	
Boron	ug/L	<6.4	100	6.4	12/05/23 10:47	
Calcium	ug/L	<26.9	200	26.9	12/05/23 10:47	
Cobalt	ug/L	1.6J	5.0	1.2	12/05/23 10:47	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 10:47	
Lead	ug/L	<3.8	10.0	3.8	12/05/23 10:47	
Lithium	ug/L	<3.7	10.0	3.7	12/05/23 10:47	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 10:47	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 10:47	
Molybdenum	ug/L	<1.0	20.0	1.0	12/05/23 10:47	
Potassium	ug/L	<69.7	500	69.7	12/05/23 10:47	
Sodium	ug/L	<115	500	115	12/05/23 10:47	

LABORATORY CONTROL SAMPLE: 3468003						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	969	97	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Cobalt	ug/L	1000	1090	109	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1070	107	85-115	
Lithium	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	9890	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9690	97	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468004 3468005													
Parameter	Units	60442419012 Result	MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	MS Result	MSD Result							
Barium	ug/L	52.9	1000	1000	1060	1070	101	102	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468004 3468005												
Parameter	Units	60442419012		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Beryllium	ug/L	0.14J	1000	1000	1000	1030	1040	103	104	70-130	2	20
Boron	ug/L	7640	1000	1000	1000	8550	8740	91	110	70-130	2	20
Calcium	ug/L	120000	10000	10000	10000	128000	131000	85	114	70-130	2	20
Cobalt	ug/L	1.7J	1000	1000	1000	1050	1070	105	106	70-130	1	20
Iron	ug/L	5550	10000	10000	10000	15700	15900	101	104	70-130	1	20
Lead	ug/L	<3.8	1000	1000	1000	1040	1050	104	105	70-130	1	20
Lithium	ug/L	28.4	1000	1000	1000	1090	1080	106	105	70-130	0	20
Magnesium	ug/L	27300	10000	10000	10000	37100	37800	98	105	70-130	2	20
Manganese	ug/L	422	1000	1000	1000	1450	1470	103	105	70-130	2	20
Molybdenum	ug/L	463	1000	1000	1000	1500	1530	104	106	70-130	2	20
Potassium	ug/L	5330	10000	10000	10000	15800	15800	104	105	70-130	0	20
Sodium	ug/L	75600	10000	10000	10000	85600	87600	99	119	70-130	2	20

MATRIX SPIKE SAMPLE: 3468006								
Parameter	Units	60442420003		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Conc.	Result	% Rec	Limits	
Barium	ug/L		143	1000	1140	100	70-130	
Beryllium	ug/L		0.18J	1000	1040	104	70-130	
Boron	ug/L		803	1000	1780	97	70-130	
Calcium	ug/L		140000	10000	149000	94	70-130	
Cobalt	ug/L		1.6J	1000	1070	107	70-130	
Iron	ug/L		14100	10000	24300	102	70-130	
Lead	ug/L		<3.8	1000	1050	105	70-130	
Lithium	ug/L		27.2	1000	1070	104	70-130	
Magnesium	ug/L		23700	10000	33700	99	70-130	
Manganese	ug/L		1690	1000	2730	104	70-130	
Molybdenum	ug/L		85.8	1000	1140	105	70-130	
Potassium	ug/L		4380	10000	14500	101	70-130	
Sodium	ug/L		14900	10000	25700	108	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 875737 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442419016, 60442419017, 60442419018

METHOD BLANK: 3468152 Matrix: Water
 Associated Lab Samples: 60442419016, 60442419017, 60442419018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/06/23 08:45	
Beryllium	ug/L	<0.12	1.0	0.12	12/06/23 08:45	
Boron	ug/L	<6.4	100	6.4	12/06/23 08:45	
Calcium	ug/L	<26.9	200	26.9	12/06/23 08:45	
Cobalt	ug/L	<1.2	5.0	1.2	12/06/23 08:45	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 08:45	
Lead	ug/L	<3.8	10.0	3.8	12/06/23 08:45	
Lithium	ug/L	<3.7	10.0	3.7	12/06/23 08:45	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 08:45	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 08:45	
Molybdenum	ug/L	<1.0	20.0	1.0	12/06/23 08:45	
Potassium	ug/L	<69.7	500	69.7	12/06/23 08:45	
Sodium	ug/L	<115	500	115	12/06/23 08:45	

LABORATORY CONTROL SAMPLE: 3468153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	976	98	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468154 3468155

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442419016	Spike Conc.	Spike Conc.	Result						
Barium	ug/L	250	1000	1000	1260	1260	101	101	70-130	1	20
Beryllium	ug/L	0.16J	1000	1000	1040	1030	104	103	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA
Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468154												3468155	
Parameter	Units	60442419016 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Boron	ug/L	5040	1000	1000	6010	6060	97	103	70-130	1	20		
Calcium	ug/L	108000	10000	10000	117000	118000	97	99	70-130	0	20		
Cobalt	ug/L	<1.2	1000	1000	1040	1030	104	103	70-130	1	20		
Iron	ug/L	7970	10000	10000	18200	18100	102	102	70-130	0	20		
Lead	ug/L	<3.8	1000	1000	1050	1040	105	104	70-130	0	20		
Lithium	ug/L	33.7	1000	1000	1060	1060	103	103	70-130	0	20		
Magnesium	ug/L	22900	10000	10000	32800	32900	99	101	70-130	1	20		
Manganese	ug/L	1270	1000	1000	2290	2300	102	102	70-130	0	20		
Molybdenum	ug/L	259	1000	1000	1310	1300	105	104	70-130	0	20		
Potassium	ug/L	5310	10000	10000	15300	15500	100	102	70-130	1	20		
Sodium	ug/L	62400	10000	10000	72500	72600	101	102	70-130	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468156												3468157	
Parameter	Units	60442423003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Barium	ug/L		1000	1000	1270	1270	101	101	70-130	0	20		
Beryllium	ug/L		1000	1000	1040	1030	104	103	70-130	1	20		
Boron	ug/L	114	1000	1000	1090	1090	98	98	70-130	0	20		
Calcium	ug/L	145000	10000	10000	154000	155000	88	98	70-130	1	20		
Cobalt	ug/L		1000	1000	1030	1030	103	103	70-130	0	20		
Iron	ug/L	1220	10000	10000	11500	11500	102	102	70-130	0	20		
Lead	ug/L		1000	1000	1050	1060	105	106	70-130	1	20		
Lithium	ug/L		1000	1000	1070	1080	103	104	70-130	1	20		
Magnesium	ug/L	30400	10000	10000	40200	40100	98	97	70-130	0	20		
Manganese	ug/L	1190	1000	1000	2220	2220	103	103	70-130	0	20		
Molybdenum	ug/L		1000	1000	1030	1030	103	103	70-130	0	20		
Potassium	ug/L	5980	10000	10000	16000	16100	100	101	70-130	1	20		
Sodium	ug/L	6400	10000	10000	16500	16400	101	100	70-130	0	20		

MATRIX SPIKE SAMPLE: 3468158											
Parameter	Units	60442425003 Result	Spike Conc.	MS	MS	% Rec	Qualifiers				
				Result	% Rec	Limits					
Barium	ug/L		1000	1230	100	70-130					
Beryllium	ug/L		1000	1040	104	70-130					
Boron	ug/L	828	1000	1770	94	70-130					
Calcium	ug/L	133000	10000	137000	42	70-130	M1				
Cobalt	ug/L		1000	1040	104	70-130					
Iron	ug/L	6510	10000	16500	100	70-130					
Lead	ug/L		1000	1060	106	70-130					
Lithium	ug/L		1000	1060	103	70-130					
Magnesium	ug/L	23400	10000	32100	87	70-130					
Manganese	ug/L	1130	1000	2120	99	70-130					

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE SAMPLE:		3468158					
Parameter	Units	60442425003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L		1000	1050	104	70-130	
Potassium	ug/L	5300	10000	15000	97	70-130	
Sodium	ug/L	10800	10000	20500	96	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 875741 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3468169 Matrix: Water
 Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.67J	5.0	0.64	12/06/23 09:34	
Beryllium	ug/L	<0.12	1.0	0.12	12/06/23 09:34	
Boron	ug/L	<6.4	100	6.4	12/06/23 09:34	
Calcium	ug/L	<26.9	200	26.9	12/06/23 09:34	
Cobalt	ug/L	<1.2	5.0	1.2	12/06/23 09:34	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 09:34	
Lead	ug/L	<3.8	10.0	3.8	12/06/23 09:34	
Lithium	ug/L	<3.7	10.0	3.7	12/06/23 09:34	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 09:34	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 09:34	
Molybdenum	ug/L	<1.0	20.0	1.0	12/06/23 09:34	
Potassium	ug/L	<69.7	500	69.7	12/06/23 09:34	
Sodium	ug/L	<115	500	115	12/06/23 09:34	

LABORATORY CONTROL SAMPLE: 3468170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1080	108	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1070	107	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468171 3468172

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442420001	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	134	1000	1000	1150	1150	102	101	70-130	0	20
Beryllium	ug/L	0.15J	1000	1000	1040	1040	104	104	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468171												3468172	
Parameter	Units	60442420001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Boron	ug/L	1080	1000	1000	2060	2050	98	98	70-130	0	20		
Calcium	ug/L	128000	10000	10000	138000	135000	102	75	70-130	2	20		
Cobalt	ug/L	<1.2	1000	1000	1040	1040	104	104	70-130	0	20		
Iron	ug/L	4050	10000	10000	14400	14300	104	103	70-130	1	20		
Lead	ug/L	<3.8	1000	1000	1080	1060	108	106	70-130	2	20		
Lithium	ug/L	30.6	1000	1000	1060	1060	103	103	70-130	0	20		
Magnesium	ug/L	26100	10000	10000	35800	35500	98	94	70-130	1	20		
Manganese	ug/L	471	1000	1000	1520	1510	105	104	70-130	0	20		
Molybdenum	ug/L	31.2	1000	1000	1080	1080	105	105	70-130	0	20		
Potassium	ug/L	7760	10000	10000	17800	17800	101	101	70-130	0	20		
Sodium	ug/L	59200	10000	10000	68900	68100	97	88	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468173												3468174	
Parameter	Units	60442425001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Barium	ug/L		1000	1000	1370	1370	101	102	70-130	1	20		
Beryllium	ug/L		1000	1000	1060	1060	106	106	70-130	0	20		
Boron	ug/L	55.0J	1000	1000	1040	1030	98	98	70-130	0	20		
Calcium	ug/L	154000	10000	10000	163000	164000	91	105	70-130	1	20		
Cobalt	ug/L		1000	1000	1050	1050	105	105	70-130	0	20		
Iron	ug/L	20.5J	10000	10000	10500	10500	105	104	70-130	0	20		
Lead	ug/L		1000	1000	1070	1070	107	107	70-130	0	20		
Lithium	ug/L		1000	1000	1060	1050	105	104	70-130	0	20		
Magnesium	ug/L	14600	10000	10000	24400	24600	98	100	70-130	1	20		
Manganese	ug/L	8.6	1000	1000	1060	1060	106	105	70-130	0	20		
Molybdenum	ug/L		1000	1000	1060	1050	106	105	70-130	1	20		
Potassium	ug/L	3590	10000	10000	13900	13800	103	102	70-130	1	20		
Sodium	ug/L	7500	10000	10000	17700	17600	102	101	70-130	1	20		

MATRIX SPIKE SAMPLE: 3468175											
Parameter	Units	60442419028 Result	Spike Conc.	MS	MS	% Rec	Qualifiers				
				Result	% Rec	Limits					
Barium	ug/L		367	1000	1380	102	70-130				
Beryllium	ug/L		<0.12	1000	1060	106	70-130				
Boron	ug/L	83.6J	1000	1060	98	70-130					
Calcium	ug/L		143000	10000	153000	108	70-130				
Cobalt	ug/L		1.2J	1000	1050	105	70-130				
Iron	ug/L		13.1J	10000	10400	104	70-130				
Lead	ug/L		<3.8	1000	1060	106	70-130				
Lithium	ug/L		23.3	1000	1040	102	70-130				
Magnesium	ug/L		20900	10000	30700	98	70-130				
Manganese	ug/L		179	1000	1240	106	70-130				

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE SAMPLE:		3468175					
Parameter	Units	60442419028 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	<1.0	1000	1050	105	70-130	
Potassium	ug/L	31200	10000	41100	99	70-130	
Sodium	ug/L	2960	10000	13100	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875572	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010

METHOD BLANK: 3467609 Matrix: Water
 Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/05/23 11:50	
Arsenic	ug/L	<0.13	1.0	0.13	12/05/23 11:50	
Cadmium	ug/L	<0.050	0.50	0.050	12/05/23 11:50	
Chromium	ug/L	<0.30	1.0	0.30	12/05/23 11:50	
Selenium	ug/L	<0.18	1.0	0.18	12/05/23 11:50	
Thallium	ug/L	<0.14	1.0	0.14	12/05/23 11:50	

LABORATORY CONTROL SAMPLE: 3467610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.6	89	85-115	
Arsenic	ug/L	40	41.6	104	85-115	
Cadmium	ug/L	40	42.2	105	85-115	
Chromium	ug/L	40	42.3	106	85-115	
Selenium	ug/L	40	42.2	105	85-115	
Thallium	ug/L	40	40.7	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467611 3467612

Parameter	Units	60442388001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Antimony	ug/L	1.4	40	40	35.7	36.8	86	89	70-130	3	20		
Arsenic	ug/L	2.9	40	40	44.6	45.4	104	106	70-130	2	20		
Cadmium	ug/L	<0.50	40	40	37.2	38.2	93	95	70-130	3	20		
Chromium	ug/L	<1.0	40	40	39.1	39.8	97	98	70-130	2	20		
Selenium	ug/L	2.2	40	40	41.6	41.6	99	98	70-130	0	20		
Thallium	ug/L	<1.0	40	40	38.1	39.2	95	98	70-130	3	20		

MATRIX SPIKE SAMPLE: 3467613

Parameter	Units	60442419006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	35.2	88	70-130	
Arsenic	ug/L	13.6	40	55.5	105	70-130	
Cadmium	ug/L	0.061J	40	38.8	97	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE SAMPLE:		3467613					
Parameter	Units	60442419006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.30J	40	40.7	101	70-130	
Selenium	ug/L	<0.18	40	39.2	97	70-130	
Thallium	ug/L	<0.14	40	39.2	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875739	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419016, 60442419017, 60442419018

METHOD BLANK: 3468159 Matrix: Water

Associated Lab Samples: 60442419016, 60442419017, 60442419018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 11:40	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 11:40	
Cadmium	ug/L	<0.050	0.50	0.050	12/11/23 11:40	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 11:40	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 11:40	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 11:40	

LABORATORY CONTROL SAMPLE: 3468160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	34.8	87	85-115	
Arsenic	ug/L	40	41.8	104	85-115	
Cadmium	ug/L	40	41.5	104	85-115	
Chromium	ug/L	40	42.1	105	85-115	
Selenium	ug/L	40	42.2	106	85-115	
Thallium	ug/L	40	38.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468161 3468162

Parameter	Units	60442419016		3468162		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Antimony	ug/L	<0.12	40	40	34.3	34.6	86	86	70-130	1	20
Arsenic	ug/L	0.42J	40	40	42.2	42.6	104	106	70-130	1	20
Cadmium	ug/L	0.095J	40	40	39.4	39.8	98	99	70-130	1	20
Chromium	ug/L	0.41J	40	40	40.4	40.7	100	101	70-130	1	20
Selenium	ug/L	<0.18	40	40	39.5	41.0	98	102	70-130	4	20
Thallium	ug/L	<0.14	40	40	40.1	40.6	100	101	70-130	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468163 3468164

Parameter	Units	60442423003		3468164		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Antimony	ug/L		40	40	34.8	34.7	87	86	70-130	1	20
Arsenic	ug/L		40	40	42.6	42.9	104	105	70-130	1	20
Cadmium	ug/L		40	40	40.5	40.6	101	101	70-130	0	20
Chromium	ug/L		40	40	41.9	42.2	104	104	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468163 3468164													
Parameter	Units	60442423003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Selenium	ug/L		40	40	41.5	41.8	100	101	70-130		1	20	
Thallium	ug/L		40	40	40.6	41.2	101	103	70-130		2	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875747	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3468176 Matrix: Water

Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 12:31	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 12:31	
Cadmium	ug/L	0.21J	0.50	0.050	12/11/23 12:31	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 12:31	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 12:31	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 12:31	

LABORATORY CONTROL SAMPLE: 3468177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.7	89	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	42.3	106	85-115	
Chromium	ug/L	40	42.6	107	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	39.6	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468178 3468179

Parameter	Units	60442420001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result							
Antimony	ug/L	<0.12	40	40	35.1	35.4	88	89	70-130	1	20		
Arsenic	ug/L	0.89J	40	40	43.3	43.0	106	105	70-130	1	20		
Cadmium	ug/L	<0.050	40	40	40.3	40.4	101	101	70-130	0	20		
Chromium	ug/L	0.51J	40	40	41.6	41.7	103	103	70-130	0	20		
Selenium	ug/L	<0.18	40	40	40.7	41.0	102	102	70-130	1	20		
Thallium	ug/L	<0.14	40	40	41.1	41.4	103	103	70-130	1	20		

MATRIX SPIKE SAMPLE: 3468180

Parameter	Units	60442419030 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	36.1	90	70-130	
Arsenic	ug/L	3.9	40	47.3	109	70-130	
Cadmium	ug/L	0.30J	40	41.0	102	70-130	
Chromium	ug/L	1.0	40	42.3	103	70-130	
Selenium	ug/L	<0.18	40	41.6	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE SAMPLE:	3468180						
		60442419030	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Thallium	ug/L	<0.14	40	41.7	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875783	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419019, 60442419020, 60442419021, 60442419022		

METHOD BLANK:	3468379	Matrix:	Water
Associated Lab Samples:	60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419019, 60442419020, 60442419021, 60442419022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/11/23 13:35	
Arsenic	ug/L	<0.13	1.0	0.13	12/11/23 13:35	
Cadmium	ug/L	<0.050	0.50	0.050	12/11/23 13:35	
Chromium	ug/L	<0.30	1.0	0.30	12/11/23 13:35	
Selenium	ug/L	<0.18	1.0	0.18	12/11/23 13:35	
Thallium	ug/L	<0.14	1.0	0.14	12/11/23 13:35	

LABORATORY CONTROL SAMPLE: 3468380						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	36.5	91	85-115	
Arsenic	ug/L	40	43.1	108	85-115	
Cadmium	ug/L	40	43.3	108	85-115	
Chromium	ug/L	40	43.4	108	85-115	
Selenium	ug/L	40	43.3	108	85-115	
Thallium	ug/L	40	40.6	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468381												3468382	
Parameter	Units	60442419012		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Antimony	ug/L	<0.12	40	40	35.8	36.4	90	91	70-130	2	20		
Arsenic	ug/L	0.20J	40	40	43.0	44.2	107	110	70-130	3	20		
Cadmium	ug/L	0.17J	40	40	40.6	41.9	101	104	70-130	3	20		
Chromium	ug/L	0.49J	40	40	41.4	43.2	102	107	70-130	4	20		
Selenium	ug/L	<0.18	40	40	41.4	42.0	103	105	70-130	2	20		
Thallium	ug/L	<0.14	40	40	41.7	42.8	104	107	70-130	3	20		

MATRIX SPIKE SAMPLE: 3468383											
Parameter	Units	60442420004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers				
Antimony	ug/L	<0.12	40	36.8	92	70-130					
Arsenic	ug/L	38.4	40	82.3	110	70-130					
Cadmium	ug/L	<0.050	40	42.7	107	70-130					

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE SAMPLE:		3468383		60442420004		Spike	MS	MS	% Rec		
Parameter	Units	Result	Conc.	Result	Conc.	Result	% Rec	Limit	Qualifiers		
Chromium	ug/L	0.51J	40	44.0	109	70-130					
Selenium	ug/L	<0.18	40	42.8	107	70-130					
Thallium	ug/L	<0.14	40	42.0	105	70-130					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3468384		3468385		60442425001		MS	MSD	MS	MSD	% Rec	Max		
Parameter	Units	Result	Conc.	Result	Conc.	Result	Result	% Rec	% Rec	Limit	RPD	RPD	Qual		
Antimony	ug/L		40	40	35.8	36.0	89	90	70-130	1	20				
Arsenic	ug/L		40	40	43.9	43.7	108	108	70-130	1	20				
Cadmium	ug/L		40	40	42.0	41.4	105	103	70-130	2	20				
Chromium	ug/L		40	40	42.7	42.4	106	105	70-130	1	20				
Selenium	ug/L		40	40	44.4	45.1	103	104	70-130	2	20				
Thallium	ug/L		40	40	42.1	42.1	105	105	70-130	0	20				

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	874660	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419006, 60442419013, 60442419016, 60442419017, 60442419018

METHOD BLANK: 3464259 Matrix: Water

Associated Lab Samples: 60442419006, 60442419013, 60442419016, 60442419017, 60442419018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/24/23 14:09	

LABORATORY CONTROL SAMPLE: 3464260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	485	97	90-110	

SAMPLE DUPLICATE: 3464261

Parameter	Units	60442270019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	257	260	1	10	

SAMPLE DUPLICATE: 3464262

Parameter	Units	60442419016 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	271	273	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	874661	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419007, 60442419010, 60442419011

METHOD BLANK: 3464263 Matrix: Water

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419007, 60442419010, 60442419011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/24/23 16:59	

LABORATORY CONTROL SAMPLE: 3464264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	482	96	90-110	

SAMPLE DUPLICATE: 3464265

Parameter	Units	60442425003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	418	415	1	10	

SAMPLE DUPLICATE: 3464266

Parameter	Units	60442416001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	97.8	97.1	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	874727	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419005, 60442419008, 60442419009, 60442419019, 60442419021, 60442419022

METHOD BLANK: 3464569 Matrix: Water

Associated Lab Samples: 60442419005, 60442419008, 60442419009, 60442419019, 60442419021, 60442419022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/23 12:21	

LABORATORY CONTROL SAMPLE: 3464570

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3464571

Parameter	Units	60442420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	383	385	1	10	

SAMPLE DUPLICATE: 3464572

Parameter	Units	60442425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	447	450	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 874879

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419012, 60442419014, 60442419015, 60442419020

METHOD BLANK: 3465019

Matrix: Water

Associated Lab Samples: 60442419012, 60442419014, 60442419015, 60442419020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/28/23 10:06	

LABORATORY CONTROL SAMPLE: 3465020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	484	97	90-110	

SAMPLE DUPLICATE: 3465021

Parameter	Units	60442419012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	343	346	1	10	

SAMPLE DUPLICATE: 3465022

Parameter	Units	60442423003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	448	452	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 875083

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419027

METHOD BLANK: 3465735

Matrix: Water

Associated Lab Samples: 60442419027

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/29/23 10:42	

LABORATORY CONTROL SAMPLE: 3465736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	486	97	90-110	

SAMPLE DUPLICATE: 3465737

Parameter	Units	60439754002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	266	264	1	10	H1

SAMPLE DUPLICATE: 3465738

Parameter	Units	60442466005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	403	405	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	875206	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3466176 Matrix: Water
 Associated Lab Samples: 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/30/23 10:31	

LABORATORY CONTROL SAMPLE: 3466177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	495	99	90-110	

SAMPLE DUPLICATE: 3466178

Parameter	Units	60442836001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	347	342	1	10	

SAMPLE DUPLICATE: 3466179

Parameter	Units	60442576002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1790	1700	5	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	874691	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3464490 Matrix: Water
 Associated Lab Samples: 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/27/23 13:45	

LABORATORY CONTROL SAMPLE: 3464491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3464492

Parameter	Units	60442420017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<136	<136		10	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 878803

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419027

METHOD BLANK: 3480675

Matrix: Water

Associated Lab Samples: 60442419027

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/29/23 14:10	

LABORATORY CONTROL SAMPLE: 3480676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3480677

Parameter	Units	60442425002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	479	480	0	10	H1

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	878919	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419016, 60442419017, 60442419018, 60442419019, 60442419020

METHOD BLANK: 3481069 Matrix: Water

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419016, 60442419017, 60442419018, 60442419019, 60442419020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	27.0	17.0	17.0	11/22/23 17:28	2e,B0

LABORATORY CONTROL SAMPLE: 3481070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	898	90	80-120	2e,B0

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 878920

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419022

METHOD BLANK: 3481071

Matrix: Water

Associated Lab Samples: 60442419022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/22/23 18:57	2e

LABORATORY CONTROL SAMPLE: 3481072

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	936	94	80-120	2e

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 880000

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442419021

METHOD BLANK: 3484907

Matrix: Water

Associated Lab Samples: 60442419021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<17.0	17.0	17.0	11/28/23 10:59	3e

LABORATORY CONTROL SAMPLE: 3484908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	3e

SAMPLE DUPLICATE: 3484909

Parameter	Units	60442420009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<17.0	<25.4		10	3e,H1

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 875610 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419020

METHOD BLANK: 3467695 Matrix: Water
Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419020

Table with 7 columns: Parameter, Units, Blank Result, Reporting Limit, MDL, Analyzed, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

METHOD BLANK: 3470828 Matrix: Water
Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419020

Table with 7 columns: Parameter, Units, Blank Result, Reporting Limit, MDL, Analyzed, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

LABORATORY CONTROL SAMPLE: 3467696

Table with 7 columns: Parameter, Units, Spike Conc., LCS Result, LCS % Rec, % Rec Limits, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

LABORATORY CONTROL SAMPLE: 3470829

Table with 7 columns: Parameter, Units, Spike Conc., LCS Result, LCS % Rec, % Rec Limits, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467697 3467698

Parameter	Units	60442419012		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Chloride	mg/L	13.0	5	5	18.4	18.7	108	115	80-120	2	15			
Fluoride	mg/L	<0.12	2.5	2.5	1.8	1.9	72	78	80-120	8	15	M1		
Sulfate	mg/L	219	100	100	369	332	150	113	80-120	11	15	M1		

SAMPLE DUPLICATE: 3467699

Parameter	Units	60442419012 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	13.0	13.1	0	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	219	213	3	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 875787 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442419016, 60442419021, 60442419022

METHOD BLANK: 3468419 Matrix: Water
 Associated Lab Samples: 60442419016, 60442419021, 60442419022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/05/23 09:23	
Fluoride	mg/L	<0.12	0.20	0.12	12/05/23 09:23	
Sulfate	mg/L	<0.55	1.0	0.55	12/05/23 09:23	

METHOD BLANK: 3470526 Matrix: Water
 Associated Lab Samples: 60442419016, 60442419021, 60442419022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/06/23 22:54	
Fluoride	mg/L	<0.12	0.20	0.12	12/06/23 22:54	
Sulfate	mg/L	<0.55	1.0	0.55	12/06/23 22:54	

METHOD BLANK: 3470833 Matrix: Water
 Associated Lab Samples: 60442419016, 60442419021, 60442419022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/07/23 19:09	
Fluoride	mg/L	<0.12	0.20	0.12	12/07/23 19:09	
Sulfate	mg/L	<0.55	1.0	0.55	12/07/23 19:09	

LABORATORY CONTROL SAMPLE: 3468420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 3470527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.8	114	90-110 L1	
Sulfate	mg/L	5	4.7	94	90-110	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

LABORATORY CONTROL SAMPLE: 3470834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468421 3468422

Parameter	Units	60442420001		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	27.2	25	25	51.3	50.2	96	92	80-120	2	15		
Fluoride	mg/L	<0.12	2.5	2.5	1.9	2.0	78	81	80-120	5	15	M1	
Sulfate	mg/L	130	100	100	232	227	101	96	80-120	2	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468424 3468425

Parameter	Units	60442423003		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	3.3	5	5	8.4	8.4	102	102	80-120	0	15		
Fluoride	mg/L	<0.12	2.5	2.5	2.4	2.4	97	97	80-120	0	15		
Sulfate	mg/L	44.8	25	25	71.7	71.9	108	108	80-120	0	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468427 3468428

Parameter	Units	60442425001		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	3.9	5	5	8.8	8.8	98	98	80-120	0	15		
Fluoride	mg/L	<0.12	2.5	2.5	2.4	2.4	97	97	80-120	0	15		
Sulfate	mg/L	7.9	5	5	11.2	11.6	67	75	80-120	4	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3468430 3468431

Parameter	Units	60442419016		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	19.5	25	25	45.1	44.1	103	98	80-120	2	15		
Fluoride	mg/L	<0.12	2.5	2.5	1.7	1.4	68	58	80-120	16	15	M1,R1	
Sulfate	mg/L	189	100	100	283	284	94	95	80-120	0	15		

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

SAMPLE DUPLICATE: 3468423

Parameter	Units	60442420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	27.2	27.4	1	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	130	125	4	15	

SAMPLE DUPLICATE: 3468426

Parameter	Units	60442423003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	3.3	3.5	4	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	44.8	45.7	2	15	

SAMPLE DUPLICATE: 3468429

Parameter	Units	60442425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	3.9	3.9	0	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	7.9	7.6	3	15	

SAMPLE DUPLICATE: 3468432

Parameter	Units	60442419016 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	19.5	19.7	1	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	189	186	2	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch: 876922 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK: 3473231 Matrix: Water
Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Table with 7 columns: Parameter, Units, Blank Result, Reporting Limit, MDL, Analyzed, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

METHOD BLANK: 3475667 Matrix: Water
Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Table with 7 columns: Parameter, Units, Blank Result, Reporting Limit, MDL, Analyzed, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

METHOD BLANK: 3476788 Matrix: Water
Associated Lab Samples: 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Table with 7 columns: Parameter, Units, Blank Result, Reporting Limit, MDL, Analyzed, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

LABORATORY CONTROL SAMPLE: 3473232

Table with 7 columns: Parameter, Units, Spike Conc., LCS Result, LCS % Rec, % Rec Limits, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

LABORATORY CONTROL SAMPLE: 3475668

Table with 7 columns: Parameter, Units, Spike Conc., LCS Result, LCS % Rec, % Rec Limits, Qualifiers. Rows for Chloride, Fluoride, Sulfate.

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QUALITY CONTROL DATA

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

LABORATORY CONTROL SAMPLE: 3476789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	3.0	118	90-110	L1
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3473233 3473234

Parameter	Units	60443033003		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Chloride	mg/L	73.7	100	100	150	151	76	77	80-120	0	15	M1	
Fluoride	mg/L	ND	50	50	45.6	46.6	91	93	80-120	2	15		
Sulfate	mg/L	81.6	100	100	172	172	91	91	80-120	0	15		

SAMPLE DUPLICATE: 3473235

Parameter	Units	60443033003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	73.7	72.4	2	15	
Fluoride	mg/L	ND	<2.5		15	
Sulfate	mg/L	81.6	80.1	2	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AMW-8 **Lab ID: 60442419001** Collected: 11/16/23 16:38 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.419 ± 0.387 (0.563) C:NA T:88%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.01 ± 0.448 (0.722) C:79% T:80%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.110 ± 0.404 (0.874) C:NA T:93%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.435 ± 0.344 (0.672) C:77% T:84%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.520 ± 0.345 (0.157) C:NA T:78%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.480 ± 0.385 (0.765) C:82% T:79%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.507 ± 0.402 (0.545) C:NA T:87%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.598 ± 0.363 (0.667) C:81% T:84%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0710 ± 0.171 (0.330) C:NA T:93%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.408 ± 0.346 (0.688) C:84% T:80%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-1D **Lab ID: 60442419013** Collected: 11/15/23 12:38 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	1.50 ± 0.703 (0.822) C:NA T:87%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.66 ± 0.530 (0.673) C:82% T:83%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.631 ± 0.500 (0.680) C:NA T:84%	pCi/L	12/19/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0405 ± 0.349 (0.807) C:80% T:79%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-2D **Lab ID: 60442419015** Collected: 11/17/23 10:09 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.499 (0.984) C:NA T:88%	pCi/L	12/19/23 13:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.556 ± 0.468 (0.953) C:81% T:83%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.279 ± 0.410 (0.699) C:NA T:88%	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.28 ± 0.463 (0.632) C:85% T:83%	pCi/L	12/14/23 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-TP-3D **Lab ID: 60442419017** Collected: 11/15/23 14:32 Received: 11/18/23 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.626 ± 0.463 (0.626) C:NA T:91%	pCi/L	12/19/23 13:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.696 ± 0.468 (0.905) C:76% T:83%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	1.63 ± 0.669 (0.630) C:NA T:84%	pCi/L	12/19/23 13:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.898 ± 0.505 (0.932) C:78% T:79%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: L-CA-DUP-1 Lab ID: 60442419019 Collected: 11/16/23 08:00 Received: 11/18/23 04:55 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.447 ± 0.576 (0.959) C:NA T:81%	pCi/L	12/19/23 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.799 ± 0.514 (0.986) C:77% T:83%	pCi/L	12/13/23 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.464 ± 0.393 (0.488) C:NA T:83%	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.57 ± 0.574 (0.773) C:85% T:74%	pCi/L	12/14/23 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.245 ± 0.381 (0.660) C:NA T:90%	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.274 ± 0.342 (0.724) C:86% T:82%	pCi/L	12/14/23 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0545 ± 0.466 (0.950) C:NA T:92%	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.259 ± 0.316 (0.667) C:82% T:89%	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MS-1 **Lab ID: 60442419023** Collected: 11/15/23 15:18 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	124.65 %REC ± NA (NA) C:NA T:NA	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	84.29 %REC ± NA (NA) C:NA T:NA	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MSD-1	Lab ID: 60442419024	Collected: 11/15/23 15:18	Received: 11/18/23 04:55	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	99.84 %REC 22.11 RPD ± NA (NA) C:NA T:NA	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	105.13 %REC 22.0RPD ± NA (NA) C:NA T:NA	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	89.69 %REC ± NA (NA) C:NA T:NA	pCi/L	12/19/23 14:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	94.86 %REC ± NA (NA) C:NA T:NA	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MSD-2	Lab ID: 60442419026	Collected: 11/17/23 10:17	Received: 11/18/23 04:55	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	79.83 %REC 11.64RPD ± NA (NA) C:NA T:NA	pCi/L	12/19/23 14:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	95.77 %REC 0.95RPD ± NA (NA) C:NA T:NA	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.588 ± 0.405 (0.433) C:NA T:93%	pCi/L	12/19/23 14:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.688 ± 0.402 (0.741) C:87% T:86%	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AM-1S **Lab ID: 60442419029** Collected: 11/20/23 09:46 Received: 11/21/23 06:02 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.573 ± 0.481 (0.688) C:NA T:84%	pCi/L	12/19/23 14:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.372 ± 0.335 (0.679) C:90% T:90%	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-AM-1D **Lab ID: 60442419030** Collected: 11/20/23 08:58 Received: 11/21/23 06:02 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.298 ± 0.389 (0.641) C:NA T:82%	pCi/L	12/19/23 14:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.341 ± 0.348 (0.714) C:86% T:82%	pCi/L	12/14/23 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.536 ± 0.497 (0.756) C:NA T:90%	pCi/L	12/19/23 14:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.387 ± 0.360 (0.732) C:89% T:78%	pCi/L	12/14/23 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-CA-FB-3 **Lab ID: 60442419032** Collected: 11/20/23 08:40 Received: 11/21/23 06:02 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0553 ± 0.252 (0.513) C:NA T:94%	pCi/L	12/19/23 14:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.119 ± 0.292 (0.651) C:84% T:89%	pCi/L	12/14/23 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.926 ± 0.585 (0.768) C:NA T:89%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.38 ± 0.595 (1.00) C:78% T:79%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.112 ± 0.269 (0.520) C:NA T:92%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.469 ± 0.476 (0.989) C:75% T:81%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-MW-26 **Lab ID: 60442419009** Collected: 11/17/23 11:27 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.175 ± 0.267 (0.158) C:NA T:87%	pCi/L	12/19/23 13:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	-0.180 ± 0.338 (0.838) C:75% T:78%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.171 ± 0.432 (0.801) C:NA T:87%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.460 ± 0.479 (0.997) C:73% T:80%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.169 ± 0.455 (0.845) C:NA T:84%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.710 ± 0.544 (1.09) C:77% T:77%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-7S **Lab ID: 60442419006** Collected: 11/15/23 15:39 Received: 11/18/23 04:55 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.200 ± 0.480 (0.869) C:NA T:89%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.815 ± 0.468 (0.860) C:77% T:80%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Sample: L-LMW-8S	Lab ID: 60442419007	Collected: 11/16/23 08:54	Received: 11/18/23 04:55	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.196 ± 0.334 (0.778) C:NA T:90%	pCi/L	12/19/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.0824 ± 0.307 (0.744) C:76% T:83%	pCi/L	12/13/23 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.303 ± 0.461 (0.794) C:NA T:82%	pCi/L	12/19/23 13:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.386 ± 0.347 (0.700) C:86% T:82%	pCi/L	12/14/23 14:48	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	633526	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419025, 60442419026

METHOD BLANK:	3088485	Matrix:	Water
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Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419025, 60442419026

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.551 ± 0.364 (0.682) C:81% T:79%	pCi/L	12/13/23 14:51	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	633531	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442419016, 60442419020, 60442419021, 60442419022, 60442419023, 60442419024, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK:	3088502	Matrix:	Water
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Associated Lab Samples: 60442419016, 60442419020, 60442419021, 60442419022, 60442419023, 60442419024, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.159 ± 0.301 (0.661) C:85% T:88%	pCi/L	12/14/23 14:47	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	633529	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442419016, 60442419020, 60442419021, 60442419022, 60442419023, 60442419024, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

METHOD BLANK:	3088497	Matrix:	Water
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Associated Lab Samples: 60442419016, 60442419020, 60442419021, 60442419022, 60442419023, 60442419024, 60442419027, 60442419028, 60442419029, 60442419030, 60442419031, 60442419032

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0468 ± 0.214 (0.344) C:NA T:91%	pCi/L	12/19/23 13:51	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

QC Batch:	633525	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419025, 60442419026

METHOD BLANK:	3088484	Matrix:	Water
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Associated Lab Samples: 60442419001, 60442419002, 60442419003, 60442419004, 60442419005, 60442419006, 60442419007, 60442419008, 60442419009, 60442419010, 60442419011, 60442419012, 60442419013, 60442419014, 60442419015, 60442419017, 60442419018, 60442419019, 60442419025, 60442419026

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0829 ± 0.199 (0.385) C:NA T:97%	pCi/L	12/19/23 13:11	

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QUALIFIERS

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1e Achieving a constant weight was not met for this sample.

2e See case narrative

3e See case narrative.

B Analyte was detected in the associated method blank.

B0 Analyte was detected in an associated blank at a concentration greater than the MDL.

H1 Analysis conducted outside the EPA method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419001	L-AMW-8	EPA 200.7	875680	EPA 200.7	875702
60442419002	L-BMW-1S	EPA 200.7	875680	EPA 200.7	875702
60442419003	L-BMW-2S	EPA 200.7	875680	EPA 200.7	875702
60442419004	L-LMW-1S	EPA 200.7	875680	EPA 200.7	875702
60442419005	L-LMW-4S	EPA 200.7	875680	EPA 200.7	875702
60442419006	L-LMW-7S	EPA 200.7	875680	EPA 200.7	875702
60442419007	L-LMW-8S	EPA 200.7	875680	EPA 200.7	875702
60442419008	L-MW-24	EPA 200.7	875680	EPA 200.7	875702
60442419009	L-MW-26	EPA 200.7	875680	EPA 200.7	875702
60442419010	L-MW-33(D)	EPA 200.7	875680	EPA 200.7	875702
60442419011	L-MW-34(D)	EPA 200.7	875682	EPA 200.7	875700
60442419012	L-MW-35(D)	EPA 200.7	875682	EPA 200.7	875700
60442419013	L-TP-1D	EPA 200.7	875682	EPA 200.7	875700
60442419014	L-TP-2M	EPA 200.7	875682	EPA 200.7	875700
60442419015	L-TP-2D	EPA 200.7	875682	EPA 200.7	875700
60442419016	L-TP-3M	EPA 200.7	875737	EPA 200.7	875772
60442419017	L-TP-3D	EPA 200.7	875737	EPA 200.7	875772
60442419018	L-TP-4D	EPA 200.7	875737	EPA 200.7	875772
60442419019	L-CA-DUP-1	EPA 200.7	875682	EPA 200.7	875700
60442419020	L-CA-DUP-2	EPA 200.7	875682	EPA 200.7	875700
60442419021	L-CA-FB-1	EPA 200.7	875682	EPA 200.7	875700
60442419022	L-CA-FB-2	EPA 200.7	875682	EPA 200.7	875700
60442419027	L-LMW-2S	EPA 200.7	875741	EPA 200.7	875776
60442419028	L-S-1	EPA 200.7	875741	EPA 200.7	875776
60442419029	L-AM-1S	EPA 200.7	875741	EPA 200.7	875776
60442419030	L-AM-1D	EPA 200.7	875741	EPA 200.7	875776
60442419031	L-CA-DUP-3	EPA 200.7	875741	EPA 200.7	875776
60442419032	L-CA-FB-3	EPA 200.7	875741	EPA 200.7	875776
60442419001	L-AMW-8	EPA 200.8	875572	EPA 200.8	875612
60442419002	L-BMW-1S	EPA 200.8	875572	EPA 200.8	875612
60442419003	L-BMW-2S	EPA 200.8	875572	EPA 200.8	875612
60442419004	L-LMW-1S	EPA 200.8	875572	EPA 200.8	875612
60442419005	L-LMW-4S	EPA 200.8	875572	EPA 200.8	875612
60442419006	L-LMW-7S	EPA 200.8	875572	EPA 200.8	875612
60442419007	L-LMW-8S	EPA 200.8	875572	EPA 200.8	875612
60442419008	L-MW-24	EPA 200.8	875572	EPA 200.8	875612
60442419009	L-MW-26	EPA 200.8	875572	EPA 200.8	875612
60442419010	L-MW-33(D)	EPA 200.8	875572	EPA 200.8	875612
60442419011	L-MW-34(D)	EPA 200.8	875783	EPA 200.8	875810
60442419012	L-MW-35(D)	EPA 200.8	875783	EPA 200.8	875810
60442419013	L-TP-1D	EPA 200.8	875783	EPA 200.8	875810
60442419014	L-TP-2M	EPA 200.8	875783	EPA 200.8	875810
60442419015	L-TP-2D	EPA 200.8	875783	EPA 200.8	875810
60442419016	L-TP-3M	EPA 200.8	875739	EPA 200.8	875771
60442419017	L-TP-3D	EPA 200.8	875739	EPA 200.8	875771

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419018	L-TP-4D	EPA 200.8	875739	EPA 200.8	875771
60442419019	L-CA-DUP-1	EPA 200.8	875783	EPA 200.8	875810
60442419020	L-CA-DUP-2	EPA 200.8	875783	EPA 200.8	875810
60442419021	L-CA-FB-1	EPA 200.8	875783	EPA 200.8	875810
60442419022	L-CA-FB-2	EPA 200.8	875783	EPA 200.8	875810
60442419027	L-LMW-2S	EPA 200.8	875747	EPA 200.8	875777
60442419028	L-S-1	EPA 200.8	875747	EPA 200.8	875777
60442419029	L-AM-1S	EPA 200.8	875747	EPA 200.8	875777
60442419030	L-AM-1D	EPA 200.8	875747	EPA 200.8	875777
60442419031	L-CA-DUP-3	EPA 200.8	875747	EPA 200.8	875777
60442419032	L-CA-FB-3	EPA 200.8	875747	EPA 200.8	875777
60442419001	L-AMW-8	EPA 7470	876706	EPA 7470	876796
60442419002	L-BMW-1S	EPA 7470	876706	EPA 7470	876796
60442419003	L-BMW-2S	EPA 7470	876706	EPA 7470	876796
60442419004	L-LMW-1S	EPA 7470	876706	EPA 7470	876796
60442419005	L-LMW-4S	EPA 7470	876706	EPA 7470	876796
60442419006	L-LMW-7S	EPA 7470	876706	EPA 7470	876796
60442419007	L-LMW-8S	EPA 7470	876706	EPA 7470	876796
60442419008	L-MW-24	EPA 7470	876706	EPA 7470	876796
60442419009	L-MW-26	EPA 7470	876706	EPA 7470	876796
60442419010	L-MW-33(D)	EPA 7470	876706	EPA 7470	876796
60442419011	L-MW-34(D)	EPA 7470	876706	EPA 7470	876796
60442419012	L-MW-35(D)	EPA 7470	876706	EPA 7470	876796
60442419013	L-TP-1D	EPA 7470	876706	EPA 7470	876796
60442419014	L-TP-2M	EPA 7470	876706	EPA 7470	876796
60442419015	L-TP-2D	EPA 7470	876706	EPA 7470	876796
60442419016	L-TP-3M	EPA 7470	876709	EPA 7470	876797
60442419017	L-TP-3D	EPA 7470	876709	EPA 7470	876797
60442419018	L-TP-4D	EPA 7470	876706	EPA 7470	876796
60442419019	L-CA-DUP-1	EPA 7470	876706	EPA 7470	876796
60442419020	L-CA-DUP-2	EPA 7470	876706	EPA 7470	876796
60442419021	L-CA-FB-1	EPA 7470	876706	EPA 7470	876796
60442419022	L-CA-FB-2	EPA 7470	876706	EPA 7470	876796
60442419027	L-LMW-2S	EPA 7470	876709	EPA 7470	876797
60442419028	L-S-1	EPA 7470	876709	EPA 7470	876797
60442419029	L-AM-1S	EPA 7470	876709	EPA 7470	876797
60442419030	L-AM-1D	EPA 7470	876709	EPA 7470	876797
60442419031	L-CA-DUP-3	EPA 7470	876709	EPA 7470	876797
60442419032	L-CA-FB-3	EPA 7470	876709	EPA 7470	876797
60442419001	L-AMW-8	EPA 903.1	633525		
60442419002	L-BMW-1S	EPA 903.1	633525		
60442419003	L-BMW-2S	EPA 903.1	633525		
60442419004	L-LMW-1S	EPA 903.1	633525		
60442419005	L-LMW-4S	EPA 903.1	633525		
60442419006	L-LMW-7S	EPA 903.1	633525		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419007	L-LMW-8S	EPA 903.1	633525		
60442419008	L-MW-24	EPA 903.1	633525		
60442419009	L-MW-26	EPA 903.1	633525		
60442419010	L-MW-33(D)	EPA 903.1	633525		
60442419011	L-MW-34(D)	EPA 903.1	633525		
60442419012	L-MW-35(D)	EPA 903.1	633525		
60442419013	L-TP-1D	EPA 903.1	633525		
60442419014	L-TP-2M	EPA 903.1	633525		
60442419015	L-TP-2D	EPA 903.1	633525		
60442419016	L-TP-3M	EPA 903.1	633529		
60442419017	L-TP-3D	EPA 903.1	633525		
60442419018	L-TP-4D	EPA 903.1	633525		
60442419019	L-CA-DUP-1	EPA 903.1	633525		
60442419020	L-CA-DUP-2	EPA 903.1	633529		
60442419021	L-CA-FB-1	EPA 903.1	633529		
60442419022	L-CA-FB-2	EPA 903.1	633529		
60442419023	L-MS-1	EPA 903.1	633529		
60442419024	L-MSD-1	EPA 903.1	633529		
60442419025	L-MS-2	EPA 903.1	633525		
60442419026	L-MSD-2	EPA 903.1	633525		
60442419027	L-LMW-2S	EPA 903.1	633529		
60442419028	L-S-1	EPA 903.1	633529		
60442419029	L-AM-1S	EPA 903.1	633529		
60442419030	L-AM-1D	EPA 903.1	633529		
60442419031	L-CA-DUP-3	EPA 903.1	633529		
60442419032	L-CA-FB-3	EPA 903.1	633529		
60442419001	L-AMW-8	EPA 904.0	633526		
60442419002	L-BMW-1S	EPA 904.0	633526		
60442419003	L-BMW-2S	EPA 904.0	633526		
60442419004	L-LMW-1S	EPA 904.0	633526		
60442419005	L-LMW-4S	EPA 904.0	633526		
60442419006	L-LMW-7S	EPA 904.0	633526		
60442419007	L-LMW-8S	EPA 904.0	633526		
60442419008	L-MW-24	EPA 904.0	633526		
60442419009	L-MW-26	EPA 904.0	633526		
60442419010	L-MW-33(D)	EPA 904.0	633526		
60442419011	L-MW-34(D)	EPA 904.0	633526		
60442419012	L-MW-35(D)	EPA 904.0	633526		
60442419013	L-TP-1D	EPA 904.0	633526		
60442419014	L-TP-2M	EPA 904.0	633526		
60442419015	L-TP-2D	EPA 904.0	633526		
60442419016	L-TP-3M	EPA 904.0	633531		
60442419017	L-TP-3D	EPA 904.0	633526		
60442419018	L-TP-4D	EPA 904.0	633526		
60442419019	L-CA-DUP-1	EPA 904.0	633526		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419020	L-CA-DUP-2	EPA 904.0	633531		
60442419021	L-CA-FB-1	EPA 904.0	633531		
60442419022	L-CA-FB-2	EPA 904.0	633531		
60442419023	L-MS-1	EPA 904.0	633531		
60442419024	L-MSD-1	EPA 904.0	633531		
60442419025	L-MS-2	EPA 904.0	633526		
60442419026	L-MSD-2	EPA 904.0	633526		
60442419027	L-LMW-2S	EPA 904.0	633531		
60442419028	L-S-1	EPA 904.0	633531		
60442419029	L-AM-1S	EPA 904.0	633531		
60442419030	L-AM-1D	EPA 904.0	633531		
60442419031	L-CA-DUP-3	EPA 904.0	633531		
60442419032	L-CA-FB-3	EPA 904.0	633531		
60442419001	L-AMW-8	SM 2320B	874661		
60442419002	L-BMW-1S	SM 2320B	874661		
60442419003	L-BMW-2S	SM 2320B	874661		
60442419004	L-LMW-1S	SM 2320B	874661		
60442419005	L-LMW-4S	SM 2320B	874727		
60442419006	L-LMW-7S	SM 2320B	874660		
60442419007	L-LMW-8S	SM 2320B	874661		
60442419008	L-MW-24	SM 2320B	874727		
60442419009	L-MW-26	SM 2320B	874727		
60442419010	L-MW-33(D)	SM 2320B	874661		
60442419011	L-MW-34(D)	SM 2320B	874661		
60442419012	L-MW-35(D)	SM 2320B	874879		
60442419013	L-TP-1D	SM 2320B	874660		
60442419014	L-TP-2M	SM 2320B	874879		
60442419015	L-TP-2D	SM 2320B	874879		
60442419016	L-TP-3M	SM 2320B	874660		
60442419017	L-TP-3D	SM 2320B	874660		
60442419018	L-TP-4D	SM 2320B	874660		
60442419019	L-CA-DUP-1	SM 2320B	874727		
60442419020	L-CA-DUP-2	SM 2320B	874879		
60442419021	L-CA-FB-1	SM 2320B	874727		
60442419022	L-CA-FB-2	SM 2320B	874727		
60442419027	L-LMW-2S	SM 2320B	875083		
60442419028	L-S-1	SM 2320B	875206		
60442419029	L-AM-1S	SM 2320B	875206		
60442419030	L-AM-1D	SM 2320B	875206		
60442419031	L-CA-DUP-3	SM 2320B	875206		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419032	L-CA-FB-3	SM 2320B	875206		
60442419001	L-AMW-8	SM 2540C	878919		
60442419002	L-BMW-1S	SM 2540C	878919		
60442419003	L-BMW-2S	SM 2540C	878919		
60442419004	L-LMW-1S	SM 2540C	878919		
60442419005	L-LMW-4S	SM 2540C	878919		
60442419006	L-LMW-7S	SM 2540C	878919		
60442419007	L-LMW-8S	SM 2540C	878919		
60442419008	L-MW-24	SM 2540C	878919		
60442419009	L-MW-26	SM 2540C	878919		
60442419010	L-MW-33(D)	SM 2540C	878919		
60442419011	L-MW-34(D)	SM 2540C	878919		
60442419012	L-MW-35(D)	SM 2540C	878919		
60442419013	L-TP-1D	SM 2540C	878919		
60442419014	L-TP-2M	SM 2540C	878919		
60442419015	L-TP-2D	SM 2540C	878919		
60442419016	L-TP-3M	SM 2540C	878919		
60442419017	L-TP-3D	SM 2540C	878919		
60442419018	L-TP-4D	SM 2540C	878919		
60442419019	L-CA-DUP-1	SM 2540C	878919		
60442419020	L-CA-DUP-2	SM 2540C	878919		
60442419021	L-CA-FB-1	SM 2540C	880000		
60442419022	L-CA-FB-2	SM 2540C	878920		
60442419027	L-LMW-2S	SM 2540C	878803		
60442419028	L-S-1	SM 2540C	874691		
60442419029	L-AM-1S	SM 2540C	874691		
60442419030	L-AM-1D	SM 2540C	874691		
60442419031	L-CA-DUP-3	SM 2540C	874691		
60442419032	L-CA-FB-3	SM 2540C	874691		
60442419001	L-AMW-8	EPA 300.0	875610		
60442419002	L-BMW-1S	EPA 300.0	875610		
60442419003	L-BMW-2S	EPA 300.0	875610		
60442419004	L-LMW-1S	EPA 300.0	875610		
60442419005	L-LMW-4S	EPA 300.0	875610		
60442419006	L-LMW-7S	EPA 300.0	875610		
60442419007	L-LMW-8S	EPA 300.0	875610		
60442419008	L-MW-24	EPA 300.0	875610		
60442419009	L-MW-26	EPA 300.0	875610		
60442419010	L-MW-33(D)	EPA 300.0	875610		
60442419011	L-MW-34(D)	EPA 300.0	875610		
60442419012	L-MW-35(D)	EPA 300.0	875610		
60442419013	L-TP-1D	EPA 300.0	875610		
60442419014	L-TP-2M	EPA 300.0	875610		
60442419015	L-TP-2D	EPA 300.0	875610		
60442419016	L-TP-3M	EPA 300.0	875787		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPA-CA

Pace Project No.: 60442419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60442419017	L-TP-3D	EPA 300.0	875610		
60442419018	L-TP-4D	EPA 300.0	875610		
60442419019	L-CA-DUP-1	EPA 300.0	875610		
60442419020	L-CA-DUP-2	EPA 300.0	875610		
60442419021	L-CA-FB-1	EPA 300.0	875787		
60442419022	L-CA-FB-2	EPA 300.0	875787		
60442419027	L-LMW-2S	EPA 300.0	876922		
60442419028	L-S-1	EPA 300.0	876922		
60442419029	L-AM-1S	EPA 300.0	876922		
60442419030	L-AM-1D	EPA 300.0	876922		
60442419031	L-CA-DUP-3	EPA 300.0	876922		
60442419032	L-CA-FB-3	EPA 300.0	876922		

REPORT OF LABORATORY ANALYSIS

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WO#: 60442419



DC#_Title: ENV-FRM-LENE-0009_Sample C

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geo env

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.9/1.0/1.5 Corr. Factor 0.3 Corrected 0.6/0.7/1.2

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 4.0/14.1/14.9/15.3 13.7/13.8/14.6/15.0 PN 11/20/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY Analytical Request Document
 Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY - Affix Workorder/LogIn Label Here

Company Name: **RocksSmith Geoengeering, LLC.**
 Street Address: **2320 Creve Coeur Mill Road, Maryland Heights, MO 63043**
 Customer Project #: _____
 Project Name: **AMEREN LCPA-CA**

Contact/Report To: **Mark Haddock**
 Phone #: **314-974-6578**
 E-Mail: **mark.haddock@rocksmithgeo.com**
 Cc E-Mail: **Jeff Ingram, jeff.ingram@rocksmithgeo.com**
 Invoice To: **Mark Haddock**
 Invoice E-Mail: **mark.haddock@rocksmithgeo.com**

Specify Container Size **
 1.25mL, (5) 1.00mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other
 Identify Container Preservative Type***
 None, (2) HNO₃, (3) H₂SO₄, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO₄, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other



Scan QR Code for instructions

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET [] MT
 County / State origin of sample(s): **Missouri**
 Regulatory Program (DW, RCRA, etc.) as applicable:
 Rush (Pre-approval required):
 1-2 Day [] 3 day [] 5 day [] Other
 Date Results Requested: _____
 Field Filtered (if applicable): [] Yes [] No
 Analysis: _____
 Purchase Order # (if applicable): _____
 Quote #: _____

Customer Sample ID	Matrix *	Comp / Grab	Collected		Res. CLZ	Composite End		Number & Type of Containers	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	UWL Metals (200.7)	COD+TOC	TOX	Preservation non-conformance identified for sample.
			Date	Time		Date	Time											
L-AMW-8	WT	G	11-16-23	1638				4 2										
L-BMW-1S	WT	G	11-16-23	0850				4 2										
L-BMW-2S	WT	G	11-16-23	1018				4 2										
L-LMW-1S	WT	G	11-16-23	1006				4 2										
L-LMW-2S	WT																	
L-LMW-4S	WT	G	11-17-23	1246				4 2										
L-LMW-7S	WT	G	11-15-23	1539				4 2										
L-LMW-8S	WT	G	11-16-23	0854				4 2										
L-MW-24	WT	G	11-17-23	0930				4 2										
L-MW-26	WT	G	11-17-23	1127				4 2										

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (O), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Remarks / Special Conditions / Possible Hazards:
 ** App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ***UWL Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 ****UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Collected By: **Grant Mary**
 Printed Name: _____
 Signature: _____
 Received by Company: (Signature) _____
 Date/Time: **11-17-23 / 1545**

Additional Instructions from Pace:
 # Coolers: _____ Thermometer ID: _____ Correction Factor (°C): _____ Obs. Temp. (°C): _____ Corrected Temp. (°C): _____
 Tracking Number: _____
 Date/Time: **11/16/23 0955**
 Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other
 Date/Time: _____
 Received by Company: (Signature) _____
 Date/Time: _____
 Received by Company: (Signature) _____
 Date/Time: _____
 Page: **1** of **4**

Scan QR Code for instructions


CHAIN-OF-CUSTODY Analytical Request Document


Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields


Pace® Location Requested (City/State): Pace Analytical Kansas, 9608 Loiret Blvd., Lenexa, KS 66219
Company Name: Rocksmith Geoen지니어링, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock, 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):
Quote #:

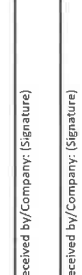
Time Zone Collected: [] AK [] PT [] MT [] CT [] ET [] AT [] Other
County / State origin of sample(s): Missouri
Regulatory Program (DW, RCRA, etc.) as applicable:
Rush (Pre-approval required): [] 2 Day [] 3 day [] 5 day [] Other
Date Results Requested: [] Yes [] No
Field Filtered (if applicable): [] Yes [] No
Analyst:


Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End Date	Res. CLZ	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)	CO2 + TOC	TOC	Preservation non-conformance identified for
			Date	Time			Time	Date										
L-MW-33(D)	WT	G	11-16-23	1305			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-MW-34(D)	WT	G	11-16-23	1413			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-MW-35(D)	WT	G	11-17-23	1017			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-S-1	WT																	
L-TP-1D	WT	G	11-15-23	1238			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-TP-2M	WT	G	11-17-23	0908			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-TP-2D	WT	G	11-17-23	1009			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-TP-3M	WT	G	11-15-23	1518			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-TP-3D	WT	G	11-15-23	1432			4	2		✓	✓	✓	✓	✓	✓	✓	✓	
L-TP-4D	WT	G	11-15-23	1338			4	2		✓	✓	✓	✓	✓	✓	✓	✓	

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 *** UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Collected By: Grant Mory
Printed Name: Grant Mory
Signature: 

Received by/Company (Signature): 
Date/Time: 11-17-23 1545

Received by/Company (Signature): 
Date/Time: 11-17-23 1545

Received by/Company (Signature): 
Date/Time: 11-17-23 1545

Additional Instructions from Pace®:
 # Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C) Corrected Temp. (°C)

Tracking Number: 111863 0453
Date/Time: 11/18/23 0453
Date/Time:

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 2 of 4

Pace® Location Requested (City/State):
 Pace Analytical Kansas
 9608 Loiret Blvd., Lenexa, KS 66219

Company Name: Rocksmith Geoeengineering, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Customer Project #: AMEREN LCPA-CA

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET Missouri

Data Deliverables:
 [] Level II [] Level III [] Level IV
 [] EQUIS
 [] Other: _____

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

Rush (Pre-approval required):
 [] 2 Day [] 3 day [] 5 day [] Other: _____
 DW PWSID # or WW Permit # as applicable: _____
Date Results Requested: Field Filtered (if applicable): [] Yes [] No
 Analysis: _____

Matrix * (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res CLZ	Number & Type of Containers
								Plastic Glass
L-AM-1S	WT							
L-AM-1D	WT							
L-CA-DUP-1	WT	G	11-16-23	1410			4	2
L-CA-DUP-2	WT	G	11-17-23	-			4	2
L-CA-DUP-3	WT							
L-CA-FB-1	WT	G	11-16-23	1410			4	2
L-CA-FB-2	WT	G	11-16-23	1640			4	2
L-CA-FB-3	WT							
L-MS-1	WT	G	11-15-23	1518			4	2
L-MSD-1	WT	G	11-15-23	1518			4	2

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti +7470 Hg
 *** UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn

Collected By: Grant Mary
Printed Name: Grant Mary
Signature: *Grant Mary*

Received by Company (Signature): *Grant Mary*
Received by Company (Signature): *Grant Mary*

Date/Time: 11-17-23 / 1515
Date/Time: 11/16/23 0455

Tracking Number: 11110630455

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 3 of 4

LAB USE ONLY - Affix Workorder/Login Label Here

Scan QR Code for instructions

Specify Container Size **
 125ml, (5) 100ml, (6) 40ml vial, (7) EnCore, (8) TerraCore, (9) Other

Identify Container Preservative Type ***
 *** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested

Lab Use Only
 Proj. Mgr: Jamie Church
 AcctNum / Client ID:
 Table #:
 Profile / Template: 15857, line 1
 Pregab / Bottle Ord. ID: EZ 3011895

Sample Comment: COD+TOC TOX

Preservation non-conformance identified for sample.

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace® Location Requested (City/State):
 Pace Analytical Kansas
 9608 Lorett Blvd., Lenexa, KS 66219

Company Name: Rocksmith Geoenvironment, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com

Customer Project #: AMEREN LCPC-CA
Project Name: AMEREN LCPC-CA

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] PT [] MT [] CT [] ET []

Data Deliverables:
 [] Level II [] Level III [] Level IV
 [] EQUIS
 [] Other

Rush (Pre-approval required):
 [] 2 Day [] 3 day [] 5 day [] Other

Date Results Requested:
 [] 2 Day [] 3 day [] 5 day [] Other

Field Filtered (if applicable): [] Yes [] No

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

DW PWSID # or WW Permit # as applicable:

Analysis:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Res. CLZ	Composite End		Number & Type of Containers	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)	COD + TOC	TOX	Preservation non-conformance identified for sample
			Date	Time		Date	Time											
L-MS-2	WT	6	11-17-23	1017				4 2		✓	✓	✓	✓	✓	✓	✓	✓	
L-MSD-2	WT	6	11-17-23	1017				4 2		✓	✓	✓	✓	✓	✓	✓	✓	

LAB USE ONLY - Affix Workorder/Login Label Here

Scan QR Code for instructions

Specify Container Size **

Identify Container Preservative Type ***

Analysis Requested

Proj. Mgr: **Jamie Church**
 AcctNum / Client ID:
 Table #:
 Profile / Template: **15857, Line 1**
 Preleg / Bottle Ord. ID: **EZ 3011895**

Sample Comment

Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) Encore, (8) TerraCore, (9) Other

Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Additional Instructions from Pace®:

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C) Corrected Temp. (°C)

Tracking Number: **1111023 0453**

Delivered by: [] In-Person [] Courier [] FedEx [] UPS [] Other

Page: **4** of **4**

3/4

Rocksmitz Geoeng

Client: _____ Profile # _____

Site: _____ Notes _____

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other					
1																																			
2																																			
3	WT												-									2	1												
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	1L unreserved plastic	AF
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R
DG9U	40mL amber unreserved	500mL HNO3 plastic	U
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unreserved plastic	
VG9U	40mL unreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unreserved glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	
BG3U	250mL Unpres Clear glass	250mL unreserved plastic	NAL
WGDU	16oz clear soil jar	250mL H2SO4 plastic	OL
		250mL NaOH, Zn Acetate	WP
		125mL unreserved plastic	DW
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unreserved plastic	

Work Order Number: 60442419

WO#: 60442419



DC#_Title: ENV-FRM-LENE-0009_Sam

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geology

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.9/2.2 Corr. Factor 10.3 Corrected 0.6/1.9

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12.7

12.4

PV 11/21/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Company Name: RocksSmith Geoeengineering, LLC
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksSmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksSmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksSmithgeo.com
Purchase Order # (if applicable):
Quote #:

Customer Project #: AMEREN LCPA-CA
Project Name:
Site Collection Info/Facility ID (as applicable):
Specify Container Size: **
Identify Container Preservative Type ***
Analysis Requested

Time Zone Collected: [] AK [] MT [] CT [] ET
Data Deliverables:
[] Level II [] Level III [] Level IV
[] EQUIS
[] Other:
Regulatory Program (DW, RCRA, etc.) as applicable: Missouri
Rush (Pre-approval required):
[] 2 Day [] 3 day [] 5 day [] Other:
DW PWSID # or WW Permit # as applicable:
Field Filtered (if applicable): [] Yes [] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OU), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

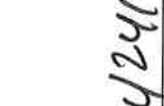
Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res. CLZ	Number & Type of Containers	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/740)**	Radium 226 & Radium 228	***UWL Metals (200.7)	Sample Comment
L-AMW-8	WT															
L-BMW-1S	WT															
L-BMW-2S	WT															
L-LMW-1S	WT															
L-LMW-2S	WT		6	11-20-23	0912											
L-LMW-4S	WT															
L-LMW-7S	WT															
L-LMW-8S	WT															
L-MW-24	WT															
L-MW-26	WT															

Customer Remarks / Special Conditions / Possible Hazards:
* App III and Cat/An Metals* - EPA 200.7; Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7; Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
***UWL Metals - 200.7; Al, Cu, Ni, Ag, Zn

Collected By: Grant Mory
Printed Name: Grant Mory
Signature: *Grant Mory*
Received By/Company (Signature): *Jeffrey ASE*
Date/Time: 11-20-23 / 1500
Received by/Company (Signature):
Date/Time:
Received by/Company (Signature):
Date/Time:
Received by/Company (Signature):
Date/Time:

Additional Instructions from Pace*:
Coolers: 3 Thermometer ID: T298 Correction Factor (°C): -0.3 Obs. Temp. (°C): 0-9/2-2/12-7 04/1-9 Corrected Temp. (°C): 12-4
Tracking Number: 11/21/23 0602
Date/Time: 11/21/23 0602
Date/Time:
Date/Time:
Date/Time:

Delivered by: [] In-Person [] Courier
[] FedEx [] UPS [] Other
Page: 1 of 3



Scan QR Code for Instructions

60442419

Company Name: Rocksmith Geoenvironment, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com
Customer Project #: AMEREN LCPA-CA
Project Name: AMEREN LCPA-CA
Site Collection Info/Facility ID (as applicable):

Pace* Location Requested (City/State):
 Pace Analytical Kansas
 9608 Loreit Blvd., Lenexa, KS 66219
Time Zone Collected: [] AK [] PT [] MT [] CT [] ET Missouri
Data Deliverables:
 [] Level II [] Level III [] Level IV
 [] EQUS
 [] Other: _____
Rush (Pre-approval required):
 [] 2 Day [] 3 day [] 5 day [] Other _____
Date Results Requested: _____
 DW PWSID # or WW Permit # as applicable: _____
 Field Filtered (if applicable): [] Yes [] No
 Analysis: _____

Matrix * Customer Sample ID
 L-MW-33(D) WT
 L-MW-34(D) WT
 L-MW-35(D) WT
 L-S-1 WT
 L-TP-1D WT
 L-TP-2M WT
 L-TP-2D WT
 L-TP-3M WT
 L-TP-3D WT
 L-TP-4D WT

Collected (or Composite Start) Date Time
 G 11-20-23 1138
Res. CL2
 4 2
Number & Type of Containers
 Plastic Glass

Composited End Date Time
Additional Instructions from Pace*:

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 *** UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn
 Date/Time: 11-20-23 / 1500
 Received by/Company: (Signature) [Signature]
 Received by/Company: (Signature) [Signature]

Chloride/Fluoride/Sulfate
Alkalinity
TDS
App III and Cat/An Metals (200.7)*
Appendix IV Metals (200.7/200.8/7470)**
Radium 226 & Radium 228
*****UWL Metals (200.7)**
 COD+TDC
 TOX

Lab Use Only
 Proj. Mgr: **Jamie Church**
 Act/Num / Client ID:
 Table #:
 Profile / Template: **15857, Line 1**
 Prelog. / Bottle Ord. ID: **EZ 3011895**
 Sample Comment:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Res. CL2	Composited End		Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)	COD+TDC	TOX	Preservation non-conformance identified for sample.
			Date	Time		Date	Time	Plastic	Glass										
L-MW-33(D)	WT																		
L-MW-34(D)	WT																		
L-MW-35(D)	WT																		
L-S-1	WT	G	11-20-23	1138					4	2									
L-TP-1D	WT																		
L-TP-2M	WT																		
L-TP-2D	WT																		
L-TP-3M	WT																		
L-TP-3D	WT																		
L-TP-4D	WT																		

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ** App IV Metals - EPA 200.7: Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 *** UWL Metals - 200.7: Al, Cu, Ni, Ag, Zn
 Date/Time: 11-20-23 / 1500
 Received by/Company: (Signature) [Signature]
 Received by/Company: (Signature) [Signature]

Additional Instructions from Pace*:
 # Coolers: 3 Thermometer ID: 7298 Correction Factor (C): -0.3 Corrected Temp. (C): 12.4
 Date/Time: 11/21/23 0600 Tracking Number:
 Date/Time:
 Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other
 Page: 2 of 3

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: Rocksmith Geoeengineering, LLC
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #: AMEREN LCPA-CA
Project Name: AMEREN LCPA-CA
Site Collection Info/Facility ID (as applicable):

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):
Quote #:

Time Zone Collected: [] AK [] MT [] PT [] CT [] ET [] Missouri
Data Deliverables: Regulatory Program (DW, RCRA, etc.) as applicable:
 Level II Level III Level IV
 EQUIS Other: _____
Date Results Requested: [] 2 Day [] 3 day [] 5 day [] Other: _____
Rush (Pre-approval required): _____
DW PWSID # or WW Permit # as applicable: _____
Field Filtered (if applicable): [] Yes [] No
Analysis: _____

Matrix * (or Composite Start): Date: _____ Time: _____
Collected (or Composite Start): Date: _____ Time: _____
Res. CLZ: _____
Composite End: Date: _____ Time: _____
Number & Type of Containers: Plastic: _____ Glass: _____

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Res. CLZ	Composite End Date	Time	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)**	Radium 226 & Radium 228	***UWL Metals (200.7)	Sample Comment
L-AM-1S	WT	G	11-20-23	0946				✓	✓	✓	✓	✓	✓	✓	✓
L-AM-1D	WT	G	11-20-23	0858				✓	✓	✓	✓	✓	✓	✓	✓
L-CA-DUP-1	WT														
L-CA-DUP-2	WT														
L-CA-DUP-3	WT	G	11-20-23	-				✓	✓	✓	✓	✓	✓	✓	✓
L-CA-FB-1	WT														
L-CA-FB-2	WT														
L-CA-FB-3	WT	G	11-20-23	0840											
L-MS-1	WT														
L-MSD-1	WT														

Customer Remarks / Special Conditions / Possible Hazards:
 * App III and Cat/An Metals* - EPA 200.7; Fe, Mg, Mn, K, Na, Ca, B
 ** App IV Metals - EPA 200.7; Ba, Be, Co, Pb, Li, Mo and 200.8 Metals - Sb, As, Cd, Cr, Se, Ti + 7470 Hg
 ***UWL Metals - 200.7; Al, Cu, Ni, Ag, Zn
Additional Instructions from Pace*:
 # Coolers: 3 Thermometer ID: T19870.3 Correction Factor (°C): 0.9122-112.7 Corrected Temp. (°C): 0.6/1.9
 Tracing Number: 11/21/23 0602
 Date/Time: 11/21/23 0602
 Date/Time: _____
 Date/Time: _____
 Date/Time: _____
 Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other
Page: 3 of 3

LAB USE ONLY - Affix Workorder/Login Label Here

Scan QR Code for instructions

60442419

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL, (7) Encore, (8) TerraCore, (9) Other
 *** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Proj. Mgr:
 Jamie Church
 AcctNum / Client ID:
 Table #:
 Profile / Template:
 15857, Line 1
 Preg / Bottle Ord. ID:
 EZ 3011895

Lab Use Only
 Preservation non-conformance identified for sample.

6/3 ONLY PRINT what you log.

Profile # AG2S = SE-21WET / BPN = SE-38RAD/RAD02

Client: ROCKSMITH Geology

Notes: Append to 60442419

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other				
1																																		
2																																		
3																																		
4																																		
5	WT																																	
6																																		
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		

Container Codes

Glass	Plastic	Misc.
DG9B 40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H 40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M 40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q 40mL TSP amber vial	BP1U 1L unreserved plastic	AF Air Filter
DG9S 40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T 40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U 40mL amber unreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H 40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T 40mL Na Thio. clear vial	BP2U 500mL unreserved plastic	
VG9U 40mL unreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S 1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U 1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H 250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U 250mL Unpres Clear glass	BP3U 250mL unreserved plastic	NAL Non-aqueous Liquid
WGDU 16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
	BP3Z 250mL NaOH, Zn Acetate	WP Wipe
	BP4U 125mL unreserved plastic	DW Drinking Water
	BP4N 125mL HNO3 plastic	
	BP4S 125mL H2SO4 plastic	
	WPDU 16oz unreserved plastic	

Work Order Number: 60442419

3/3

Client: Locksmith Green

Profile #

Notes

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT												1						1			2	1							
2	WT												1						1			2	1							
3																														
4																														
5	WT												1						1			2	1							
6																														
7																														
8	WT												1						1			2	1							
9																														
10																														
11																														
12																														

Container Codes

Glass	Plastic	Misc.
DG9B 40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H 40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M 40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q 40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S 40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T 40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U 40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H 40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T 40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U 40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S 1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U 1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H 250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U 250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU 16oz clear soil jar	BP3S 250mL unpres amber glass	OL OIL
	BP3Z 125mL unpres amber glass	WP Wipe
	BP4U 125mL unpreserved plastic	DW Drinking Water
	BP4N 125mL HNO3 plastic	
	BP4S 125mL H2SO4 plastic	
	WPDU 16oz unpreserved plastic	

Work Order Number:

60442419



L1681024

INTER_LABORATORY WORK ORDER # 60442419

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No	60442419
Receiving Project No	
Check Box for Consolidated Invoice	<input type="checkbox"/>
Date Prepared	11/20/23
REQUESTED COMPLETION DATE:	12/6/2023

Sending Region	IR60-Kansas	Sending Project Mgr.	Jamie Church
Receiving Region	IR850-Pace National	External Client	Rocksmith Geoehtneering, LLC.
State of Sample Origin	MO	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight IRWO Lab Need to run? Cert. Needed NO

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
9020B Total Organic Halogens	AG2S	48	H2SO4	22	SI-21WET	SUB PASIWET

Special Requirements: Report D, QC Limits, MDLs (D), Golder Ameren (1010)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: Yes No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.



Memorandum

January 31, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23007

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Labadie Energy Center – LCPA-CA – Data Package 60442419**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a laboratory control sample criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren LCPA-CA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23007
 Validation Date: 1/31/2024

Laboratory: Pace Analytical SDG #: 60442419

Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);

Matrix: Air Soil/Sed. Water Waste EPA 903.1/904.0 (Radium 226+228)

Sample Names L-AMW-8, L-LMW-1S, L-LMW-4S, L-LMW-7S, L-LMW-8S, L-MW-24, L-MW-33(D), L-MW-34(D), L-MW-35(D), L-TP-1D, L-TP-2M, L-TP-2D, L-TP-3M, L-TP-3D, L-TP-4D, L-CA-DUP-1, L-CA-DUP-2, L-CA-FB-2, L-MS-1, L-MSD-1, L-MS-2, L-MSD-2, L-LMW-2S, L-S-1, L-AM-1S, L-AM-1D, L-CA-DUP-3, L-CA-FB-3, L-MW-26, L-BMW-1S, L-BMW-2S, L-CA-FB-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/15/2023 - 11/20/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/JSI</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

Note Deficiencies: Criteria were not met for some method blanks, hold time, laboratory control samples, and matrix spike/matrix spike duplicates. Specific deficiencies explained in detail below.

Revised lab packet only includes parameters relevant to the CCR rule.

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Some TDS samples were analyzed outside of hold time. Results qualified as estimates.

Chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3468002: cobalt (1.6J). Associated with samples -011 through -015 and -019 through -022. Results that are < RL are reported as ND at RL.

3468169: barium (0.67J). Associated with samples -027 through -032. No qualification necessary, results > RL and 10x blank, one result a non-detect.

3468176: cadmium (0.21J). Associated with samples -027 through -032. Results < RL reported as ND at RL.

3481069: TDS (27.0). Associated with samples -001 through -020. Results > RL and 10x blank or non-detect, no qualification necessary.

Field Blanks:

L-CA-FB-1 @ L-MW-34(D): beryllium (0.13J), cobalt (1.3J), and chromium (0.44J). Results < RL, qualified as non-detects at RL.

L-CA-FB-2 @ L-AMW-8: cobalt (1.2J), chromium (1.0J) and TDS (17.0). All results non-detect or > RL and 10x blank, no qualification necessary.

L-CA-FB-3 @ L-AM-1D: potassium (73.7J) and chromium (0.48J). Potassium result > RL and 10x blank, no qualification necessary. Chromium result > RL and < 10x blank, result qualified as estimate.

Laboratory Control Samples:

3467696: LCS recovery low for fluoride. Associated with samples -001 through -015 and -017 through -020. Results qualified as estimates.

3470527: LCS recovery high for fluoride. Associated with samples -016, -021, and -022. Results are non-detects, no qualification necessary.

3476789: LCS recovery high for fluoride. Associated with samples -027 through -032. Results are non-detects, no qualification necessary.

Duplicates:

L-CA-DUP-1 @ L-MW-33(D): beryllium, chromium, and cobalt detected in DUP and not in parent sample, results qualified as estimates. Radium 226 detected in parent sample and not in duplicate, results qualified as estimates.

L-CA-DUP-2 @ L-TP-2M: RPD exceeds control limits for chromium (91%). Cobalt and radium 228 detected in field duplicate and not in parent sample. Results qualified as estimates.

L-CA-DUP-3 @ L-S-1: RPD exceeds control limits for cobalt (22%) and chloride (27%). Radium 226 detected in parent sample and not in field duplicate. Results qualified as estimates.

Laboratory duplicate max RPD: 15: chloride, fluoride, sulfate; 10%: alkalinity, TDS

MS/MSD:

3467997/3467998: MS/MSD recoveries high for potassium. Associated with unrelated sample, no qualification necessary.

3468158; 3473233/3473234: MS low for calcium; MS/MSD low for sulfate. Associated with unrelated samples, no qualification necessary.

3467697/3467698: MS/MSD recoveries low for fluoride, associated with sample -012, result qualified as estimate. MS recovery high for sulfate, MSD recovery and RPD within control limits, no qualification necessary.

3468421/3468422: MS recovery low for fluoride. MSD recovery and RPD within control limits, no qualification necessary.

3468427/3468428: MS/MSD recoveries low for sulfate. Associated with unrelated sample, no qualification necessary.

3468430/3468431: MS/MSD recoveries low and RPD out of control limits for sulfate. Associated with -016. Qualified as estimate.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-CA-FB-1	TDS	17	UJ	Analyzed outside of hold time
L-LMW-2S	"	533	J	"
L-MW-34(D)	Cobalt	5	U	Detected in method blank, result < RL
L-MW-35(D)	"	5	U	"
L-TP-1D	"	5	U	"
L-CA-DUP-1	"	5	U	"
L-CA-DUP-2	"	5	U	"
L-CA-FB-1	"	5	U	"
L-CA-FB-2	"	5	U	"
L-LMW-2S	Cadmium	0.50	U	"
L-S-1	"	0.50	U	"
L-AM-1S	"	0.50	U	"
L-AM-1D	"	0.50	U	"
L-CA-DUP-3	"	0.50	U	"
L-MW-34(D)	Beryllium	1.0	U	Detected in field blank, result < RL
"	Cobalt	5	U	"
"	Chromium	1.0	U	"
L-AM-1D	Chromium	1.0	J	Detected in field blank, result > RL and < 10x blank
L-AMW-8	Fluoride	0.12	UJ	LCS recovery low
L-LMW-1S	"	0.12	UJ	"
L-LMW-4S	"	0.12	UJ	"
L-LMW-7S	"	0.12	UJ	"
L-LMW-8S	"	0.12	UJ	"
L-MW-24	"	0.12	UJ	"
L-MW-33(D)	"	0.12	UJ	"
L-MW-34(D)	"	0.12	UJ	"
L-MW-35(D)	"	0.12	UJ	"
L-TP-1D	"	0.12	UJ	"
L-TP-2M	"	0.12	UJ	"
L-TP-2D	"	0.12	UJ	"
L-TP-3D	"	0.12	UJ	"
L-TP-4D	"	0.12	UJ	"
L-CA-DUP-1	"	0.12	UJ	"
L-CA-DUP-2	"	0.12	UJ	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-MW-26	Fluoride	0.12	UJ	LCS recovery low
L-BMW-1S	"	0.12	UJ	"
L-BMW-2S	"	0.12	UJ	"
L-CA-DUP-1	Beryllium	0.18	J	Detected in field duplicate and not in parent sample
L-MW-33(D)	"	0.12	UJ	"
L-CA-DUP-1	Chromium	0.41	J	"
L-MW-33(D)	"	0.30	UJ	"
L-CA-DUP-1	Cobalt	1.5	J	"
L-MW-33(D)	"	1.2	UJ	"
L-CA-DUP-1	Radium 226	0.959	UJ	Detected in parent sample and not in field duplicate
L-MW-33(D)	"	0.52	J	"
L-CA-DUP-2	Chromium	0.85	J	Field duplicate RPD exceeds control limit
L-TP-2M	"	0.32	J	"
L-CA-DUP-2	Cobalt	1.4	J	Detected in field duplicate and not in parent sample
L-TP-2M	"	1.2	UJ	"
L-CA-DUP-2	Radium 228	1.57	J	"
L-TP-2M	"	0.807	UJ	"
L-CA-DUP-3	Chloride	2.1	J	Field duplicate RPD exceeds control limit
L-S-1	"	1.6	J	"
L-CA-DUP-3	Cobalt	1.5	J	"
L-S-1	"	1.2	J	"
L-CA-DUP-3	Radium 226	0.756	UJ	Detected in parent sample and not in field duplicate
L-S-1	"	0.588	J	"
L-MW-35(D)	Fluoride	0.12	UJ	MS/MSD recoveries low
L-TP-3M	"	0.12	UJ	MS/MSD recoveries low, RPD exceeds control limit

Signature: *Scott Merry*

Date: 1/31/2024

Appendix B

October 2022 Assessment Monitoring Statistical Evaluation



TECHNICAL MEMORANDUM

DATE February 20, 2023

Project No. GL153140604

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram (WSP), Mark Haddock
(Rocksmith Geoengineering, LLC), Mark
Sandfort (WSP)

EMAIL Jeffrey.Ingram@wsp.com

ASSESSMENT MONITORING STATISTICAL EVALUATION LCPA SURFACE IMPOUNDMENT LABADIE ENERGY CENTER, FRANKLIN COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the October 2022 sampling event at the LCPA Surface Impoundment at the Labadie Energy Center located in Franklin County, Missouri. Included in this memorandum is a brief summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A** and **Appendix B**).

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Groundwater Monitoring Plan's (GMP) Statistical Analysis Plan (SAP). The following outlier was removed prior to the calculation of confidence limits.

- Cobalt
 - UMW-1D at 2.7 J micrograms per liter (µg/L) on 4/11/2022. The result is statistically higher than other cobalt results at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.

An analysis of the outliers removed to-date was completed and two statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits.

- Molybdenum
 - UMW-5D at 263 and 584 µg/L on 11/7/2019 and 11/2/2021. These values were removed in April 2020 and November 2021 because the results were statistically higher than other molybdenum values at the same well. However, the results have been confirmed by subsequent sampling events and the results are no longer outliers.

No new SSLs were identified in the October 2022 sampling event. The SSLs reported for the October 2022 monitoring event are as follows:

- Molybdenum at UMW-3D(R), UMW-4D, UMW-5D, UMW-6D, and UMW-7D

WSP appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314) 984-8800.

WSP USA Inc.



Jeffrey Ingram
Senior Consultant, Geologist



Mark Sandfort, P.E., R.G.
Senior Engineering Principal

Attachments: Table 1 – LCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output
Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - LCPA Groundwater Protection Standards
LCPA Surface Impoundment
Labadie Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring ⁷
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	44.2	44.2
Barium	µg/L	2000	2000	1290
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.3163
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	47.4	47.4
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	4.14
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.

6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.

7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.

8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.

9. GWPS and background values calculated using results collected through February 2021 from monitoring wells BMW-1D and BMW-2D.

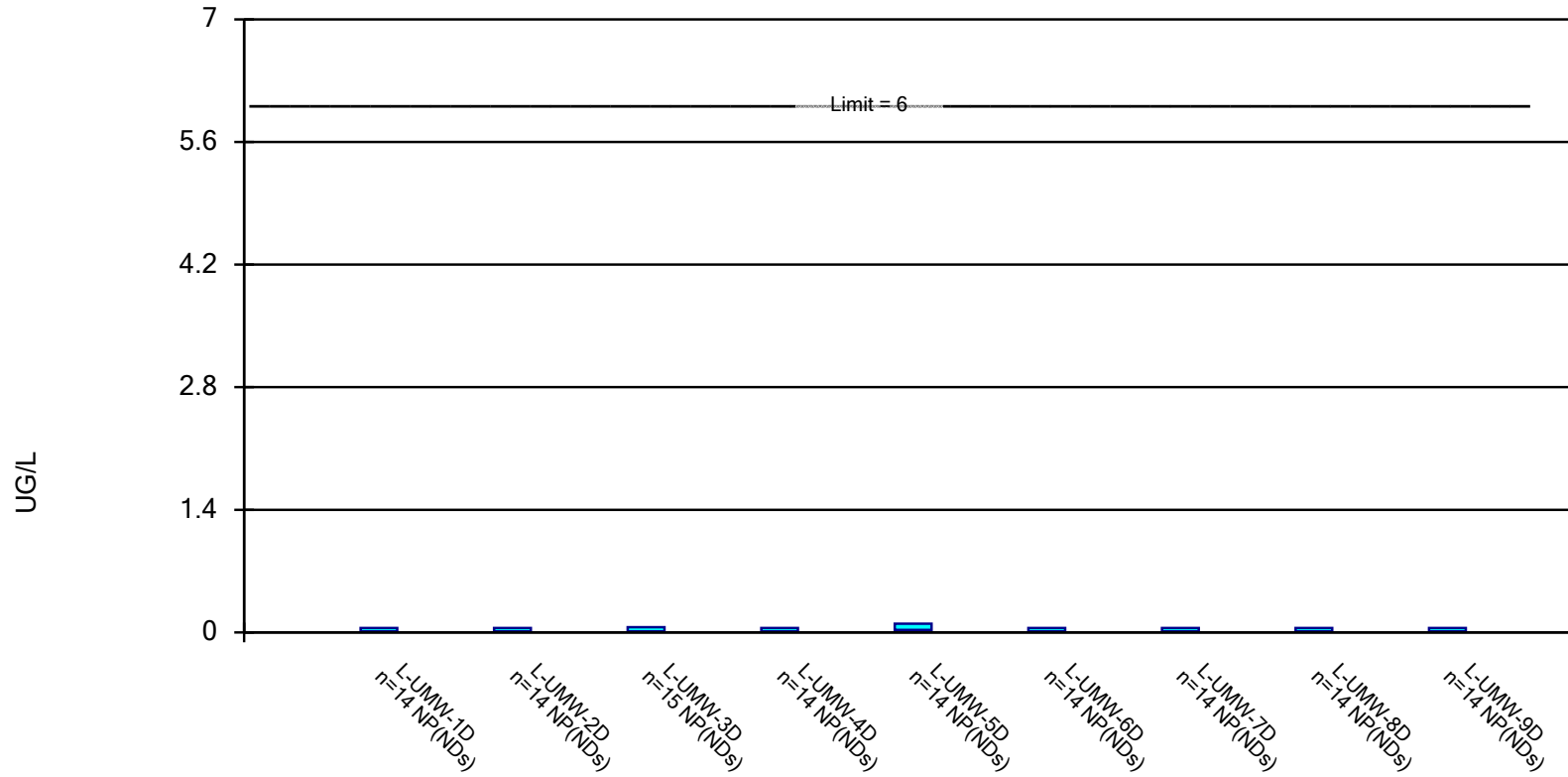
Prepared by: JSI
Checked by: EMS
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

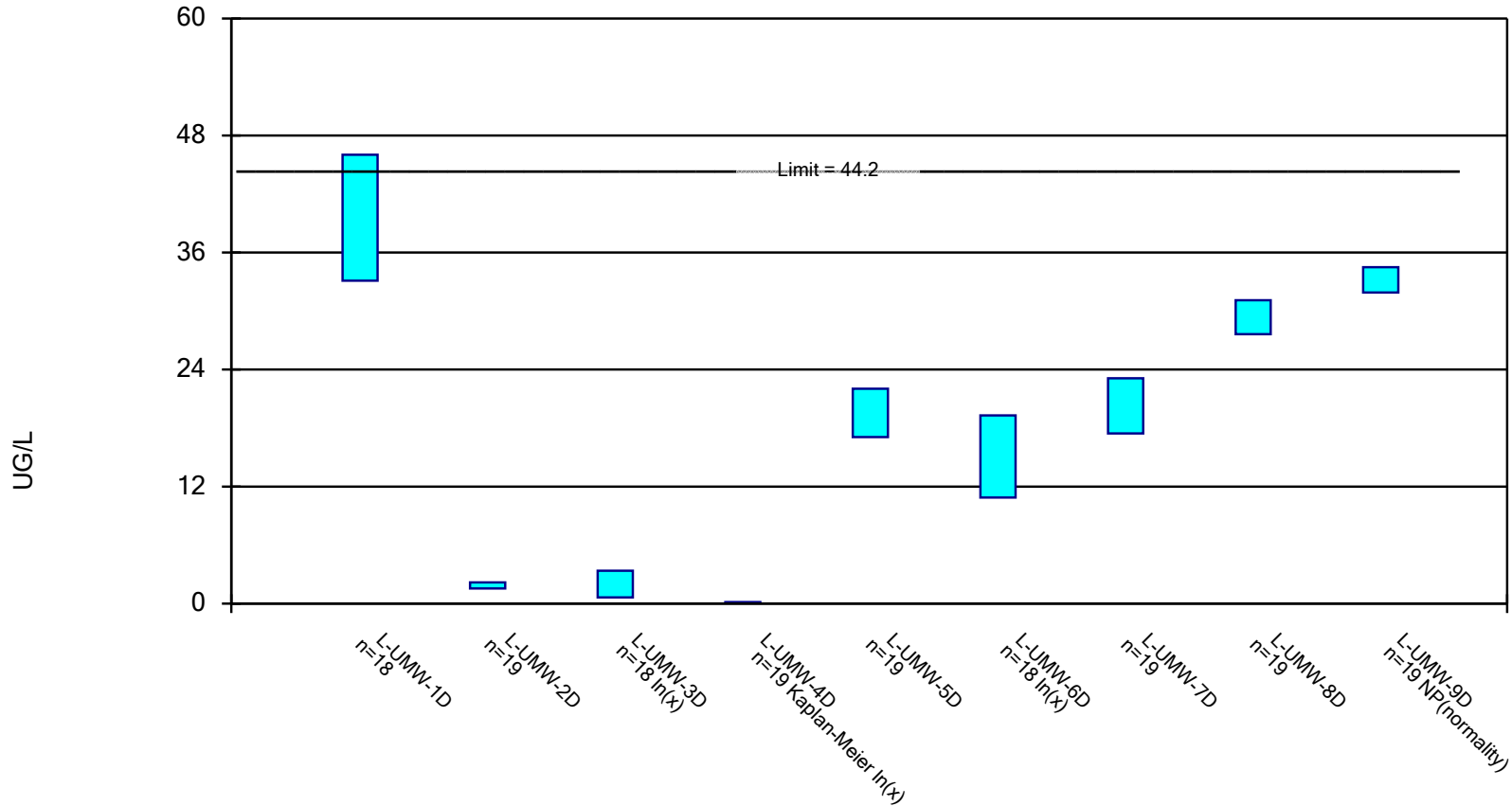


Constituent: ANTIMONY, TOTAL Analysis Run 2/3/2023 9:00 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

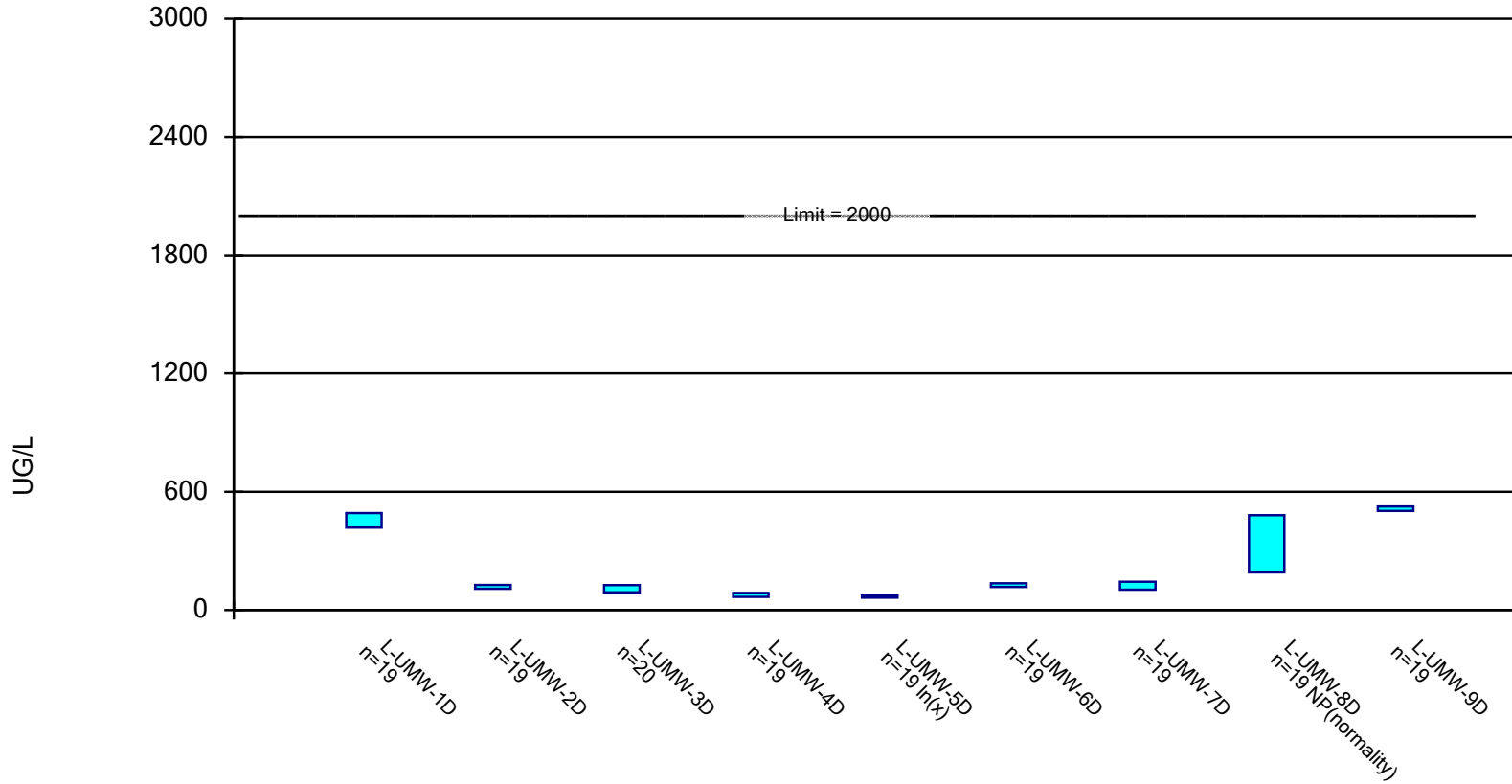


Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:00 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

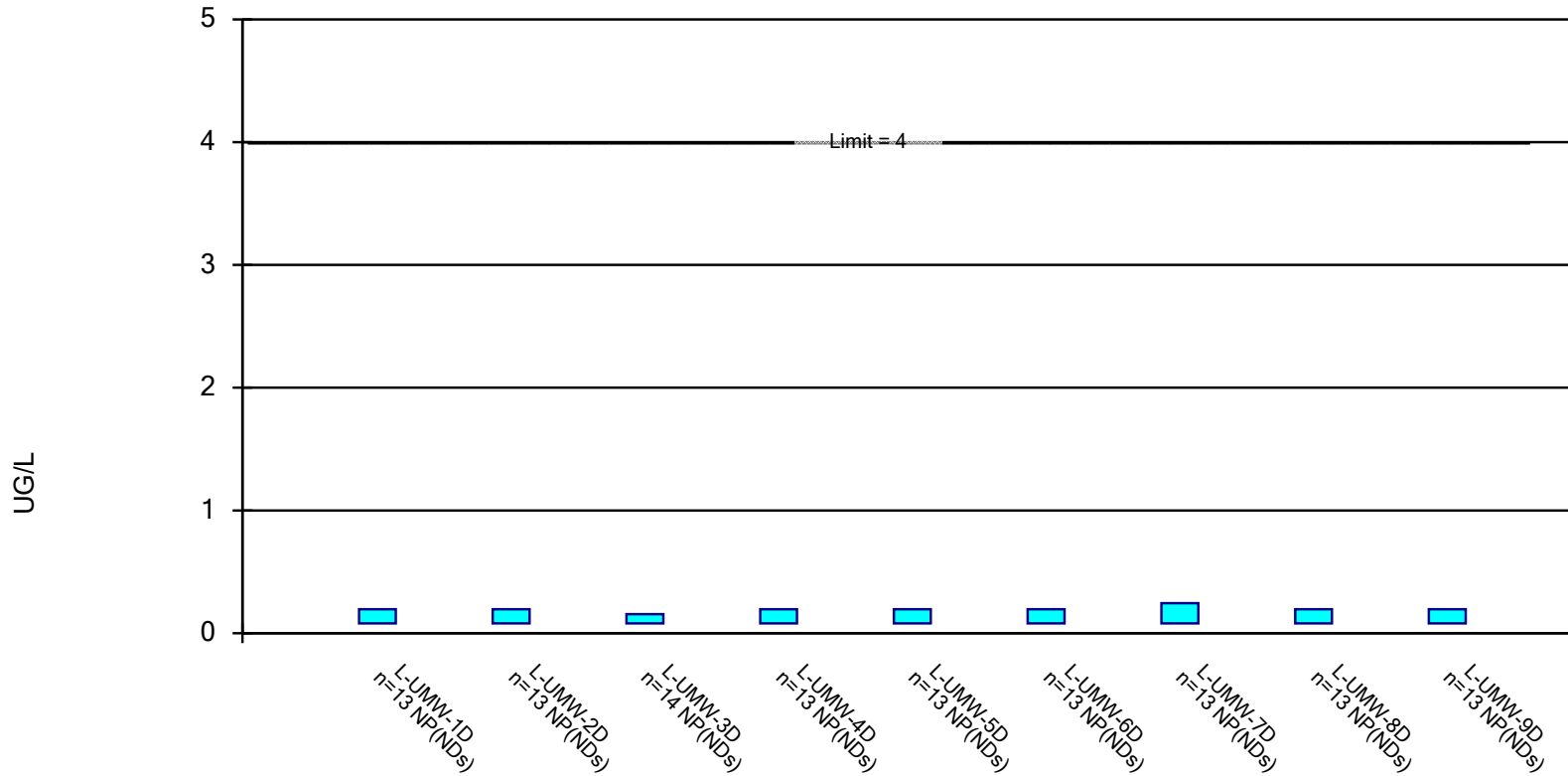


Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

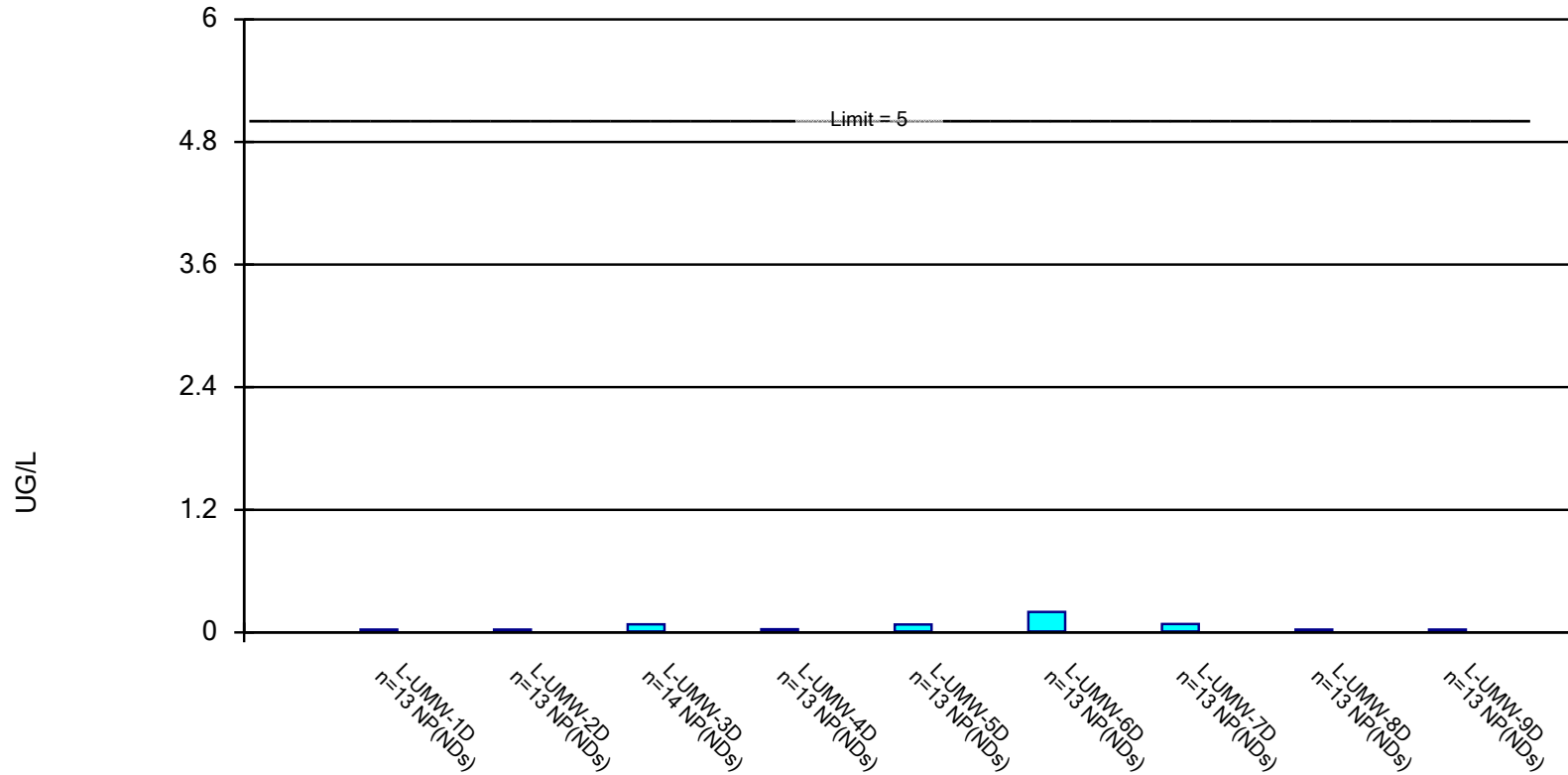


Constituent: BERYLLIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

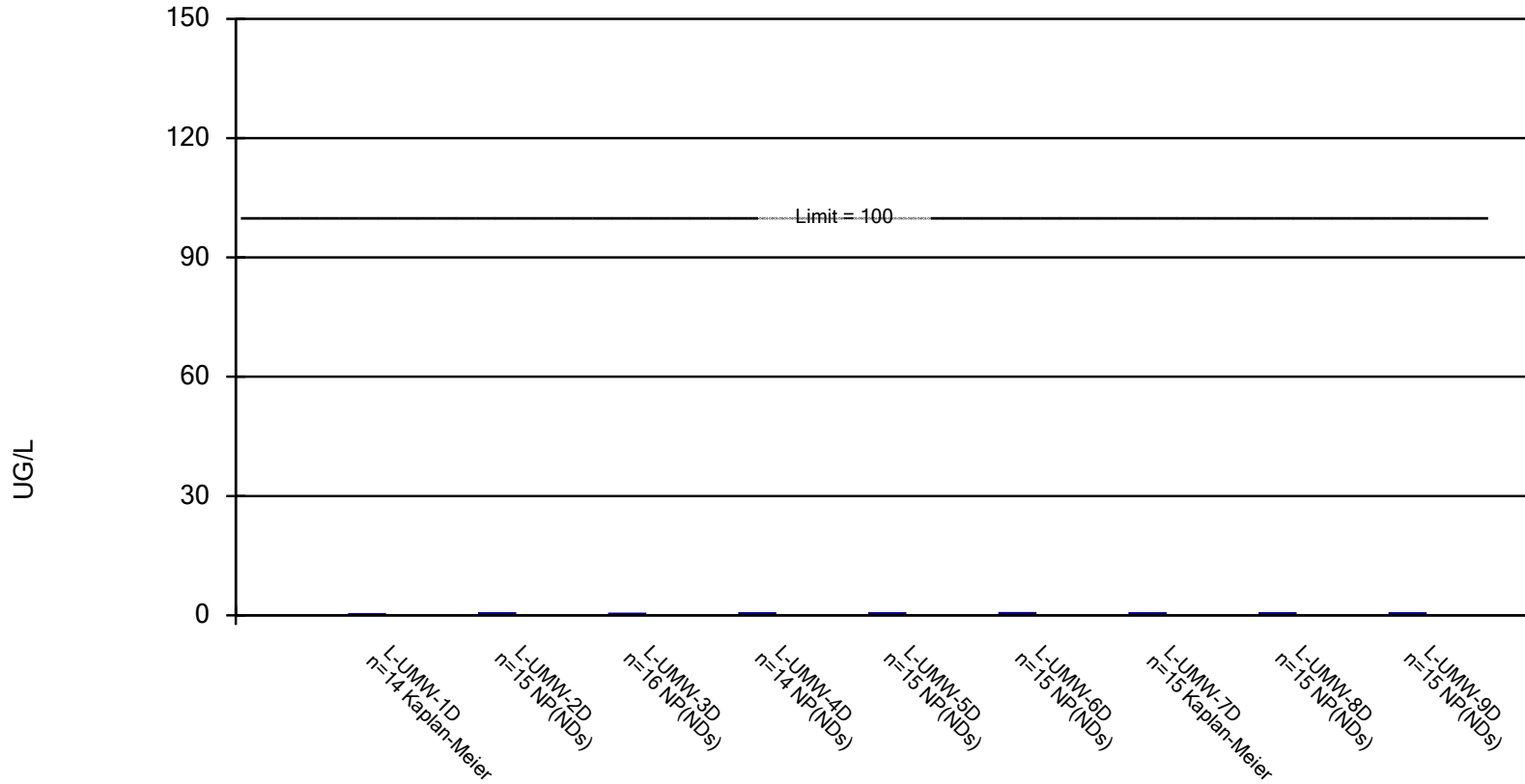


Constituent: CADMIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

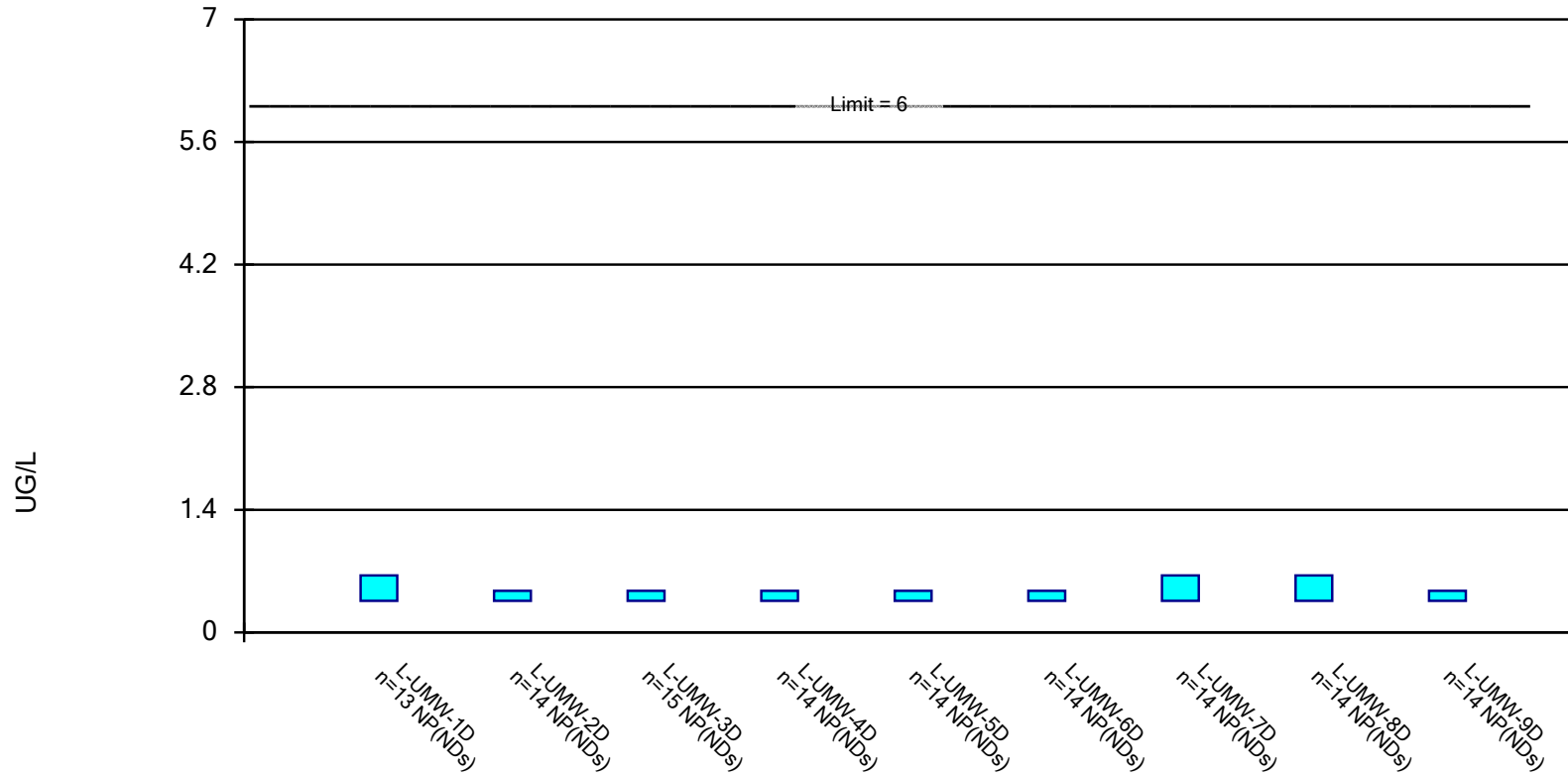


Constituent: CHROMIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

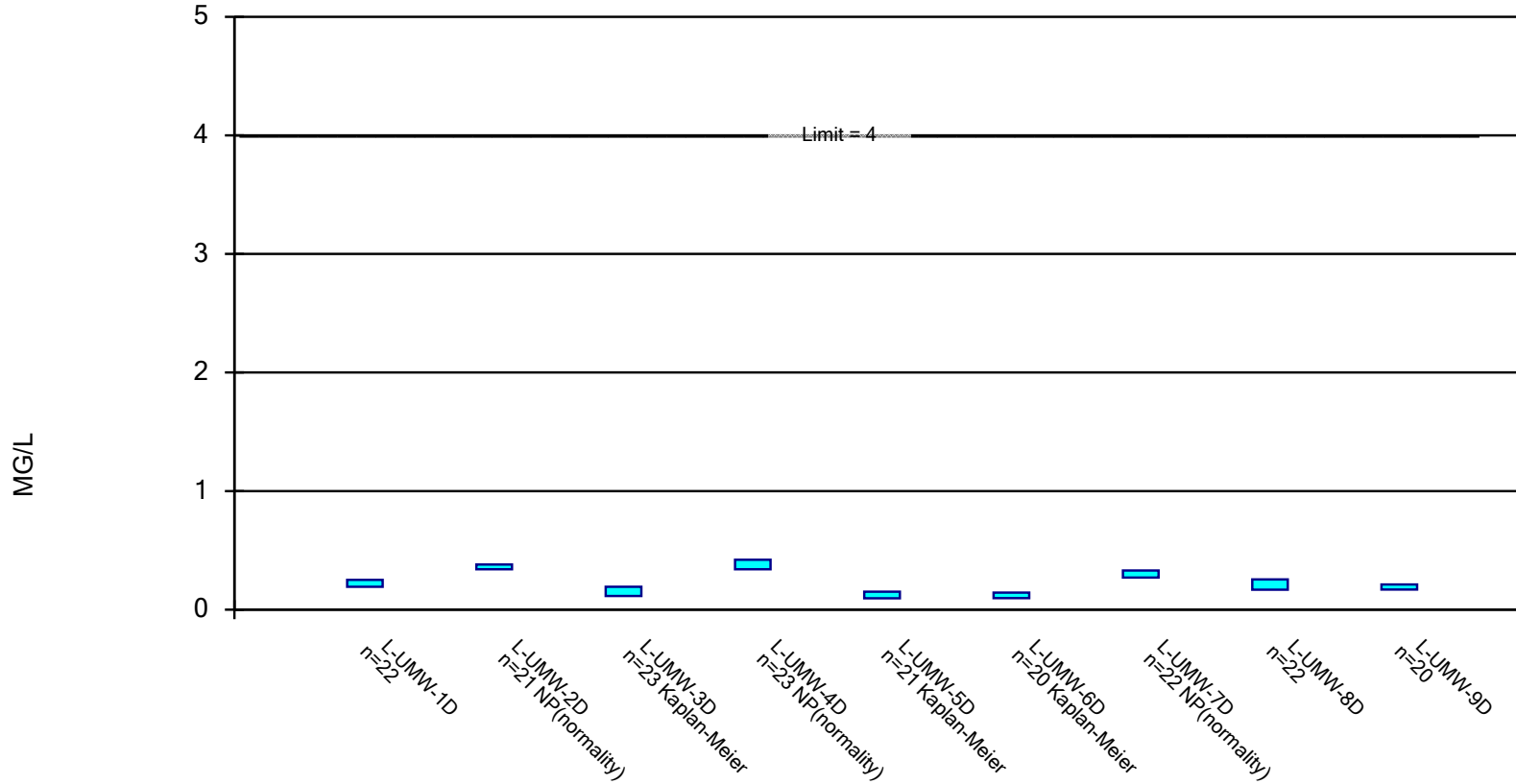


Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

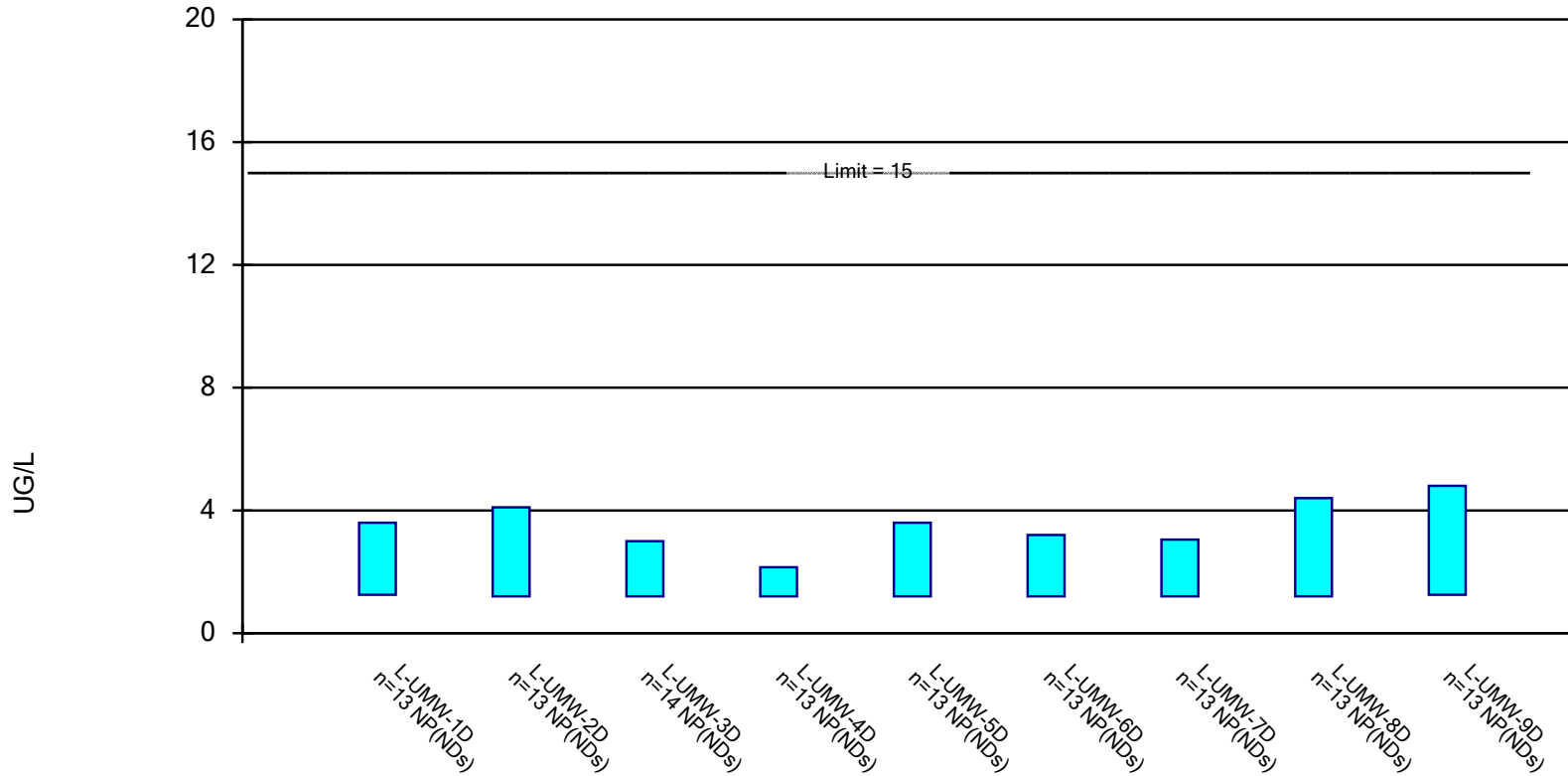


Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

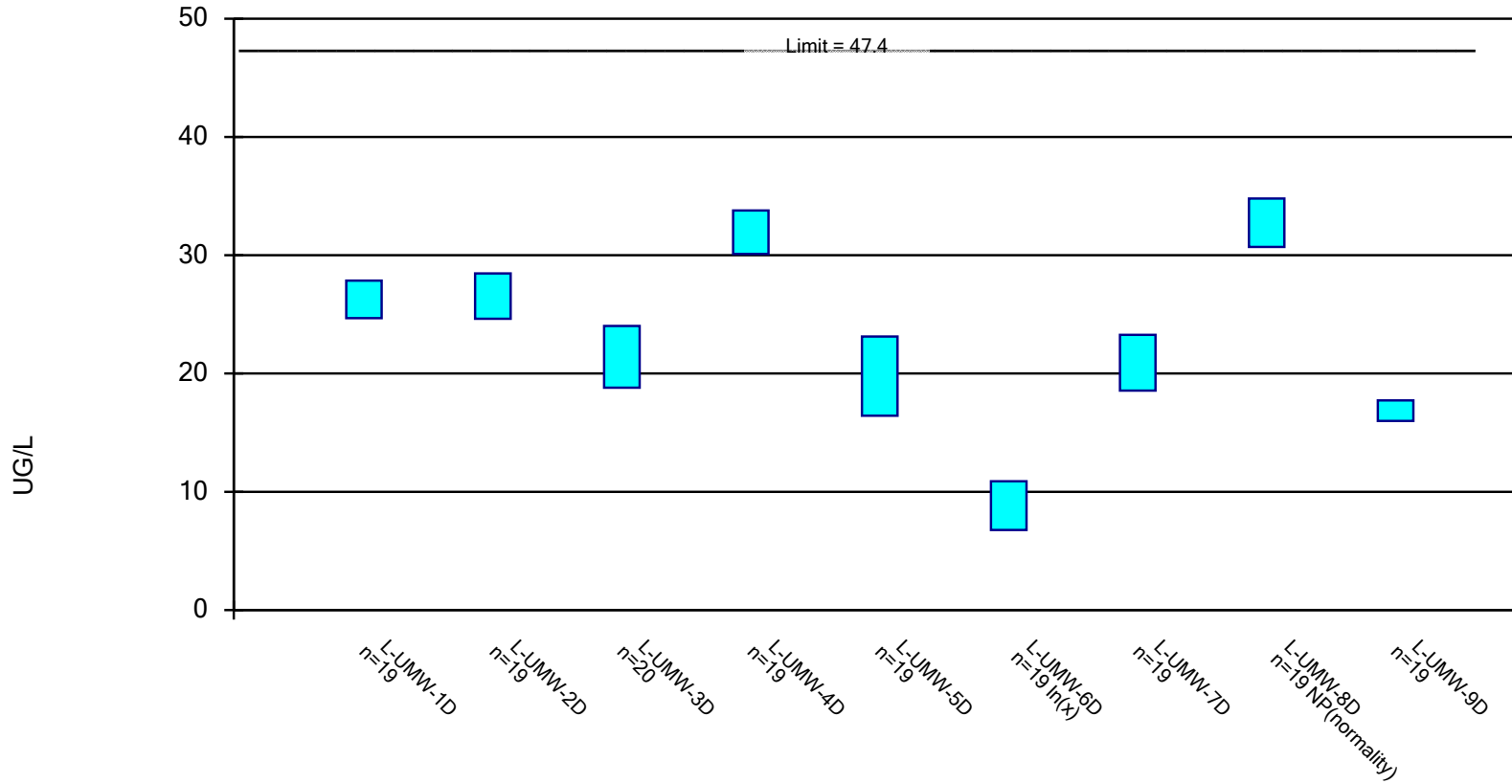


Constituent: LEAD, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

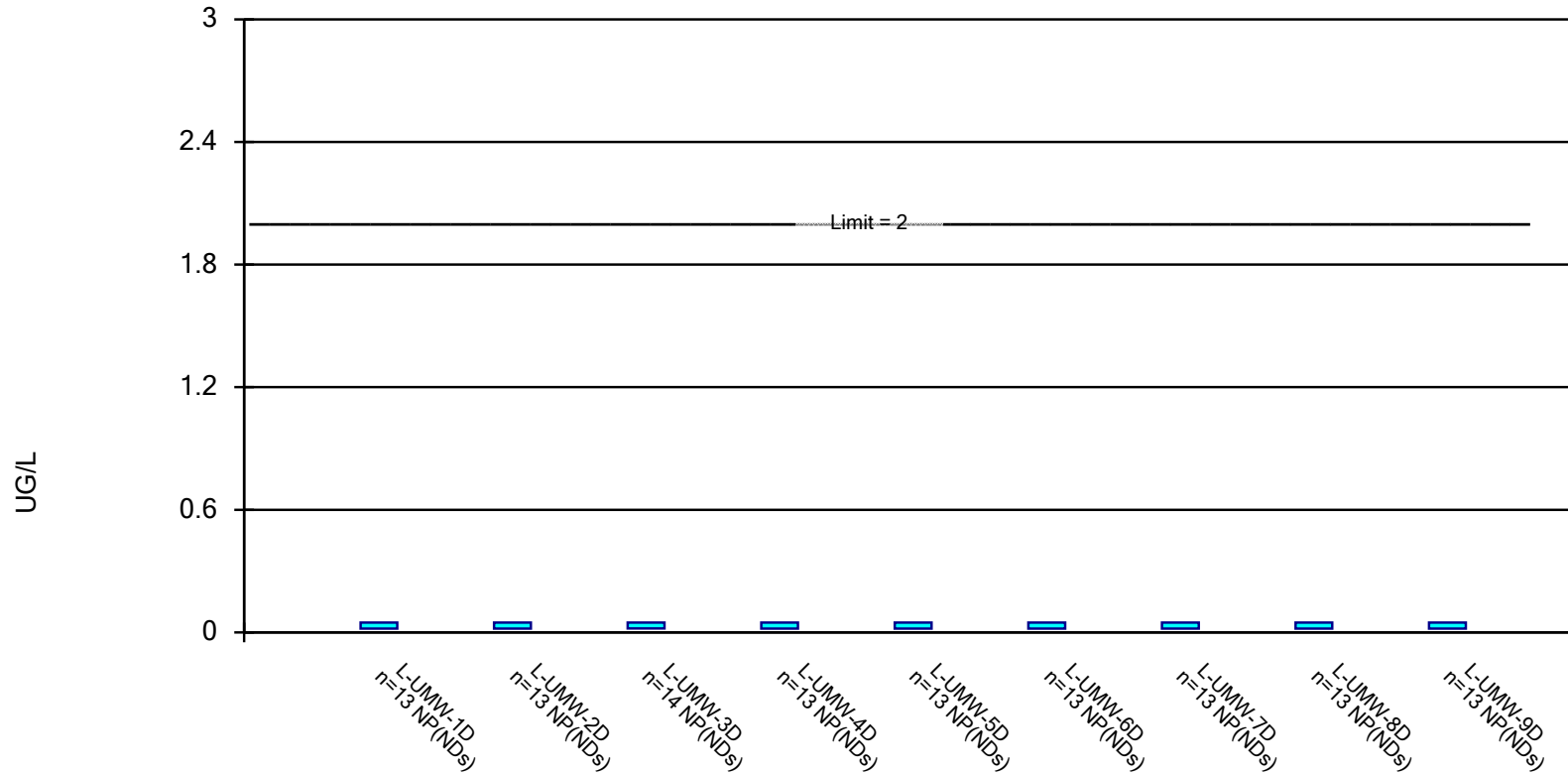


Constituent: LITHIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

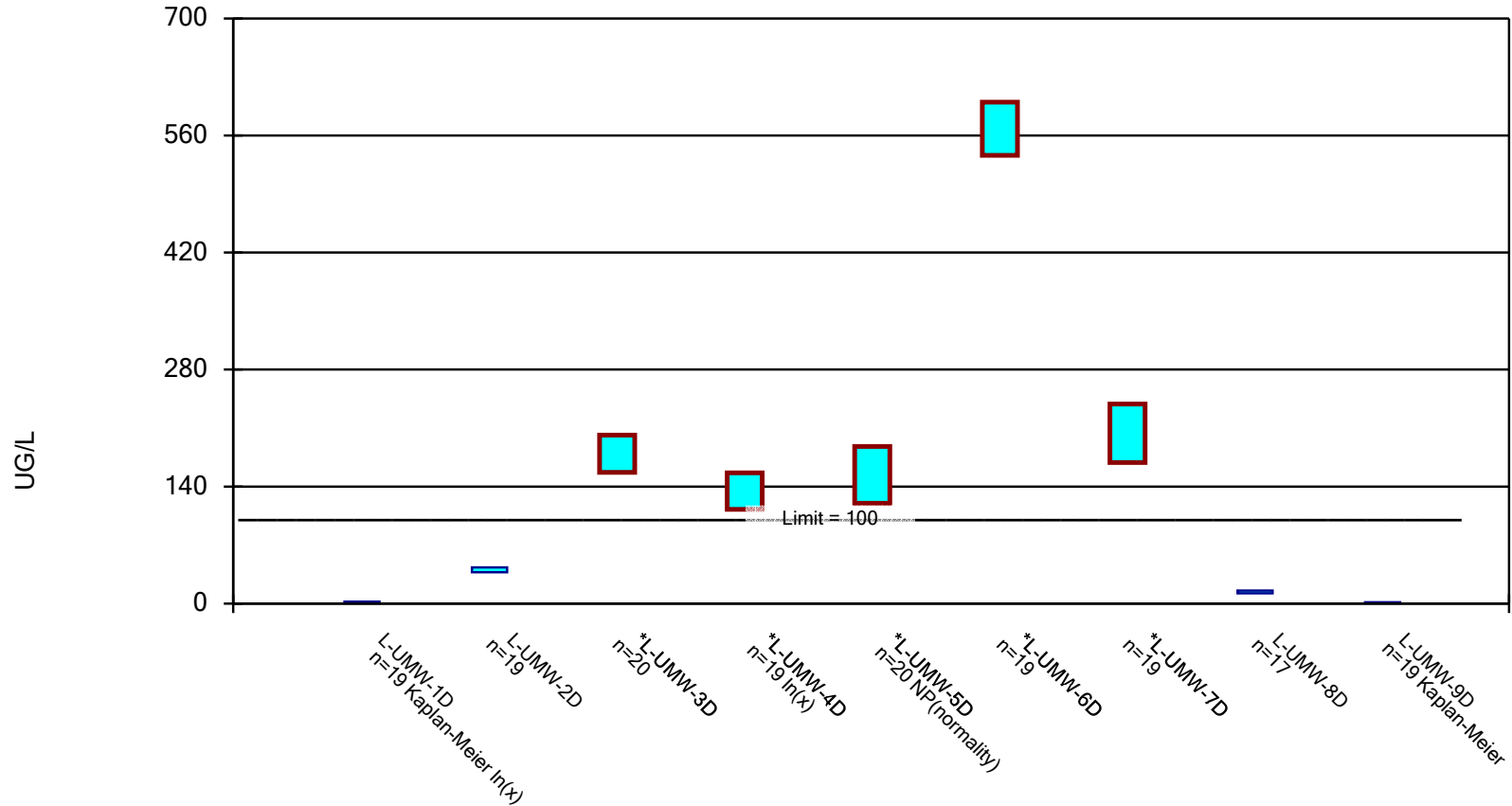


Constituent: MERCURY, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

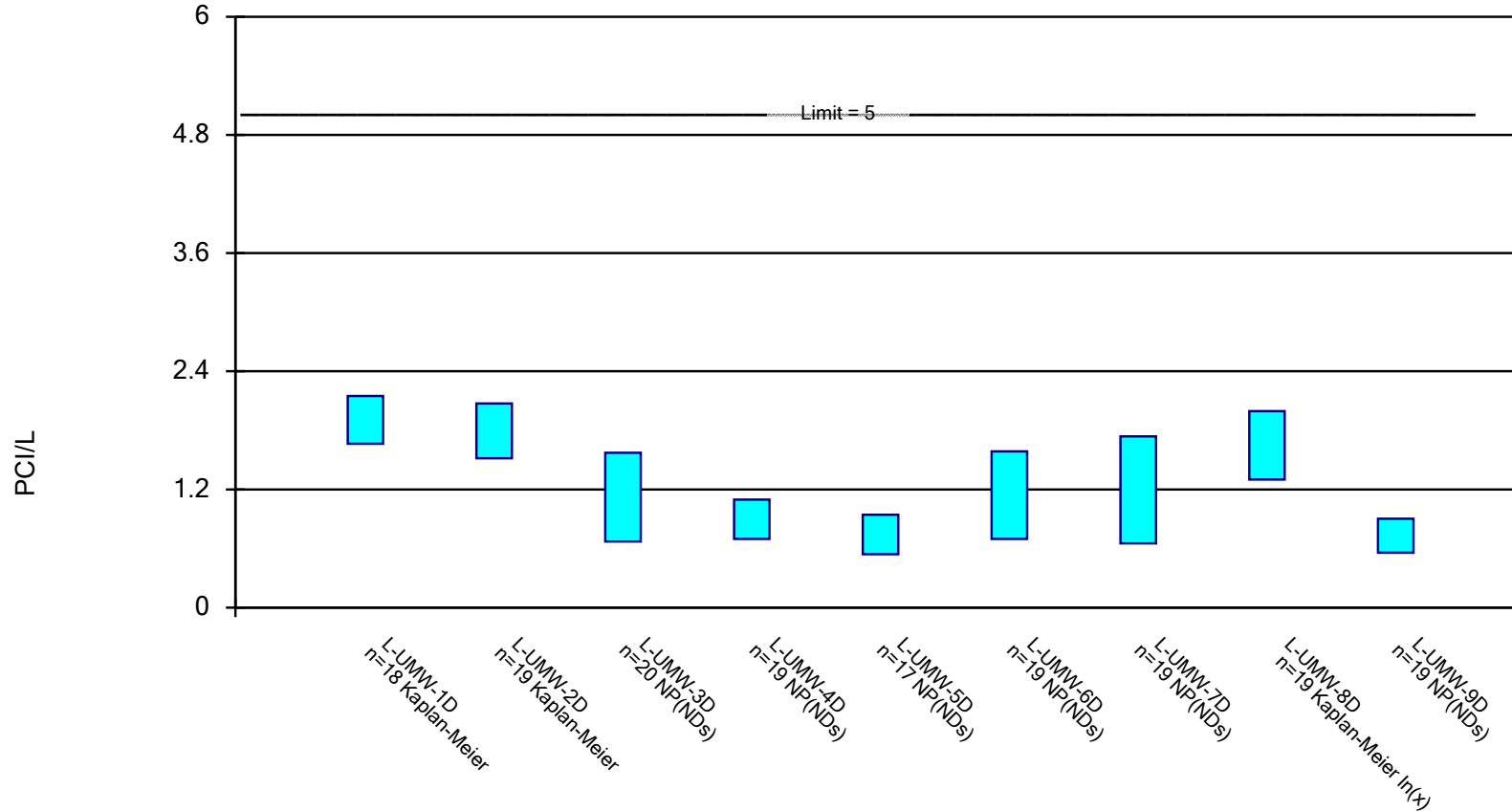


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

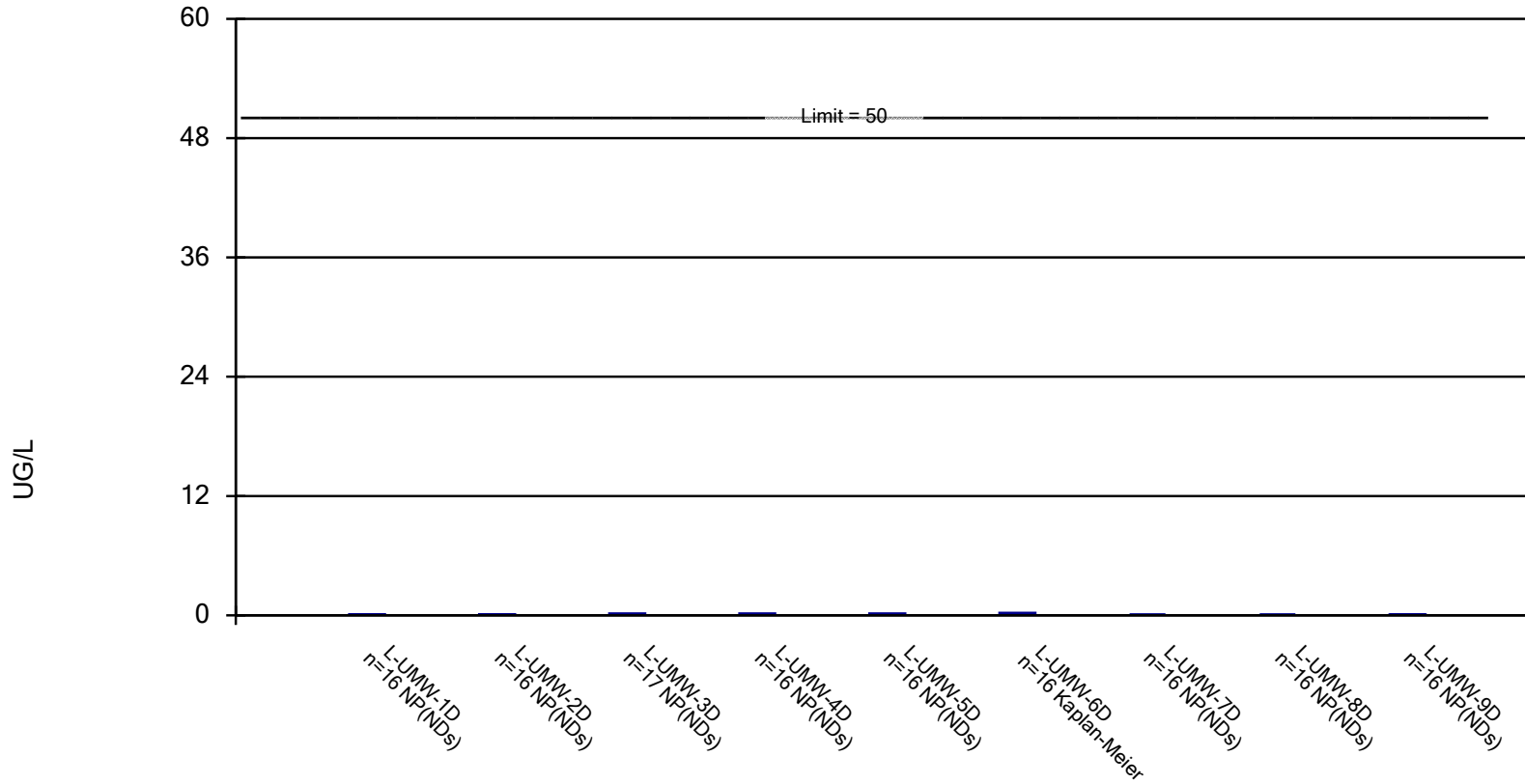


Constituent: Radium [226 + 228] Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

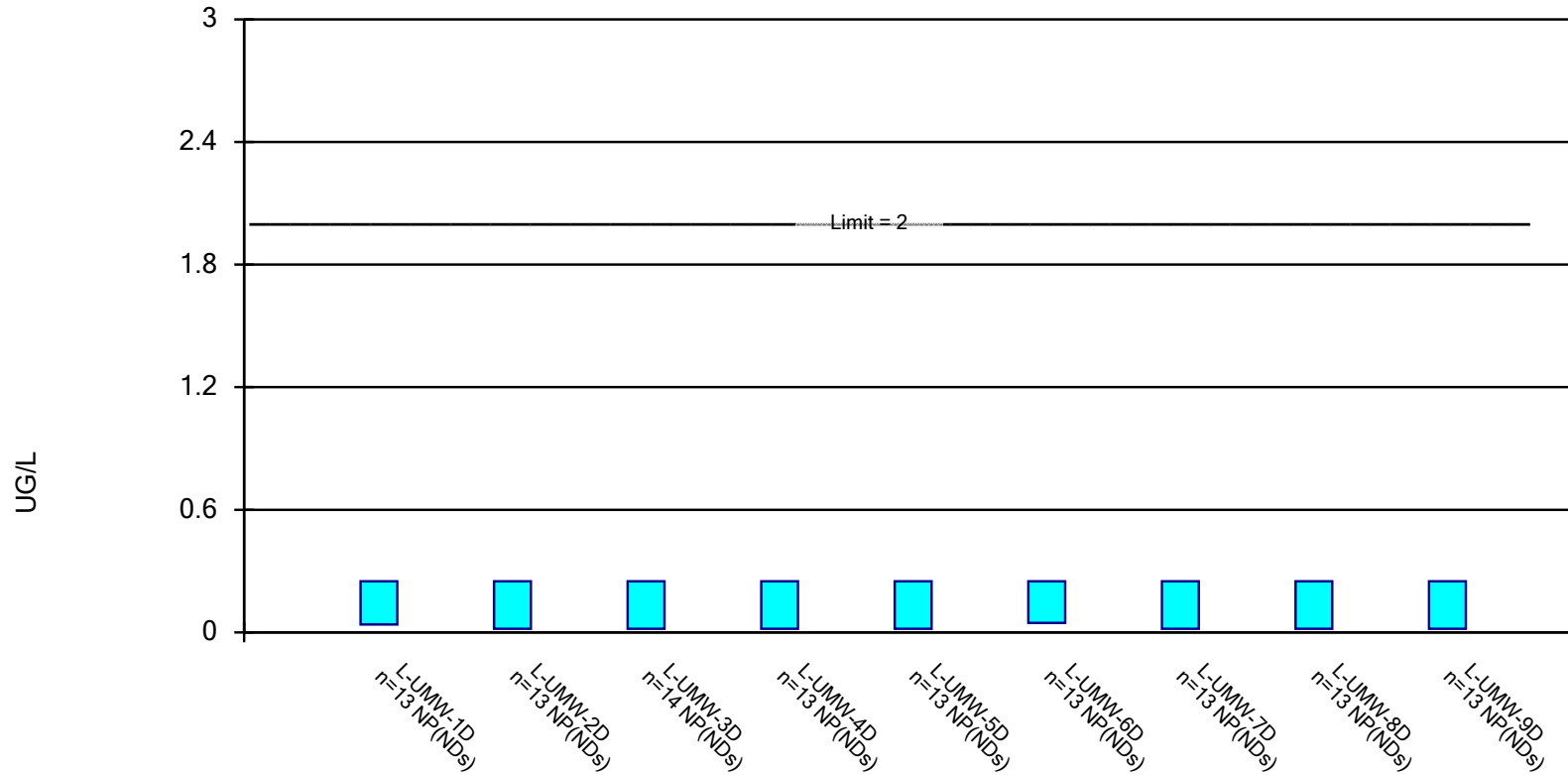


Constituent: SELENIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.05	0.013	6	No	14	85.71	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.06	0.013	6	No	15	86.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.1	0.029	6	No	14	57.14	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	L-UMW-1D	46.03	33.1	44.2	No	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-2D	2.17	1.545	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-3D	3.361	0.6394	44.2	No	18	5.556	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-4D	0.146	0.09904	44.2	No	19	31.58	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-5D	22.03	17.07	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-6D	19.29	10.88	44.2	No	18	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-7D	23.11	17.45	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-8D	31.11	27.62	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-9D	34.5	31.9	44.2	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	L-UMW-1D	492	417.5	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-2D	126.9	108.1	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-3D	126.3	90.01	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-4D	86.49	66.59	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-5D	74	62.67	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-6D	136	116.9	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-7D	143.8	103.2	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-8D	481	191	2000	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	L-UMW-9D	524.8	502.8	2000	No	19	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.079	0.009	5	No	14	64.29	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0.031	0.009	5	No	13	92.31	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.078	0.009	5	No	13	76.92	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.2	0.009	5	No	13	61.54	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0.082	0.009	5	No	13	84.62	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.251	0.08045	100	No	14	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0.5	0.027	100	No	15	73.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0.37	0.039	100	No	16	75	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	0.49	0.039	100	No	14	71.43	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0.5	0.039	100	No	15	73.33	No	0.01	NP (NDs)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	0.54	0.039	100	No	15	60	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	0.5036	0.1401	100	No	15	46.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	0.48	0.039	100	No	15	66.67	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0.5	0.039	100	No	15	73.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-1D	0.65	0.36	6	No	13	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-2D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-3D	0.475	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-4D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-5D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-6D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-7D	0.65	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-8D	0.65	0.36	6	No	14	92.86	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-9D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.2515	0.1921	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	0.38	0.34	4	No	21	9.524	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0.1928	0.1147	4	No	23	26.09	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0.42	0.34	4	No	23	4.348	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.1514	0.09544	4	No	21	23.81	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	0.1429	0.09634	4	No	20	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	0.33	0.27	4	No	22	4.545	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.2544	0.1674	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.2118	0.1692	4	No	20	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	L-UMW-1D	3.6	1.25	15	No	13	69.23	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-2D	4.1	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-3D	3	1.2	15	No	14	78.57	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-4D	2.15	1.2	15	No	13	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-5D	3.6	1.2	15	No	13	84.62	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-6D	3.2	1.2	15	No	13	84.62	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-7D	3.05	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-8D	4.4	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-9D	4.8	1.25	15	No	13	53.85	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	L-UMW-1D	27.86	24.68	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-2D	28.46	24.63	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-3D	24.02	18.8	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-4D	33.79	30.11	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-5D	23.12	16.43	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-6D	10.89	6.774	47.4	No	19	5.263	ln(x)	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-7D	23.27	18.55	47.4	No	19	5.263	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-8D	34.8	30.7	47.4	No	19	0	No	0.01	NP (normality)
LITHIUM, TOTAL (UG/L)	L-UMW-9D	17.72	15.99	47.4	No	19	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	2.358	0.886	100	No	19	26.32	ln(x)	0.01	Param.

Confidence Interval

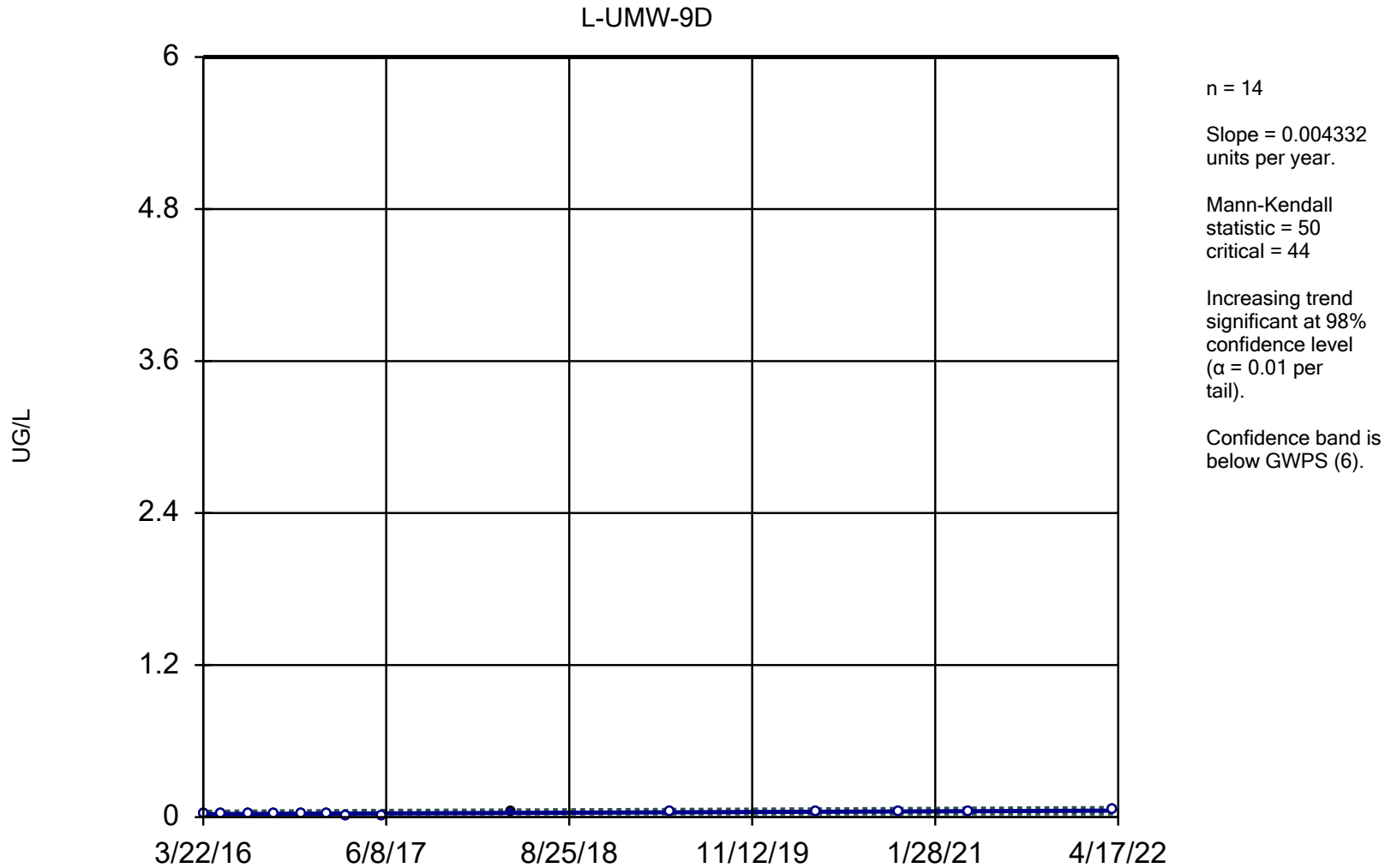
Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	43.34	37.51	100	No	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	201.5	157	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	156.4	112.7	100	Yes	19	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	188	120	100	Yes	20	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	599.8	536.2	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	238.8	168.7	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	15.51	12.29	100	No	17	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	1.589	0.8245	100	No	19	47.37	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-1D	2.149	1.663	5	No	18	16.67	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-2D	2.072	1.516	5	No	19	31.58	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-3D	1.572	0.6715	5	No	20	70	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-4D	1.097	0.697	5	No	19	73.68	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-5D	0.9425	0.542	5	No	17	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-6D	1.587	0.6975	5	No	19	52.63	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-7D	1.738	0.6525	5	No	19	73.68	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-8D	1.995	1.3	5	No	19	47.37	ln(x)	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-9D	0.9025	0.5575	5	No	19	89.47	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0.11	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0.11	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0.19	0.09	50	No	17	58.82	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0.19	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.18	0.09	50	No	16	56.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0.2493	0.1892	50	No	16	25	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0.091	0.089	50	No	16	81.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0.09	0.087	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0.09	0.043	50	No	16	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-1D	0.25	0.039	2	No	13	84.62	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-2D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-3D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-4D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-5D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-6D	0.25	0.0465	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-7D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-8D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-9D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

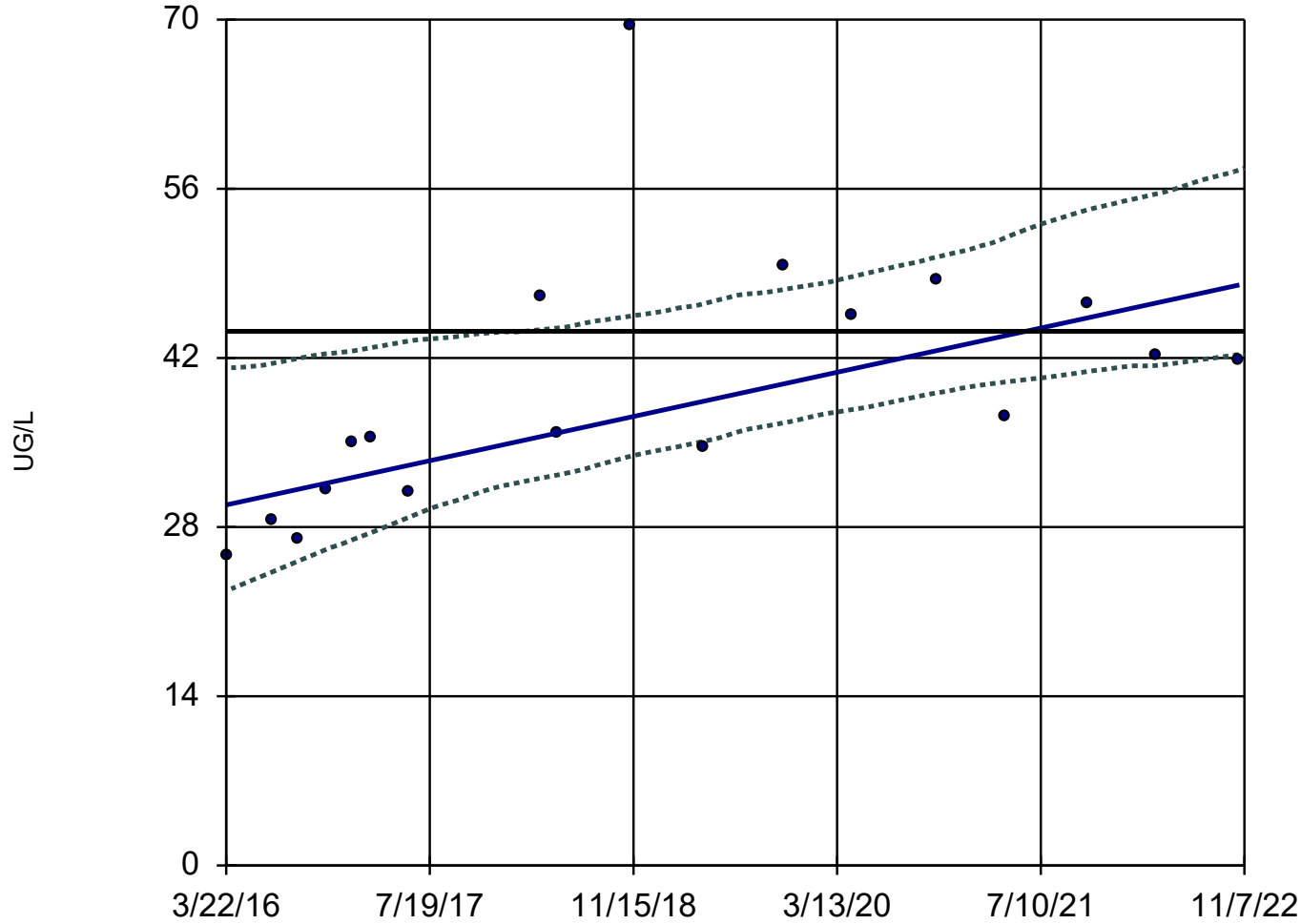


Constituent: ANTIMONY, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 18

Slope = 2.757
units per year.

Mann-Kendall
statistic = 77
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

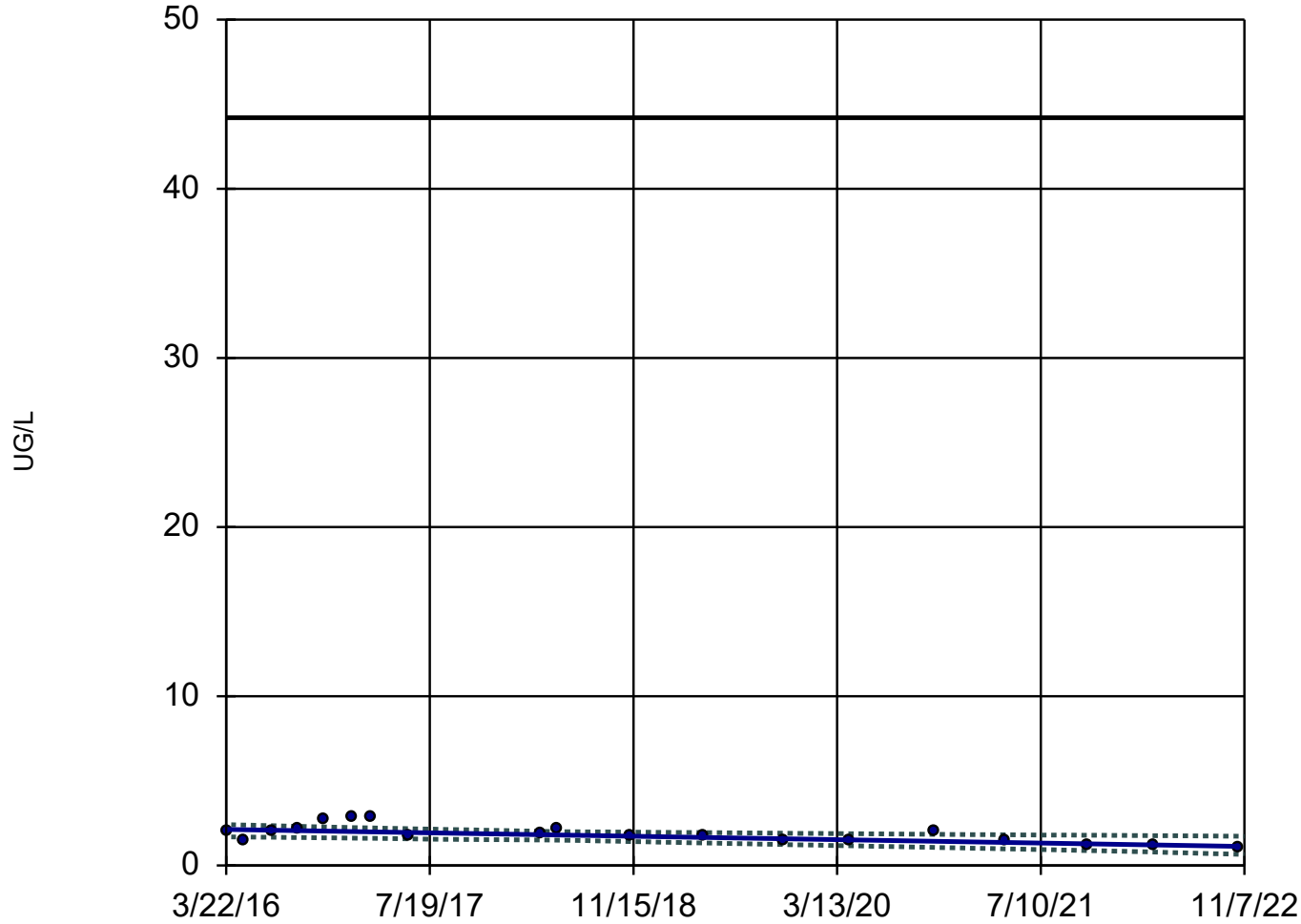
Confidence band intersects
GWPS (44.2) on 03/02/18.

Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 19

Slope = -0.1508
units per year.

Mann-Kendall
statistic = -83
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

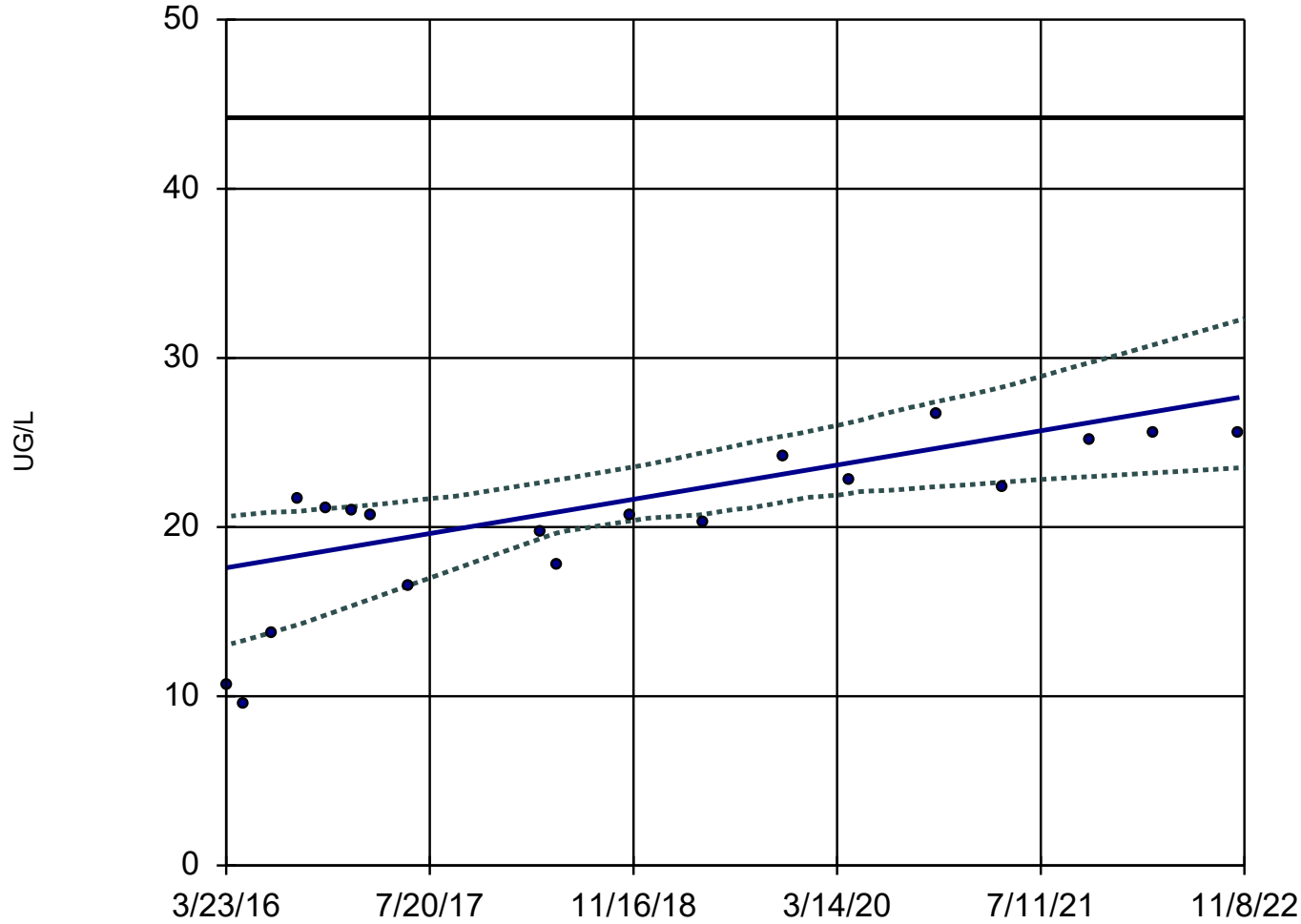
Confidence band is
below GWPS (44.2).

Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 19

Slope = 1.526
units per year.

Mann-Kendall
statistic = 100
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

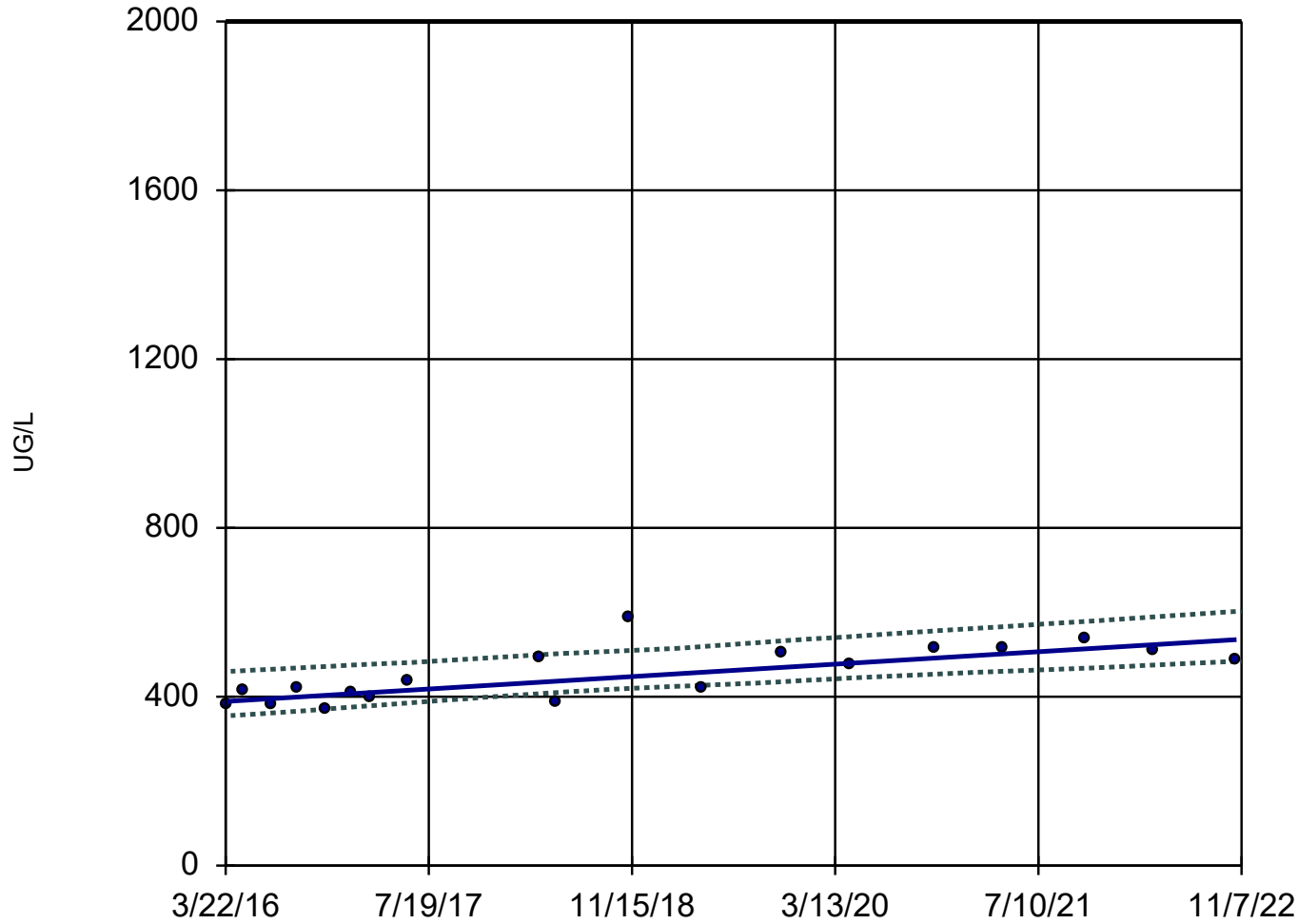
Confidence band is
below GWPS (44.2).

Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 19

Slope = 22.14
units per year.

Mann-Kendall
statistic = 95
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

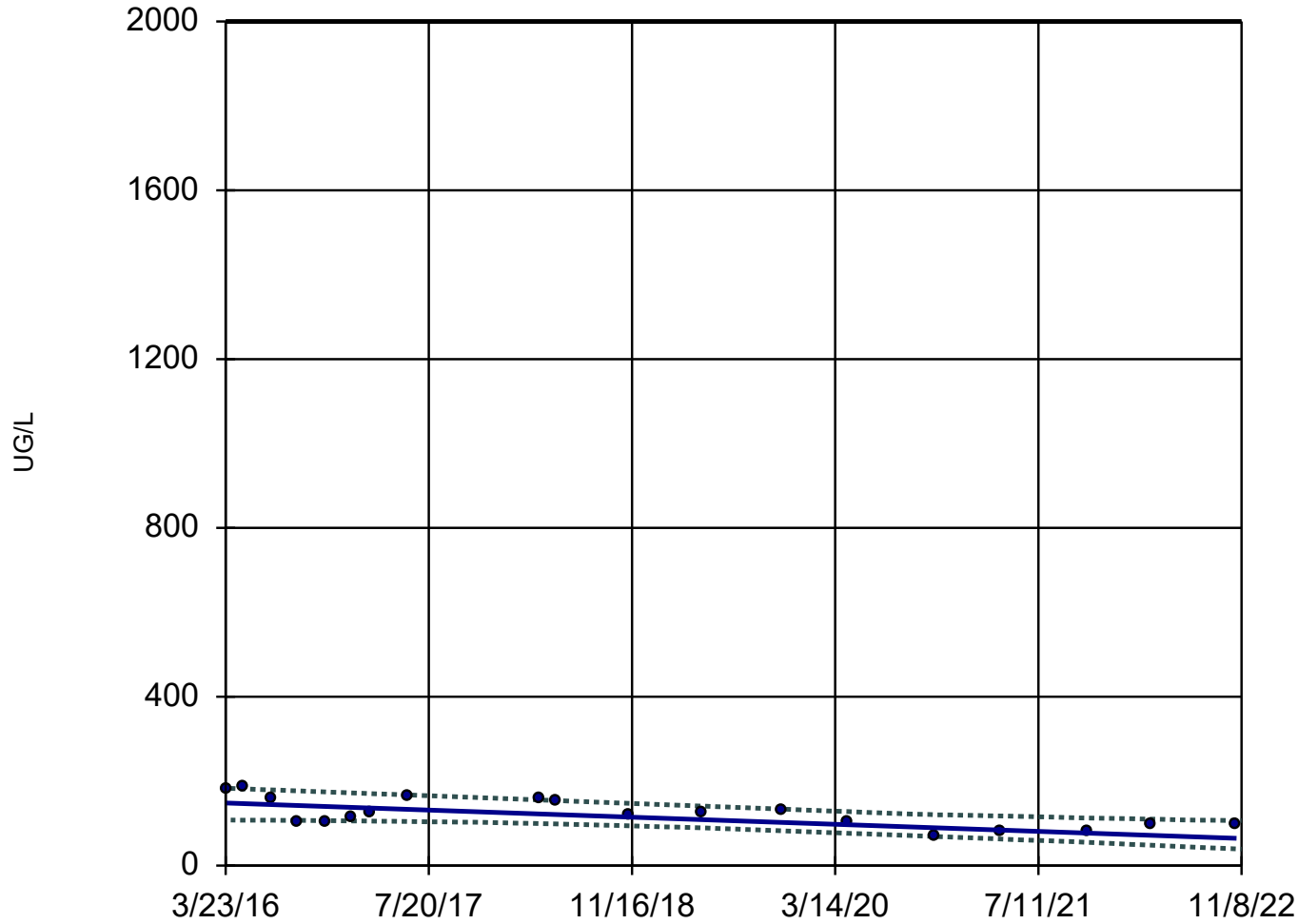
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 19

Slope = -12.68
units per year.

Mann-Kendall
statistic = -84
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

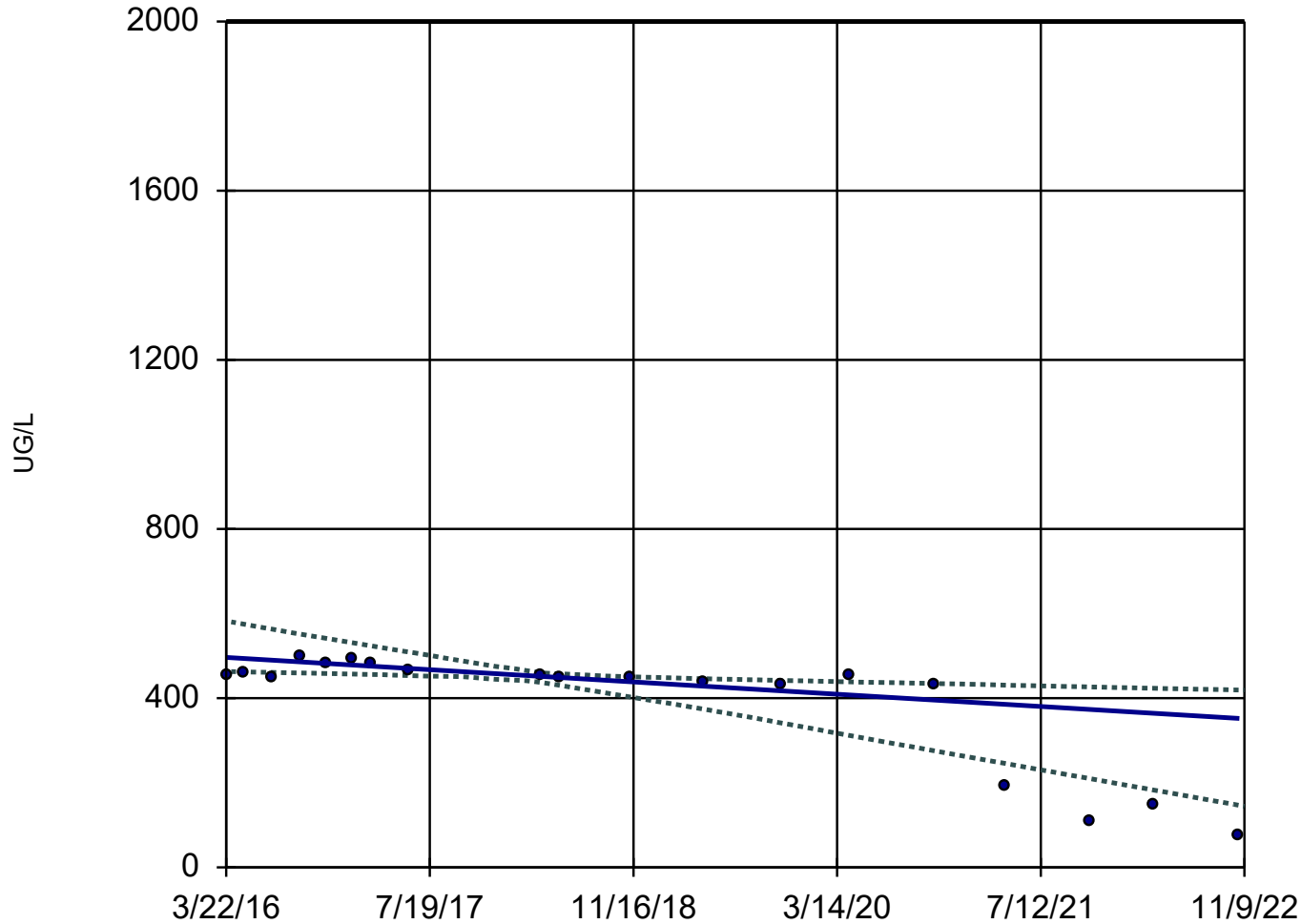
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-8D



n = 19

Slope = -21.81
units per year.

Mann-Kendall
statistic = -116
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

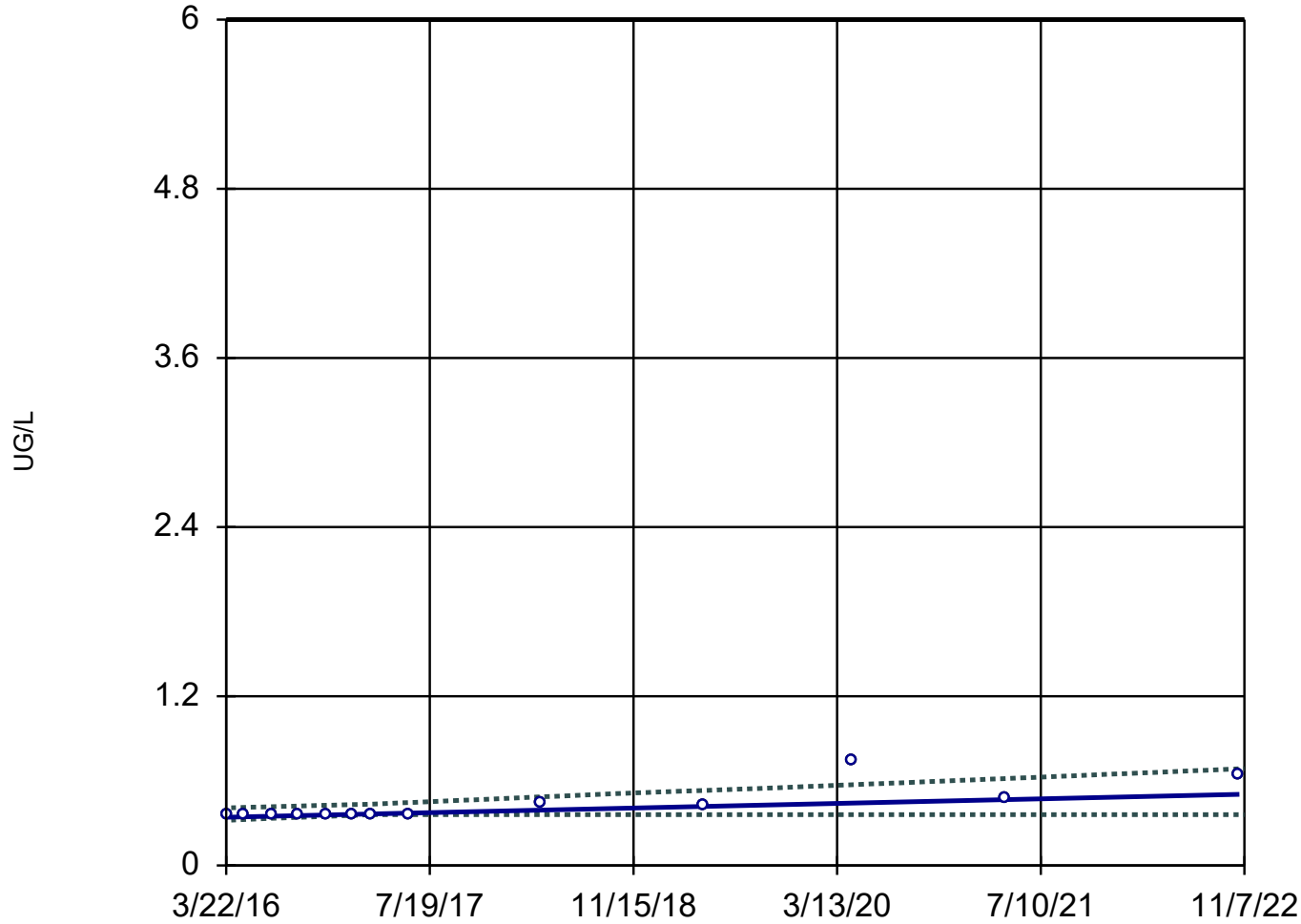
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 13

Slope = 0.02468
units per year.

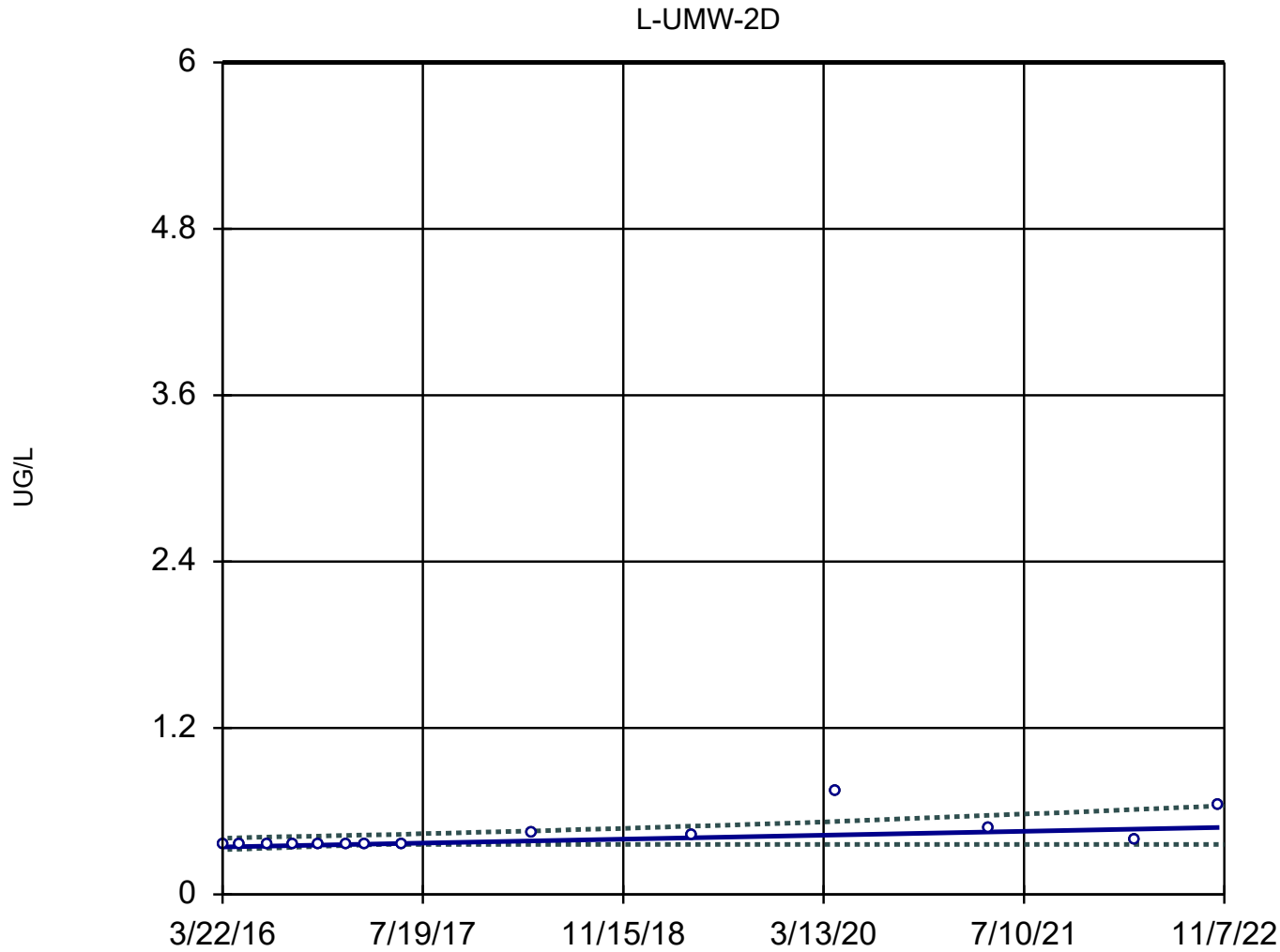
Mann-Kendall
statistic = 56
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02141
units per year.

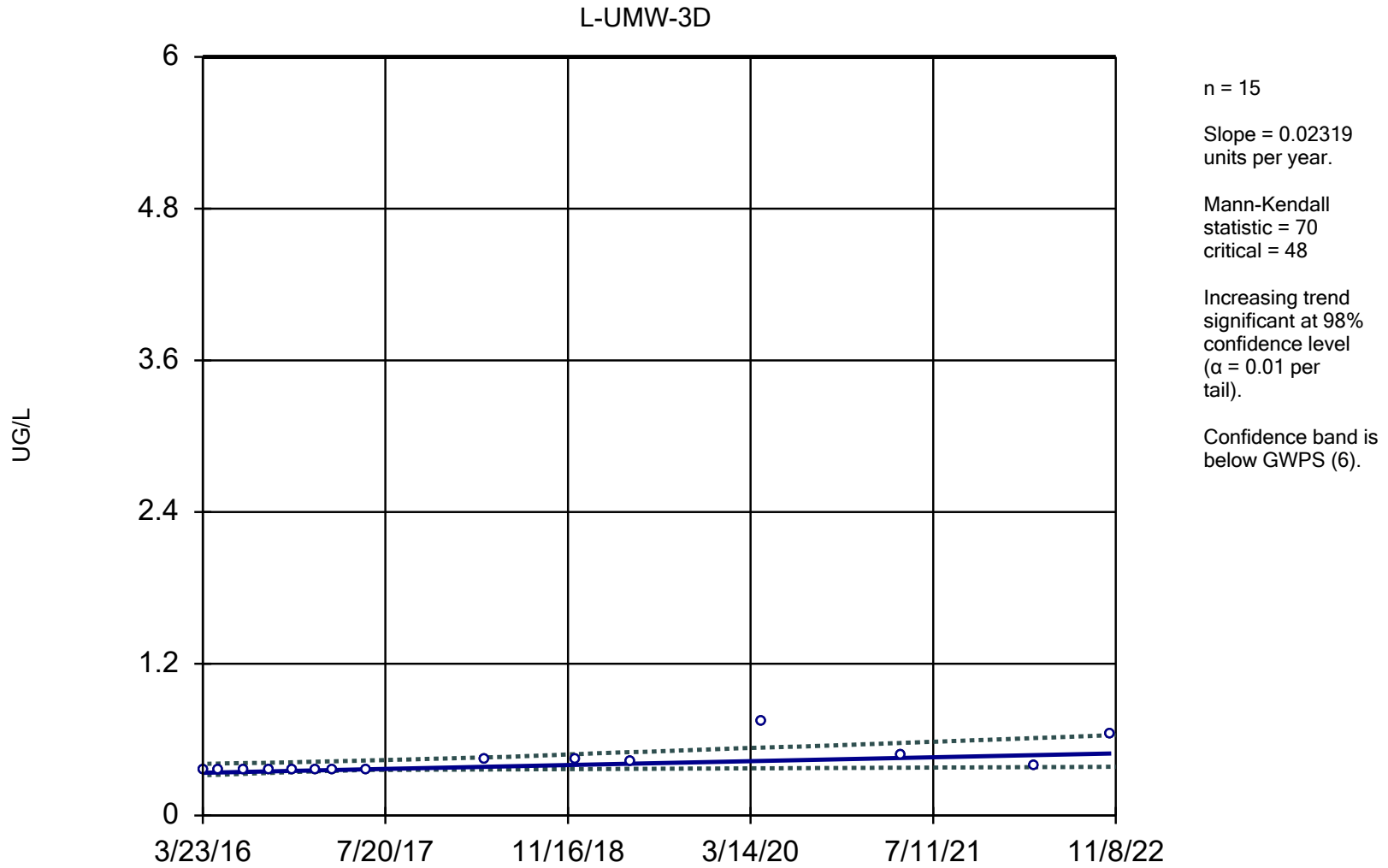
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

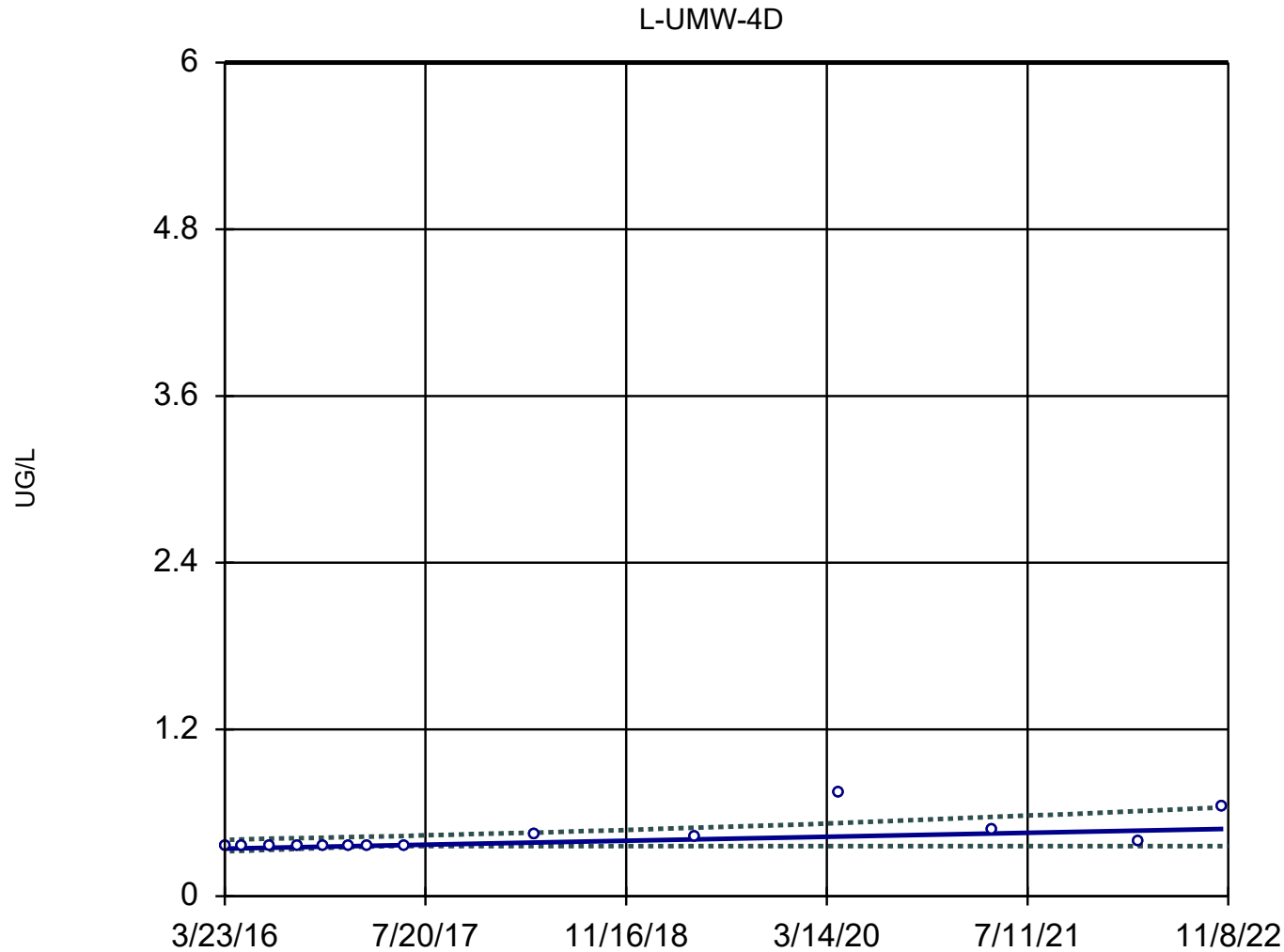
Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02145
units per year.

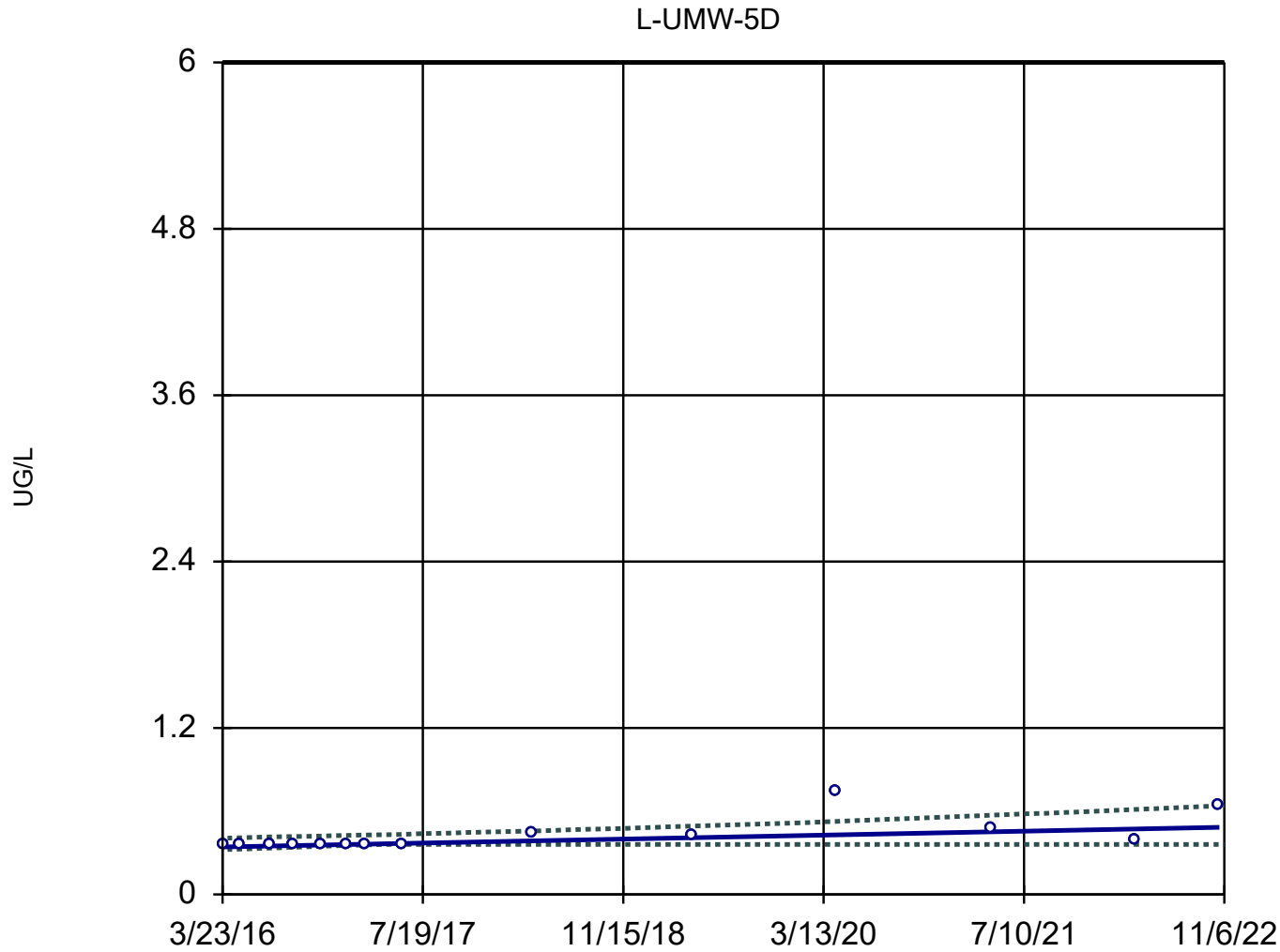
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02145
units per year.

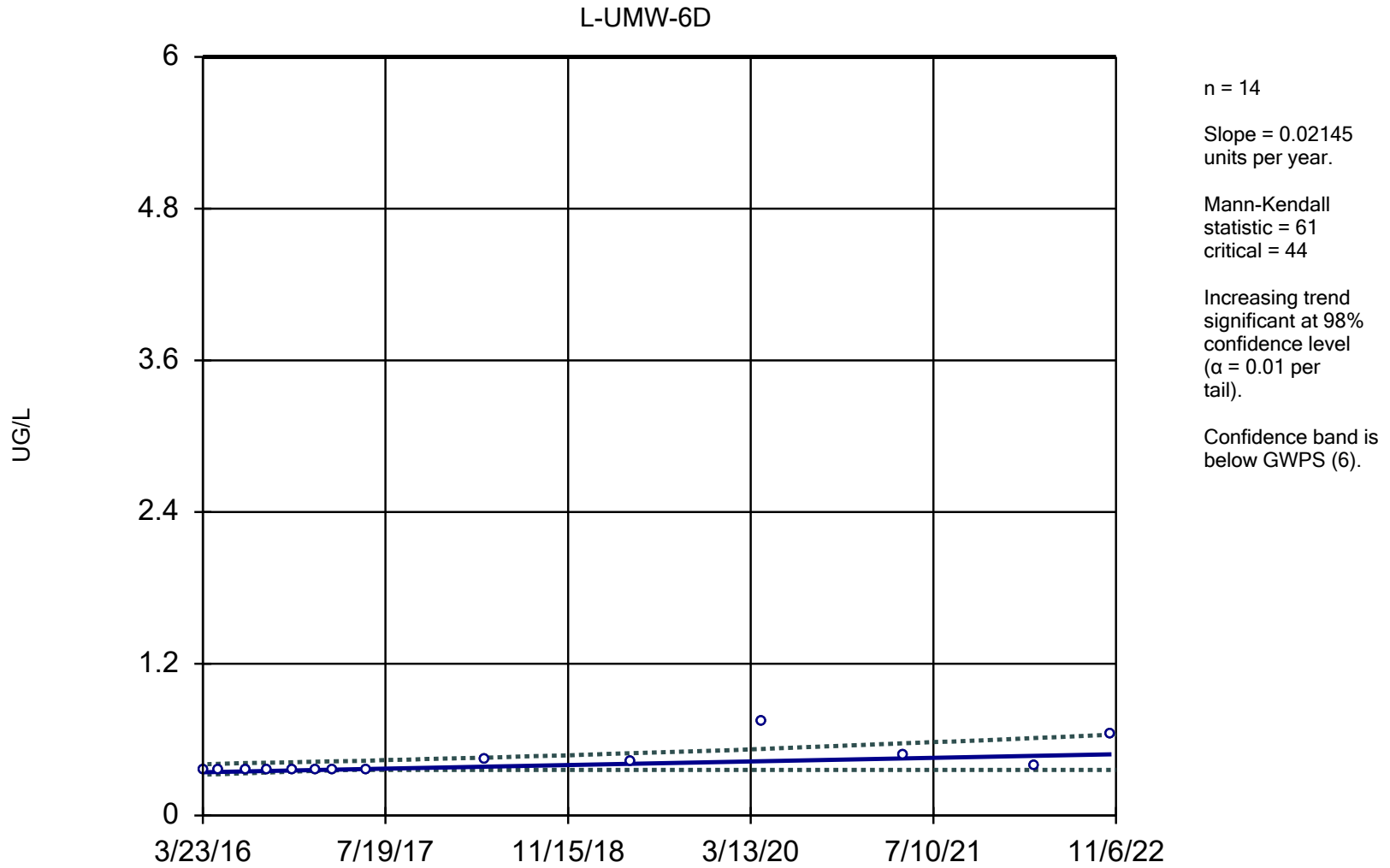
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

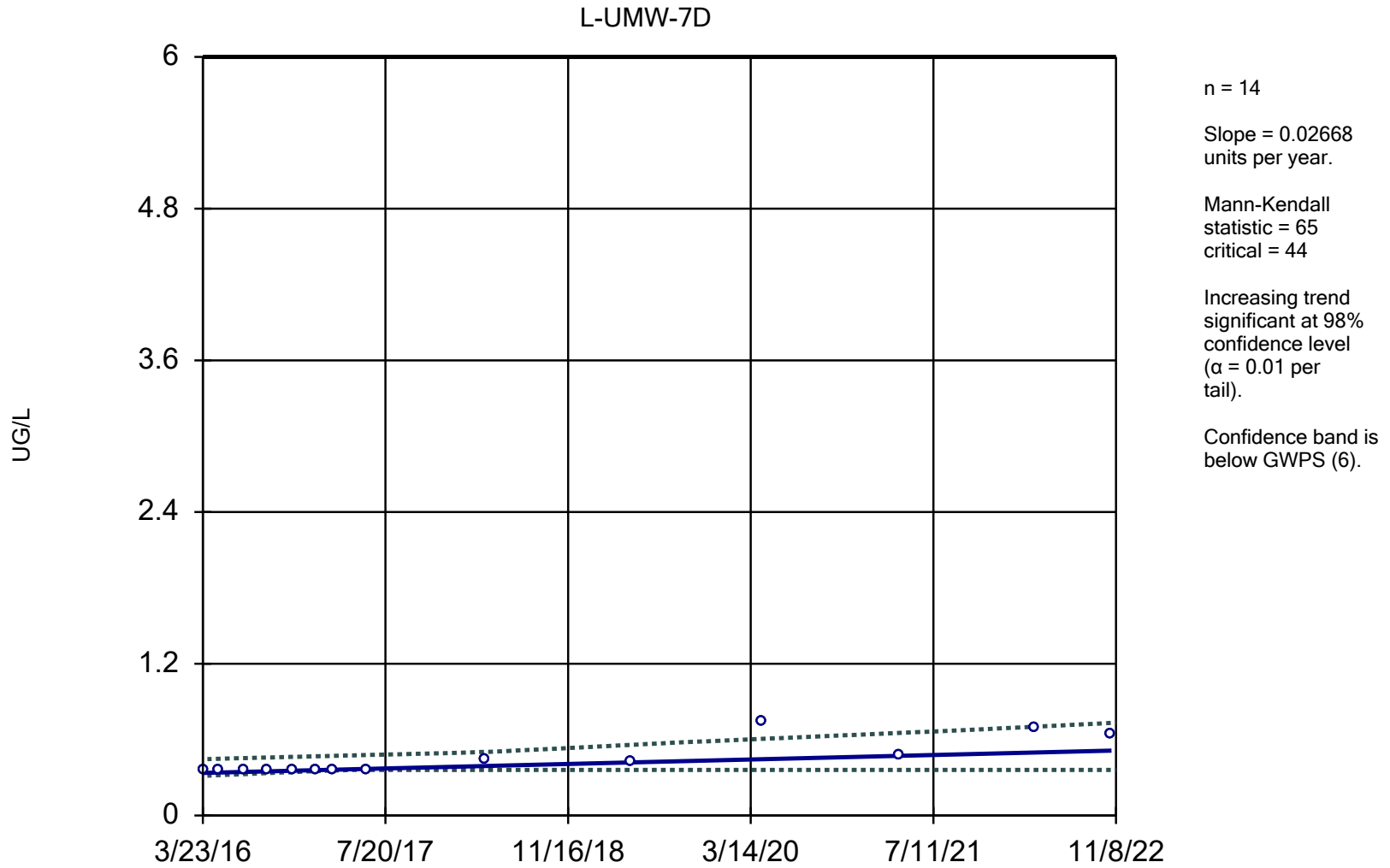
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

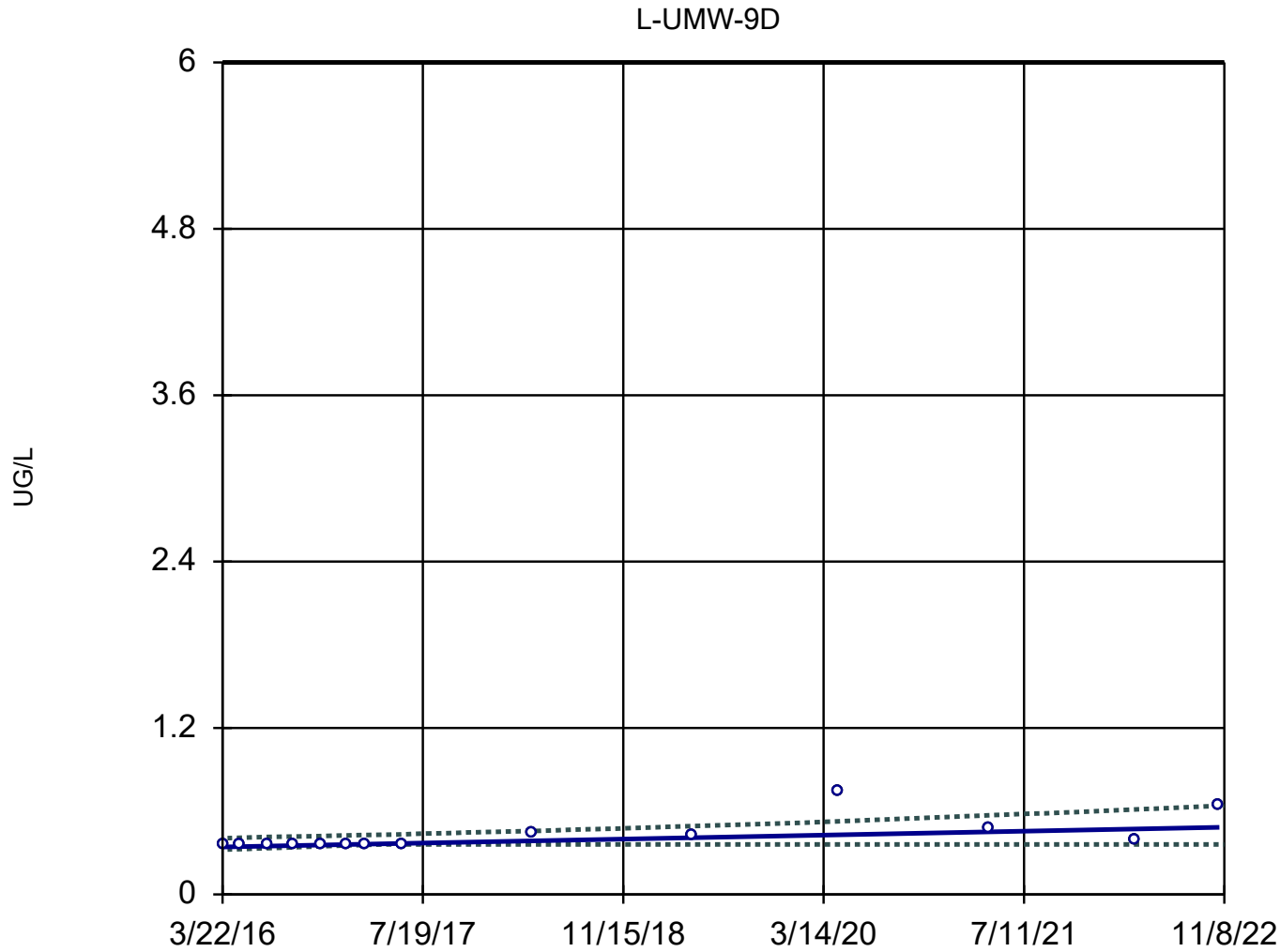


Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02143
units per year.

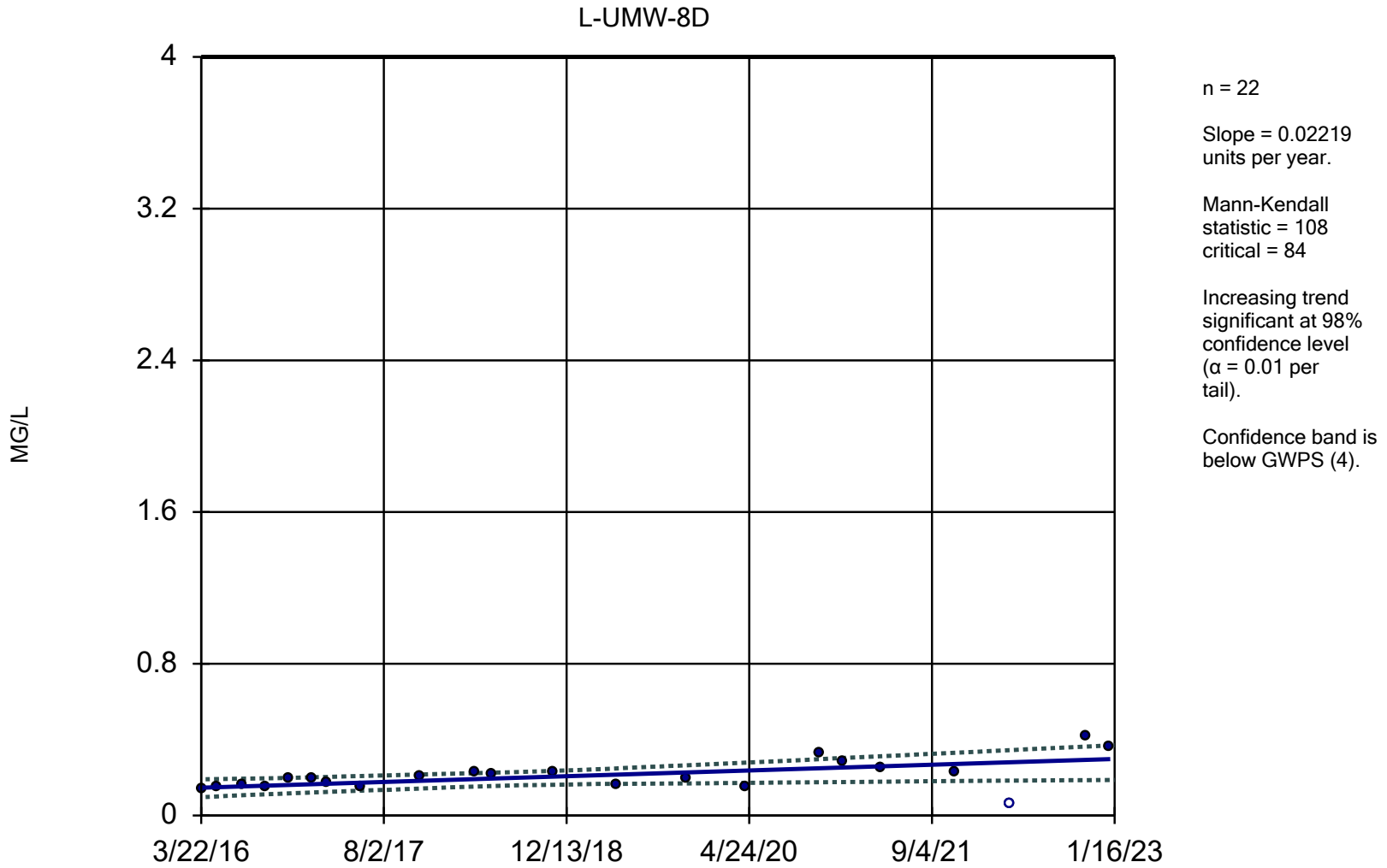
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

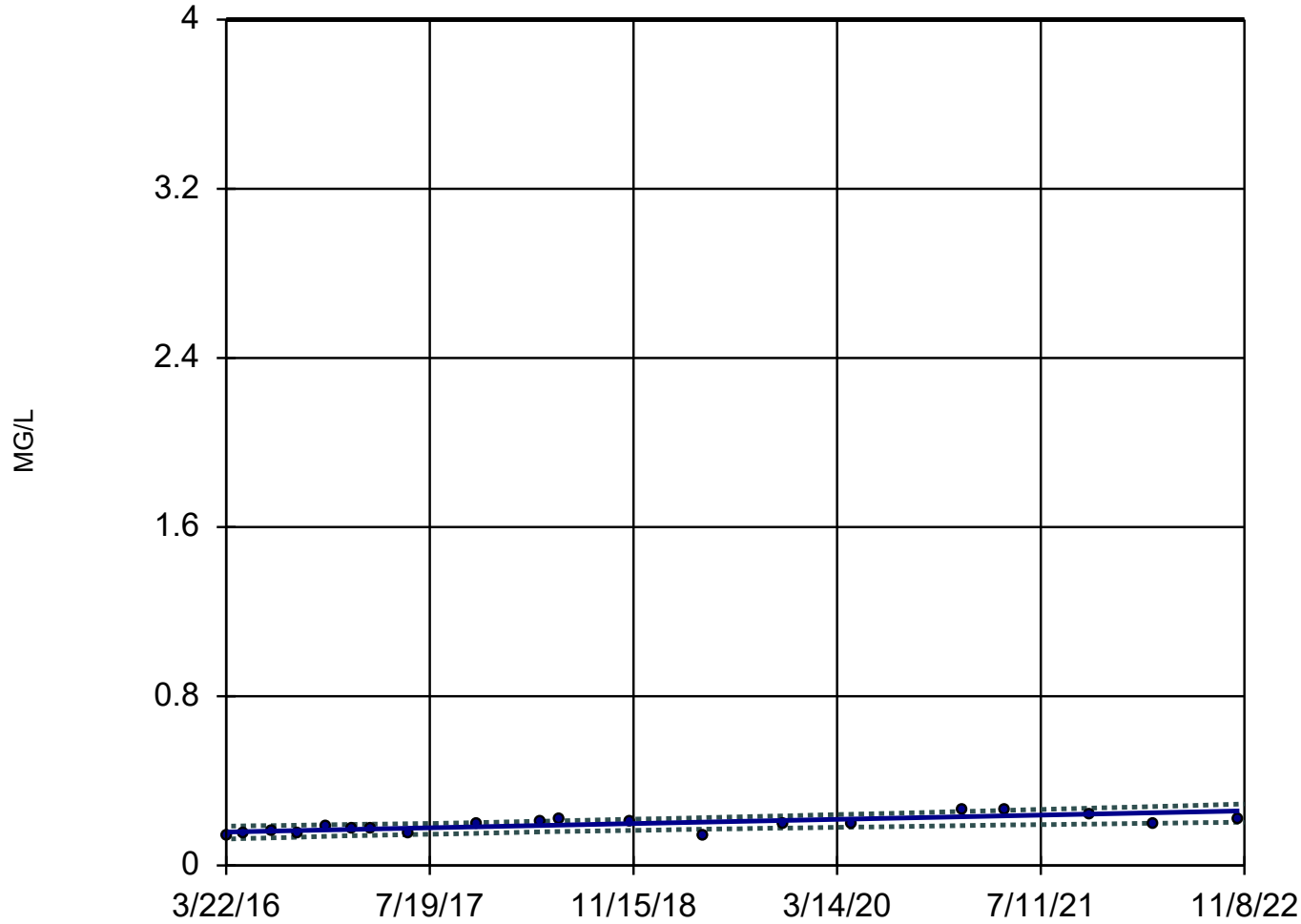
Sen's Slope and 95% Confidence Band



Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-9D



n = 20

Slope = 0.01509
units per year.

Mann-Kendall
statistic = 102
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

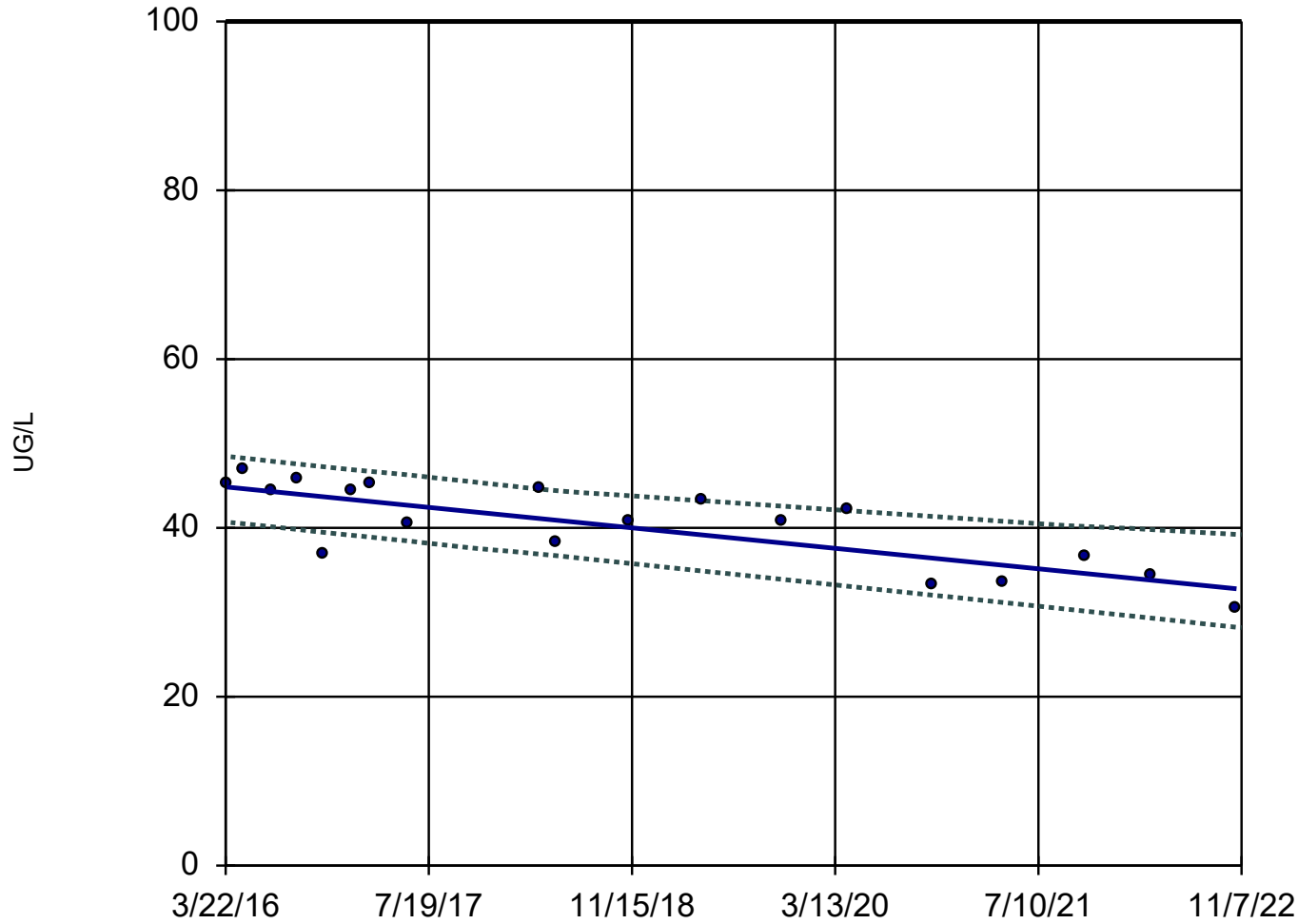
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:05 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 19

Slope = -1.829
units per year.

Mann-Kendall
statistic = -101
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

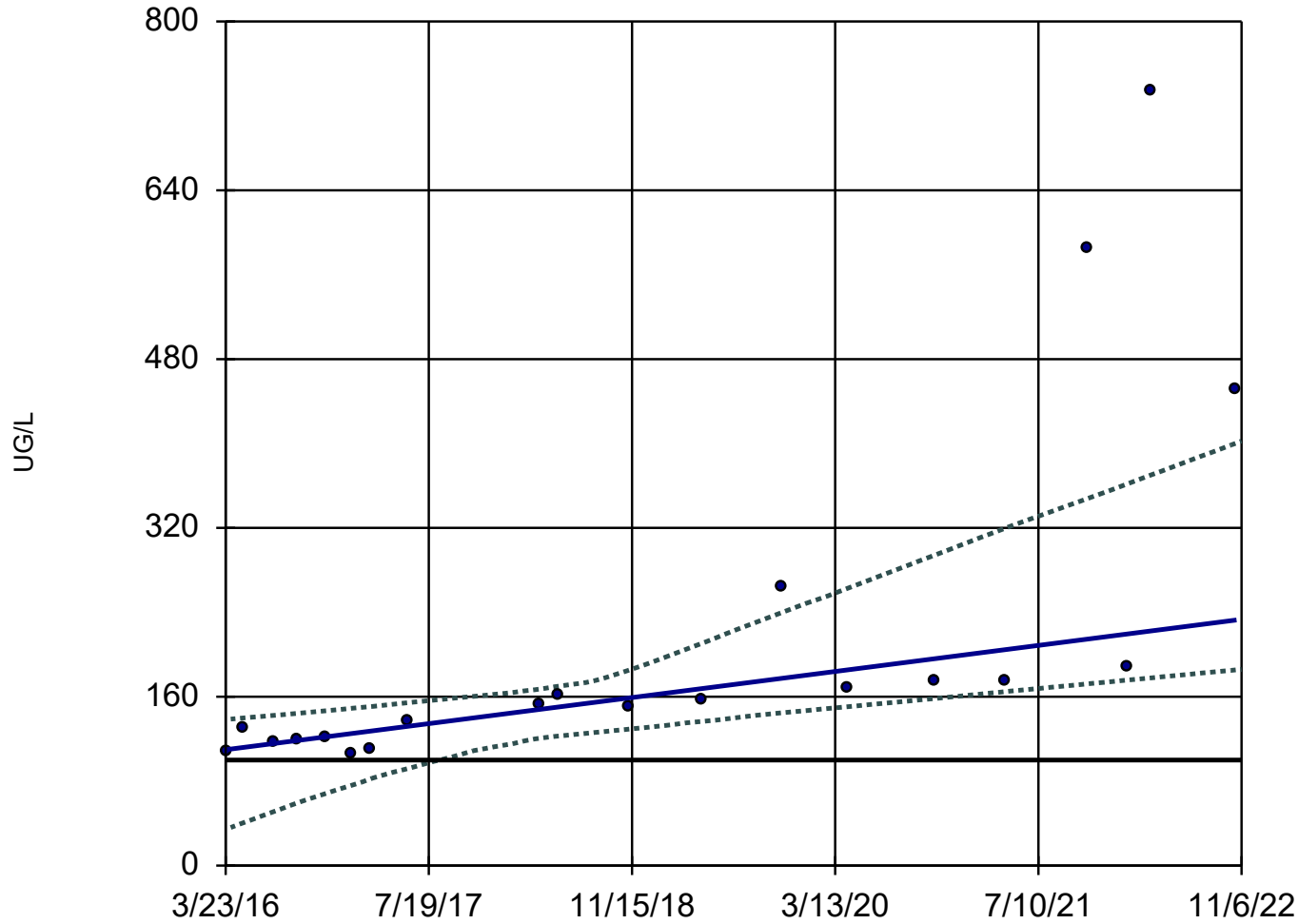
Confidence band is
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:05 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-5D



n = 20

Slope = 18.65
units per year.

Mann-Kendall
statistic = 146
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 08/22/17.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:05 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.004327	34	44	No	14	85.71	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.004222	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.004137	27	48	No	15	86.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.004134	27	44	No	14	92.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.001472	8	44	No	14	57.14	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.003575	21	44	No	14	92.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.004217	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.004222	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.004332	50	44	Yes	14	92.86	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-1D	2.757	77	63	Yes	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-2D	-0.1508	-83	-68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-3D	0.3523	45	63	No	18	5.556	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-4D	-0.00...	-14	-68	No	19	31.58	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-5D	-0.379	-23	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-6D	1.527	39	63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-7D	1.526	100	68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-8D	-0.2767	-32	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-9D	-0.53	-41	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-1D	22.14	95	68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-2D	1.271	14	68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-3D	-3.276	-27	-73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-4D	3.555	54	68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-5D	0	-1	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-6D	-3.893	-65	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-7D	-12.68	-84	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-8D	-21.81	-116	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-9D	-3.133	-51	-68	No	19	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0	-8	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0	0	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0	6	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.01049	35	44	No	14	64.29	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0	14	39	No	13	92.31	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.001623	18	39	No	13	76.92	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.009812	27	39	No	13	61.54	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0	14	39	No	13	84.62	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.01578	21	44	No	14	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0	-3	-48	No	15	73.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0	15	53	No	16	75	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	-0.0107	-14	-44	No	14	71.43	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0	-8	-48	No	15	73.33	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	-0.03782	-21	-48	No	15	60	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	0	-3	-48	No	15	46.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	-0.01594	-24	-48	No	15	66.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0	-8	-48	No	15	73.33	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-1D	0.02468	56	39	Yes	13	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-2D	0.02141	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-3D	0.02319	70	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-4D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-5D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-6D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-7D	0.02668	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-8D	0.01372	42	44	No	14	92.86	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-9D	0.02143	61	44	Yes	14	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.005935	53	84	No	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	-0.00...	-20	-78	No	21	9.524	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0.006443	28	89	No	23	26.09	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0	3	89	No	23	4.348	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.01268	49	78	No	21	23.81	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	-0.00...	-20	-73	No	20	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	-0.00...	-27	-84	No	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.02219	108	84	Yes	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.01509	102	73	Yes	20	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-1D	0.1147	10	39	No	13	69.23	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-2D	0.164	27	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-3D	0.1607	34	44	No	14	78.57	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-4D	0.1443	34	39	No	13	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-5D	0.1339	15	39	No	13	84.62	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-6D	0.1339	15	39	No	13	84.62	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-7D	0.2313	37	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-8D	0.1612	32	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-9D	0.1469	6	39	No	13	53.85	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-1D	0.5222	56	68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-2D	-0.4506	-21	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-3D	-0.09021	-9	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-4D	-0.7644	-62	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-5D	-0.1386	-5	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-6D	0.6008	41	68	No	19	5.263	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-7D	0.9697	50	68	No	19	5.263	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-8D	-0.1394	-12	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-9D	-0.1515	-24	-68	No	19	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.003849	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.003844	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.004499	43	44	No	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.00384	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	0.2446	46	68	No	19	26.32	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	-1.829	-101	-68	Yes	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	1.962	11	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	-3.815	-22	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	18.65	146	73	Yes	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	-9.372	-40	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	0	1	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	0.6209	46	58	No	17	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	-4.5e-8	-10	-68	No	19	47.37	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-1D	0.008701	12	63	No	18	16.67	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-2D	0.03891	9	68	No	19	31.58	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-3D	-0.00...	-2	-73	No	20	70	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-4D	0.02845	27	68	No	19	73.68	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-5D	-0.02283	-14	-58	No	17	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-6D	-0.01685	-15	-68	No	19	52.63	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-7D	0.007588	5	68	No	19	73.68	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-8D	-0.1091	-57	-68	No	19	47.37	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-9D	-0.02595	-35	-68	No	19	89.47	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0	3	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0	3	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0	-7	-58	No	17	58.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0	8	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.01311	52	53	No	16	56.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0	0	53	No	16	25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0	1	53	No	16	81.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0	-1	-53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0	-3	-53	No	16	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-1D	-0.03183	-36	-39	No	13	84.62	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-2D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-3D	-0.0305	-32	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-4D	-0.03098	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-5D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-6D	-0.03191	-36	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-7D	-0.03093	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-8D	-0.03097	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-9D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP

Appendix C

May 2023 Assessment Monitoring Statistical Evaluation



To: Bill Kutosky – Ameren Missouri **Project Number:** 23007

CC: Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson

From: Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey **Email:** Jeff.Ingram@Rocksmithgeo.com

RE: **Assessment Monitoring Statistical Evaluation – LCPA Surface Impoundment Labadie Energy Center, Franklin County, Missouri**

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the May 2023 sampling event at the LCPA Surface Impoundment at the Labadie Energy Center located in Franklin County, Missouri. Included in the memorandum is a brief summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). In addition to outliers noted in previous statistical evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Fluoride
 - L-UMW-4D at Non-Detect [<0.12 milligrams per liter (mg/L)] on 10/27/22: Result is statistically lower than other fluoride results at the same well. The low result is not consistent with previous or subsequent fluoride results at the well and is an outlier.

An analysis of the outliers removed from the dataset to-date was completed and two statistical outliers that were previously removed were added back into to dataset prior to the calculation of confidence limits:

- Fluoride
 - L-UMW-7D at 0.13 J and 0.16 J mg/L on 5/2/2019 and 11/6/2019, respectively: Removed in April 2021 as outliers because the results were statistically lower than other fluoride values at the same well. However, based on subsequent sampling results the low results were confirmed and are no longer outliers.

Based on the results from the confidence interval and trend analysis, no new SSLs were noted. SSLs at the LCPA Surface Impoundment as of May 2023 continue to be:

- Molybdenum at wells L-UMW-3D(R), L-UMW-4D, L-UMW-5D, L-UMW-6D and L-UMW-7D

3.0 CLOSING

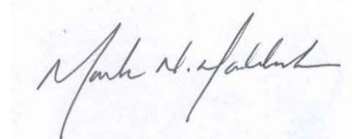
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – LCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

**Table 1 - LCPA Groundwater Protection Standards
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring ⁶
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	44.2	44.2
Barium	µg/L	2000	2000	1290
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.3074
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	47.4	47.4
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	4.14
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at <http://water.epa.gov/drink/contaminants/index.cfm>.
5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-2D.



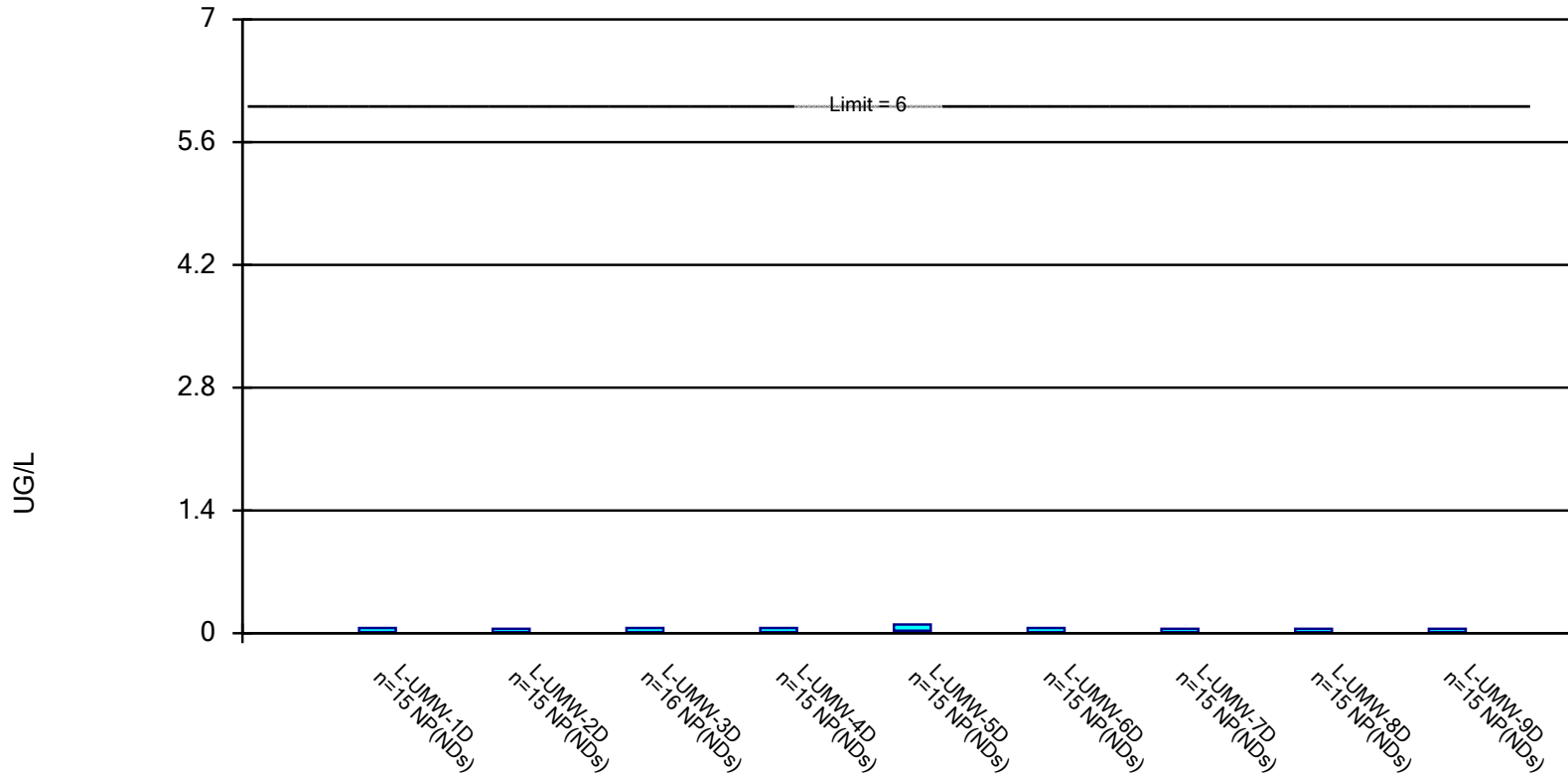
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A

Sanitas Confidence Interval Statistical Output

Non-Parametric Confidence Interval

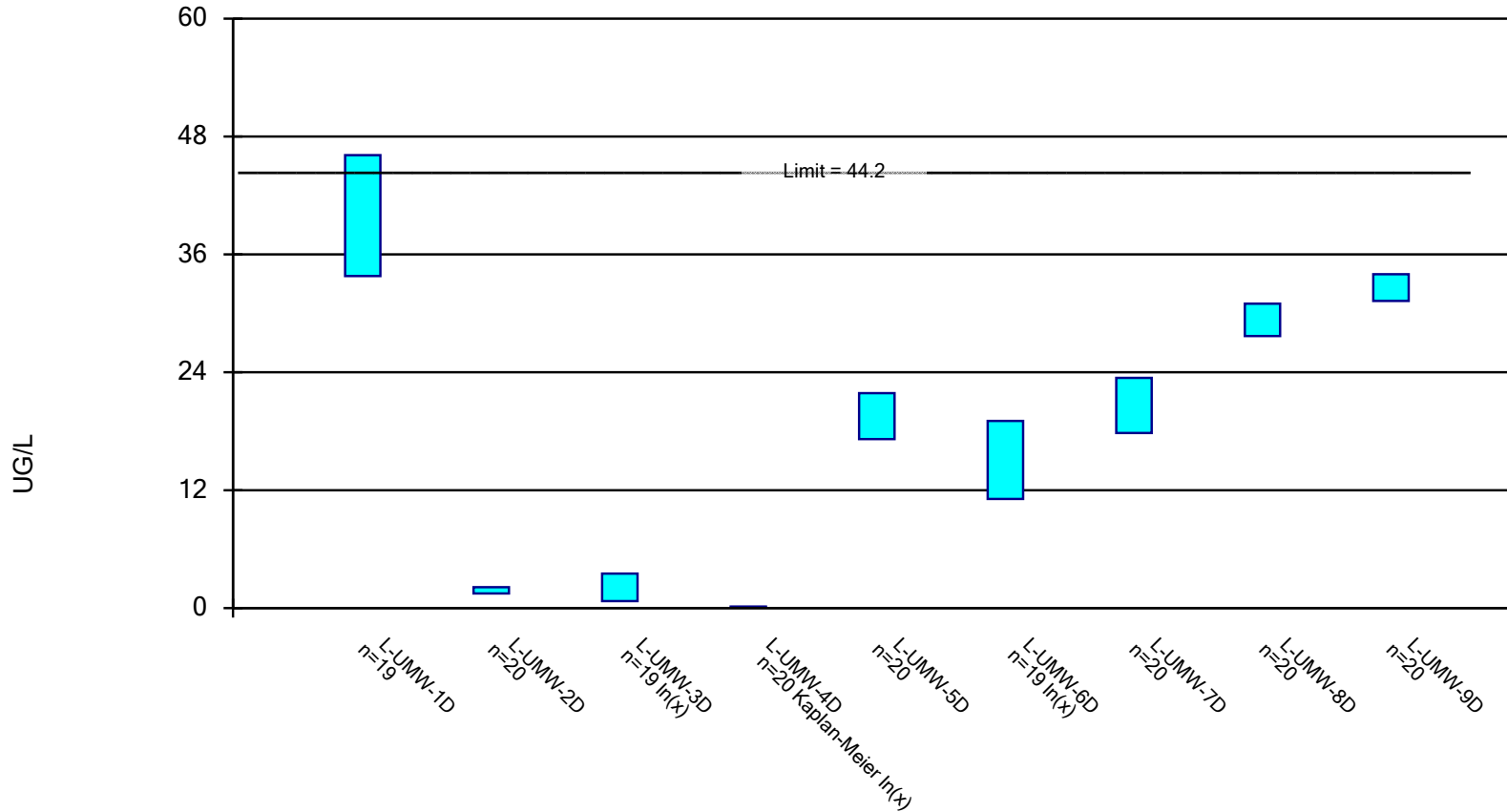
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: ANTIMONY, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric Confidence Interval

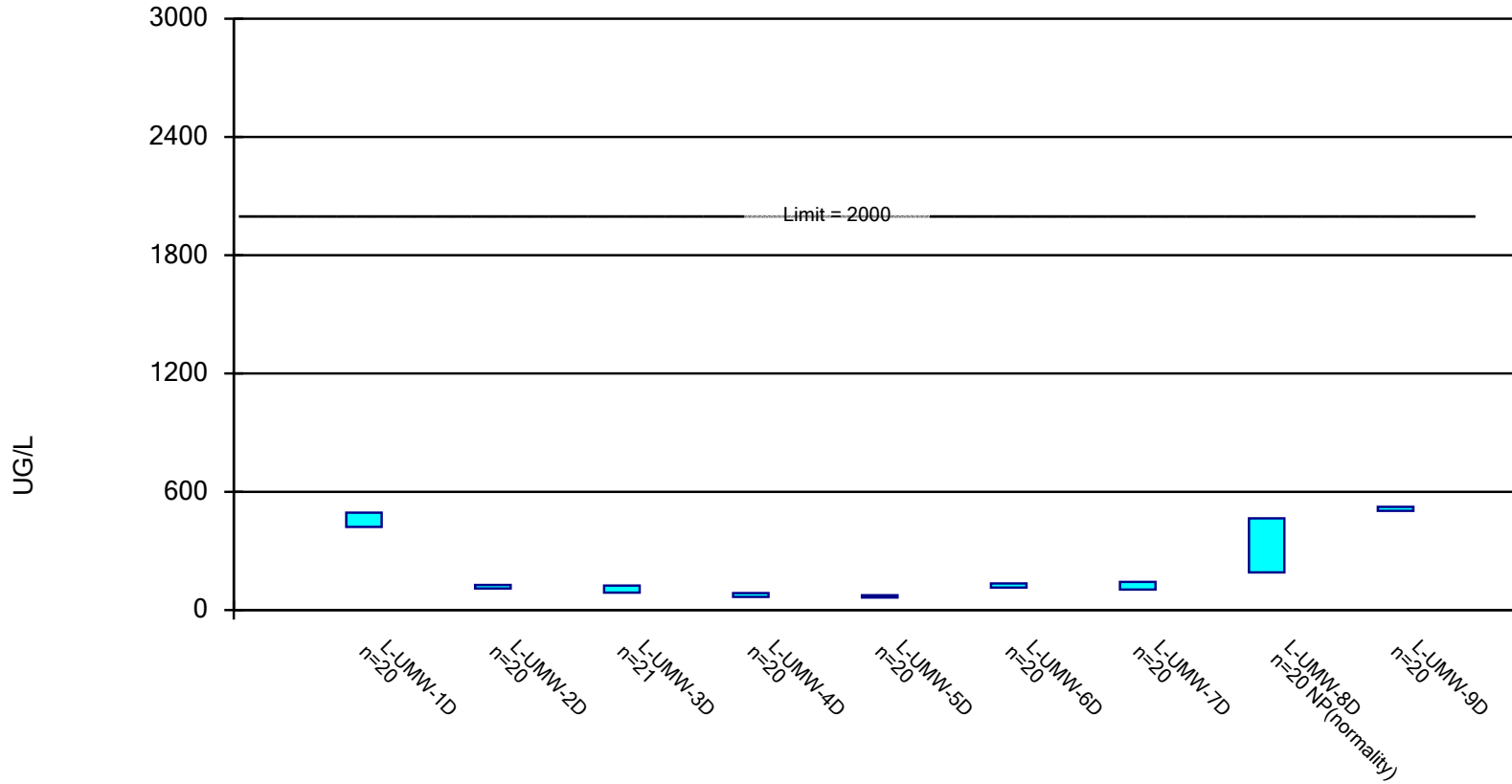
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: ARSENIC, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

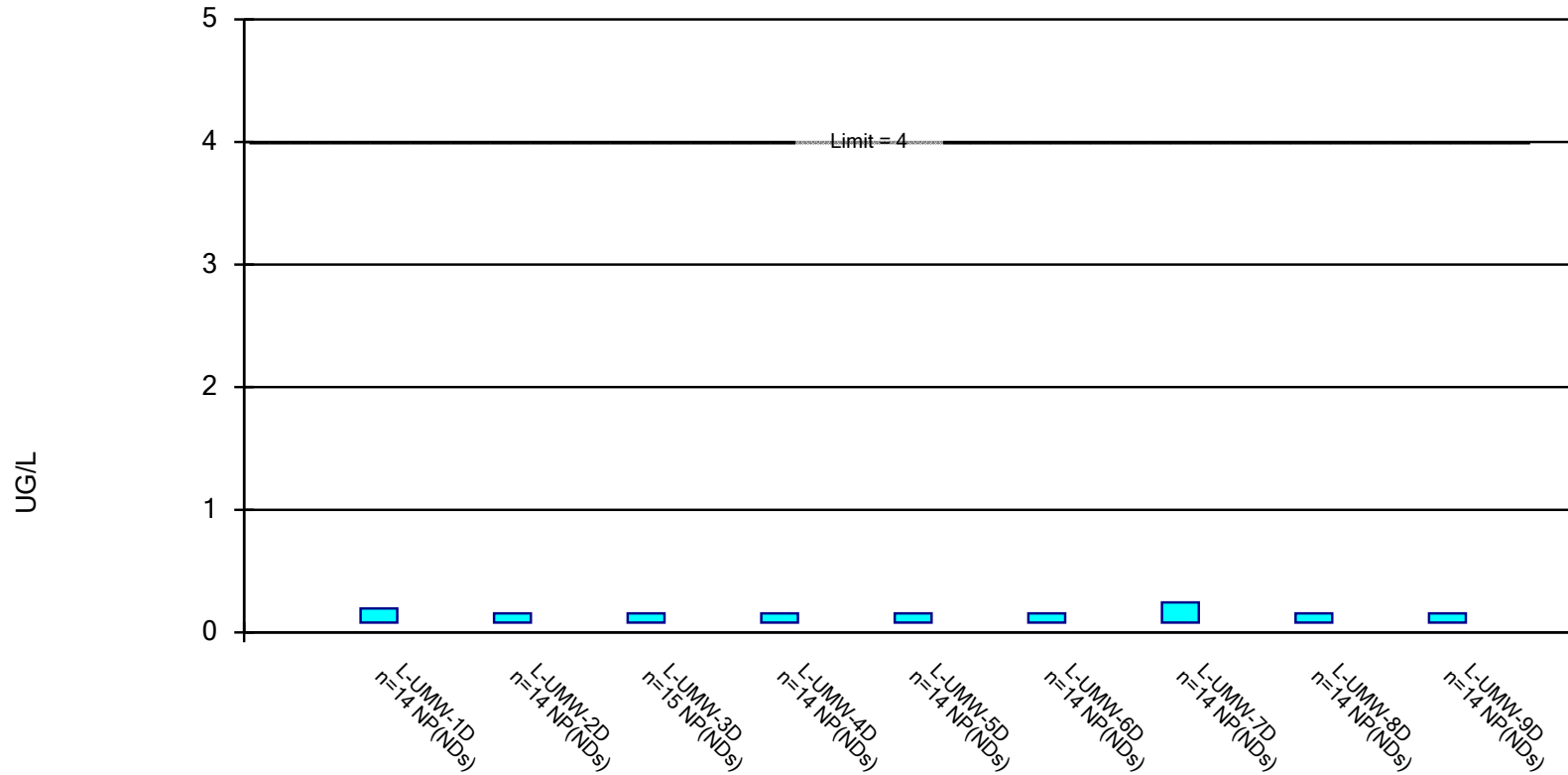
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: BARIUM, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

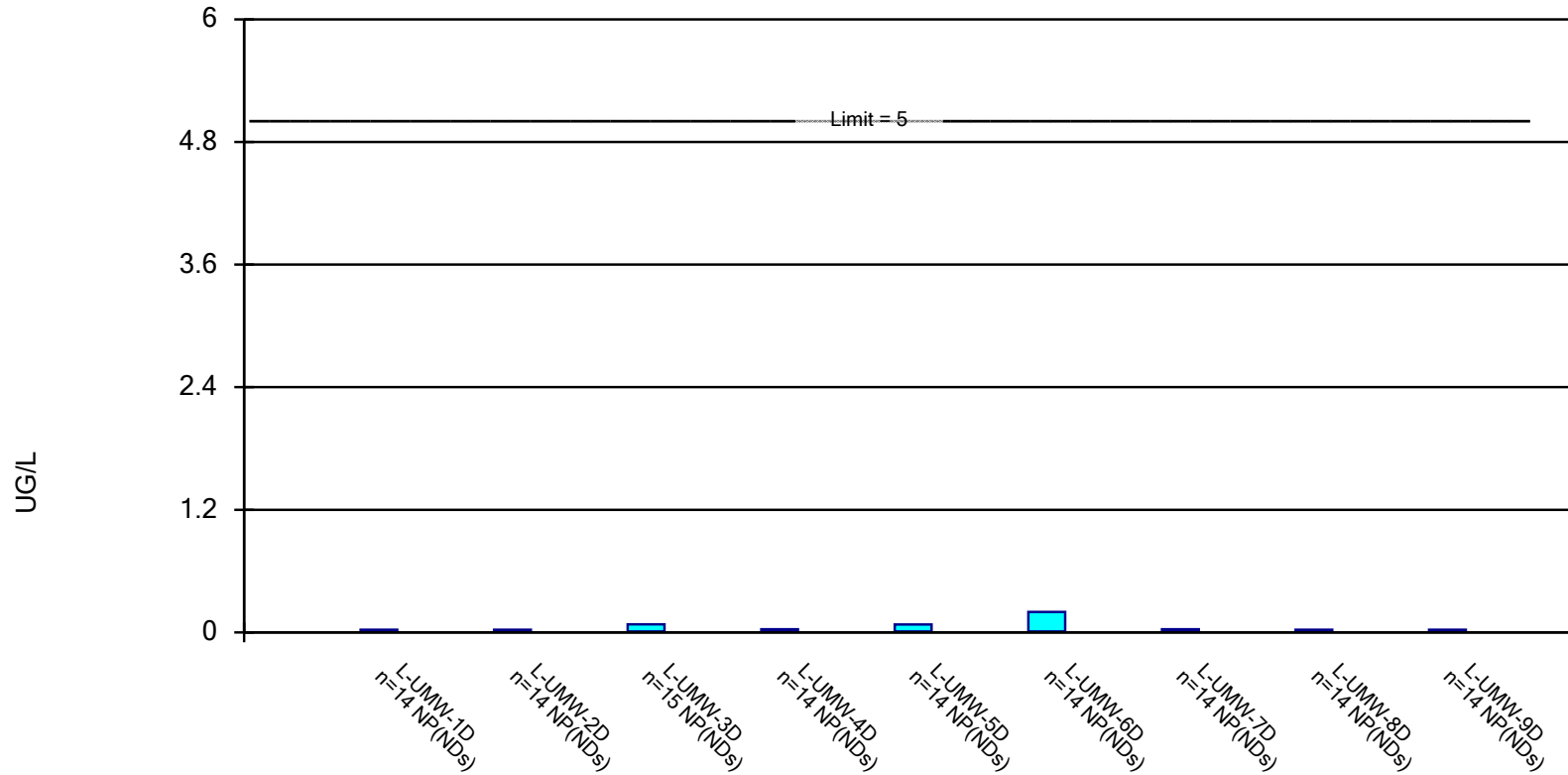
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: BERYLLIUM, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

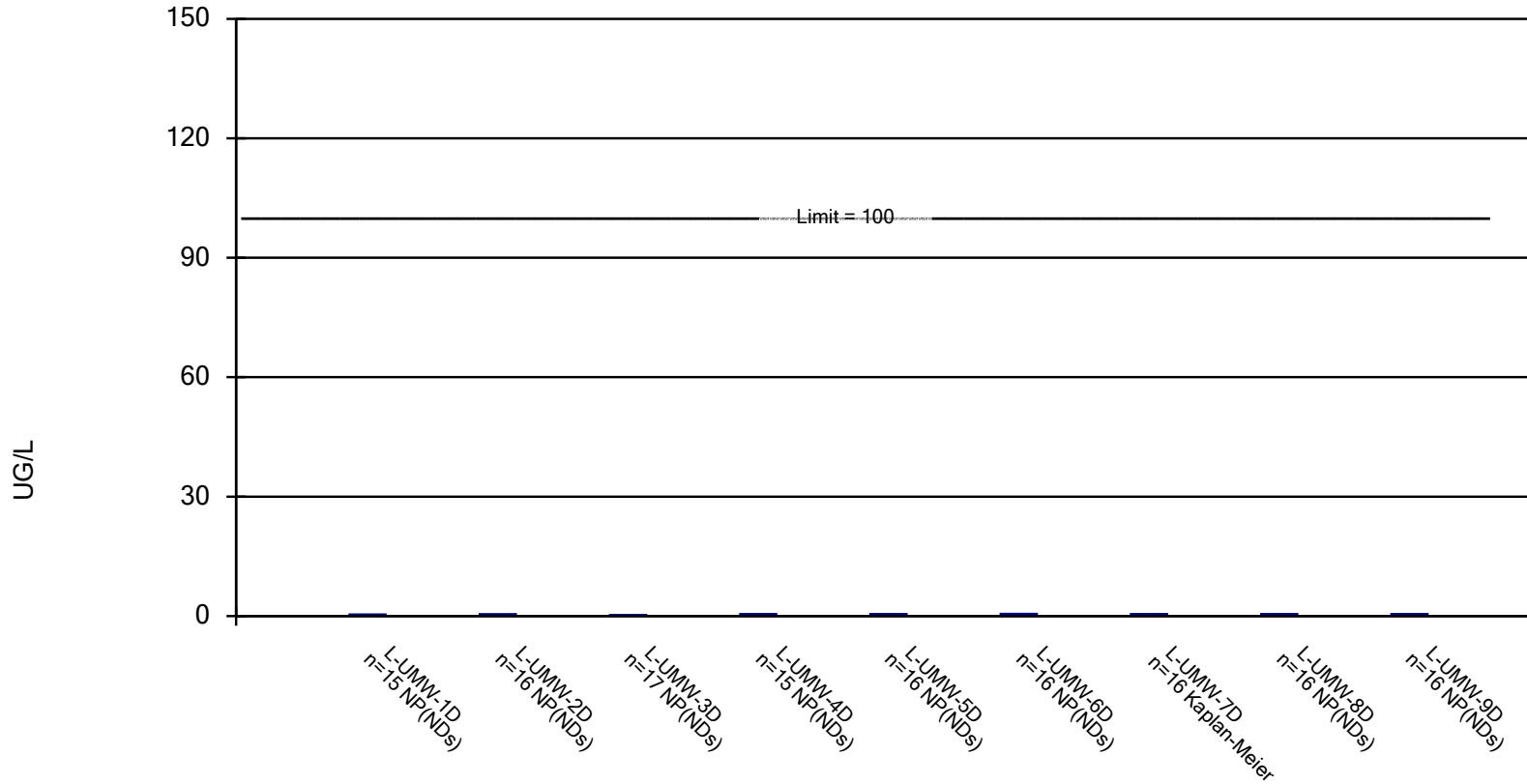
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: CADMIUM, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

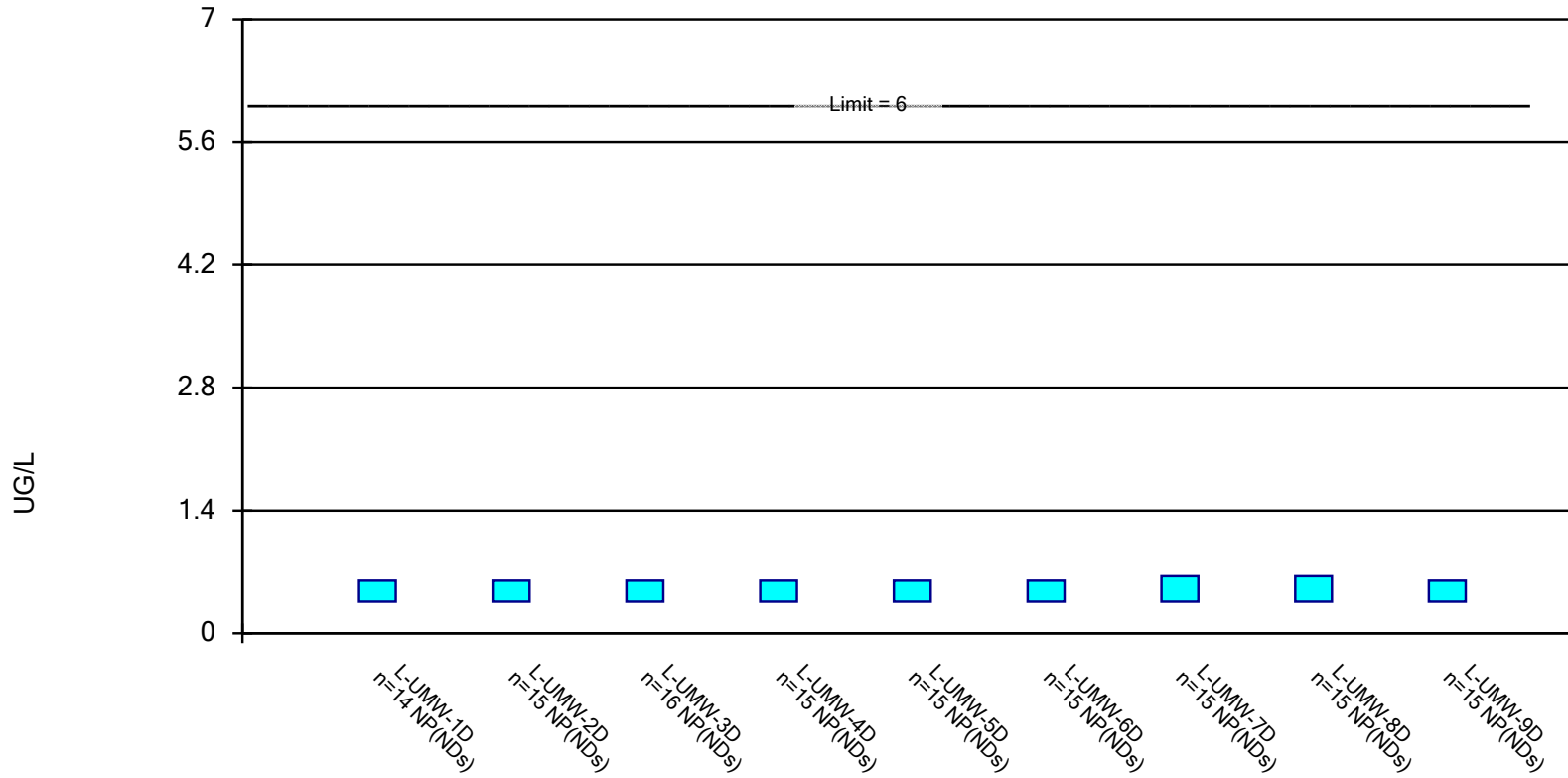


Constituent: CHROMIUM, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

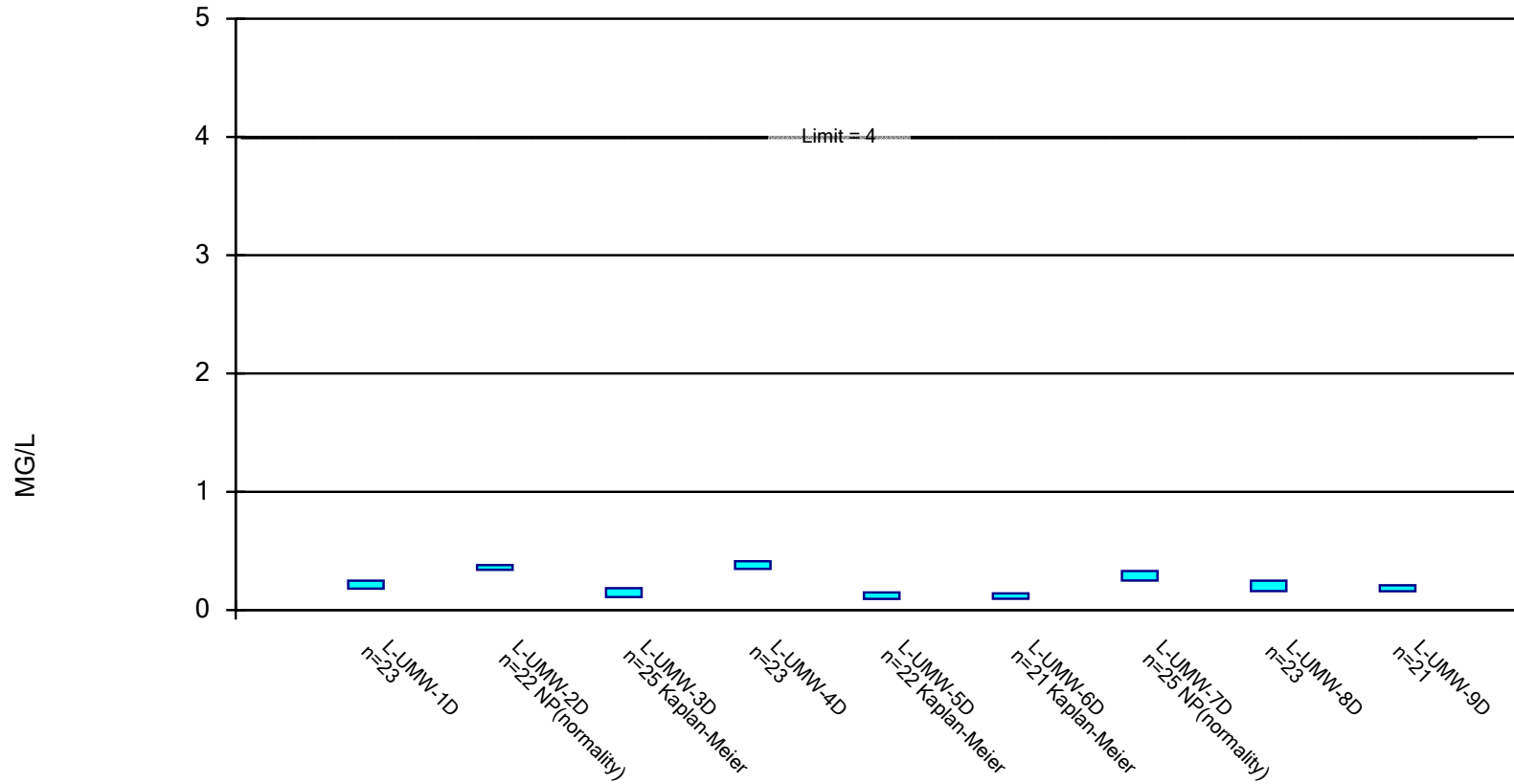
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: COBALT, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

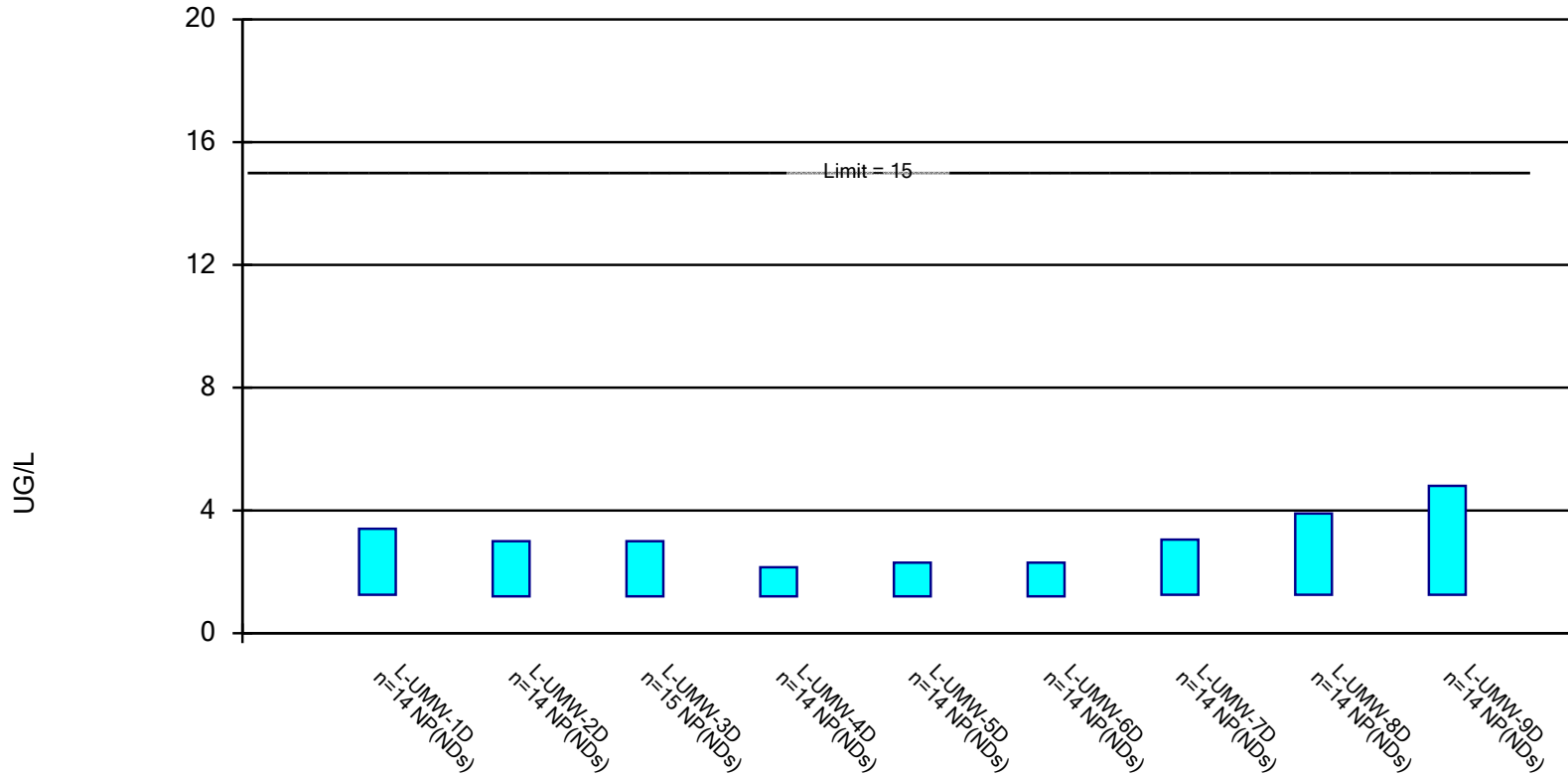
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: FLUORIDE, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

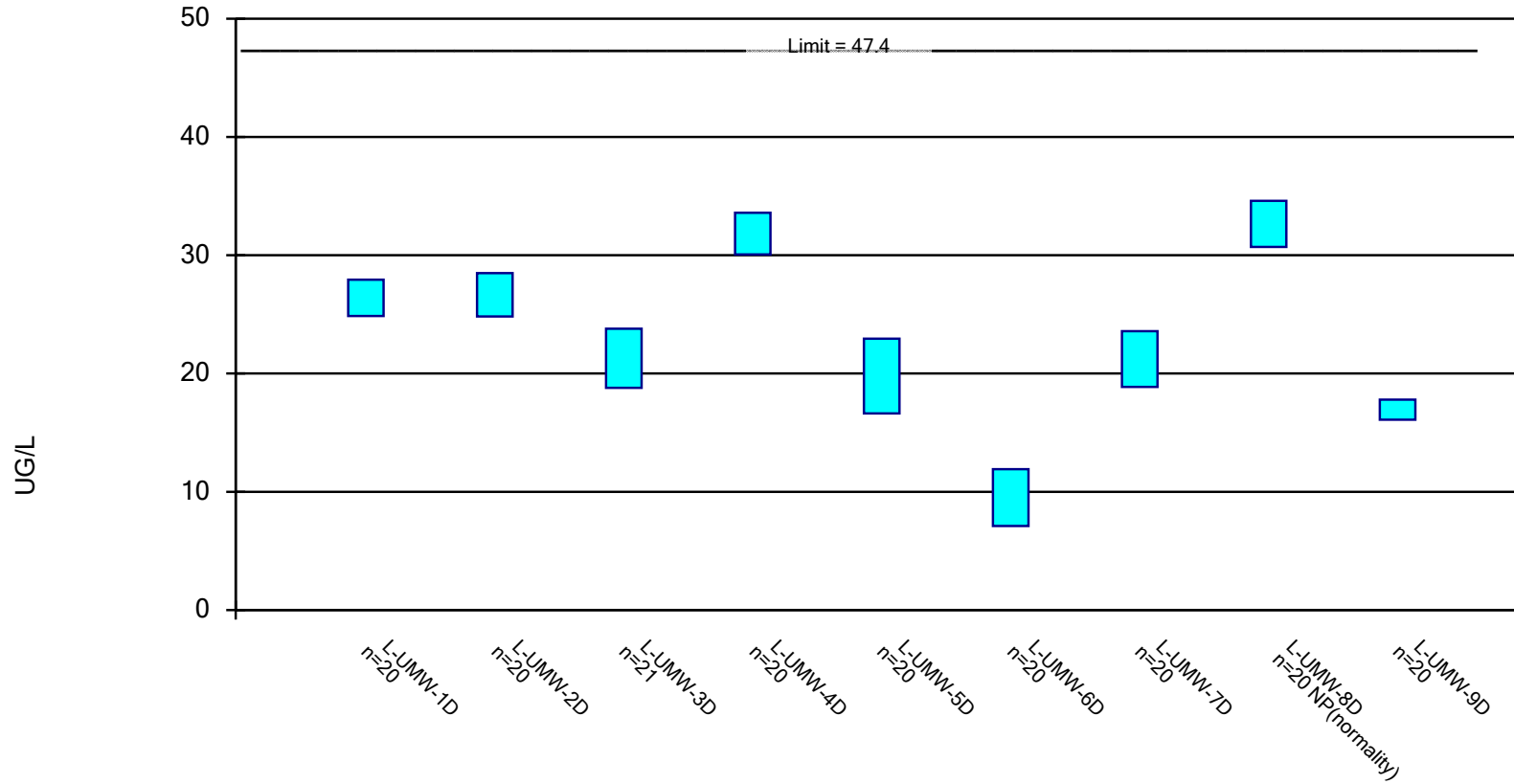
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: LEAD, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

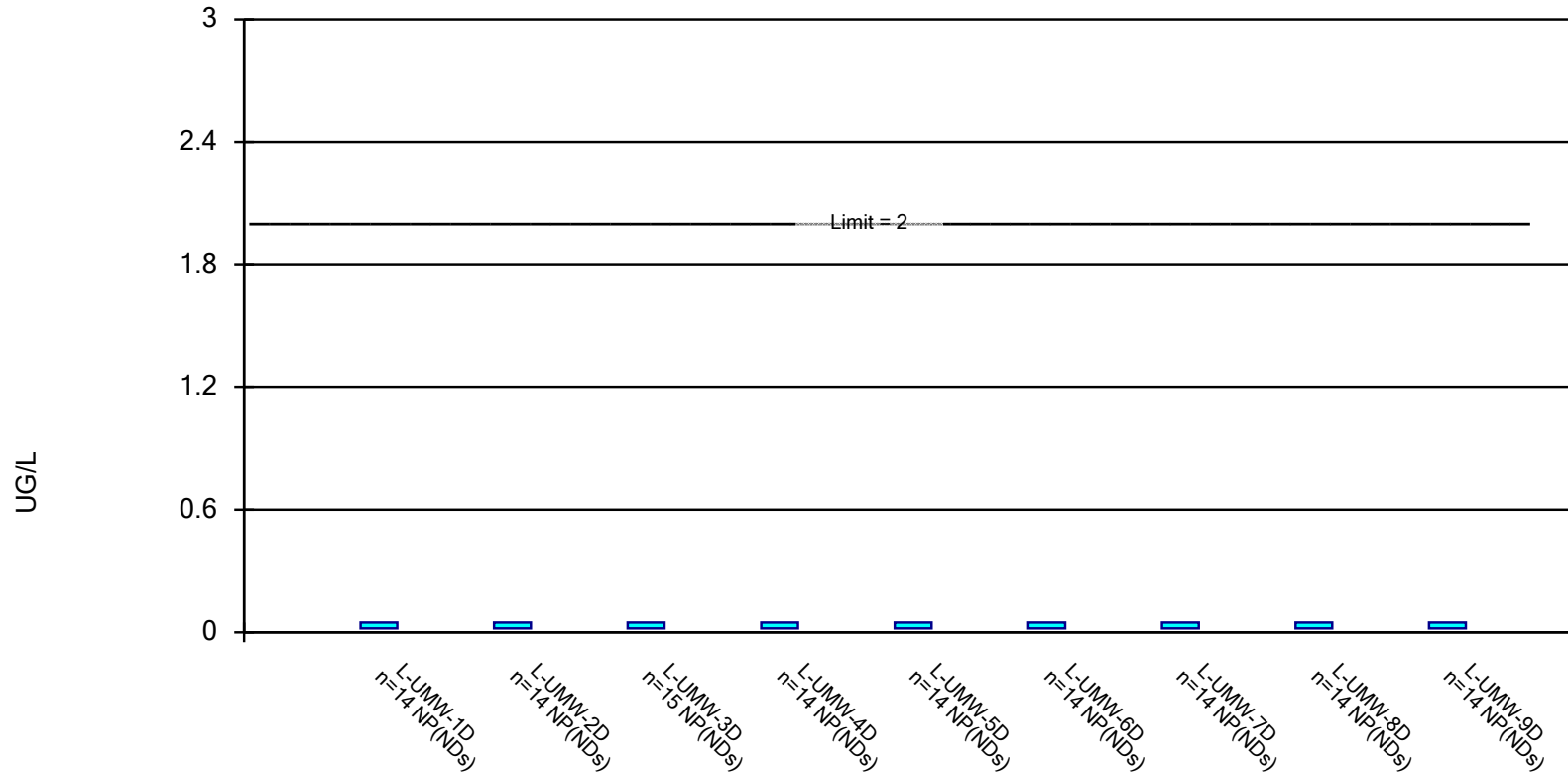
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: LITHIUM, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

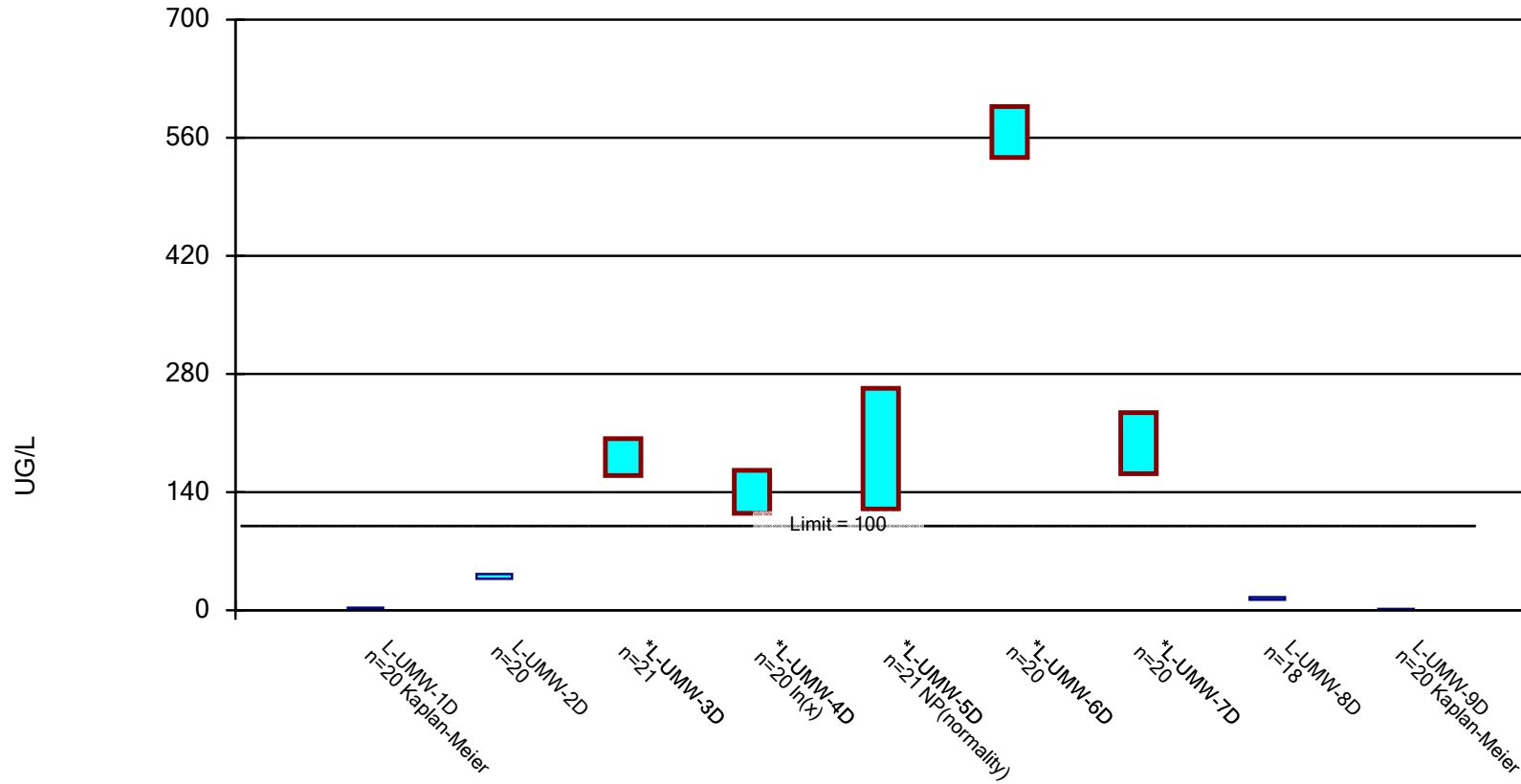
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: MERCURY, TOTAL Analysis Run 8/14/2023 10:44 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

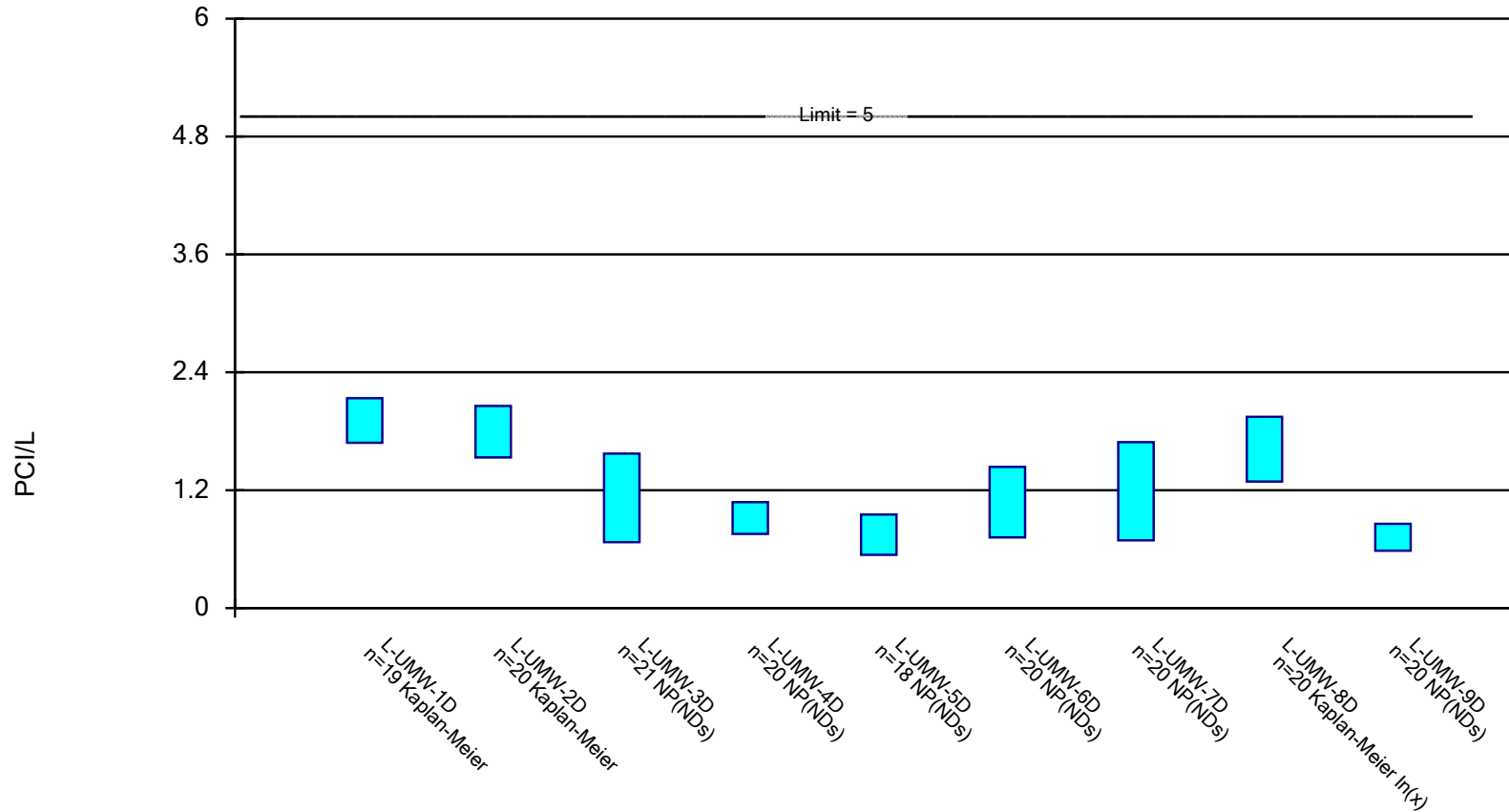
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 10:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

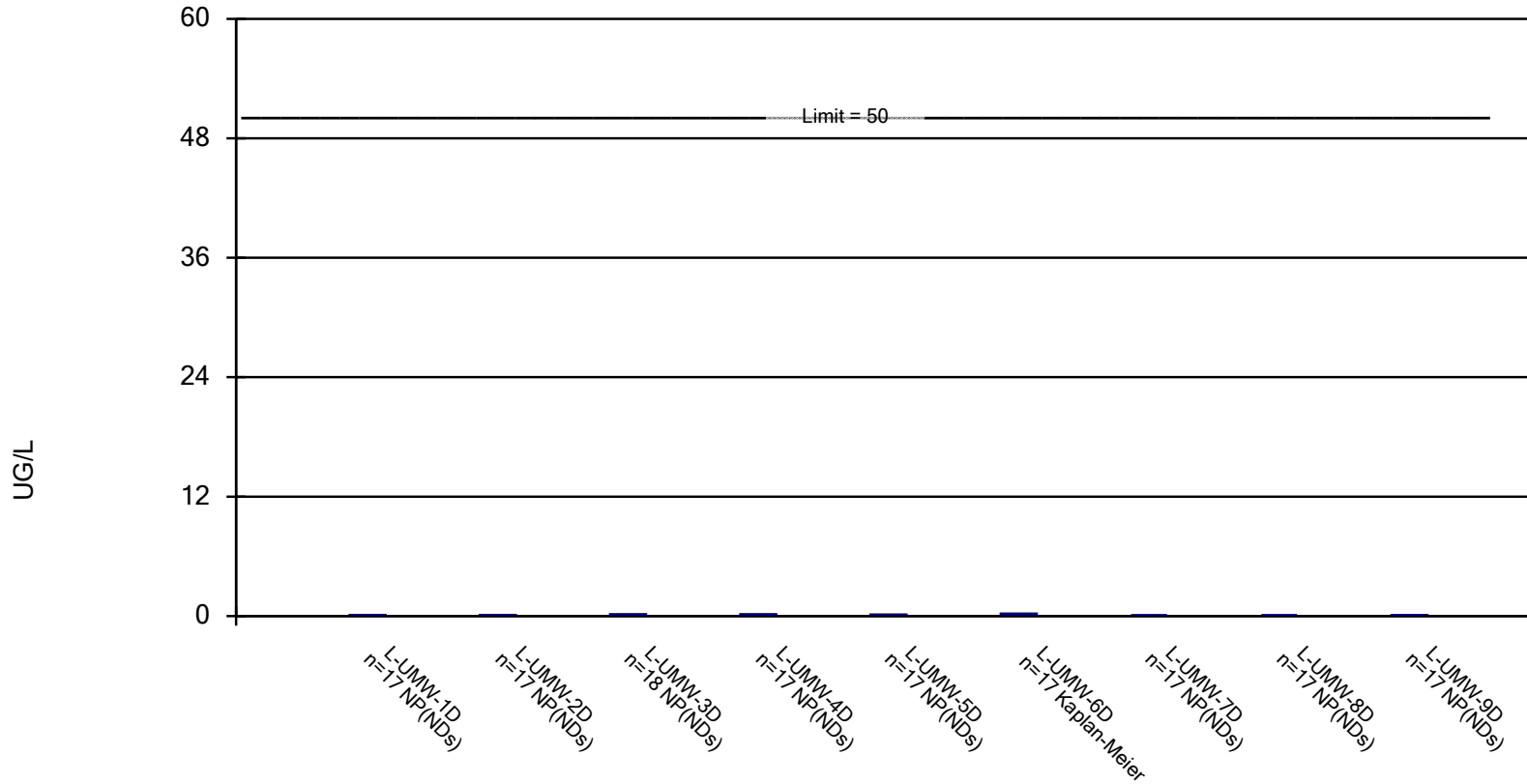
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Radium [226 + 228] Analysis Run 8/14/2023 10:45 AM View: Assessment Monitoring
 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

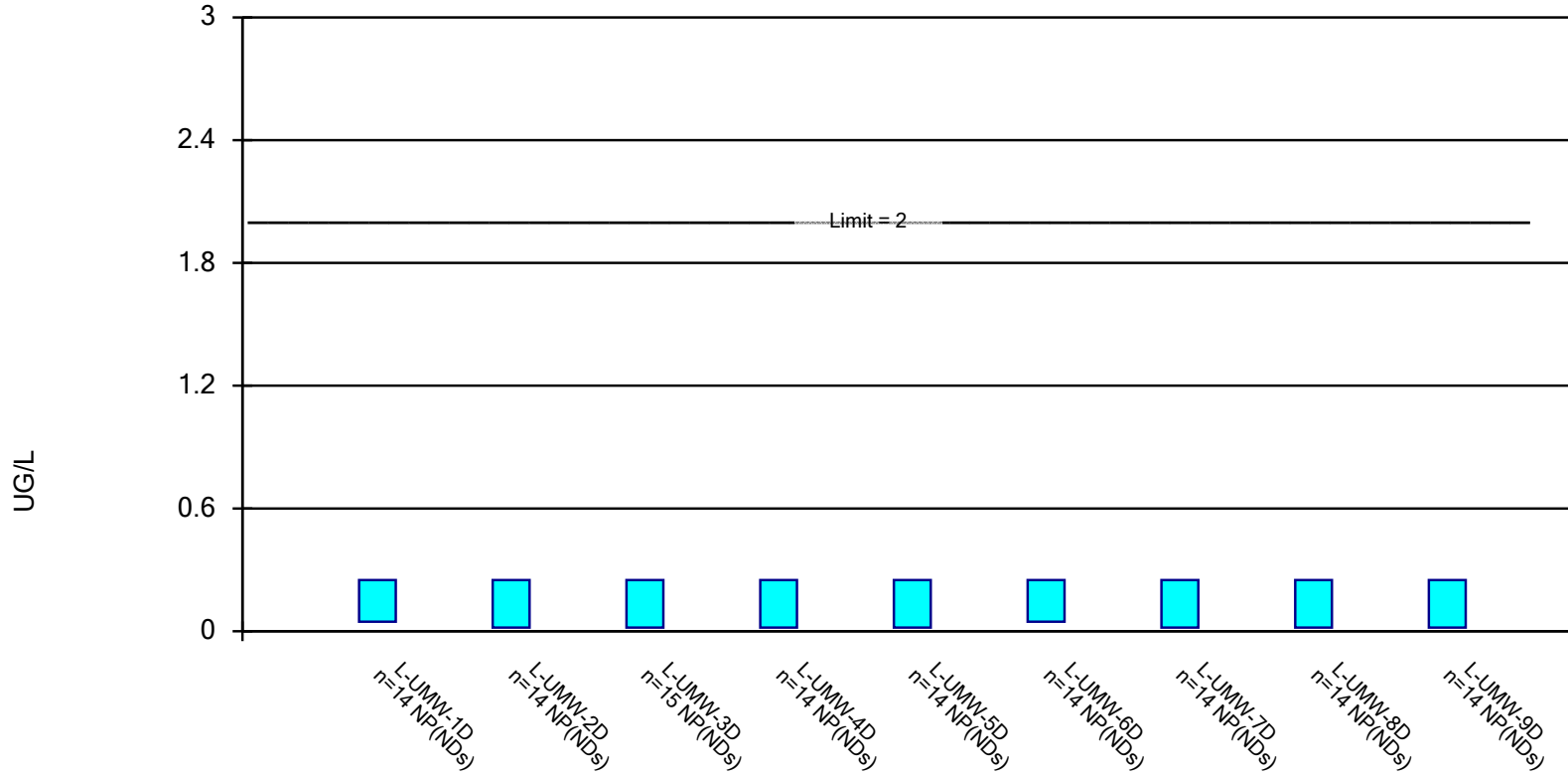
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: SELENIUM, TOTAL Analysis Run 8/14/2023 10:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 8/14/2023 10:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 10:45 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.06	0.013	6	No	15	86.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.06	0.013	6	No	16	87.5	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.06	0.013	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.1	0.029	6	No	15	60	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.06	0.013	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.05	0.013	6	No	15	93.33	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	L-UMW-1D	46.1	33.79	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-2D	2.129	1.489	44.2	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-3D	3.515	0.7068	44.2	No	19	5.263	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-4D	0.1452	0.09962	44.2	No	20	35	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-5D	21.88	17.2	44.2	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-6D	19.06	11.11	44.2	No	19	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-7D	23.44	17.81	44.2	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-8D	30.99	27.69	44.2	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-9D	33.98	31.26	44.2	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-1D	493.9	421.8	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-2D	126.9	109	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-3D	124	88.17	2000	No	21	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-4D	85.68	66.85	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-5D	75.29	63.46	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-6D	134.8	113.9	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-7D	142.4	104.1	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-8D	465	191	2000	No	20	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	L-UMW-9D	523.9	503.1	2000	No	20	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0.195	0.08	4	No	14	92.86	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0.155	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0.245	0.08	4	No	14	85.71	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.0265	0.009	5	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.0265	0.009	5	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.079	0.009	5	No	15	60	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0.031	0.009	5	No	14	92.86	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.078	0.009	5	No	14	78.57	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.2	0.009	5	No	14	64.29	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0.031	0.009	5	No	14	85.71	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.0265	0.009	5	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.0265	0.009	5	No	14	100	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.36	0.039	100	No	15	53.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0.47	0.039	100	No	16	68.75	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0.25	0.069	100	No	17	76.47	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	0.5	0.11	100	No	15	73.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0.5	0.039	100	No	16	75	No	0.01	NP (NDs)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 10:45 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	0.54	0.039	100	No	16	62.5	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	0.4818	0.1376	100	No	16	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	0.48	0.039	100	No	16	62.5	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0.5	0.039	100	No	16	68.75	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-1D	0.6	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-2D	0.6	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-3D	0.6	0.36	6	No	16	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-4D	0.6	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-5D	0.6	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-6D	0.6	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-7D	0.65	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-8D	0.65	0.36	6	No	15	93.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-9D	0.6	0.36	6	No	15	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.2481	0.1814	4	No	23	8.696	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	0.38	0.34	4	No	22	13.64	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0.1845	0.1103	4	No	25	32	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0.4125	0.3483	4	No	23	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.1486	0.09484	4	No	22	27.27	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	0.1405	0.09579	4	No	21	28.57	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	0.33	0.25	4	No	25	8	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.2489	0.1598	4	No	23	8.696	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.2098	0.1587	4	No	21	4.762	No	0.01	Param.
LEAD, TOTAL (UG/L)	L-UMW-1D	3.4	1.25	15	No	14	71.43	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-2D	3	1.2	15	No	14	78.57	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-3D	3	1.2	15	No	15	80	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-4D	2.15	1.2	15	No	14	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-5D	2.3	1.2	15	No	14	85.71	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-6D	2.3	1.2	15	No	14	85.71	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-7D	3.05	1.25	15	No	14	78.57	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-8D	3.9	1.25	15	No	14	78.57	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-9D	4.8	1.25	15	No	14	57.14	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	L-UMW-1D	27.93	24.86	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-2D	28.49	24.82	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-3D	23.78	18.79	47.4	No	21	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-4D	33.59	30.06	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-5D	22.94	16.63	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-6D	11.91	7.112	47.4	No	20	5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-7D	23.58	18.86	47.4	No	20	5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-8D	34.6	30.7	47.4	No	20	0	No	0.01	NP (normality)
LITHIUM, TOTAL (UG/L)	L-UMW-9D	17.78	16.1	47.4	No	20	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	3.092	1.147	100	No	20	25	No	0.01	Param.

Confidence Interval

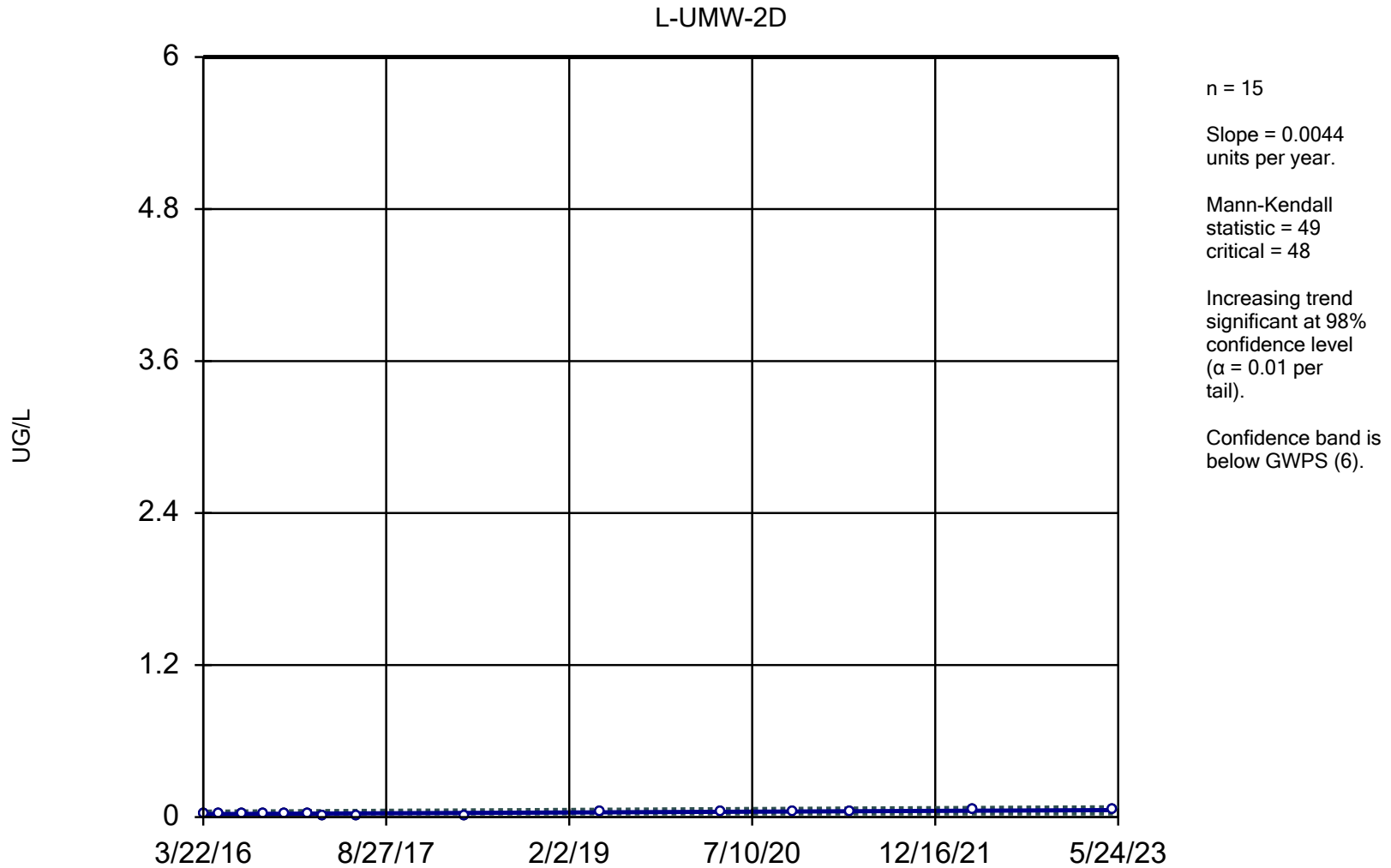
Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 10:45 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	42.99	37.33	100	No	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	203.5	159.7	100	Yes	21	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	165.8	114.9	100	Yes	20	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	263	120	100	Yes	21	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	597	536.6	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	234.2	161.8	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	15.53	12.47	100	No	18	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	1.584	0.8664	100	No	20	45	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-1D	2.136	1.682	5	No	19	15.79	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-2D	2.058	1.533	5	No	20	30	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-3D	1.572	0.6715	5	No	21	71.43	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-4D	1.077	0.7545	5	No	20	75	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-5D	0.952	0.542	5	No	18	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-6D	1.437	0.7185	5	No	20	55	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-7D	1.689	0.689	5	No	20	70	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-8D	1.947	1.288	5	No	20	50	ln(x)	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-9D	0.857	0.5835	5	No	20	90	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0.11	0.043	50	No	17	94.12	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0.11	0.043	50	No	17	94.12	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0.19	0.09	50	No	18	61.11	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0.19	0.043	50	No	17	94.12	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.15	0.09	50	No	17	58.82	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0.2455	0.188	50	No	17	23.53	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0.091	0.089	50	No	17	82.35	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0.09	0.087	50	No	17	94.12	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0.09	0.043	50	No	17	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-1D	0.25	0.0465	2	No	14	85.71	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-2D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-3D	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-4D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-5D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-6D	0.25	0.0465	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-7D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-8D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-9D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)

Appendix B

Sanitas Trending Confidence Bands Statistical Output

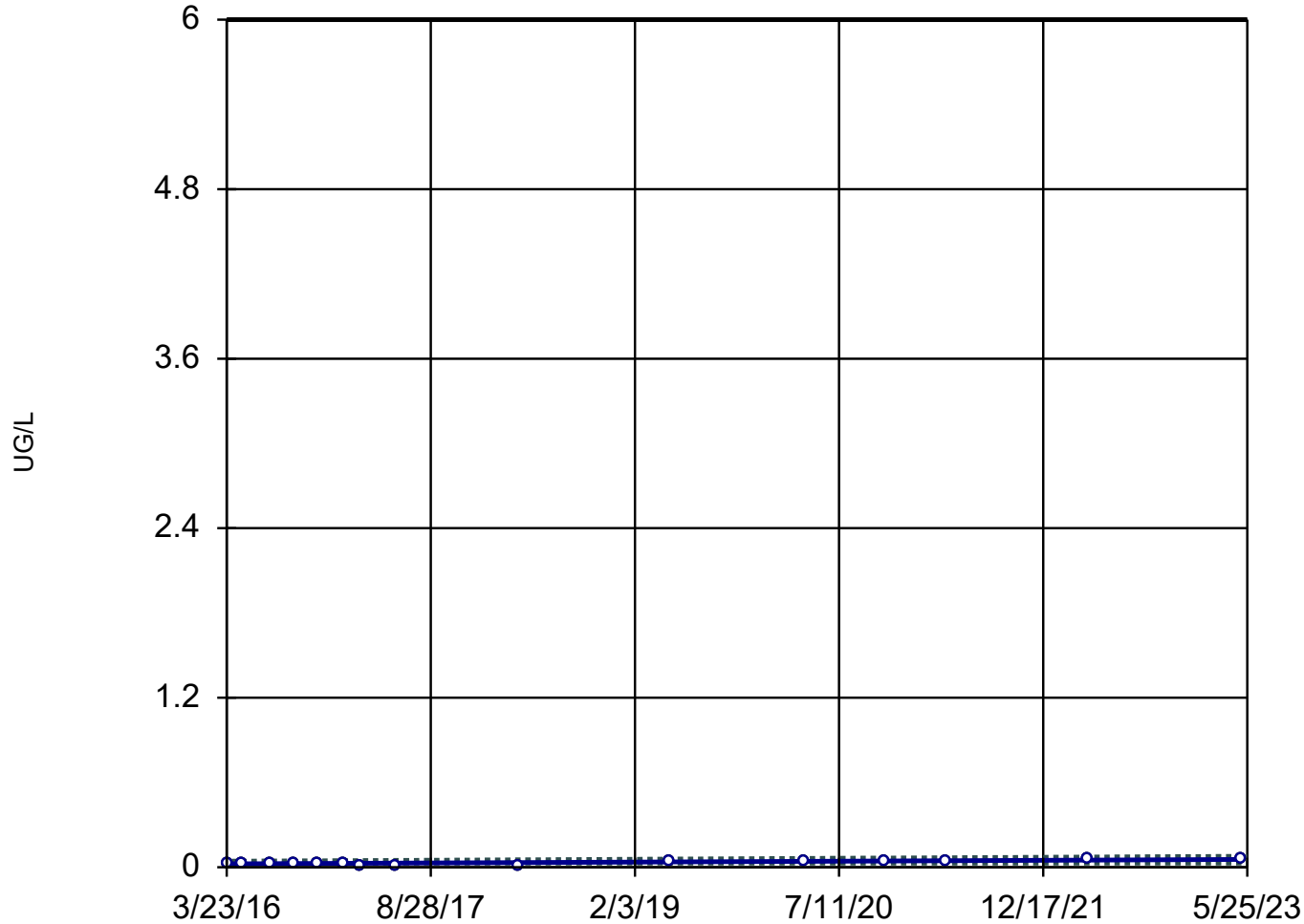
Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 15

Slope = 0.004408
units per year.

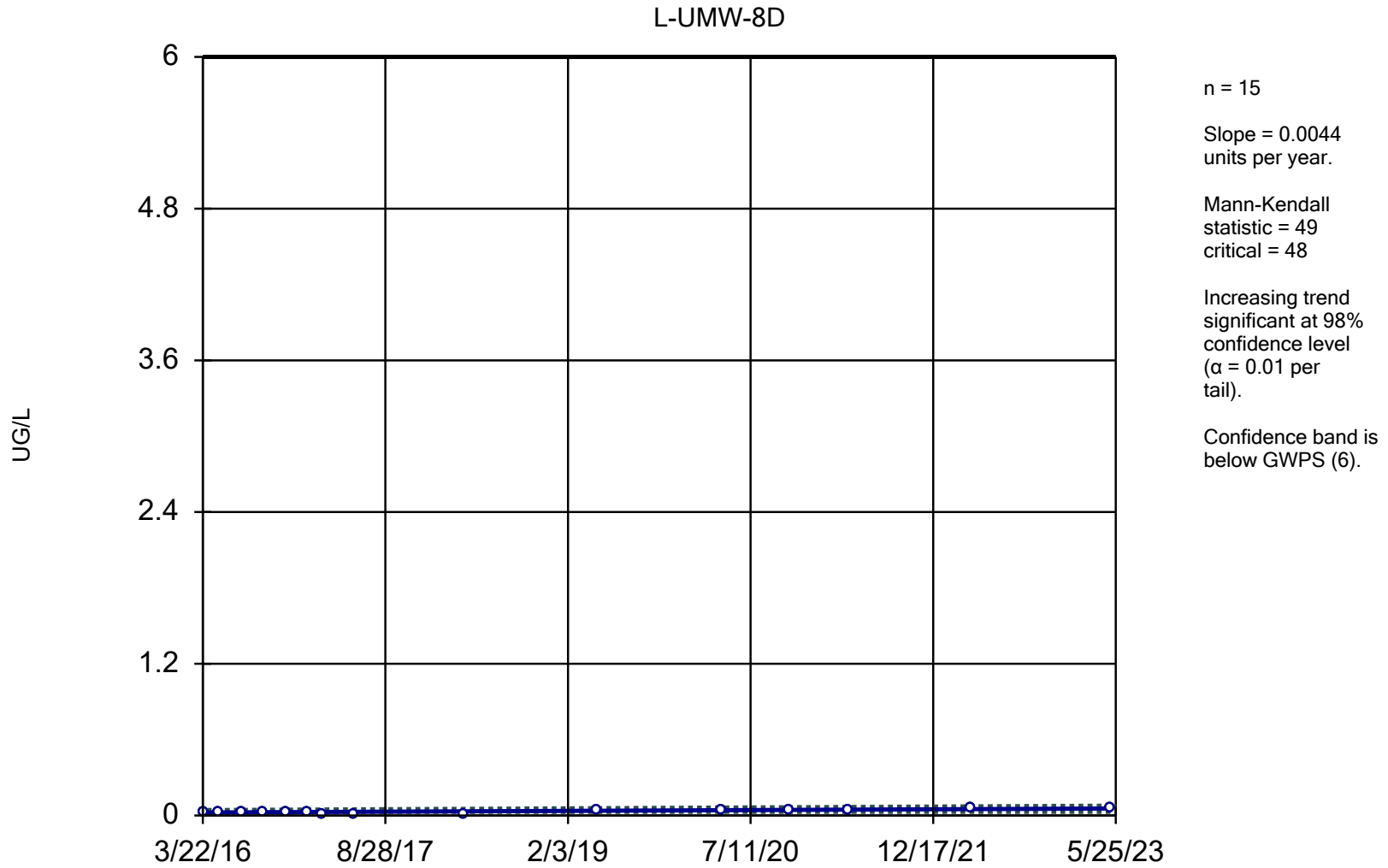
Mann-Kendall
statistic = 49
critical = 48

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

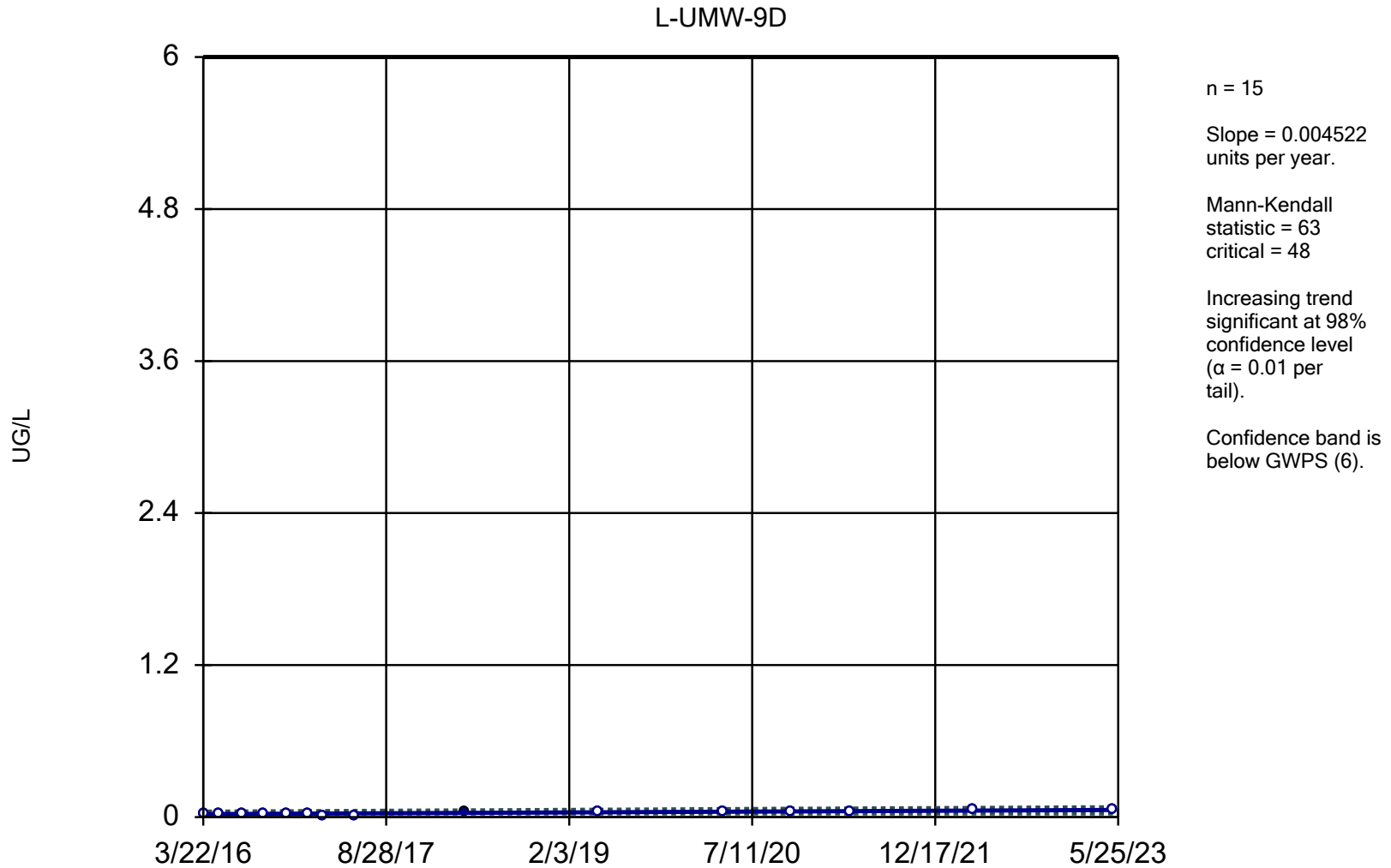
Constituent: ANTIMONY, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

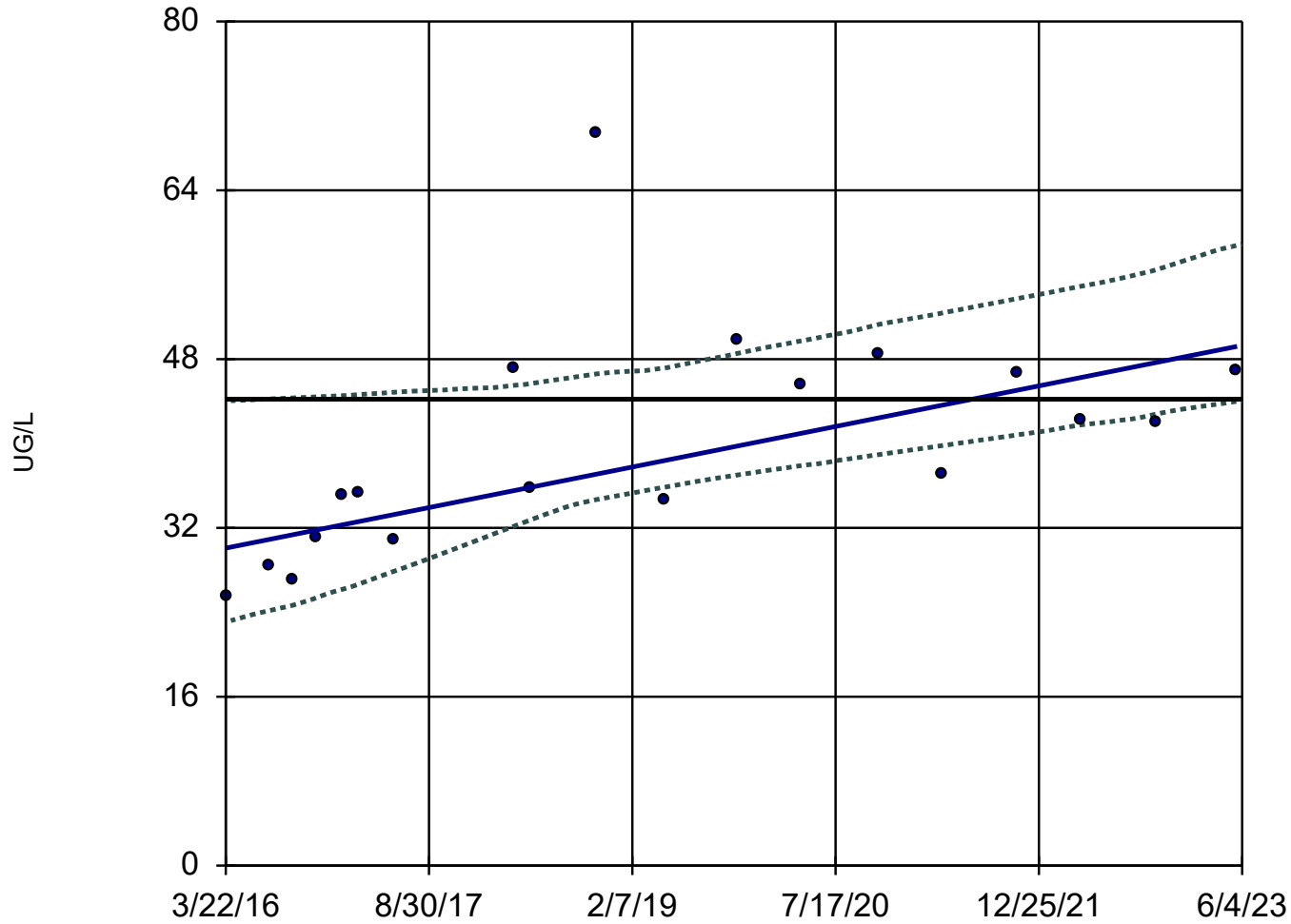
Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 19

Slope = 2.666
units per year.

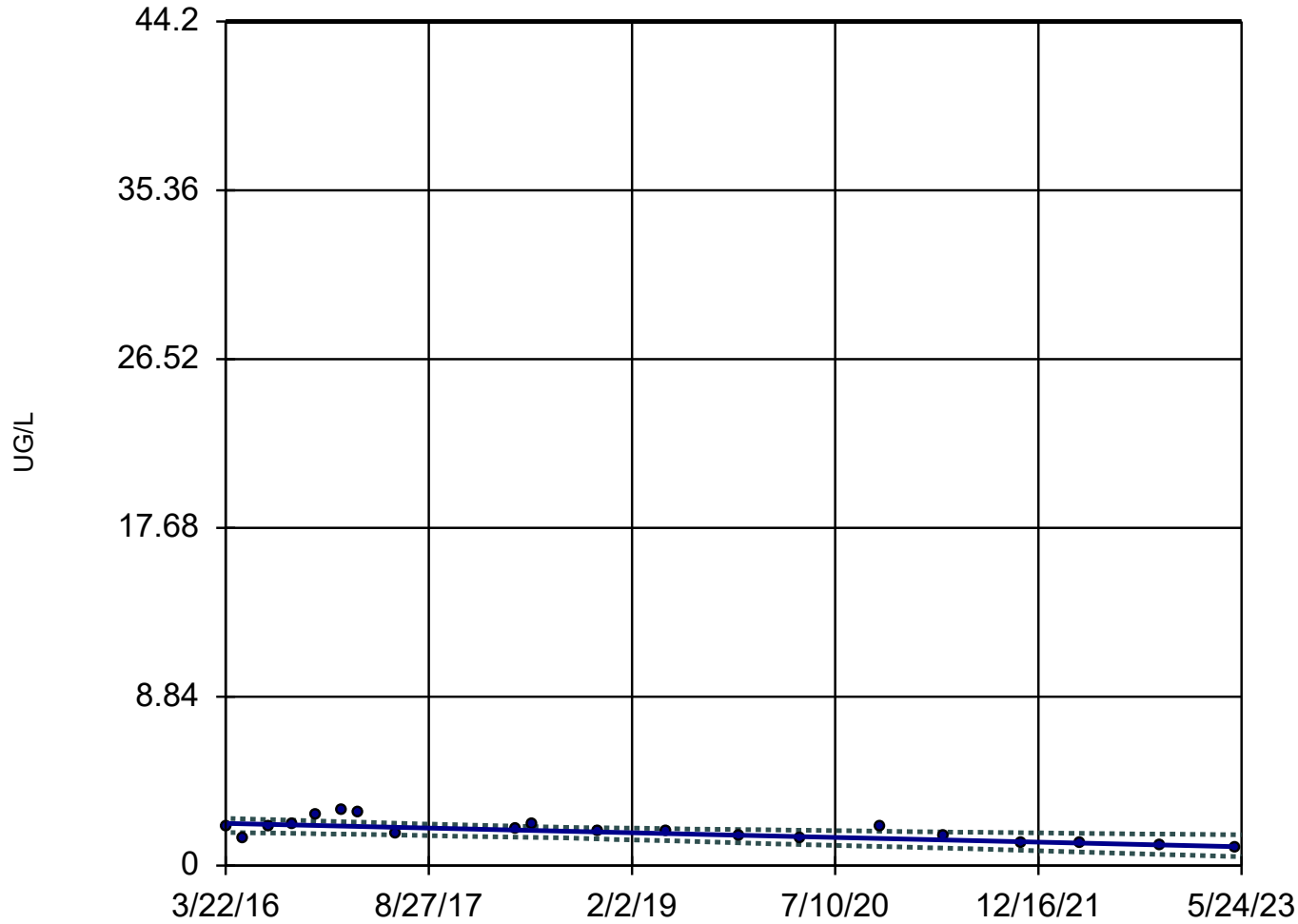
Mann-Kendall
statistic = 87
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: ARSENIC, TOTAL Analysis Run 8/9/2023 1:25 PM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 20

Slope = -0.1711
units per year.

Mann-Kendall
statistic = -102
critical = -73

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

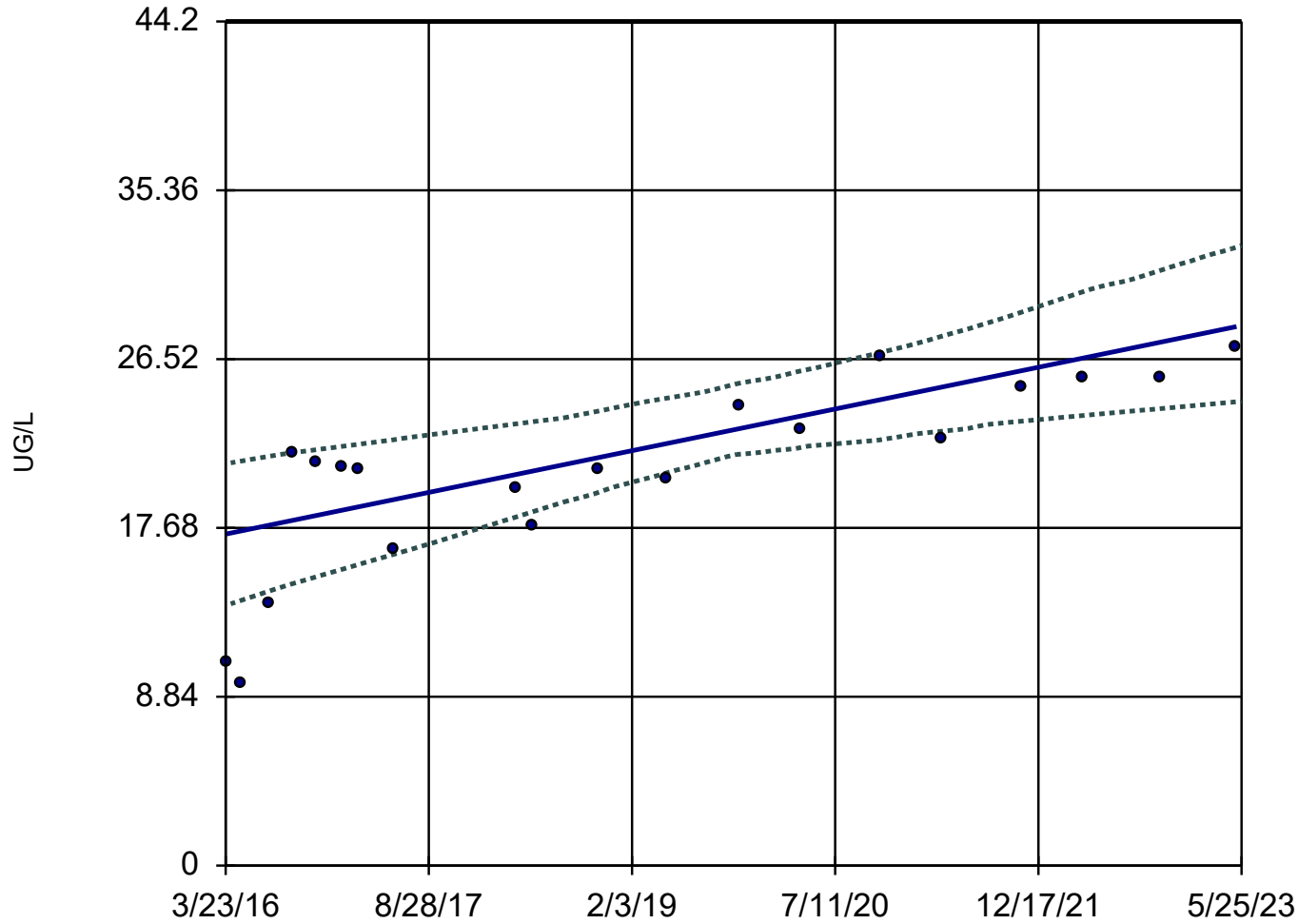
Confidence band is
below GWPS (44.2).

Constituent: ARSENIC, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 20

Slope = 1.522
units per year.

Mann-Kendall
statistic = 119
critical = 73

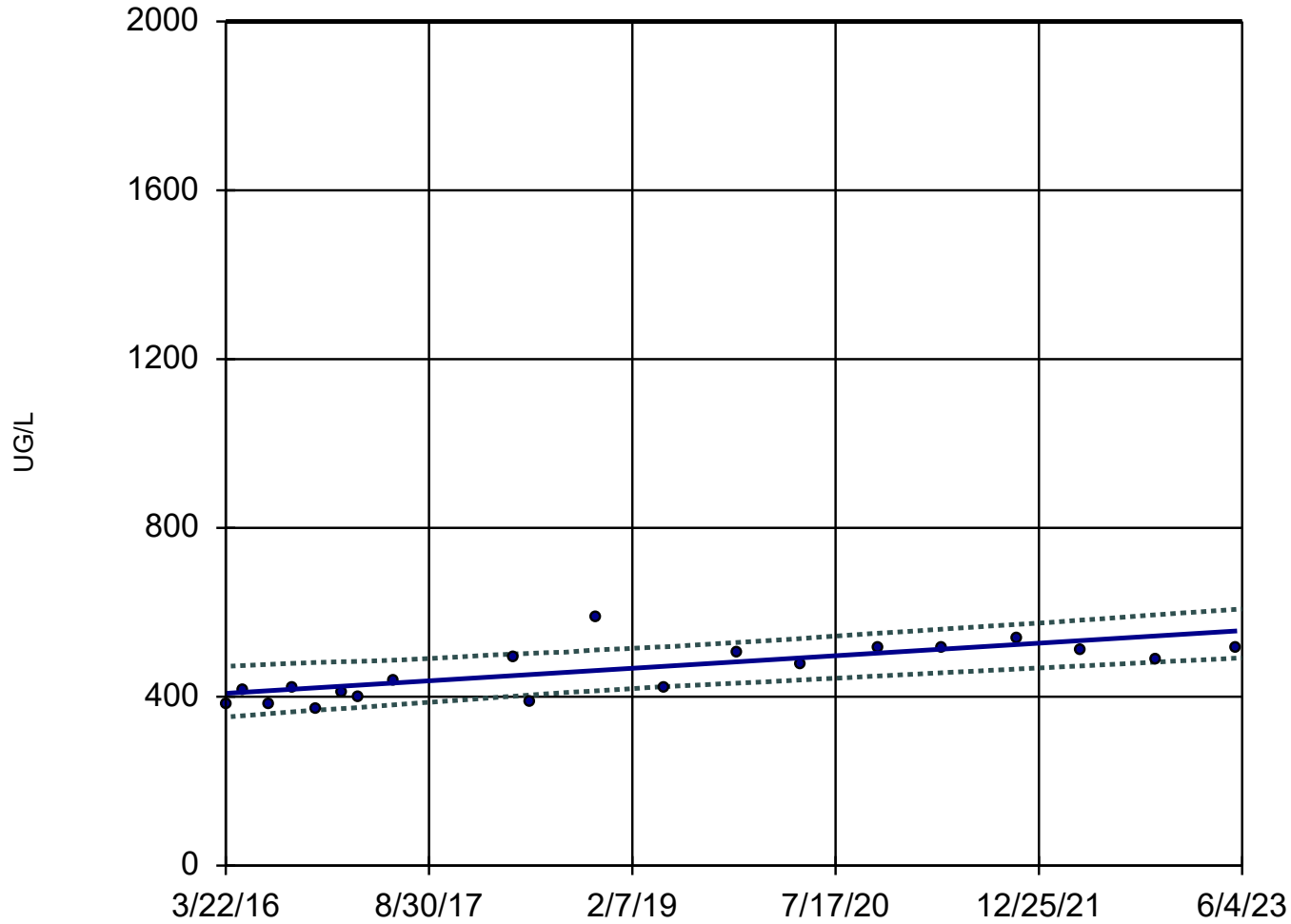
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (44.2).

Constituent: ARSENIC, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 20

Slope = 20.64
units per year.

Mann-Kendall
statistic = 110
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

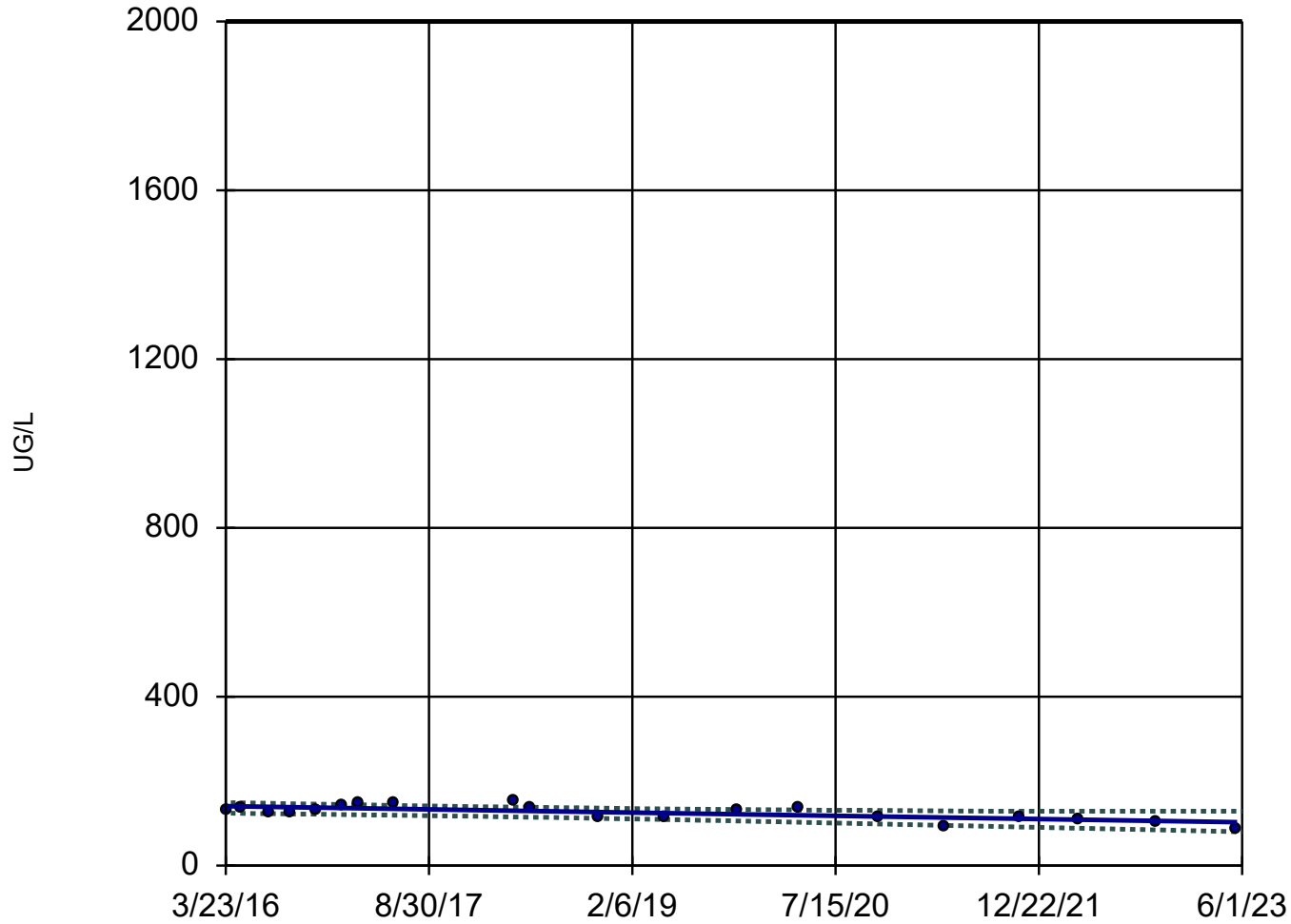
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-6D



n = 20

Slope = -5.278
units per year.

Mann-Kendall
statistic = -84
critical = -73

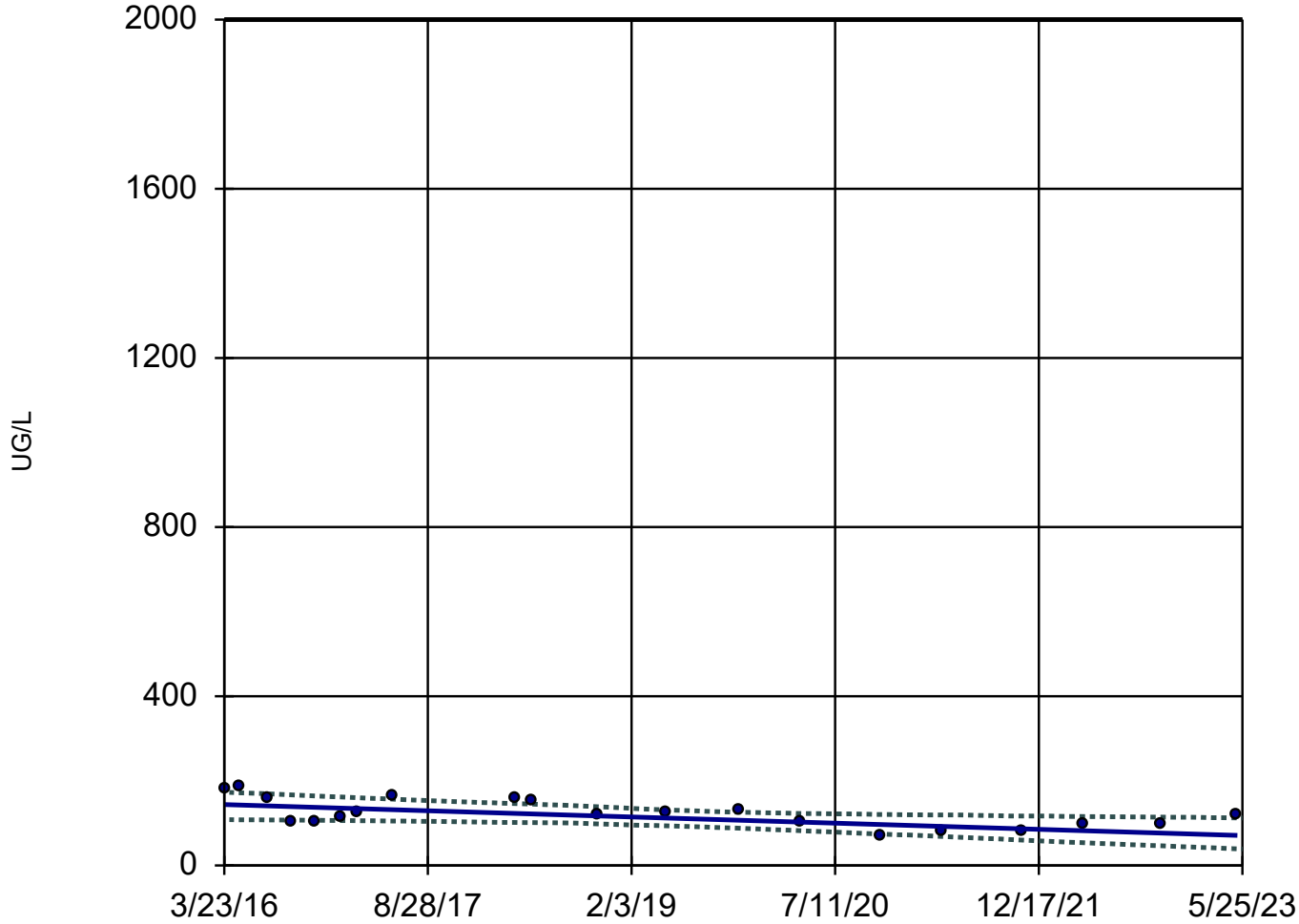
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 20

Slope = -10.17
units per year.

Mann-Kendall
statistic = -85
critical = -73

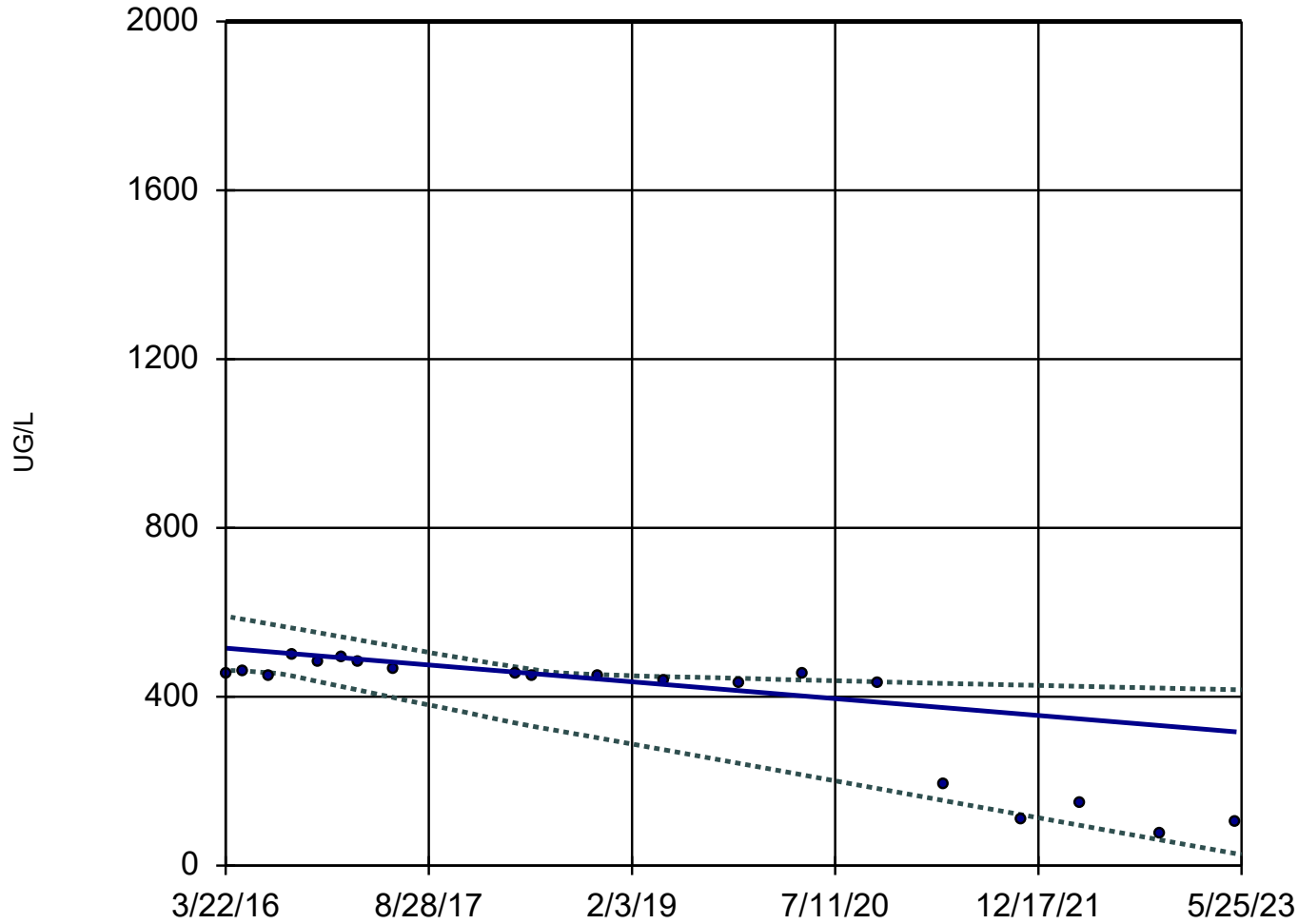
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-8D



n = 20

Slope = -27.78
units per year.

Mann-Kendall
statistic = -133
critical = -73

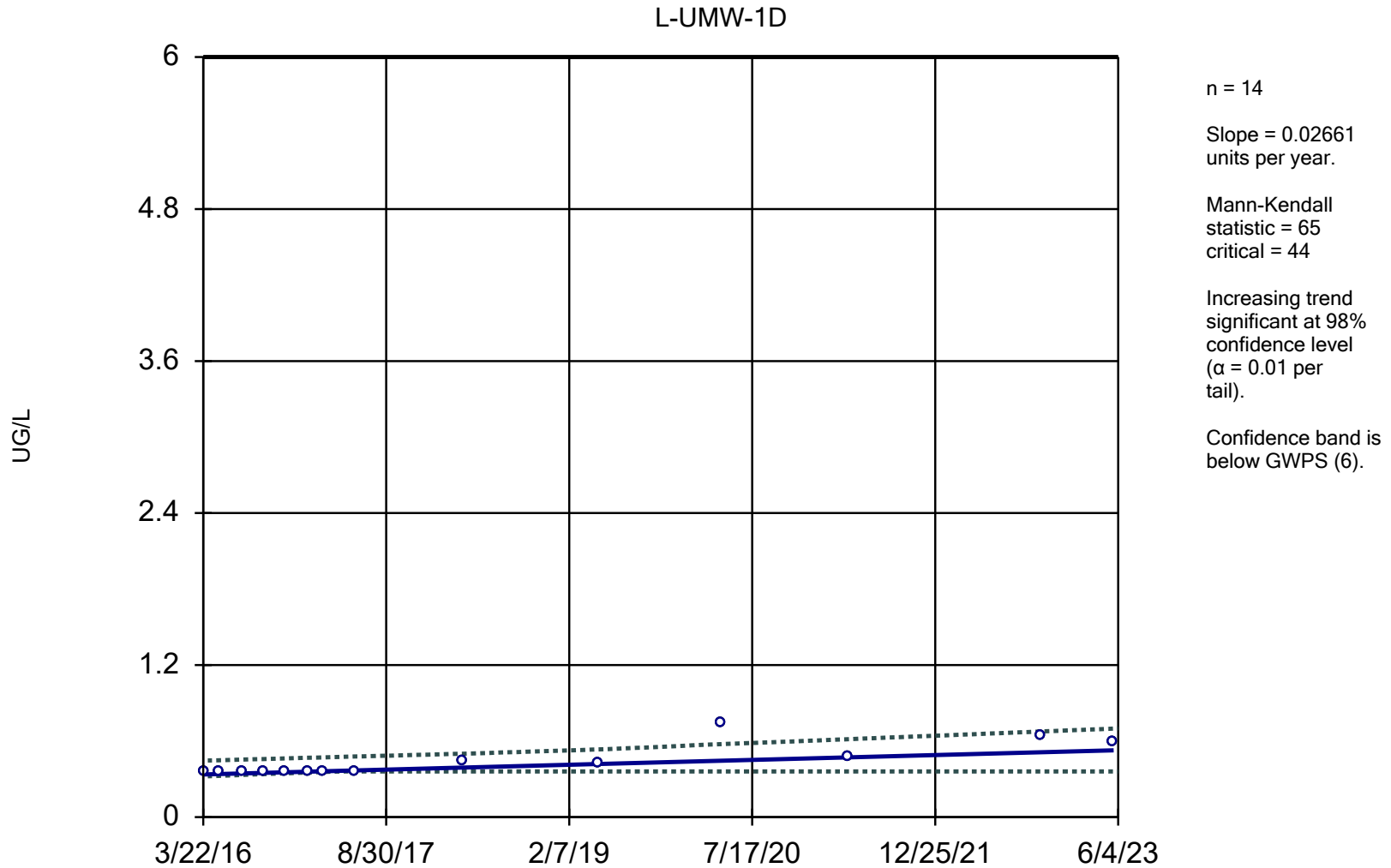
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring

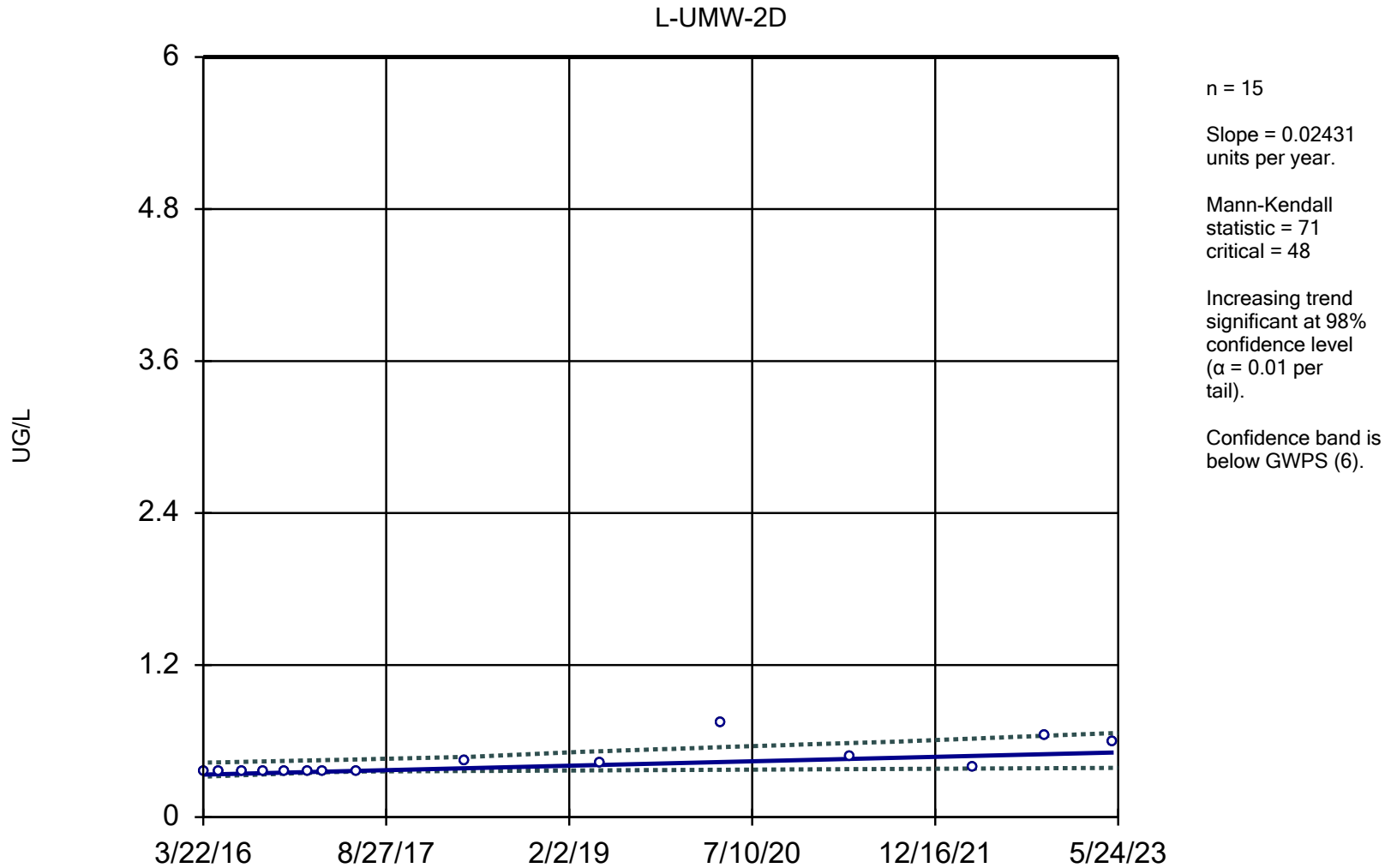
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

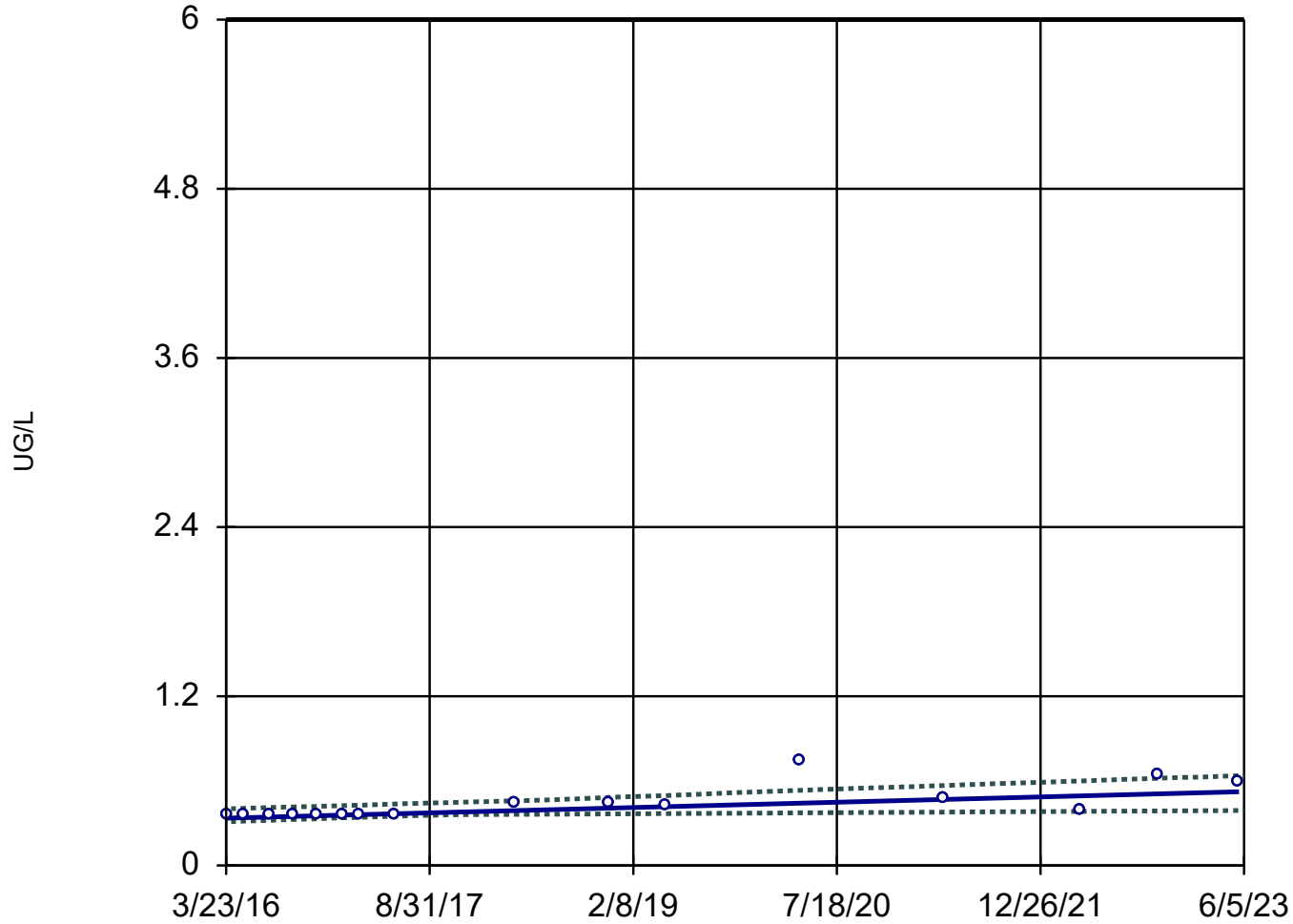
Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-3D



n = 16

Slope = 0.02612
units per year.

Mann-Kendall
statistic = 81
critical = 53

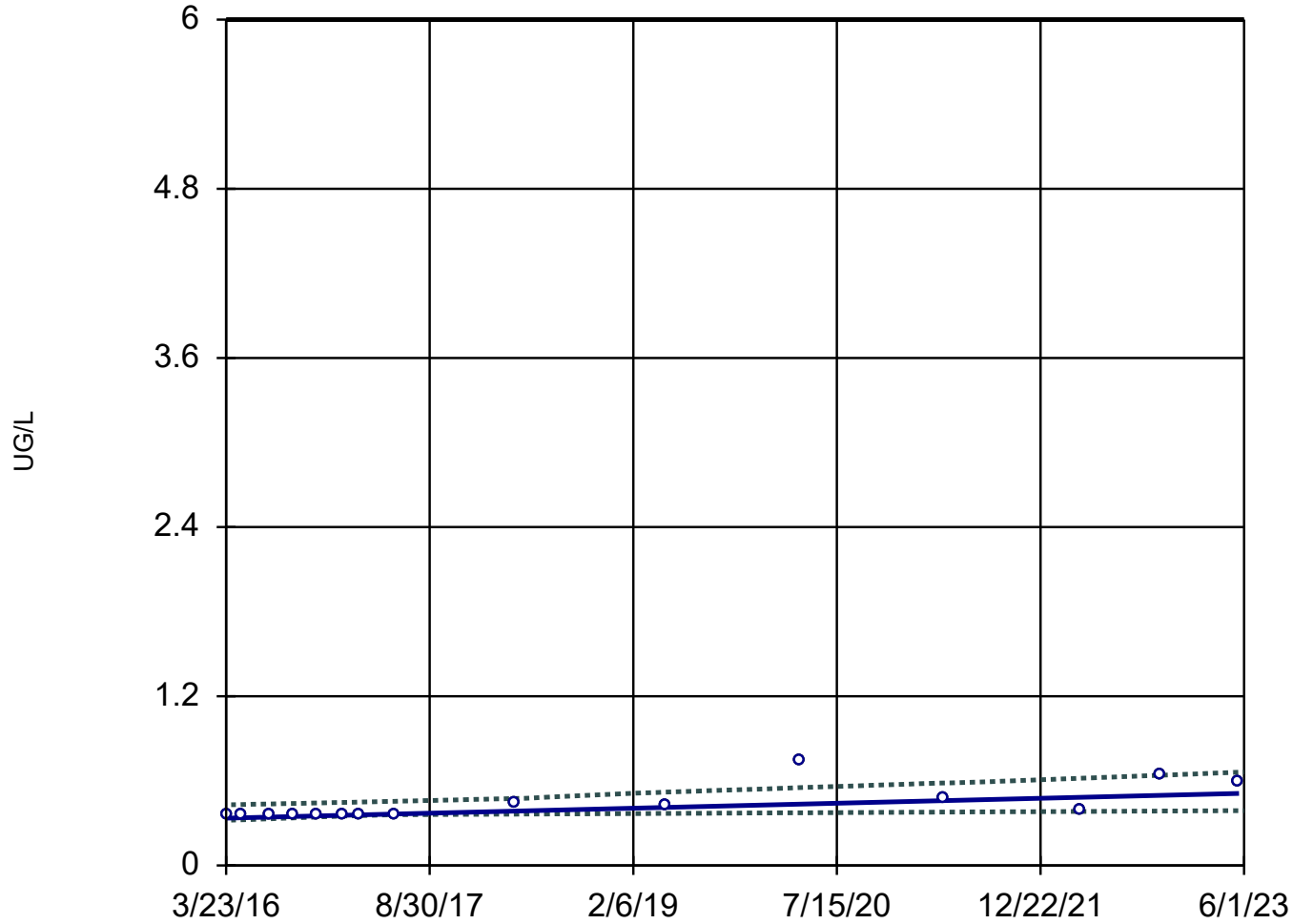
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-4D



n = 15

Slope = 0.02441
units per year.

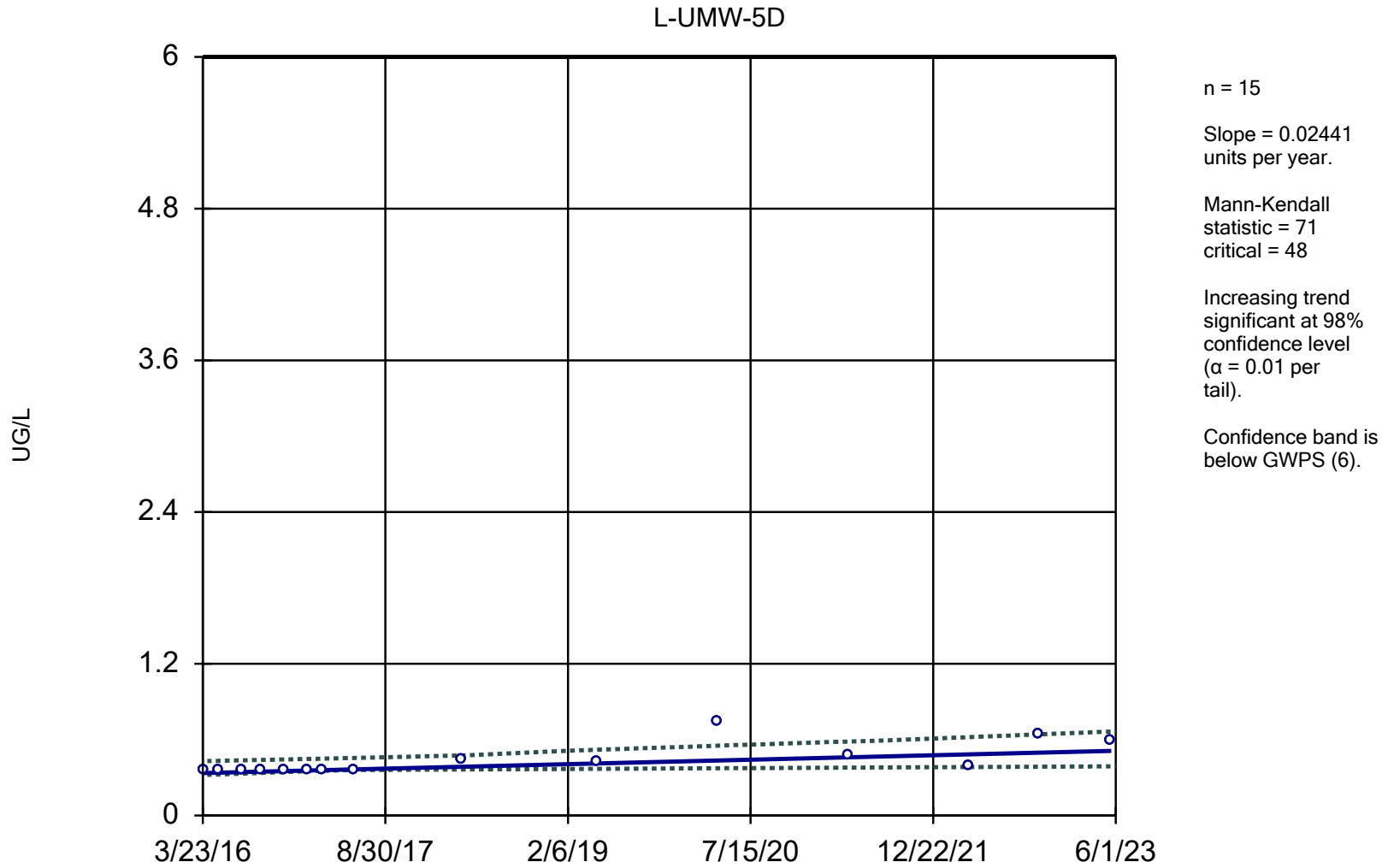
Mann-Kendall
statistic = 71
critical = 48

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

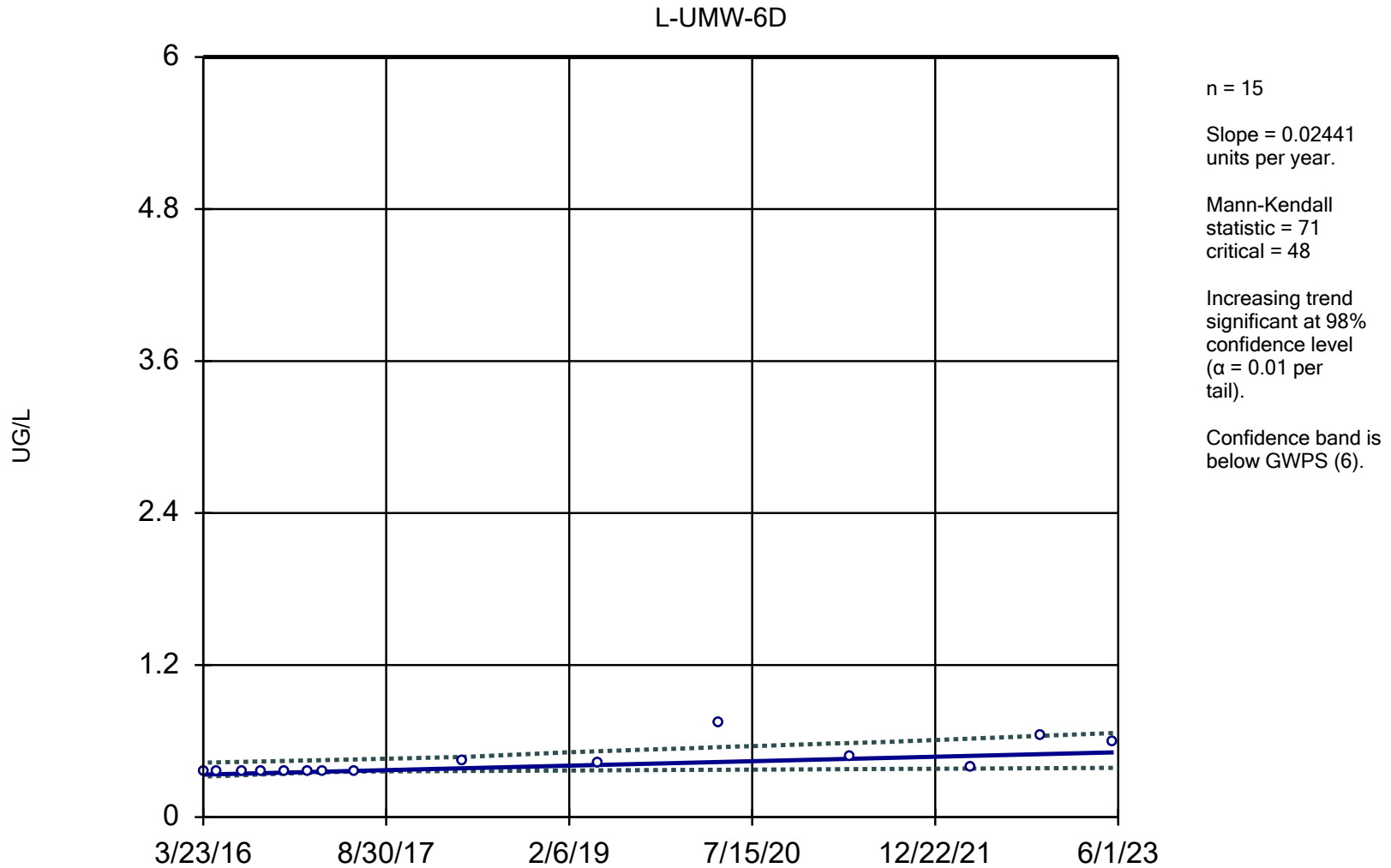
Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:45 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

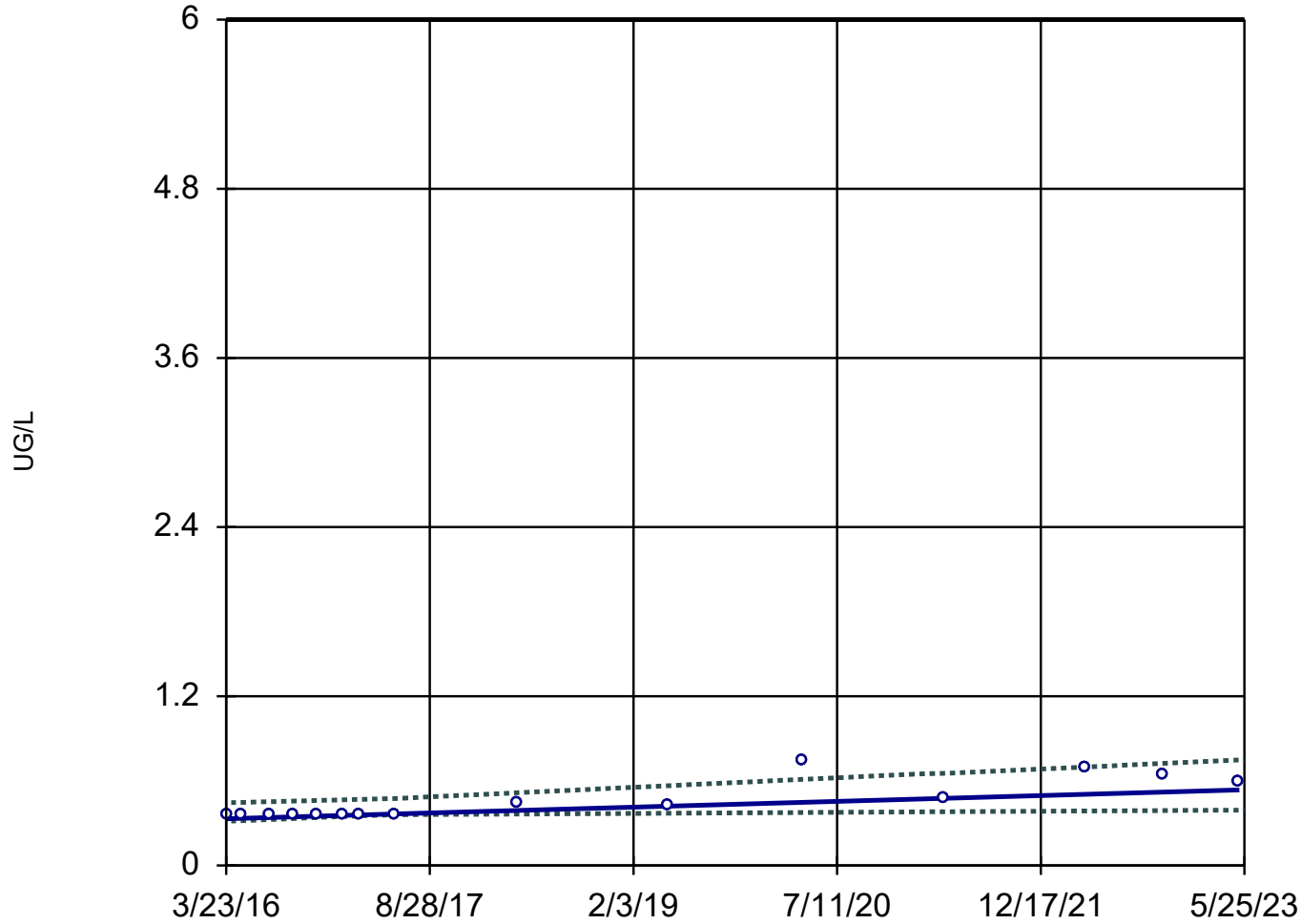
Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 15

Slope = 0.02868
units per year.

Mann-Kendall
statistic = 73
critical = 48

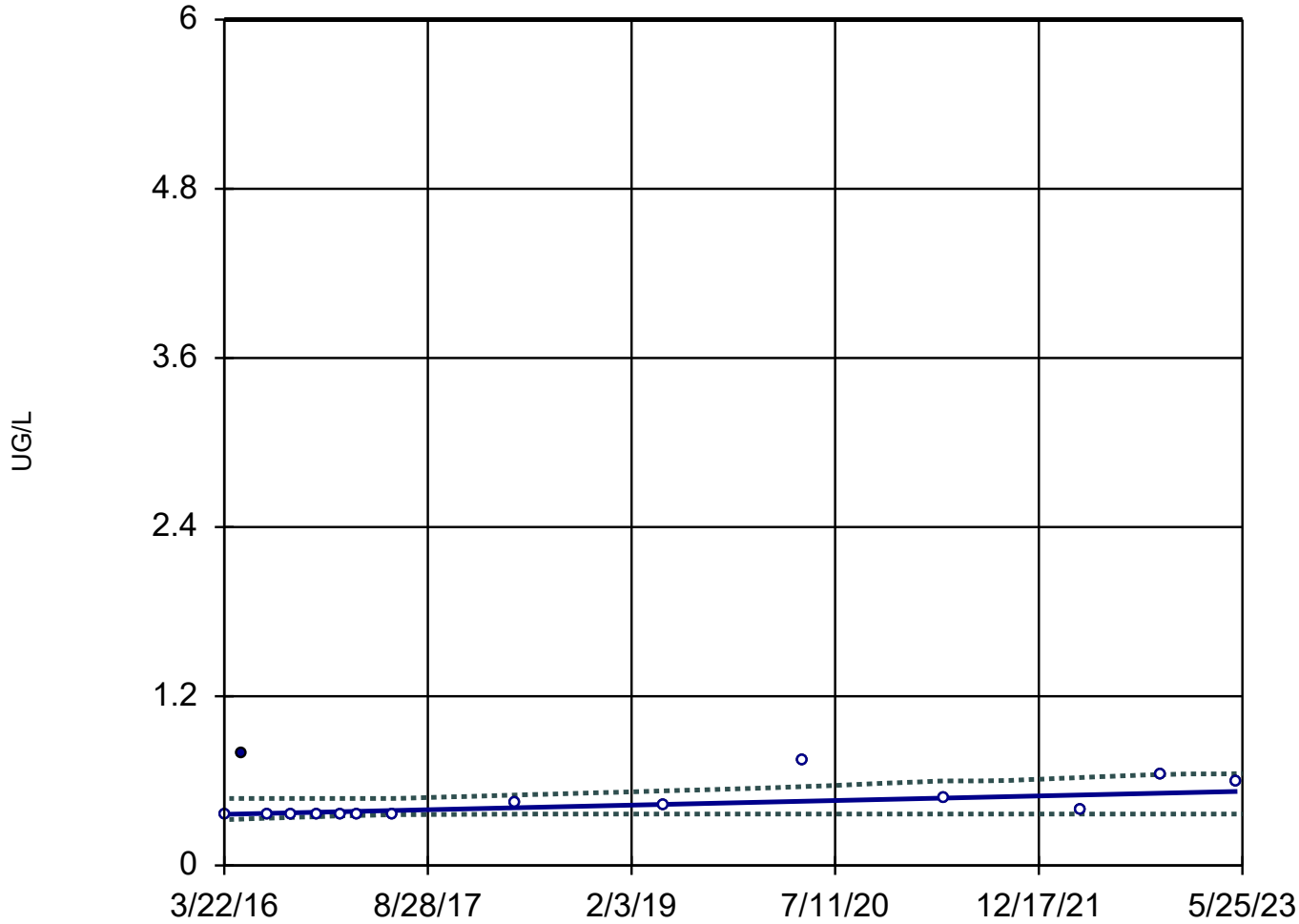
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-8D



n = 15

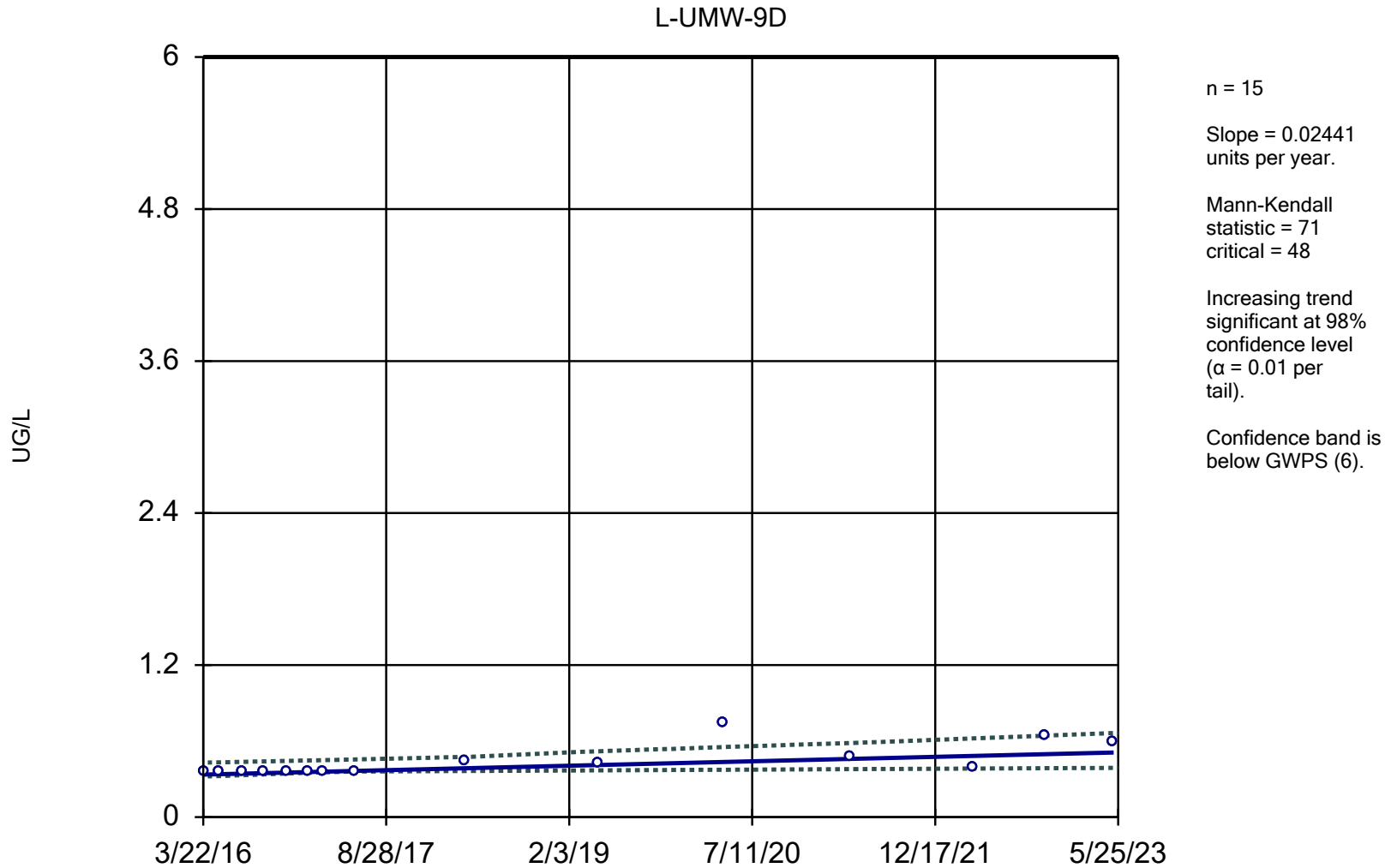
Slope = 0.02264
units per year.

Mann-Kendall
statistic = 50
critical = 48

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

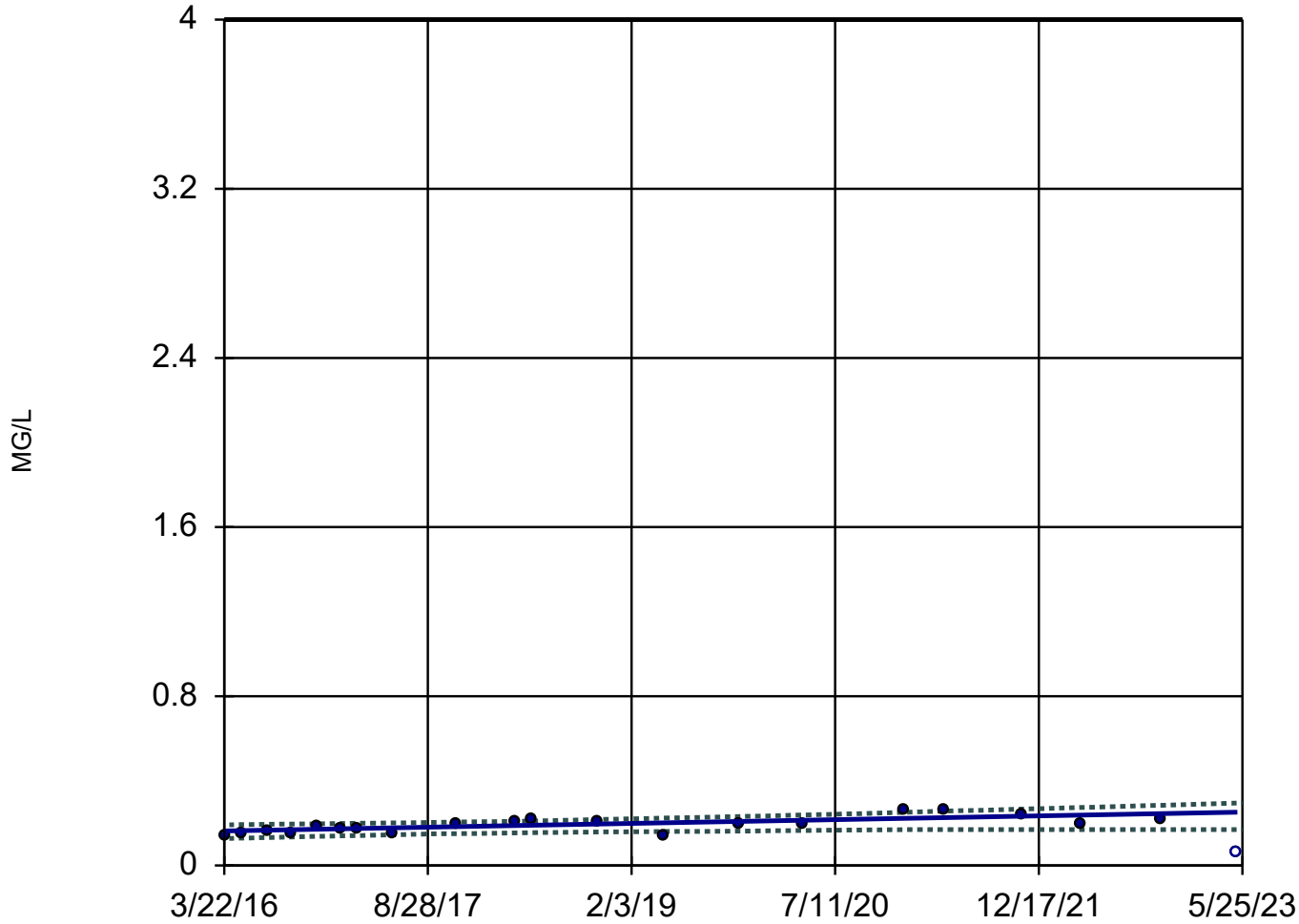
Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-9D



n = 21

Slope = 0.01238
units per year.

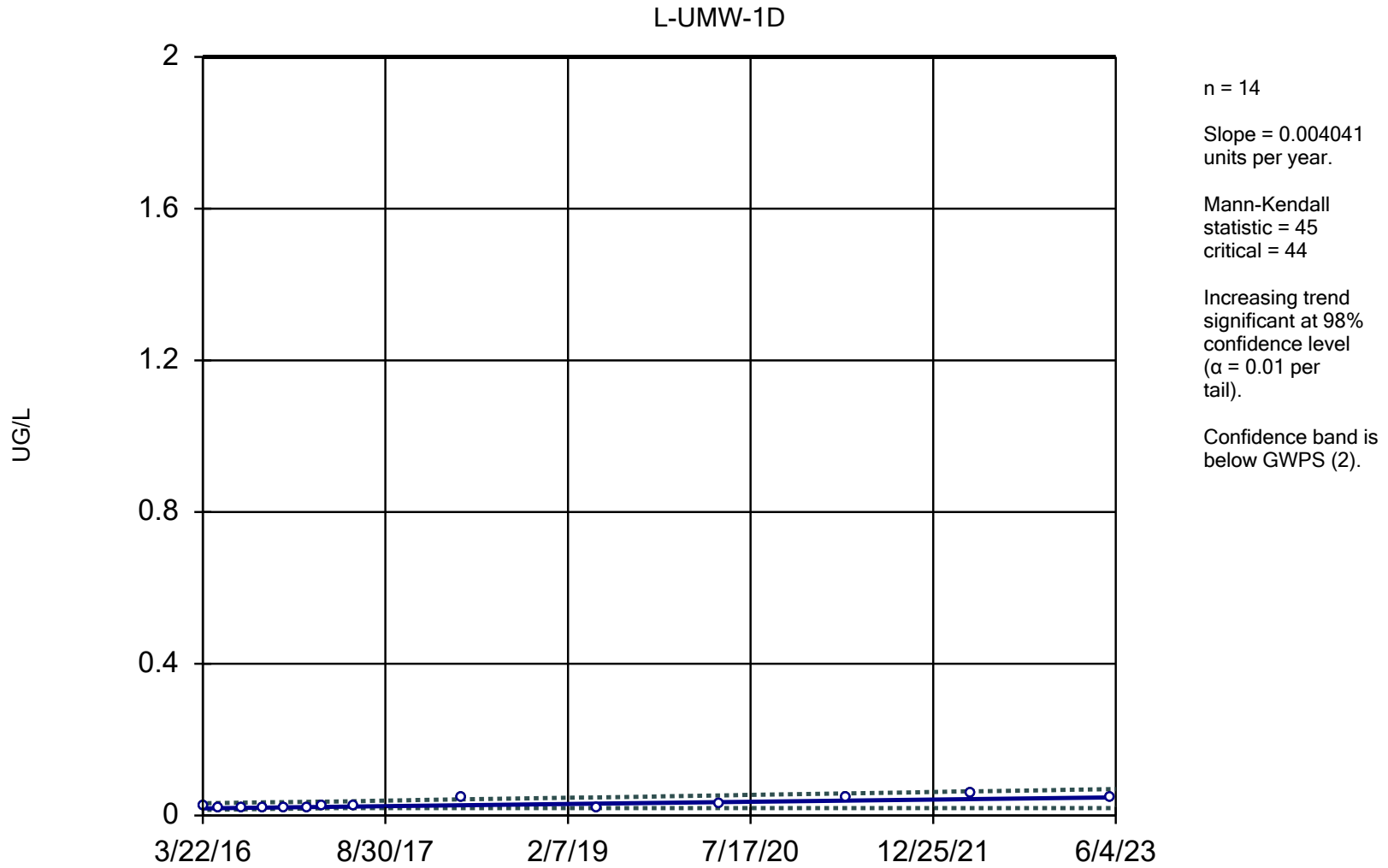
Mann-Kendall
statistic = 82
critical = 78

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (4).

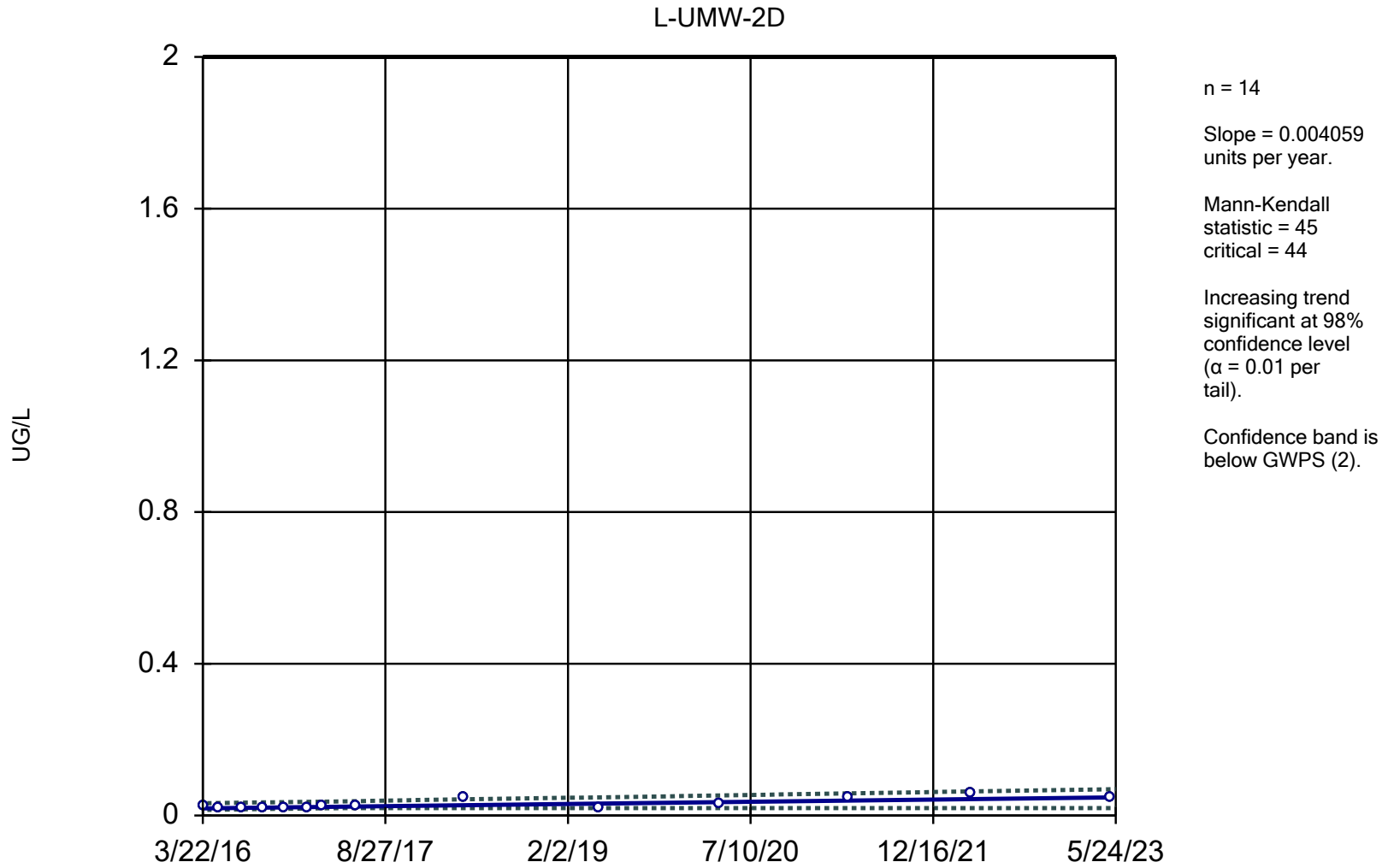
Constituent: FLUORIDE, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



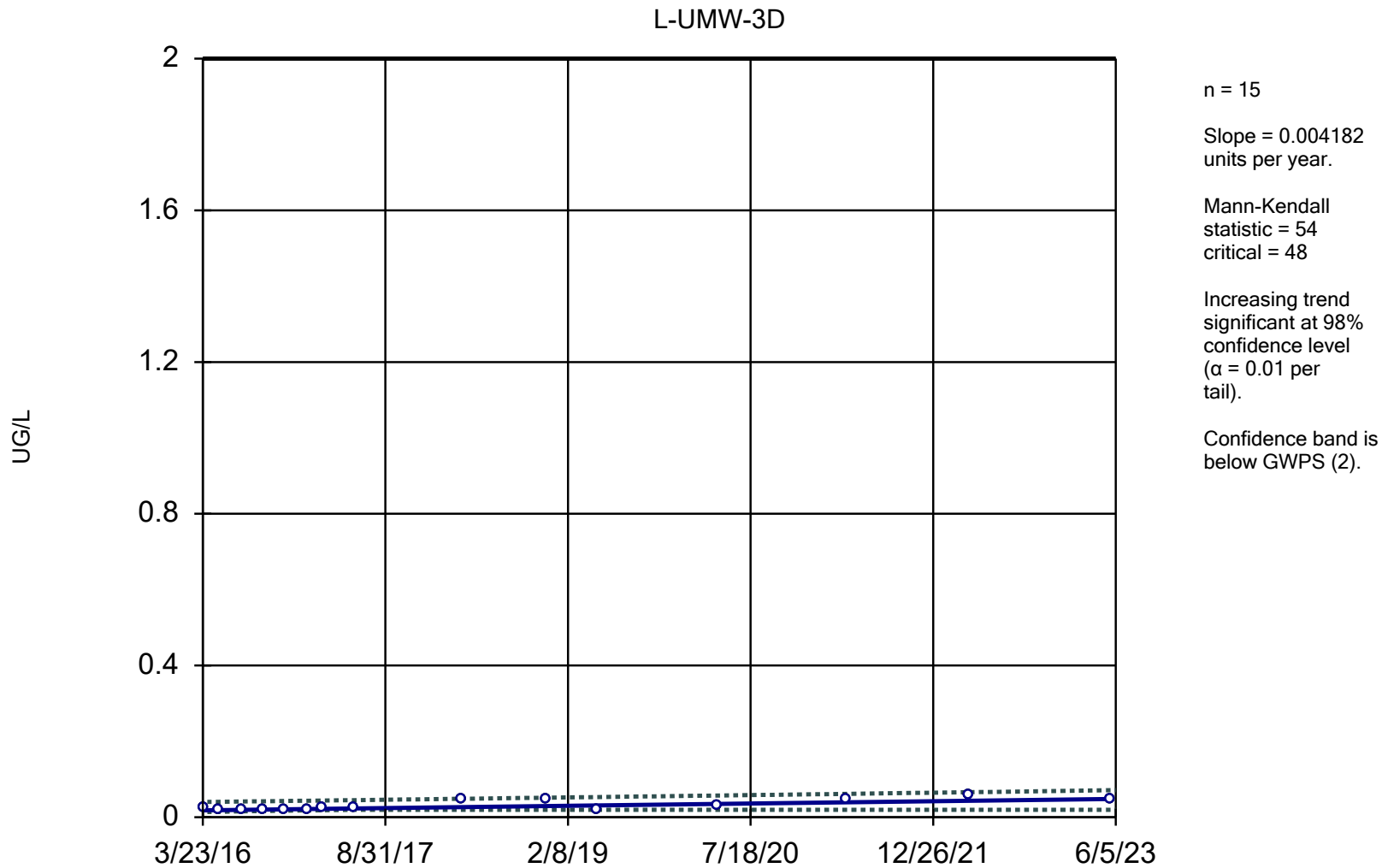
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



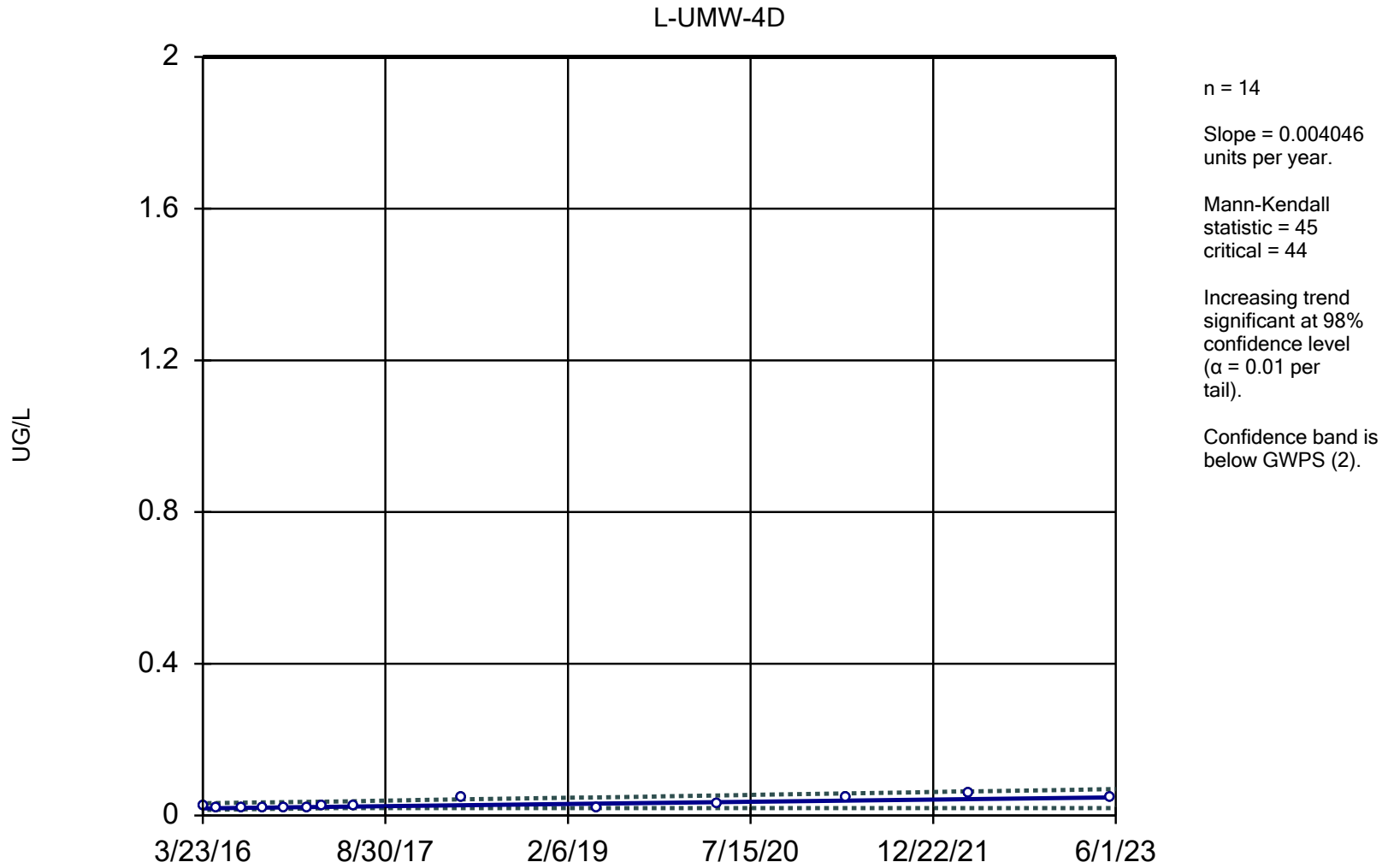
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



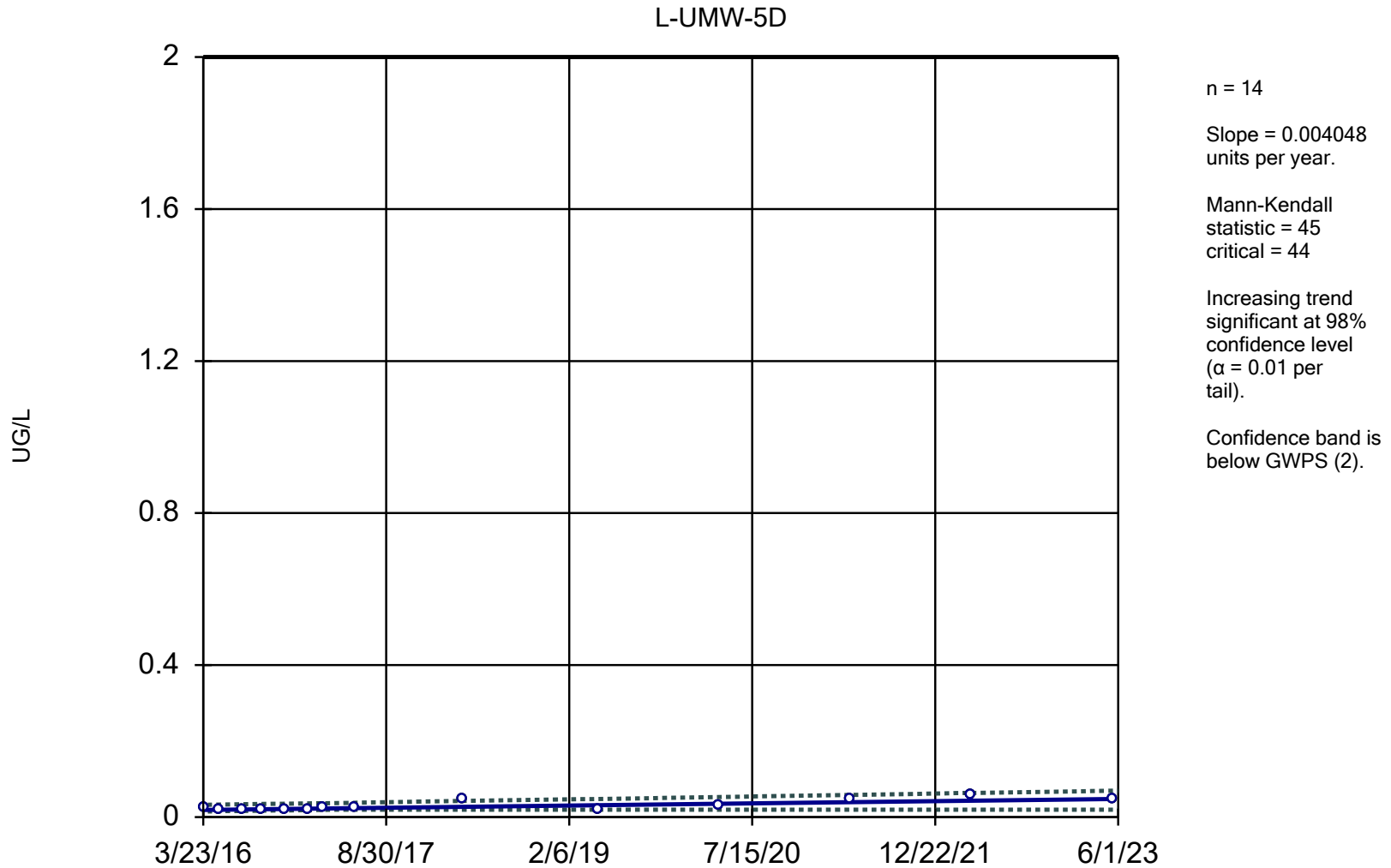
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



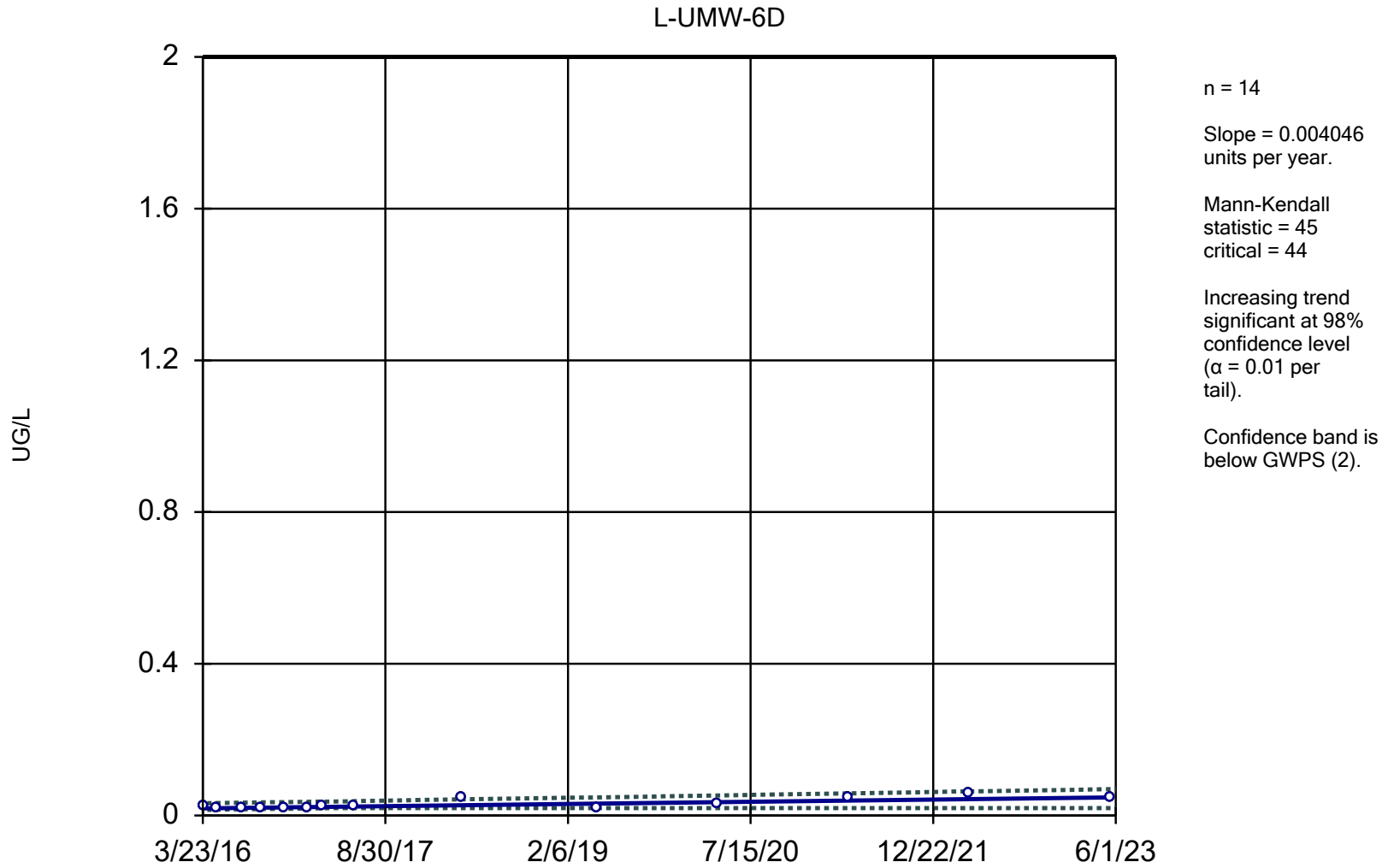
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



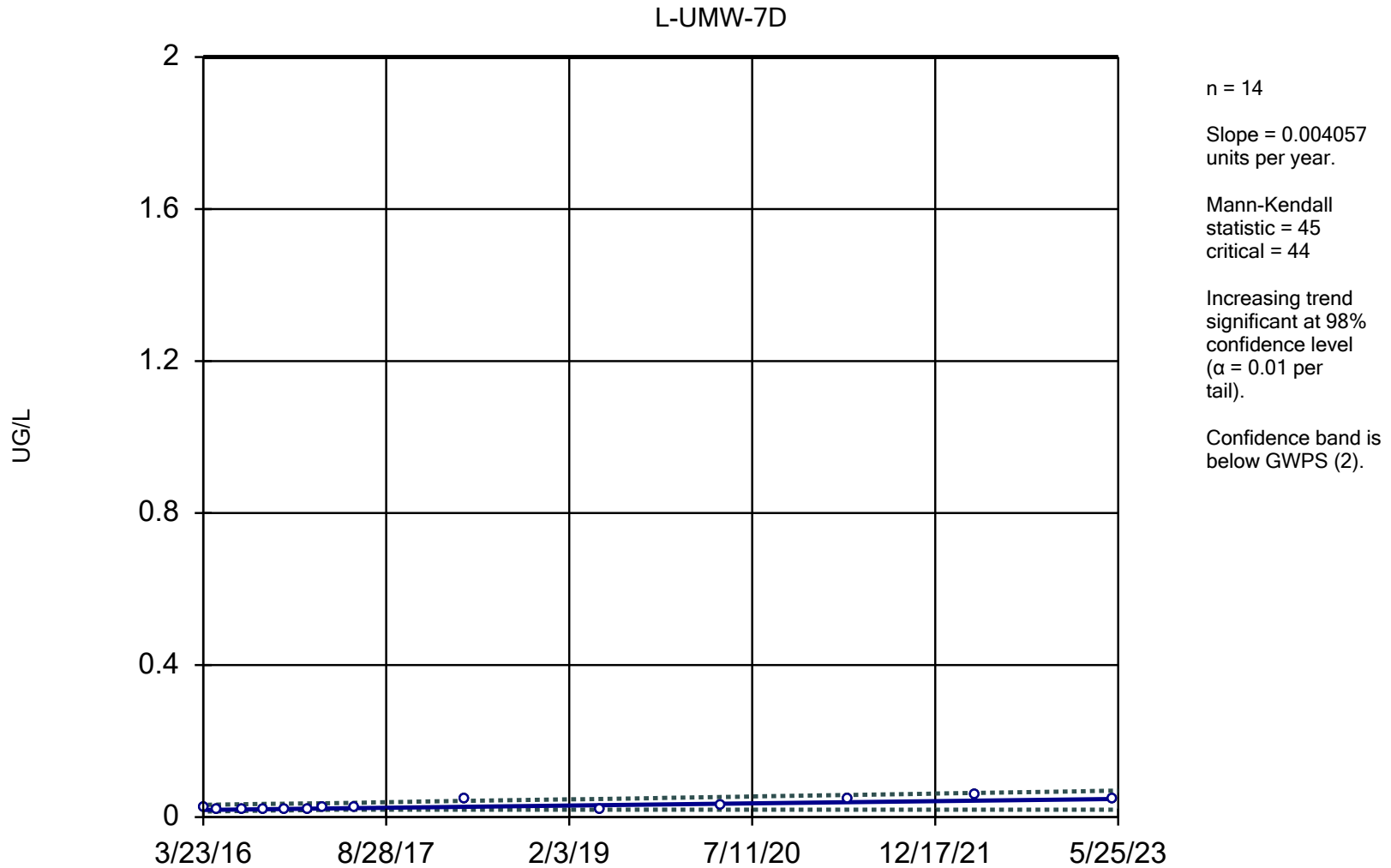
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



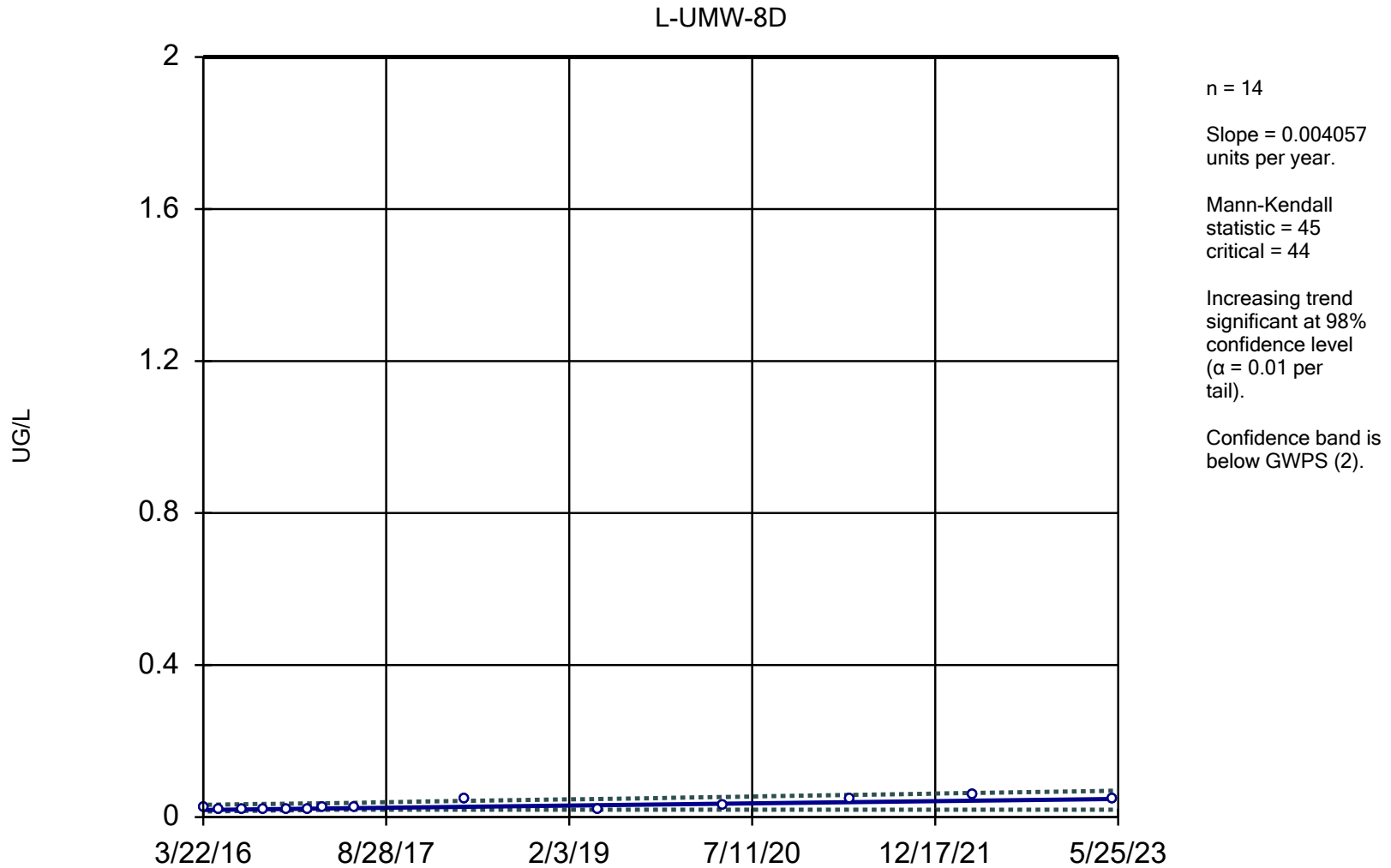
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



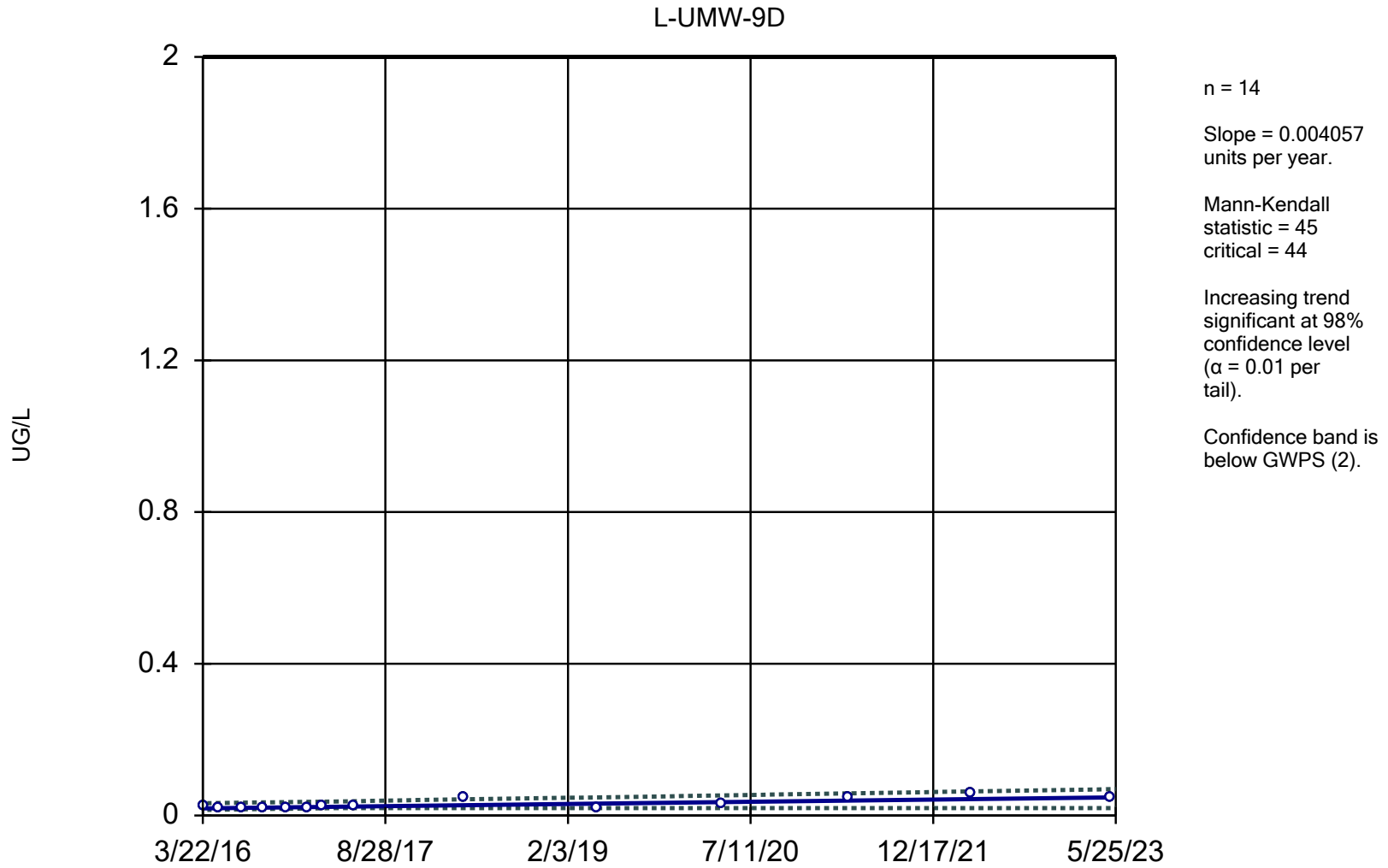
Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

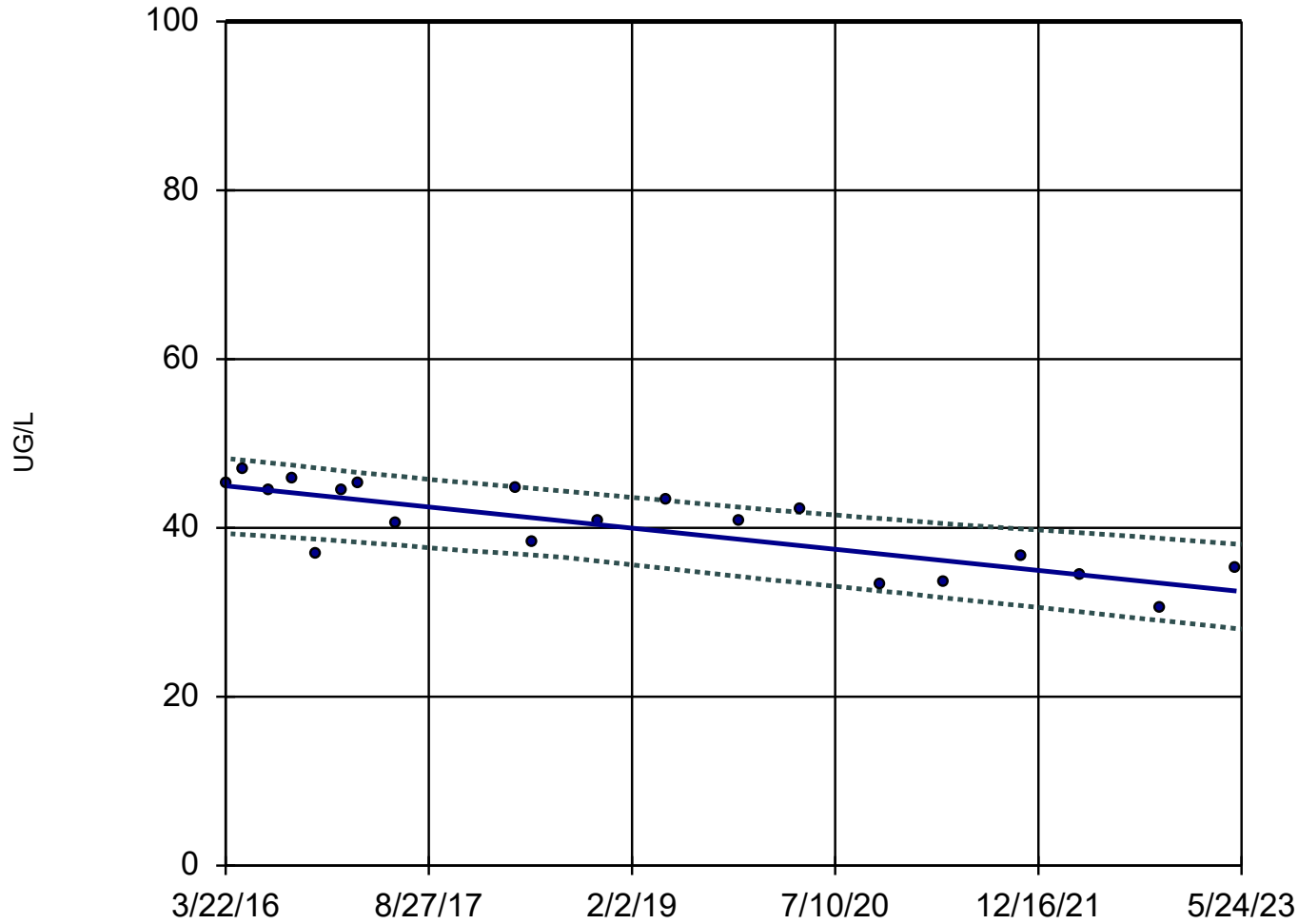
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 20

Slope = -1.747
units per year.

Mann-Kendall
statistic = -112
critical = -73

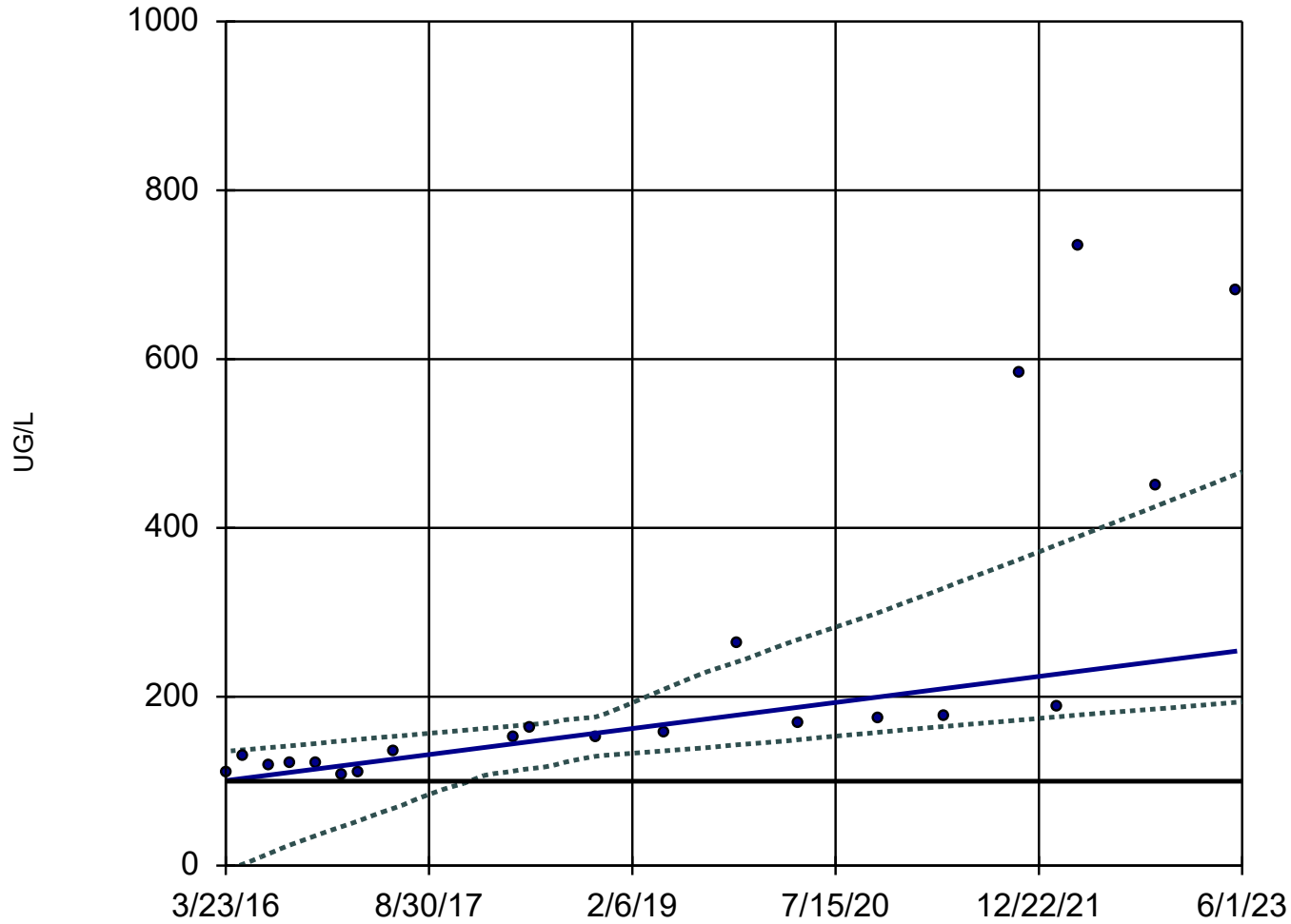
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/9/2023 11:46 AM View: Assessment Monitoring
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-5D



n = 21

Slope = 21.45
units per year.

Mann-Kendall
statistic = 164
critical = 78

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 12/23/17.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/9/2023 1:23 PM View: Assessment Monitoring

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/9/2023, 1:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.004516	45	48	No	15	86.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.0044	49	48	Yes	15	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.004391	37	53	No	16	87.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.00433	38	48	No	15	93.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.001472	9	48	No	15	60	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.004327	32	48	No	15	93.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.004408	49	48	Yes	15	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.0044	49	48	Yes	15	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.004522	63	48	Yes	15	93.33	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-1D	2.666	87	68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-2D	-0.1711	-102	-73	Yes	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-3D	0.5535	59	68	No	19	5.263	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-4D	0	5	73	No	20	35	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-5D	-0.2766	-21	-73	No	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-6D	1.252	45	68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-7D	1.522	119	73	Yes	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-8D	-0.2642	-34	-73	No	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-9D	-0.6555	-58	-73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-1D	20.64	110	73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-2D	1.541	20	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-3D	-4.182	-45	-78	No	21	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-4D	2.827	47	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-5D	0.518	12	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-6D	-5.278	-84	-73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-7D	-10.17	-85	-73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-8D	-27.78	-133	-73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-9D	-3.01	-52	-73	No	20	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0	3	44	No	14	92.86	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0	-10	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0	13	44	No	14	85.71	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0	-7	-44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.000...	27	44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.000...	27	44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.008229	43	48	No	15	60	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0.002224	27	44	No	14	92.86	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.005314	31	44	No	14	78.57	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.01878	38	44	No	14	64.29	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0.001471	19	44	No	14	85.71	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.000...	27	44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.000...	27	44	No	14	100	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.01297	15	48	No	15	53.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0	4	53	No	16	68.75	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0	11	58	No	17	76.47	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	0	-3	-48	No	15	73.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0	1	53	No	16	75	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/9/2023, 1:21 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	-0.00...	-13	-53	No	16	62.5	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	-0.00...	-10	-53	No	16	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	-0.01125	-15	-53	No	16	62.5	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0	-1	-53	No	16	68.75	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-1D	0.02661	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-2D	0.02431	71	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-3D	0.02612	81	53	Yes	16	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-4D	0.02441	71	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-5D	0.02441	71	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-6D	0.02441	71	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-7D	0.02868	73	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-8D	0.02264	50	48	Yes	15	93.33	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-9D	0.02441	71	48	Yes	15	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.003944	32	89	No	23	8.696	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	-0.00...	-39	-84	No	22	13.64	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0	-4	-101	No	25	32	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0.002062	6	89	No	23	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.006437	32	84	No	22	27.27	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	-0.00872	-34	-78	No	21	28.57	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	-0.01157	-61	-101	No	25	8	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.01929	87	89	No	23	8.696	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.01238	82	78	Yes	21	4.762	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-1D	0.04922	10	44	No	14	71.43	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-2D	0.1489	30	44	No	14	78.57	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-3D	0.1213	38	48	No	15	80	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-4D	0.128	42	44	No	14	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-5D	0.09981	19	44	No	14	85.71	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-6D	0.1011	19	44	No	14	85.71	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-7D	0.1503	40	44	No	14	78.57	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-8D	0.1489	35	44	No	14	78.57	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-9D	0	3	44	No	14	57.14	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-1D	0.5697	69	73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-2D	-0.1872	-14	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-3D	-0.1084	-12	-78	No	21	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-4D	-0.7436	-71	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-5D	-0.1162	-4	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-6D	0.7088	53	73	No	20	5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-7D	0.9919	69	73	No	20	5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-8D	-0.5537	-29	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-9D	-0.05137	-9	-73	No	20	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.004041	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.004059	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.004182	54	48	Yes	15	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.004046	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.004048	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.004046	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.004057	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.004057	45	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.004057	45	44	Yes	14	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	0.3051	59	73	No	20	25	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/9/2023, 1:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	-1.747	-112	-73	Yes	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	4.593	27	78	No	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	-0.9613	-3	-73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	21.45	164	78	Yes	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	-8.898	-45	-73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	-4.785	-18	-73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	0.5688	55	63	No	18	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	-7.2e-9	-3	-73	No	20	45	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-1D	0.004767	10	68	No	19	15.79	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-2D	0.03439	14	73	No	20	30	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-3D	0.000...	2	78	No	21	71.43	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-4D	0.03214	38	73	No	20	75	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-5D	0.000...	1	63	No	18	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-6D	-0.01239	-10	-73	No	20	55	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-7D	0.01542	14	73	No	20	70	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-8D	-0.1171	-66	-73	No	20	50	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-9D	-0.02299	-42	-73	No	20	90	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0	5	58	No	17	94.12	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0	5	58	No	17	94.12	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0	-13	-63	No	18	61.11	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0	11	58	No	17	94.12	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.003209	45	58	No	17	58.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0	-5	-58	No	17	23.53	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0	3	58	No	17	82.35	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0	3	58	No	17	94.12	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0	1	58	No	17	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-1D	-0.02686	-39	-44	No	14	85.71	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-2D	-0.02634	-29	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-3D	-0.02552	-32	-48	No	15	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-4D	-0.02627	-29	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-5D	-0.02627	-29	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-6D	-0.02689	-39	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-7D	-0.02632	-29	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-8D	-0.02633	-29	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-9D	-0.02633	-29	-44	No	14	100	n/a	n/a	0.02	NP

Appendix D

October 2022 Corrective Action Statistical Evaluation



TECHNICAL MEMORANDUM

DATE February 20, 2023

Project No. 153140604

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram (WSP), Mark Haddock
(Rocksmith Geoengineering, LLC), Mark
Sandfort (WSP)

EMAIL Jeffrey.Ingram@wsp.com

CORRECTIVE ACTION STATISTICAL EVALUATION LCPA SURFACE IMPOUNDMENT LABADIE ENERGY CENTER, FRANKLIN COUNTY, MISSOURI

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the October 2022 sampling event for the LCPA Surface Impoundment at the Labadie Energy Center located in Franklin County, Missouri. As outlined in the Remedy Selection Report for the LCPA, Corrective Action at the LCPA consists of two phases:

- 1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
- 2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations to document concentration trends following Corrective Action.

Phase 1 of Corrective Action commenced on September 28, 2019, and was substantially completed on December 30, 2020, with the installation of the low permeability cover system. Included in this memorandum is a summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A**).

The initial Corrective Action sampling event was completed in April 2020, and seven (7) sampling events have been completed in total as a part of the Corrective Action Program at the LEC. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time were collected during active conditions at the LCPA, prior to cessation of CCR disposal in the LCPA and are not representative of groundwater conditions since the initiation of closure. Several constituents were reported at concentrations below the practical quantitation limit (PQL) during the April 2020 sampling event including beryllium, cadmium, cobalt, lead, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling event, they were not re-sampled/tested during the subsequent 2020 semi-annual sampling events in May and November 2020. Like the April 2020 sampling event, the samples collected during the April 2021 event were analyzed for all Appendix IV parameters, and antimony, beryllium, cadmium, cobalt, lead, mercury, and thallium were not detected above the PQL. Therefore, these analytes were not tested for during the subsequent November 2021 sampling event. Similarly, antimony, beryllium, cadmium, chromium, lead, mercury, and thallium were not detected above the

PQL during the April 2022 sampling event. Thus, these analytes were not tested for during the subsequent October 2022 sampling event.

Only three results are available for beryllium, cadmium, lead, mercury, and thallium; thus, confidence intervals could not be calculated because Corrective Action statistical analyses require a minimum of four (4) sampling events. Each of the three results collected during the Corrective Action monitoring period for beryllium, cadmium, lead, mercury, and thallium are below the PQL. As a result, beryllium, cadmium, lead, mercury, and thallium are not evaluated in this statistical evaluation.

The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plans (CAGMP) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis included results collected as a part of the Corrective Action monitoring program. The following outliers were removed prior to the calculation of confidence limits.

- Antimony
 - TP-4D at 1.0 microgram per liter ($\mu\text{g/L}$) on 4/15/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent antimony results at the well and is an outlier.
- Cobalt
 - BMW-1S at 1.9 $\mu\text{g/L}$ on 2/18/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent cobalt results at the well and is an outlier.
 - TP-1D at 6.9 $\mu\text{g/L}$ on 4/11/2022. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent cobalt results at the well and is an outlier.
- Fluoride
 - S-1 at 1.7 milligrams per liter (mg/L) on 4/11/2022. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent fluoride results at the well and is an outlier.
- Lithium
 - MW-33[D] at 25.3 $\mu\text{g/L}$ on 4/16/2021. The result is statistically lower than other values at the same well. The low result is not consistent with previous or subsequent lithium results at the well and is an outlier.
 - BMW-1S and BMW-2S at Non-Detect (ND) in November 2021. Analysis of the November 2021 sampling event data revealed that laboratory dilution was required for analysis of the samples. The sample dilutions caused the Method Detection Limit (MDL) to be greater than the Groundwater Protection Standard (GWPS). The samples were re-analyzed on 2/9/2022 and the resultant data is consistent with historical results. The diluted results from November 2021 are outliers.
 - BMW-2S, LMW-4S, LMW-8S, MW-24, and TP-4D at ND in February 2022. Analysis of the November 2021 sampling event data revealed that laboratory dilution was required for analysis of the samples. The sample dilutions caused the MDL to be greater than the GWPS. The samples

were re-analyzed on 2/9/2022 and the resultant data is not consistent with historical results. The re-analyzed results from February 2022 are outliers.

- Radium 226 + 228
 - AM-1S at 2.26 picocuries per liter (pCi/L) on 11/3/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent radium 226 + 228 results at the well and is an outlier.

An analysis of the outliers removed to-date was completed and several statistical outliers that were previously removed were added back into the data set prior to the calculation of confidence limits.

- Arsenic
 - LMW-7S at 6.8 µg/L on 11/5/2021. Was removed in April 2022 as an outlier because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.
- Barium
 - LMW-8S at 73.2 µg/L on 11/5/2020. Was removed in April 2022 as an outlier because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.
- Fluoride
 - LMW-7S at ND on 4/15/2021. Was removed in April 2022 as an outlier because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.
 - MW-26 at 0.29 mg/L on 4/16/2021. Was removed in April 2021 as an outlier because the result was statistically higher than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.
 - MW-33[D] at ND on 4/15/2020. Was removed in April 2021 as an outlier because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.

Following the identification and exclusion of outliers from the intrawell data sets, the second step in the statistical analysis was to calculate confidence intervals and compare those to the GWPS¹. As stated above, the confidence intervals shown in Appendix A are calculated based on results since April 2020. Cobalt at AM-1S and lithium at LMW-7S are new exceedances based on additional data from the October 2022 sampling event. The remaining exceedances are the same as those reported for the April 2022 sampling event. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at LMW-2S

¹ The GWPS is the same limit that was used during Assessment Monitoring period, which was the groundwater monitoring phase immediately prior to Corrective Action.

- Cobalt at AM-1S²
- Lithium at LMW-7S
- Molybdenum at LMW-2S, LMW-4S, LMW-8S³, AM-1D³, TP-2D³, TP-3D³, TP-3M, AMW-8³, MW-33[D]³, MW-34[D]³, MW-35[D]³
- Radium 226 + 228 at TP-1D³

Typically, following the calculation of confidence intervals, trend tests would be completed using the Sen's Slope / Mann Kendall analysis as outlined in the statistical analysis plan. However, Sen's Slope / Mann Kendall analysis require 8 independent sampling results to complete as outlined in the USEPA Unified Guidance. Since only 7 sampling events have occurred since the cessation of CCR disposal into the LCPA, the Sen's Slope / Mann Kendall test cannot be completed. Therefore, no constituent well pairs were determined to have a significant trend and no trend charts are included with this Technical Memorandum. However, a visual/qualitative review of the existing data was performed and those well/constituent combinations showing downward trends were identified (see note 3). The remaining well/constituent combinations are showing no specific trend or possibly slight upward trends. Based on the current sampling schedule, it is anticipated that eight sampling events will be available following the Spring 2023 sampling event, and trend analyses will be completed at that time.

Using corrective action statistical methods, GWPS exceedances are reported for arsenic, cobalt, lithium, molybdenum, and radium 226 + 228. However, variability in the initial groundwater sampling results during and directly after the closure of the LCPA is expected, especially at wells nearest the CCR unit where closure grading and disturbance activities were greatest. The concentrations reported in these preliminary results are expected to decrease over time as stabilization occurs following the December 2020 closure.

WSP appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314) 984-8800.

Sincerely,



Jeffrey Ingram

Senior Consultant, Geologist



Mark Sandfort, P.E., R.G.

Senior Engineering Principal

Attachments: Table 1 – LCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output

² Although these are exceedances using Corrective Action statistical methods (i.e. the upper confidence limit above the GWPS), no individual values are present above the GWPS. As more data is collected, and the dataset is refined, the degree of uncertainty for the confidence intervals is expected to decrease and these well-constituent pairs are expected to no longer be exceedances.

³ Based on visual (qualitative) review of the data, these data sets are showing an overall downward trend since April 2020.

**Table 1 - LCPA Groundwater Protection Standards
LCPA Surface Impoundment
Labadie Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring ⁷
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	44.2	44.2
Barium	µg/L	2000	2000	1290
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.3163
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	47.4	47.4
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	4.14
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.

6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.

7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.

8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.

9. GWPS and background values calculated using results collected through February 2021 from monitoring wells BMW-1D and BMW-2D.

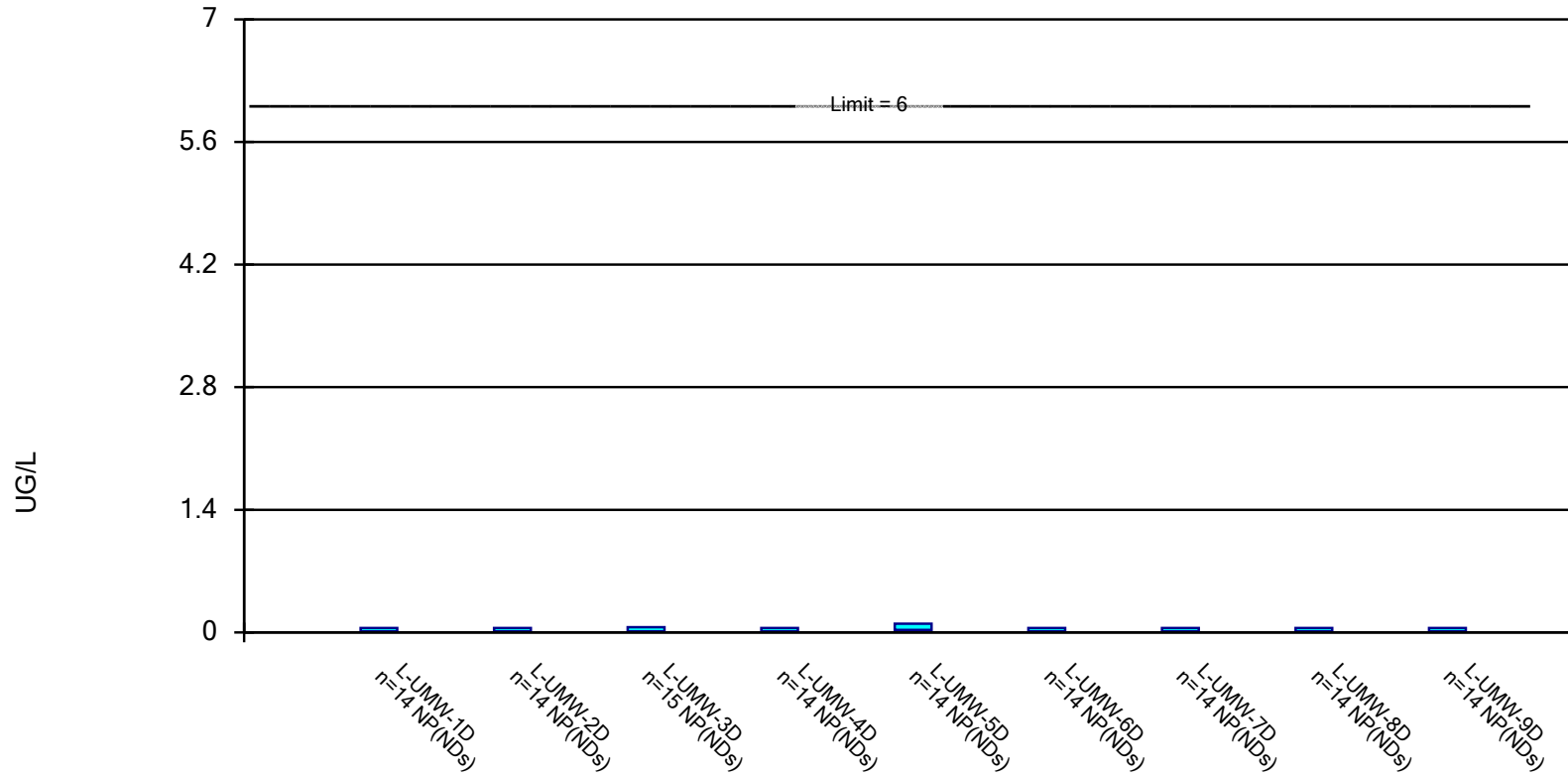
Prepared by: JSI
Checked by: EMS
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

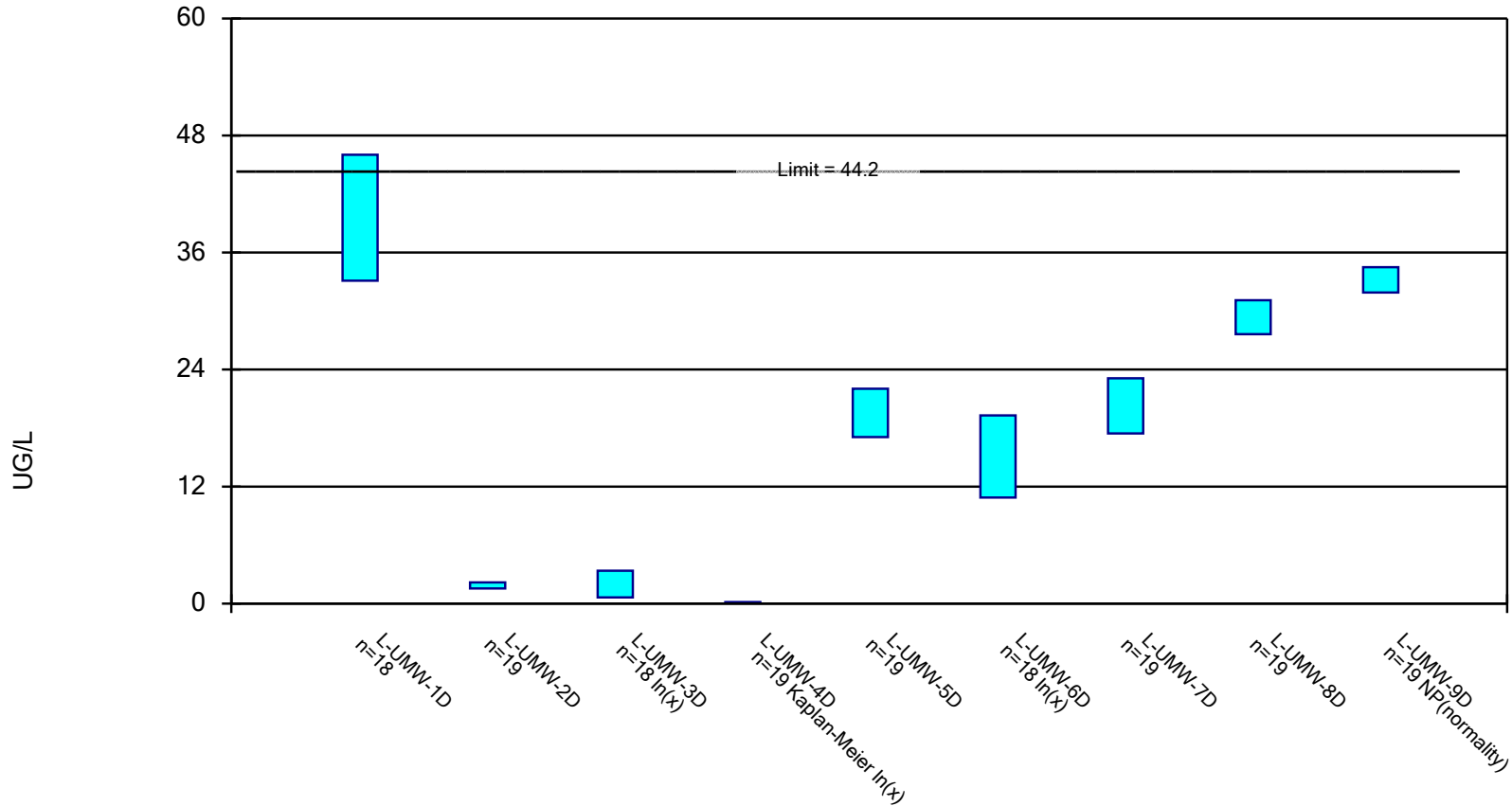


Constituent: ANTIMONY, TOTAL Analysis Run 2/3/2023 9:00 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

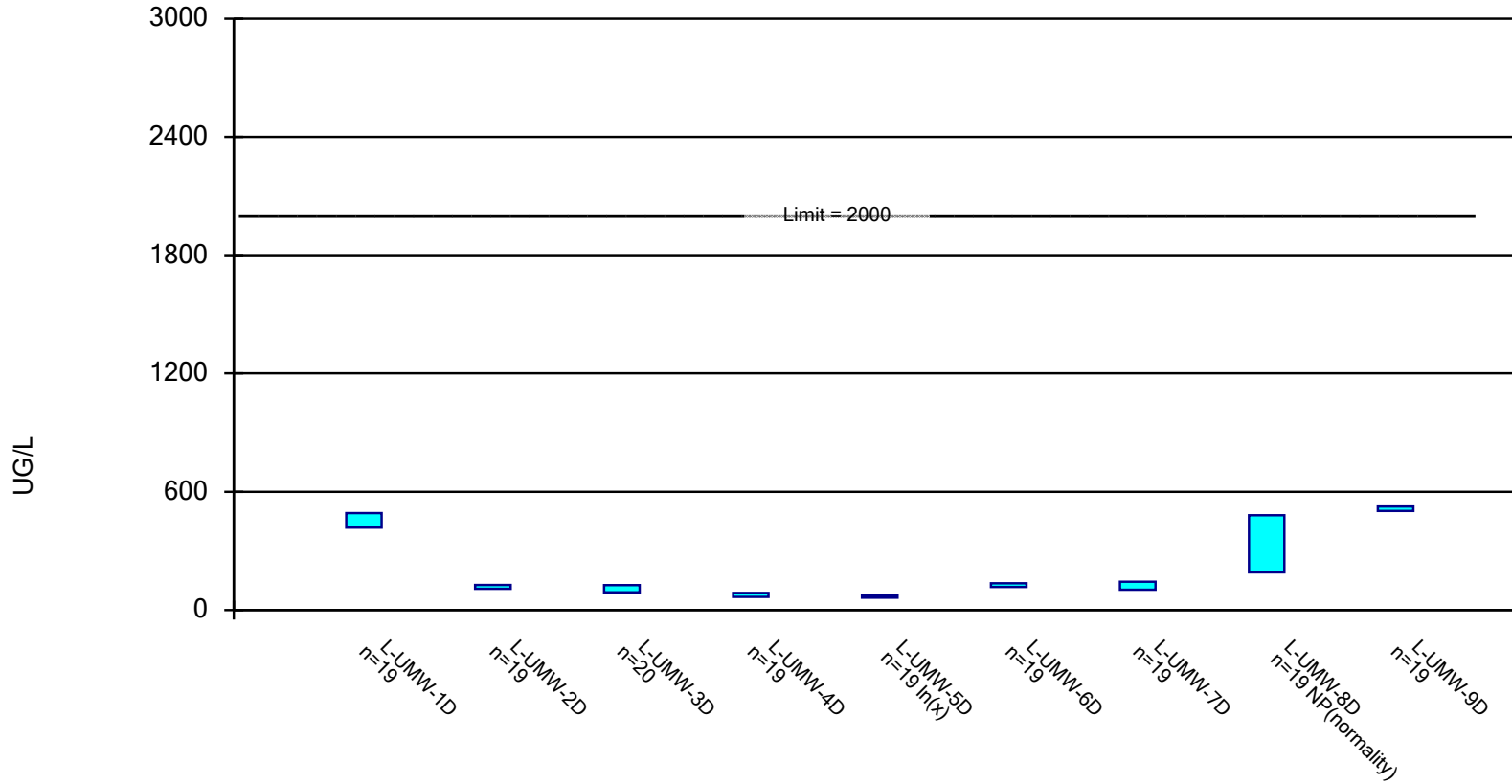


Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:00 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

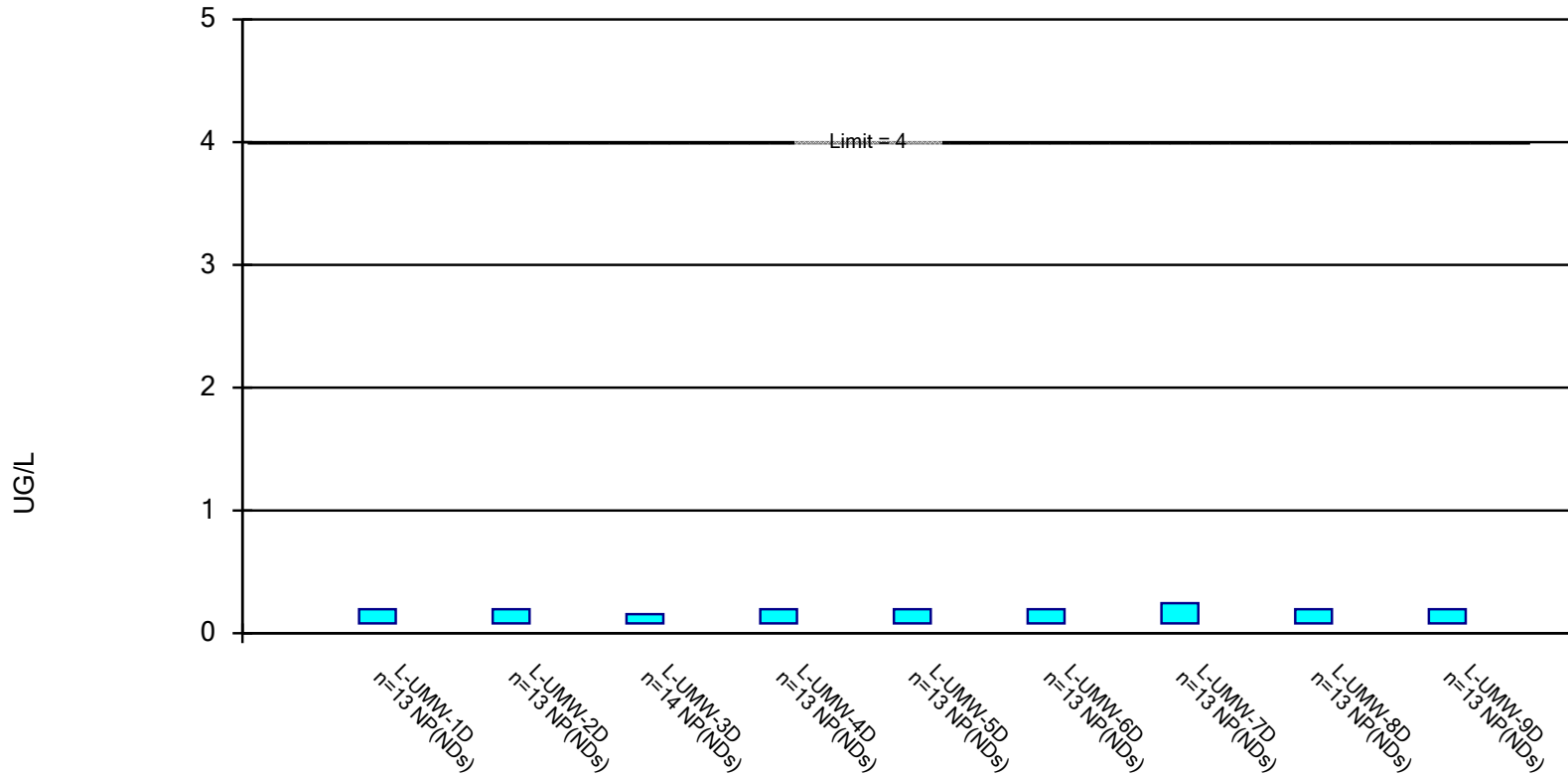


Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

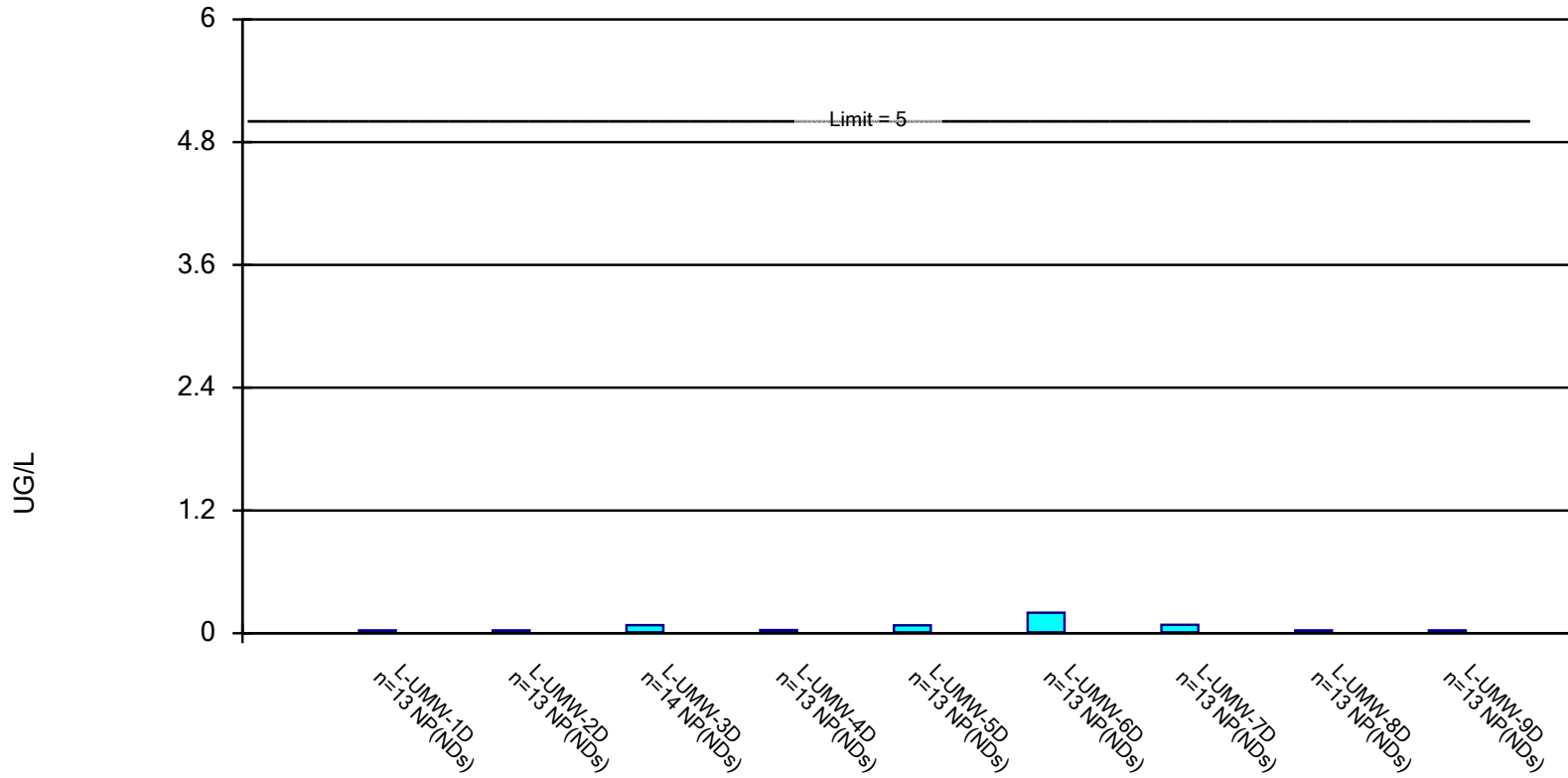


Constituent: BERYLLIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

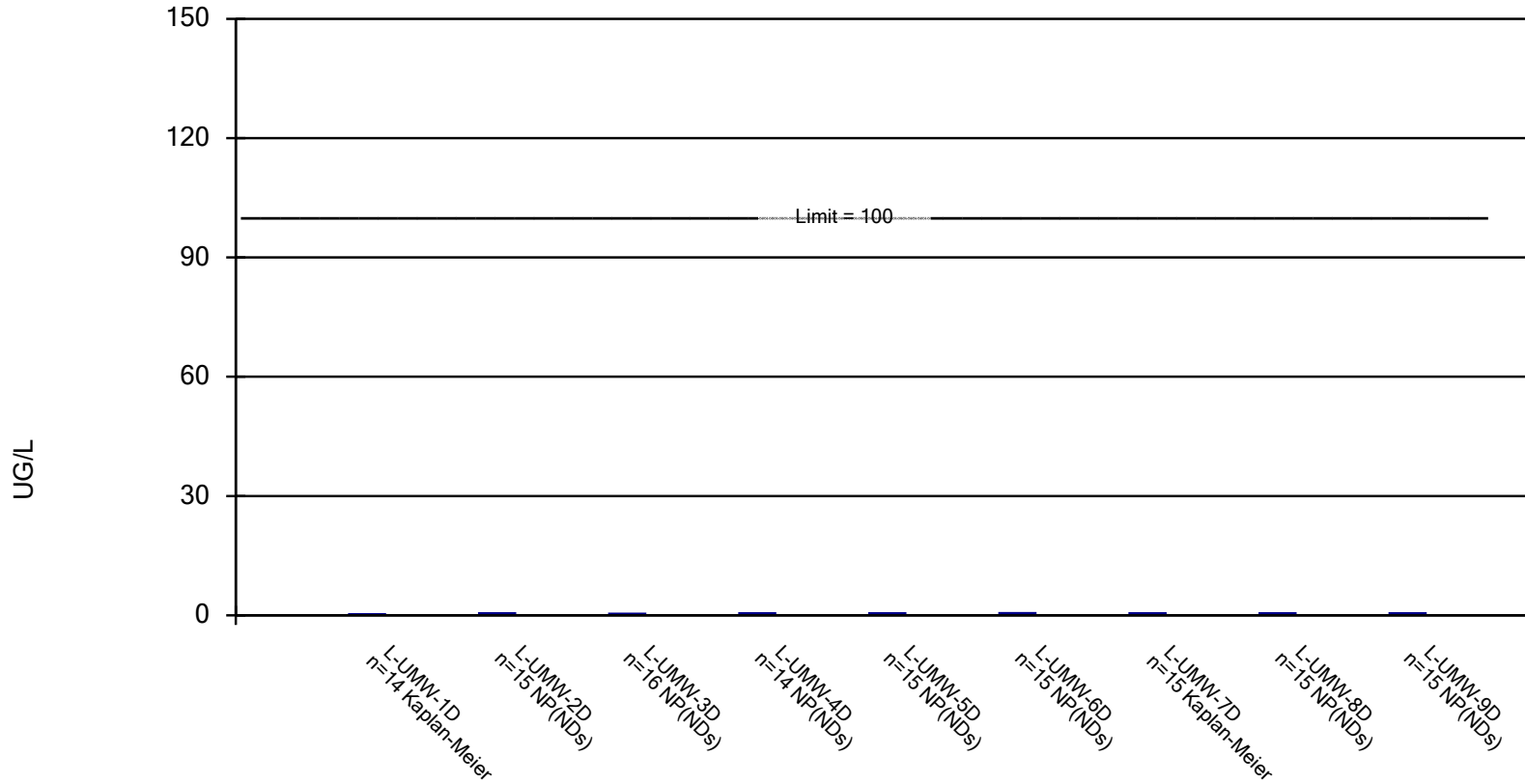


Constituent: CADMIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

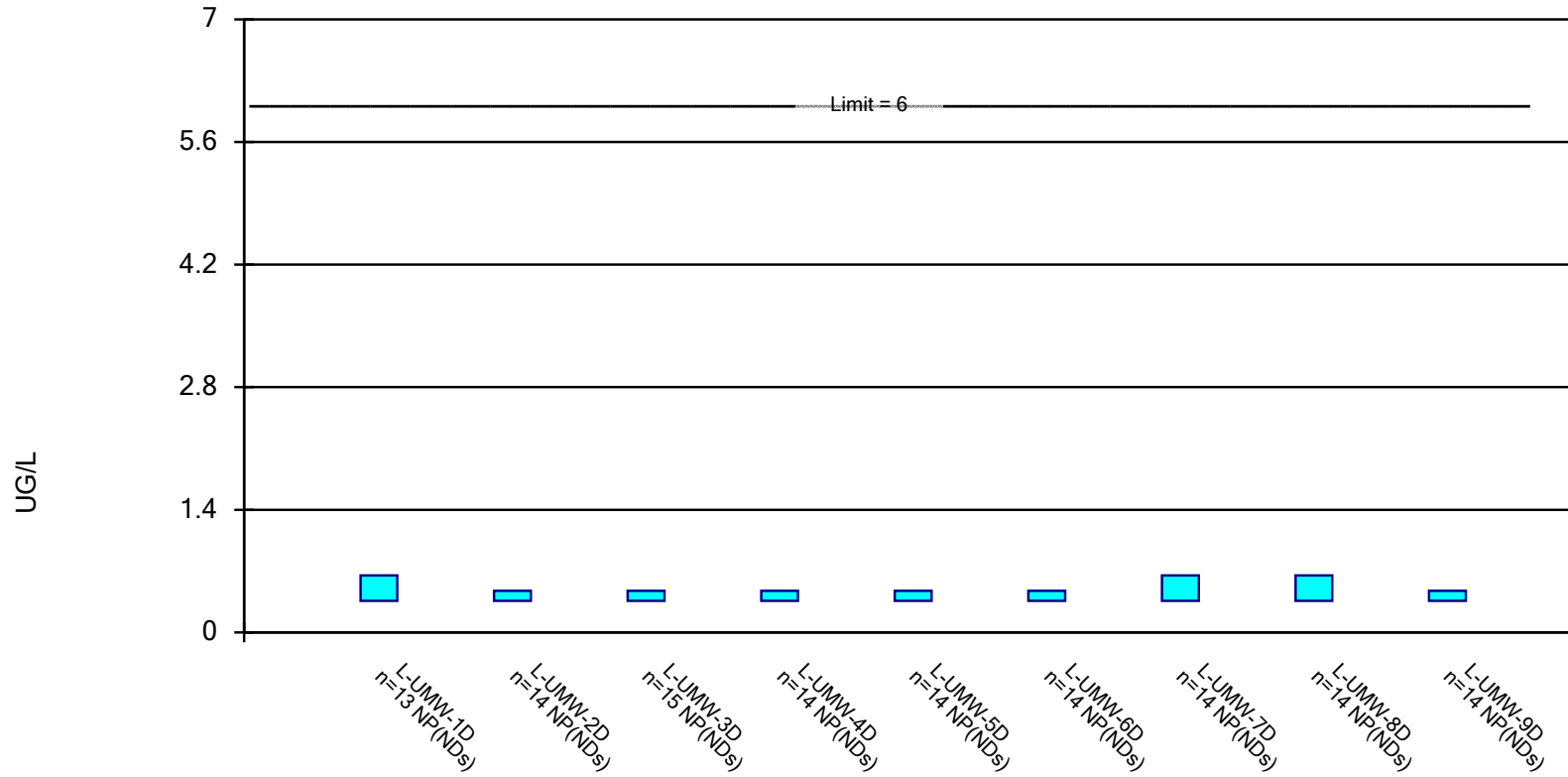


Constituent: CHROMIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

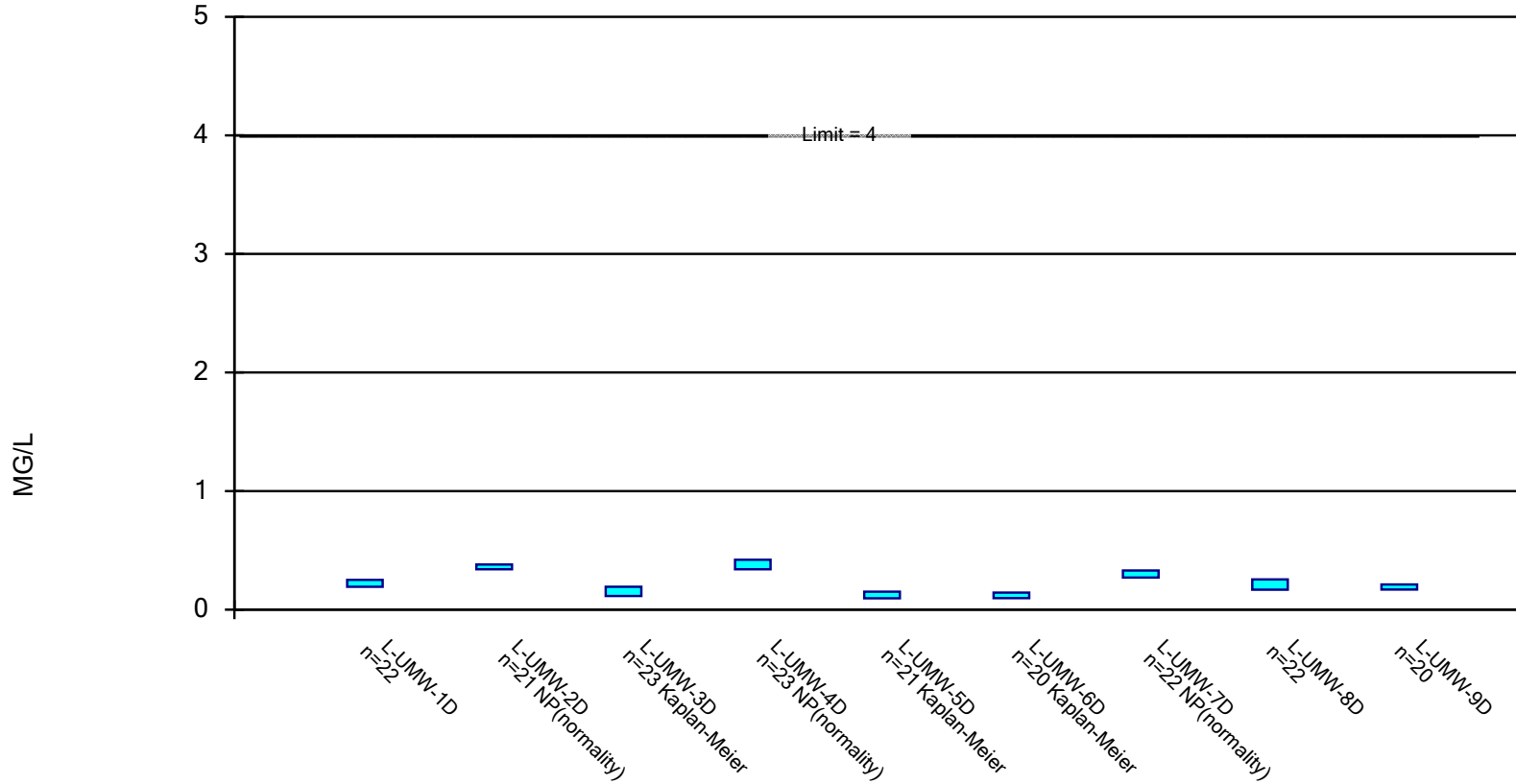


Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

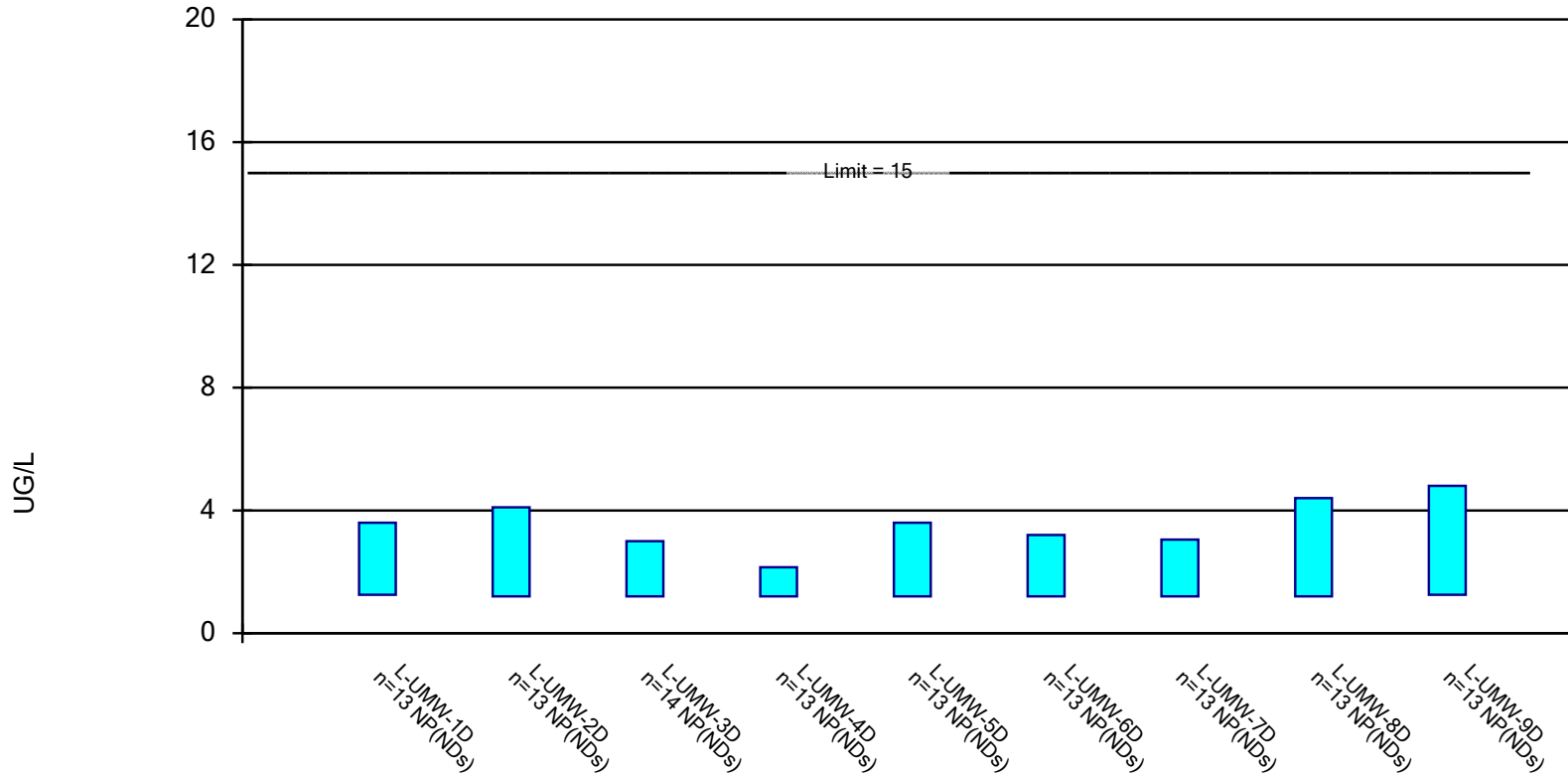


Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

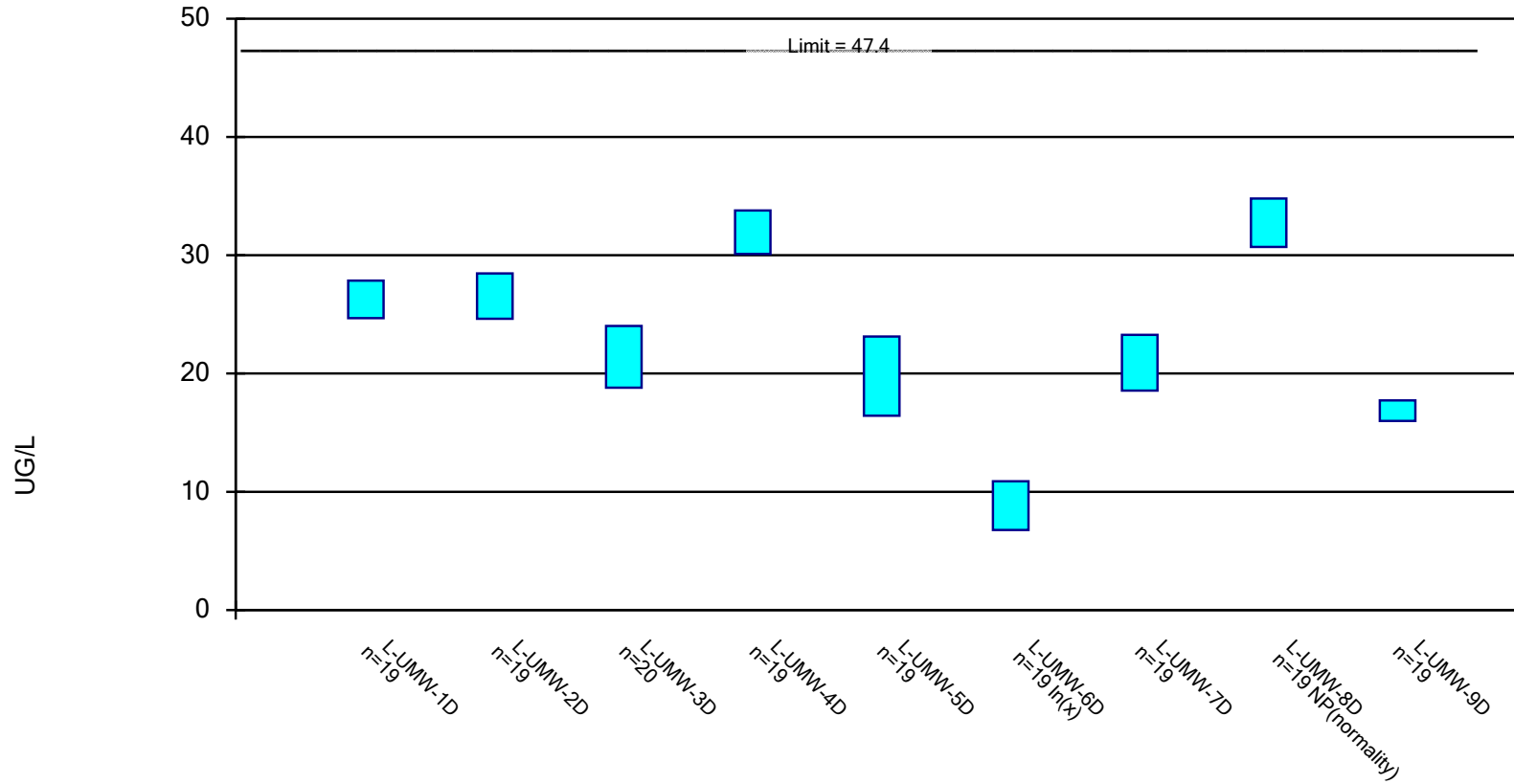


Constituent: LEAD, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

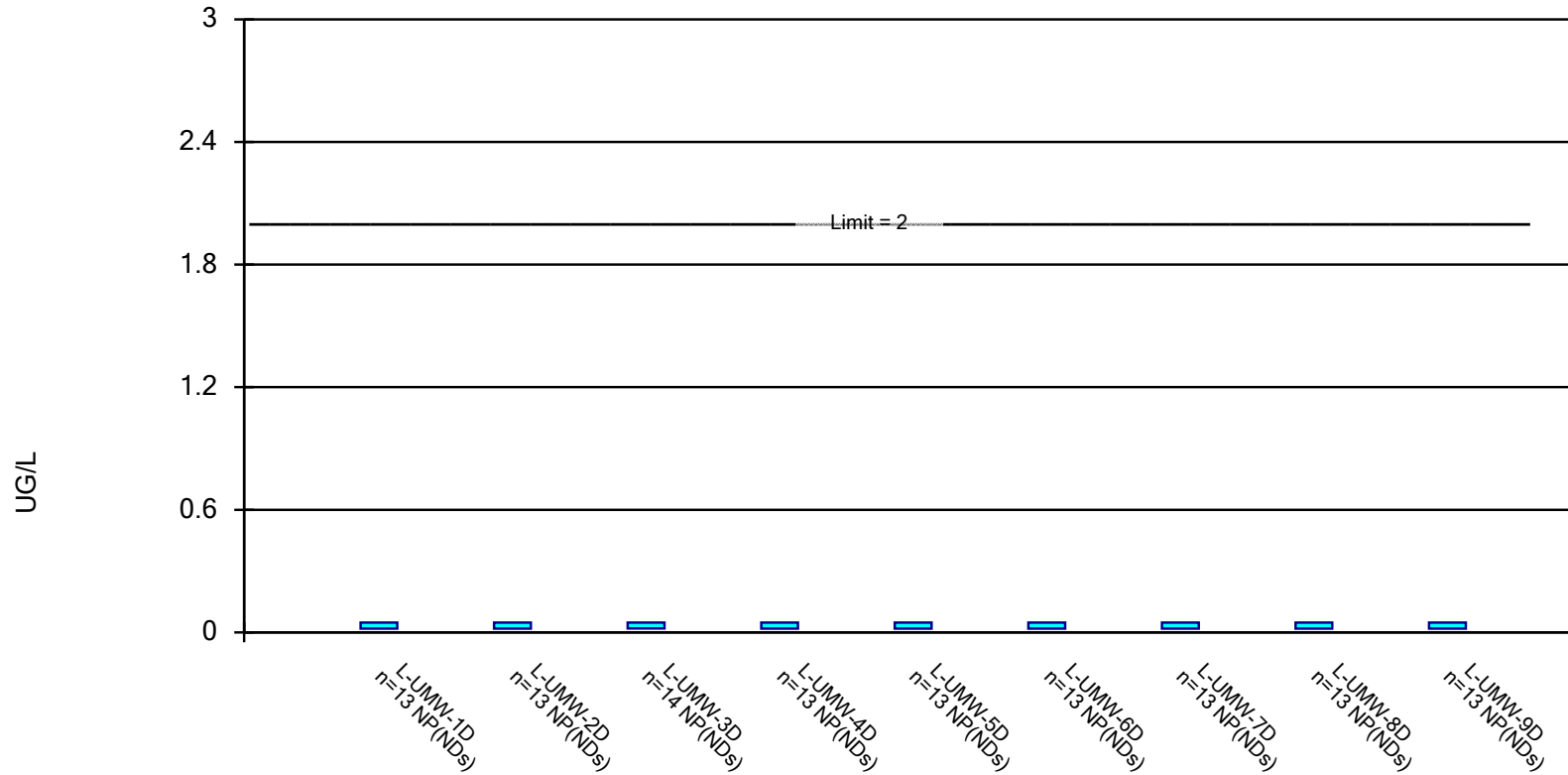


Constituent: LITHIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

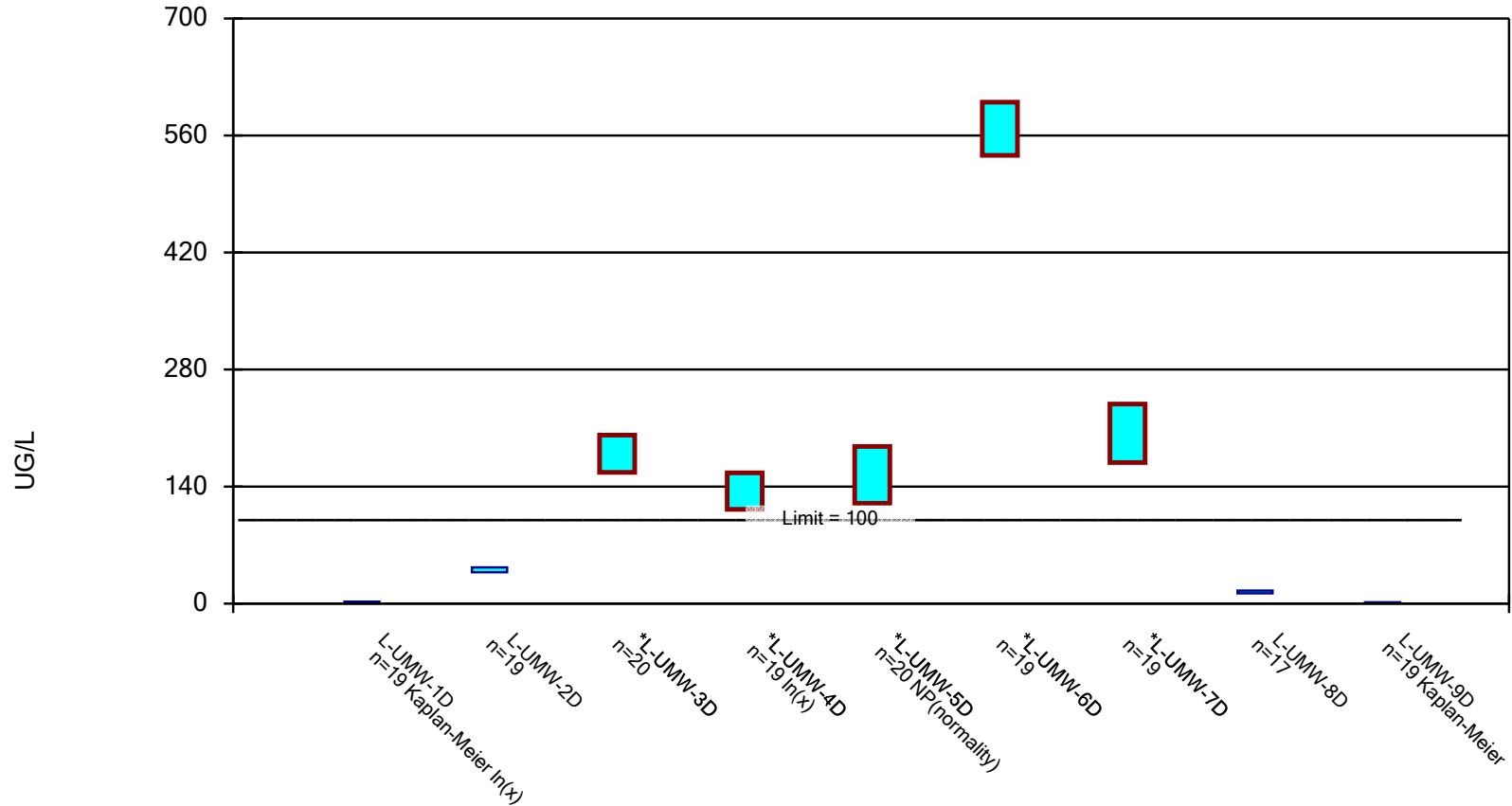


Constituent: MERCURY, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

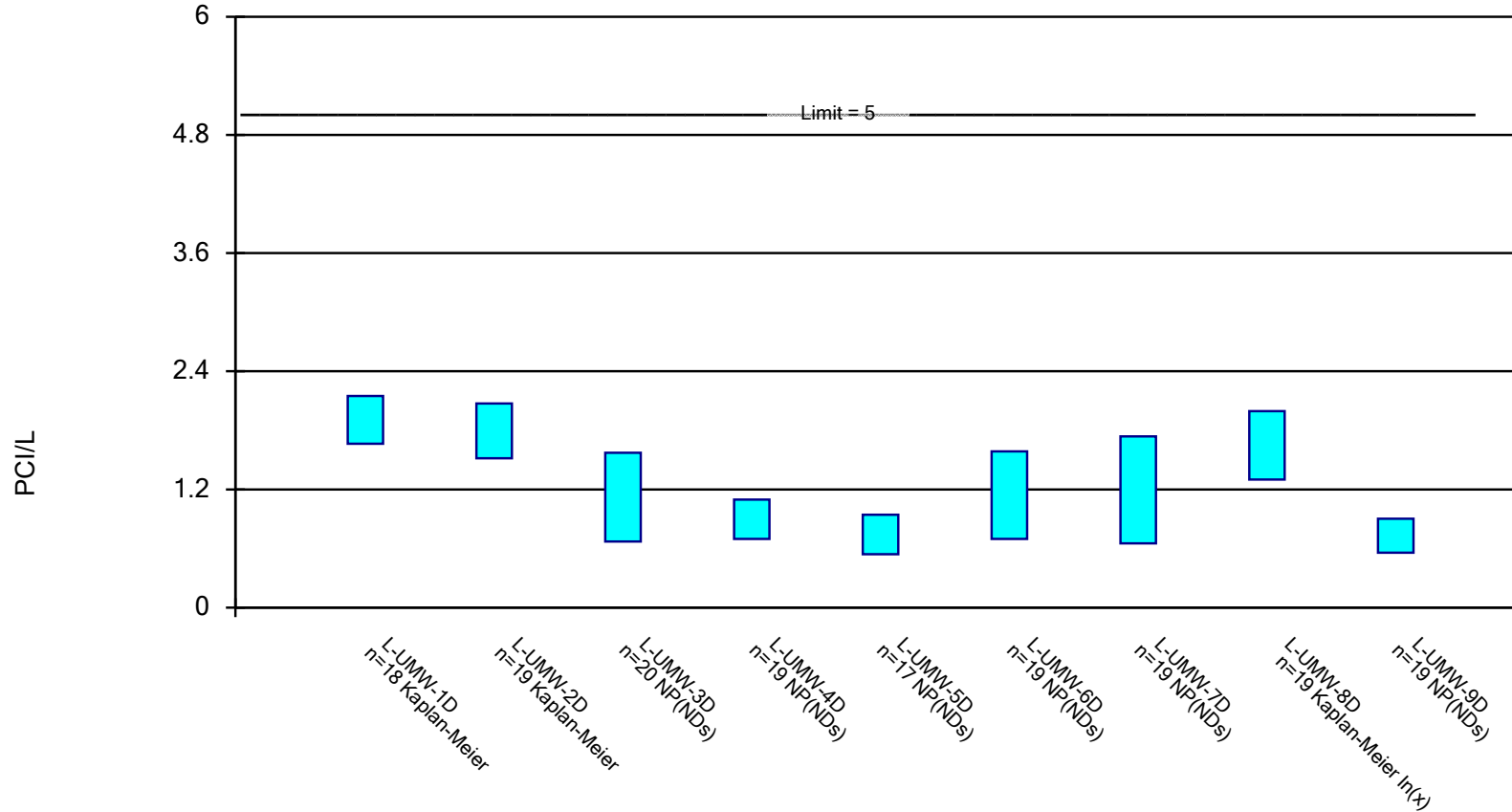


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

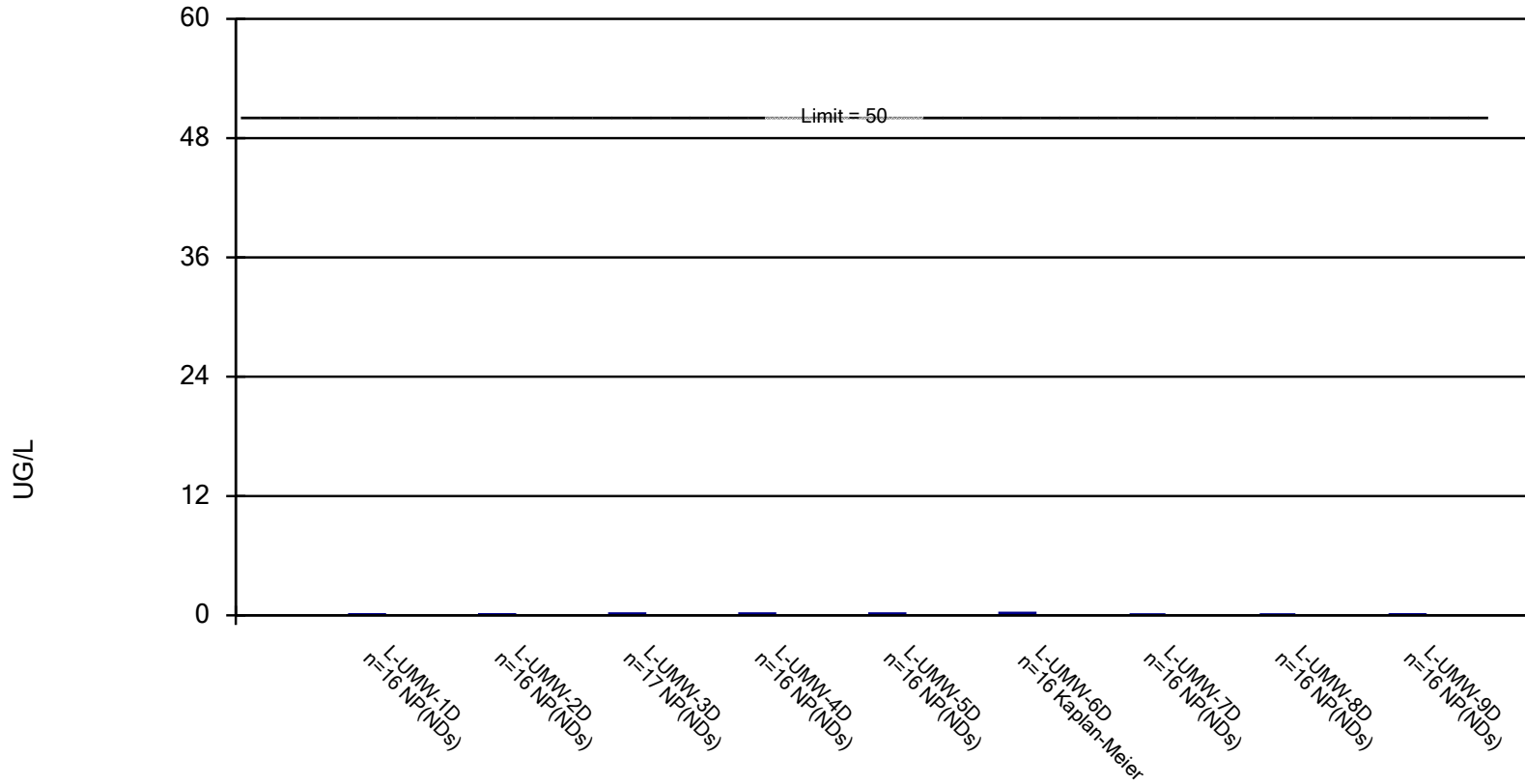


Constituent: Radium [226 + 228] Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

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.

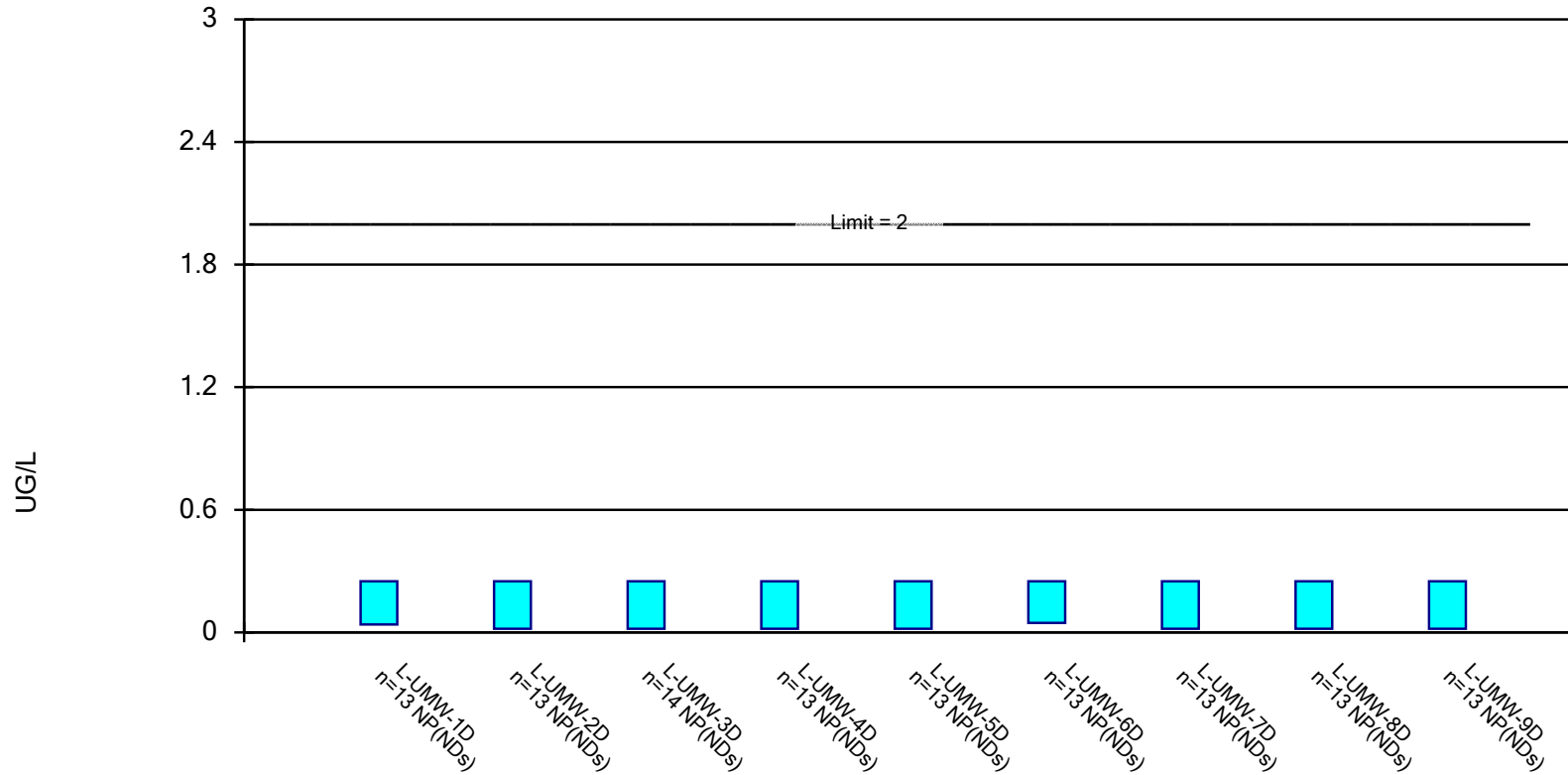


Constituent: SELENIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 2/3/2023 9:01 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.05	0.013	6	No	14	85.71	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.06	0.013	6	No	15	86.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.1	0.029	6	No	14	57.14	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.05	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.05	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	L-UMW-1D	46.03	33.1	44.2	No	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-2D	2.17	1.545	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-3D	3.361	0.6394	44.2	No	18	5.556	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-4D	0.146	0.09904	44.2	No	19	31.58	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-5D	22.03	17.07	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-6D	19.29	10.88	44.2	No	18	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-7D	23.11	17.45	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-8D	31.11	27.62	44.2	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-UMW-9D	34.5	31.9	44.2	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	L-UMW-1D	492	417.5	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-2D	126.9	108.1	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-3D	126.3	90.01	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-4D	86.49	66.59	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-5D	74	62.67	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-6D	136	116.9	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-7D	143.8	103.2	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-UMW-8D	481	191	2000	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	L-UMW-9D	524.8	502.8	2000	No	19	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.079	0.009	5	No	14	64.29	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0.031	0.009	5	No	13	92.31	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.078	0.009	5	No	13	76.92	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.2	0.009	5	No	13	61.54	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0.082	0.009	5	No	13	84.62	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.028	0.009	5	No	13	100	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.251	0.08045	100	No	14	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0.5	0.027	100	No	15	73.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0.37	0.039	100	No	16	75	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	0.49	0.039	100	No	14	71.43	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0.5	0.039	100	No	15	73.33	No	0.01	NP (NDs)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	0.54	0.039	100	No	15	60	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	0.5036	0.1401	100	No	15	46.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	0.48	0.039	100	No	15	66.67	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0.5	0.039	100	No	15	73.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-1D	0.65	0.36	6	No	13	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-2D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-3D	0.475	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-4D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-5D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-6D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-7D	0.65	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-8D	0.65	0.36	6	No	14	92.86	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	L-UMW-9D	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.2515	0.1921	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	0.38	0.34	4	No	21	9.524	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0.1928	0.1147	4	No	23	26.09	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0.42	0.34	4	No	23	4.348	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.1514	0.09544	4	No	21	23.81	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	0.1429	0.09634	4	No	20	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	0.33	0.27	4	No	22	4.545	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.2544	0.1674	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.2118	0.1692	4	No	20	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	L-UMW-1D	3.6	1.25	15	No	13	69.23	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-2D	4.1	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-3D	3	1.2	15	No	14	78.57	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-4D	2.15	1.2	15	No	13	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-5D	3.6	1.2	15	No	13	84.62	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-6D	3.2	1.2	15	No	13	84.62	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-7D	3.05	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-8D	4.4	1.2	15	No	13	76.92	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	L-UMW-9D	4.8	1.25	15	No	13	53.85	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	L-UMW-1D	27.86	24.68	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-2D	28.46	24.63	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-3D	24.02	18.8	47.4	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-4D	33.79	30.11	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-5D	23.12	16.43	47.4	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-6D	10.89	6.774	47.4	No	19	5.263	ln(x)	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-7D	23.27	18.55	47.4	No	19	5.263	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-UMW-8D	34.8	30.7	47.4	No	19	0	No	0.01	NP (normality)
LITHIUM, TOTAL (UG/L)	L-UMW-9D	17.72	15.99	47.4	No	19	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	2.358	0.886	100	No	19	26.32	ln(x)	0.01	Param.

Confidence Interval

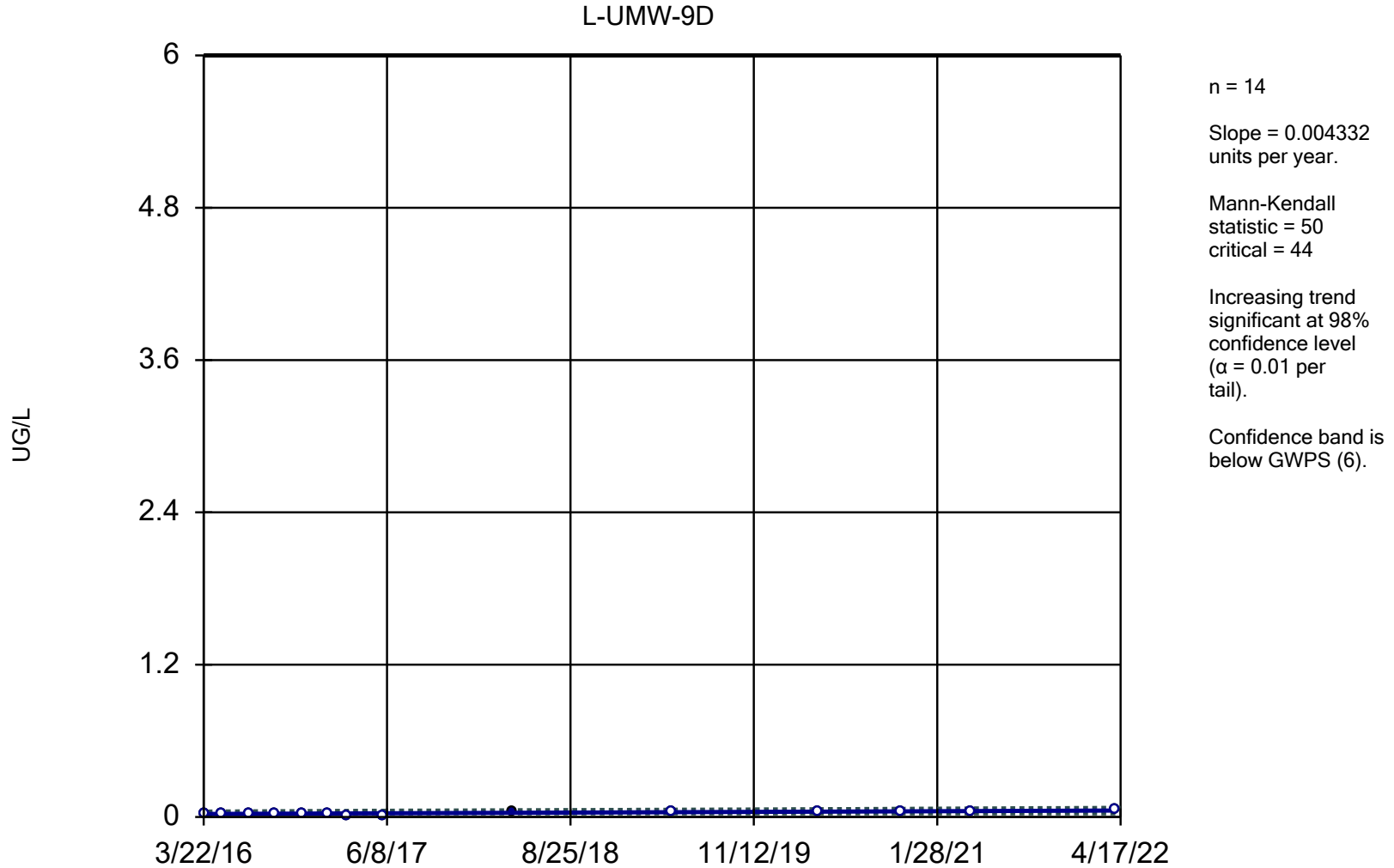
Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:01 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	43.34	37.51	100	No	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	201.5	157	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	156.4	112.7	100	Yes	19	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	188	120	100	Yes	20	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	599.8	536.2	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	238.8	168.7	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	15.51	12.29	100	No	17	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	1.589	0.8245	100	No	19	47.37	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-1D	2.149	1.663	5	No	18	16.67	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-2D	2.072	1.516	5	No	19	31.58	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-3D	1.572	0.6715	5	No	20	70	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-4D	1.097	0.697	5	No	19	73.68	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-5D	0.9425	0.542	5	No	17	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-6D	1.587	0.6975	5	No	19	52.63	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-7D	1.738	0.6525	5	No	19	73.68	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	L-UMW-8D	1.995	1.3	5	No	19	47.37	ln(x)	0.01	Param.
Radium [226 + 228] (PCI/L)	L-UMW-9D	0.9025	0.5575	5	No	19	89.47	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0.11	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0.11	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0.19	0.09	50	No	17	58.82	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0.19	0.043	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.18	0.09	50	No	16	56.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0.2493	0.1892	50	No	16	25	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0.091	0.089	50	No	16	81.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0.09	0.087	50	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0.09	0.043	50	No	16	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-1D	0.25	0.039	2	No	13	84.62	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-2D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-3D	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-4D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-5D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-6D	0.25	0.0465	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-7D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-8D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-UMW-9D	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

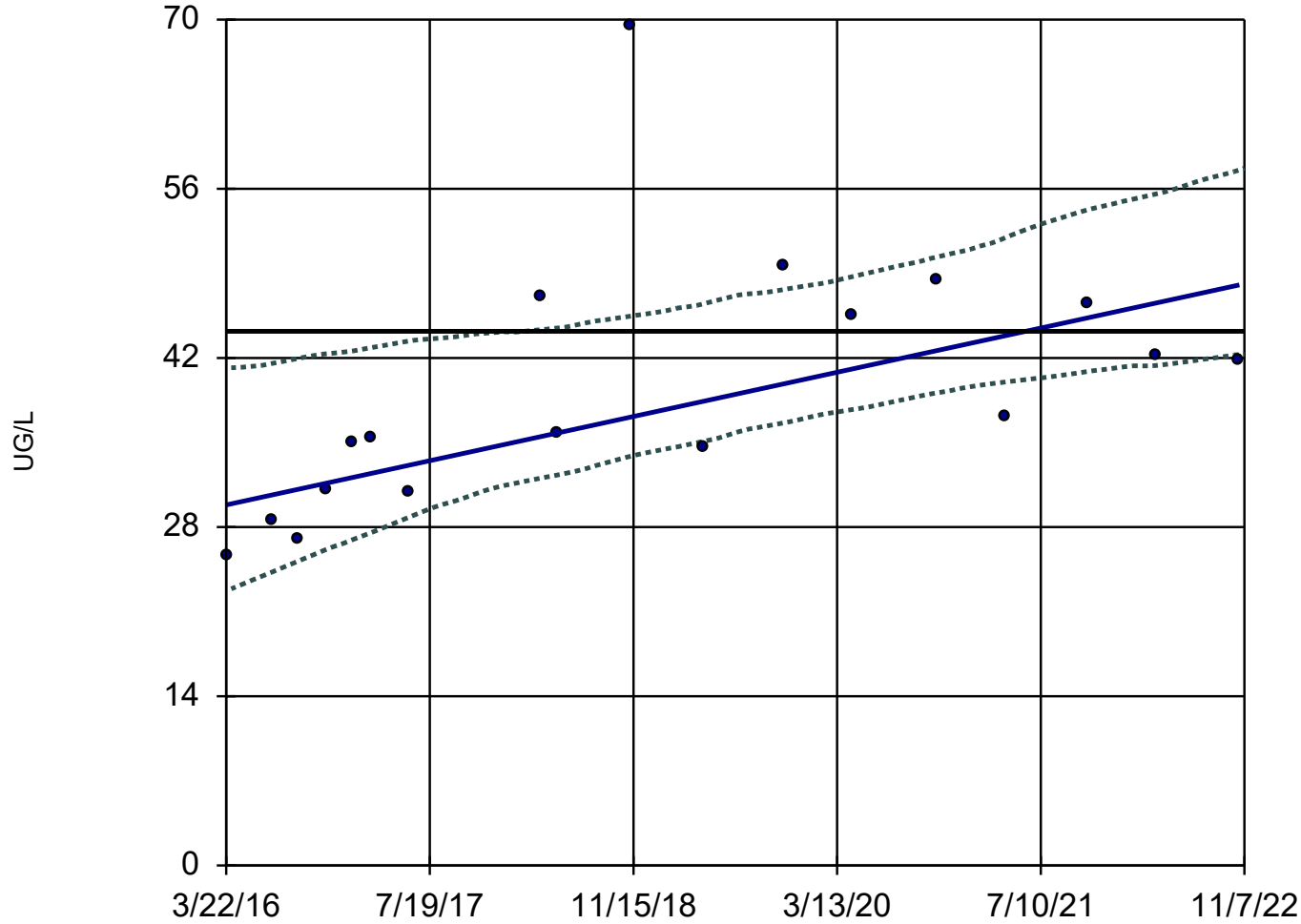


Constituent: ANTIMONY, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 18

Slope = 2.757
units per year.

Mann-Kendall
statistic = 77
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

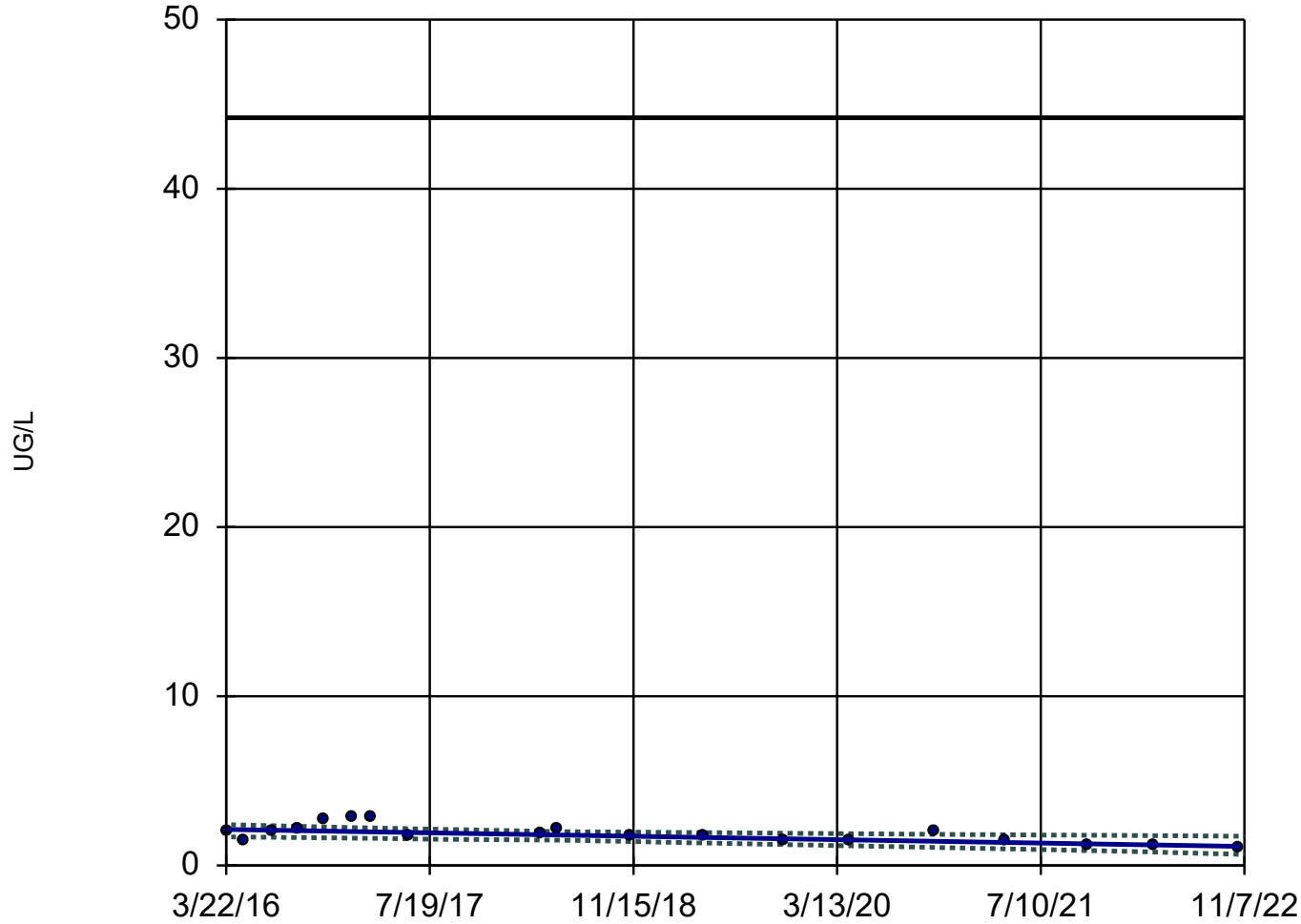
Confidence band intersects
GWPS (44.2) on 03/02/18.

Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 19

Slope = -0.1508
units per year.

Mann-Kendall
statistic = -83
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

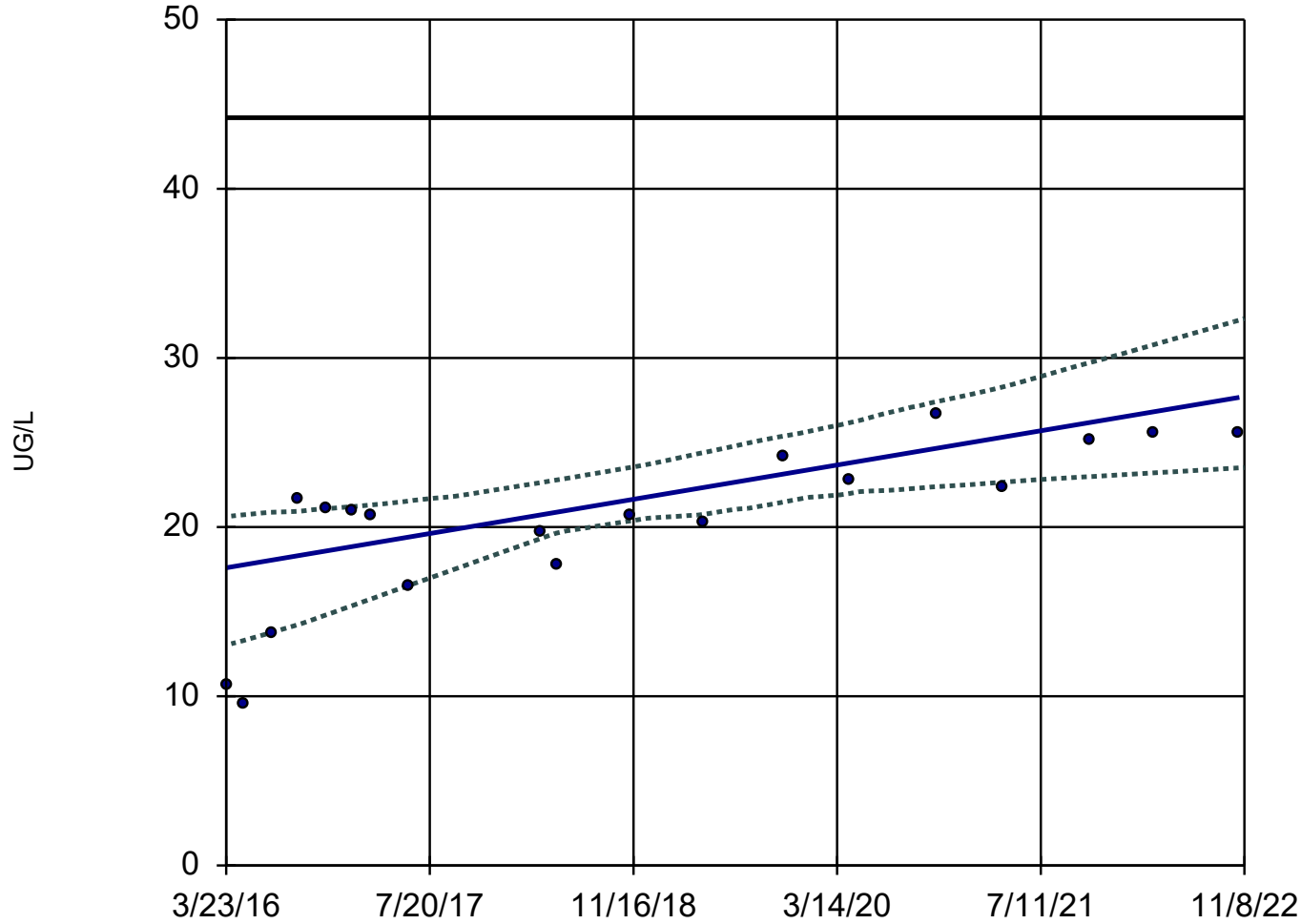
Confidence band is
below GWPS (44.2).

Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

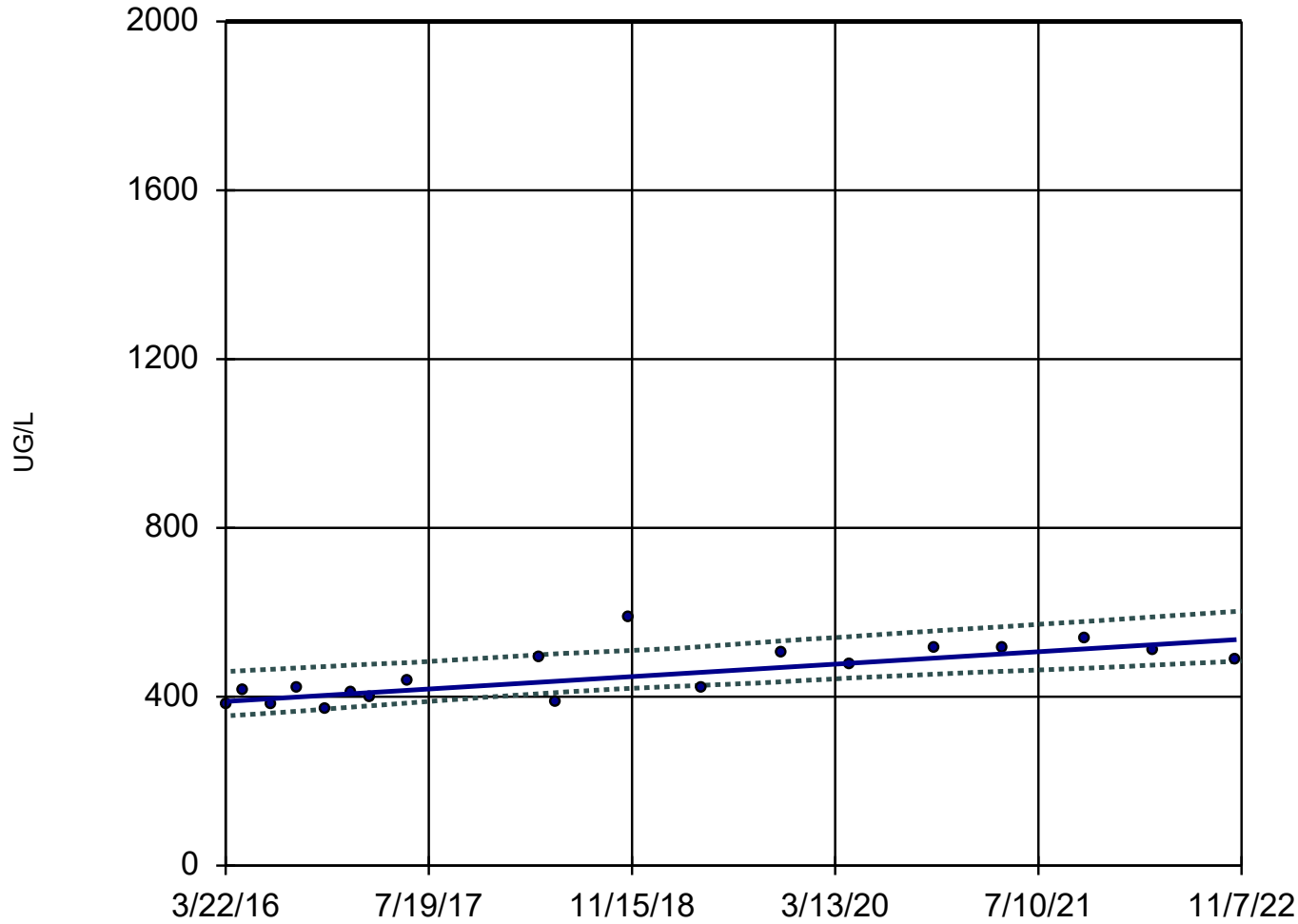
Sen's Slope and 95% Confidence Band

L-UMW-7D



Sen's Slope and 95% Confidence Band

L-UMW-1D



n = 19

Slope = 22.14
units per year.

Mann-Kendall
statistic = 95
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

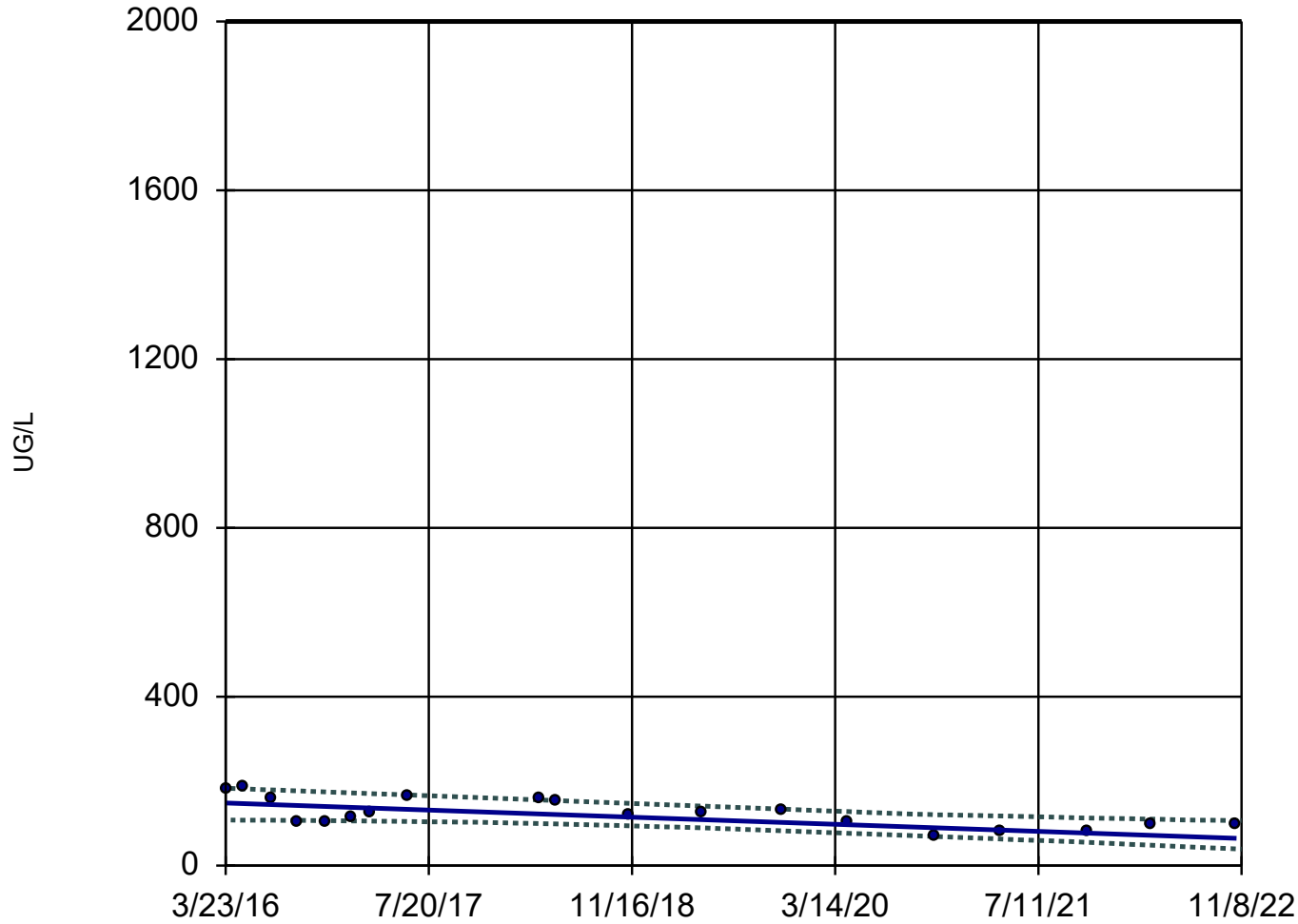
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:04 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-7D



n = 19

Slope = -12.68
units per year.

Mann-Kendall
statistic = -84
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

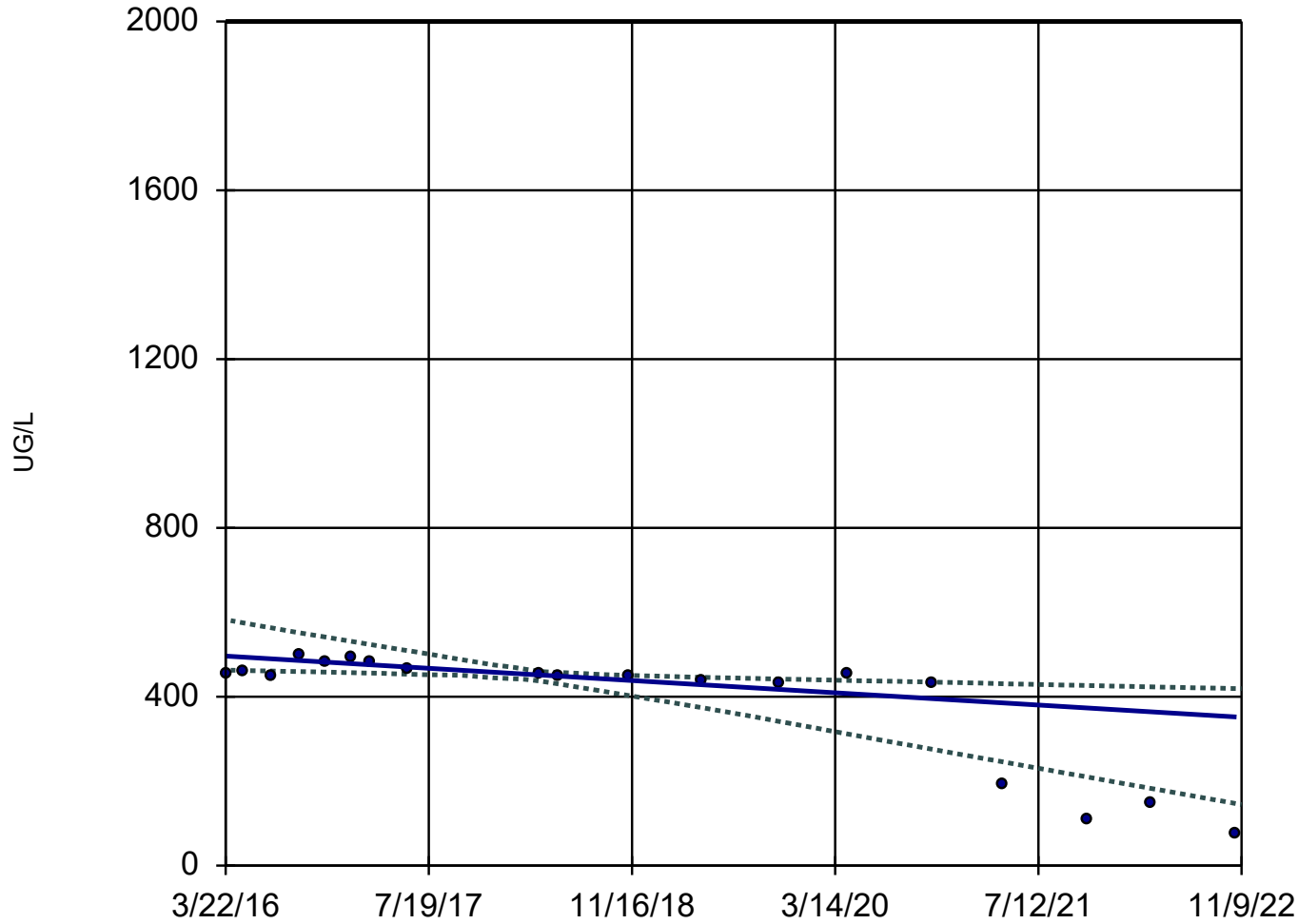
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 9:04 AM

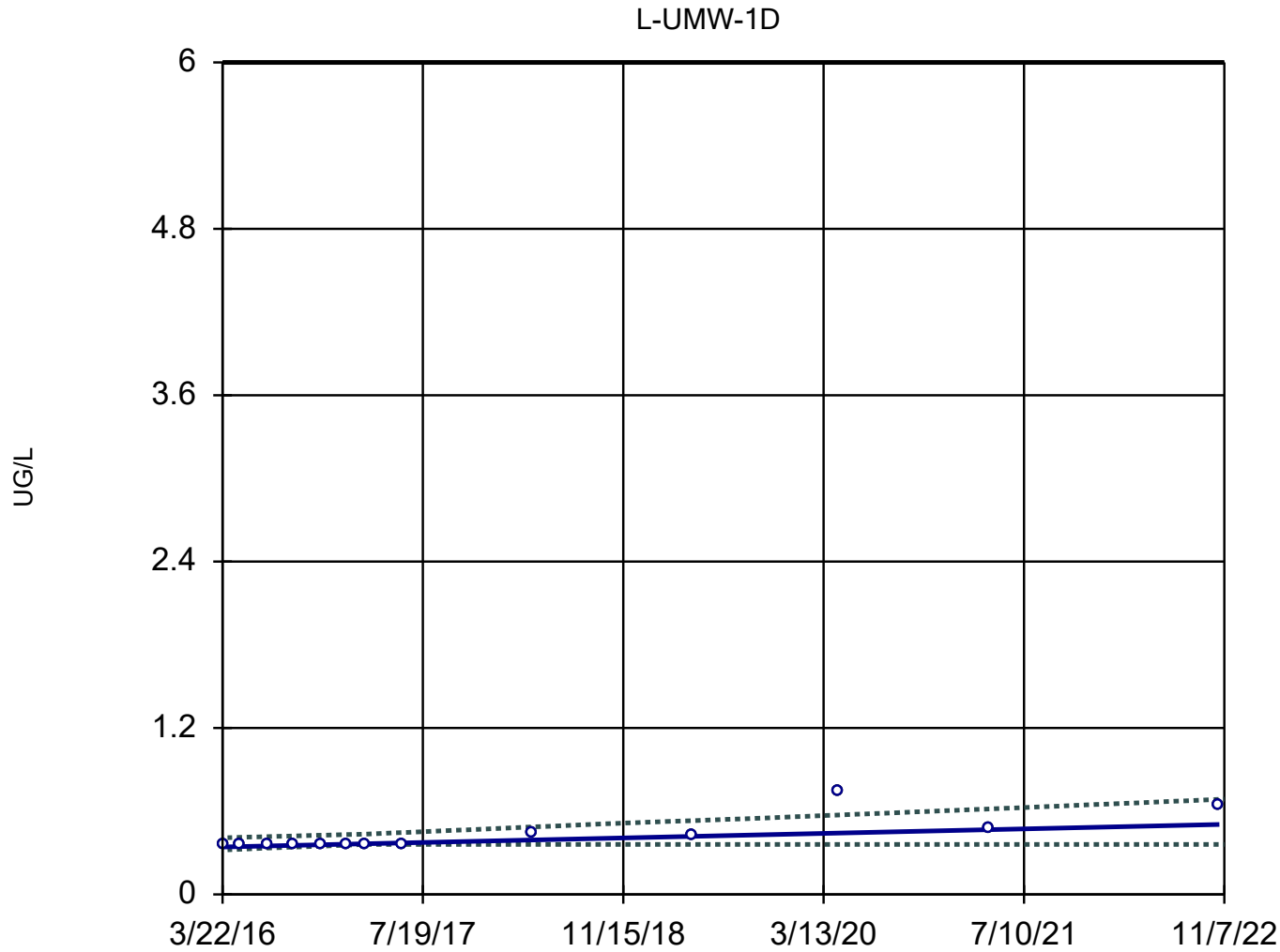
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-8D



Sen's Slope and 95% Confidence Band



n = 13

Slope = 0.02468
units per year.

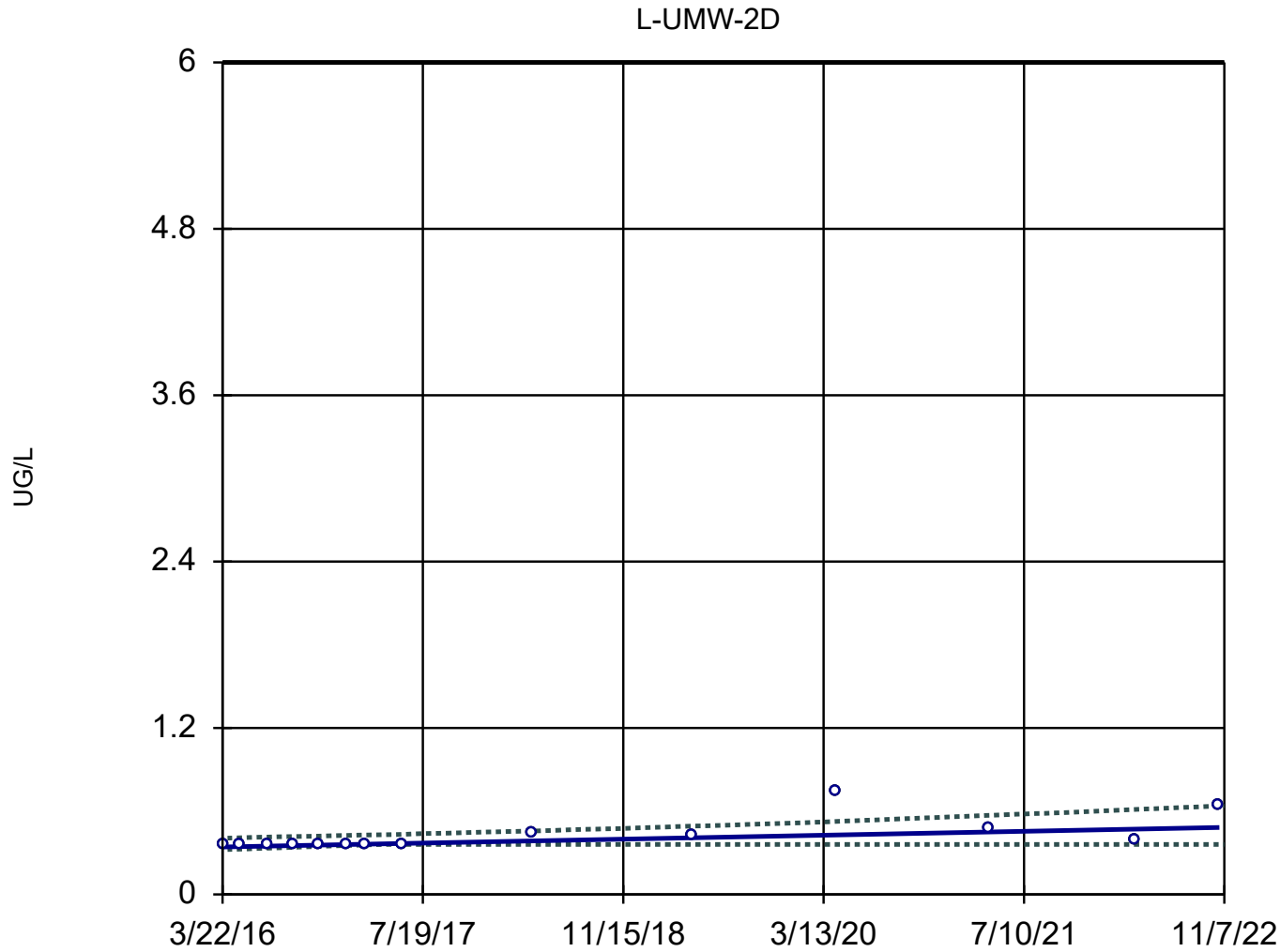
Mann-Kendall
statistic = 56
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02141
units per year.

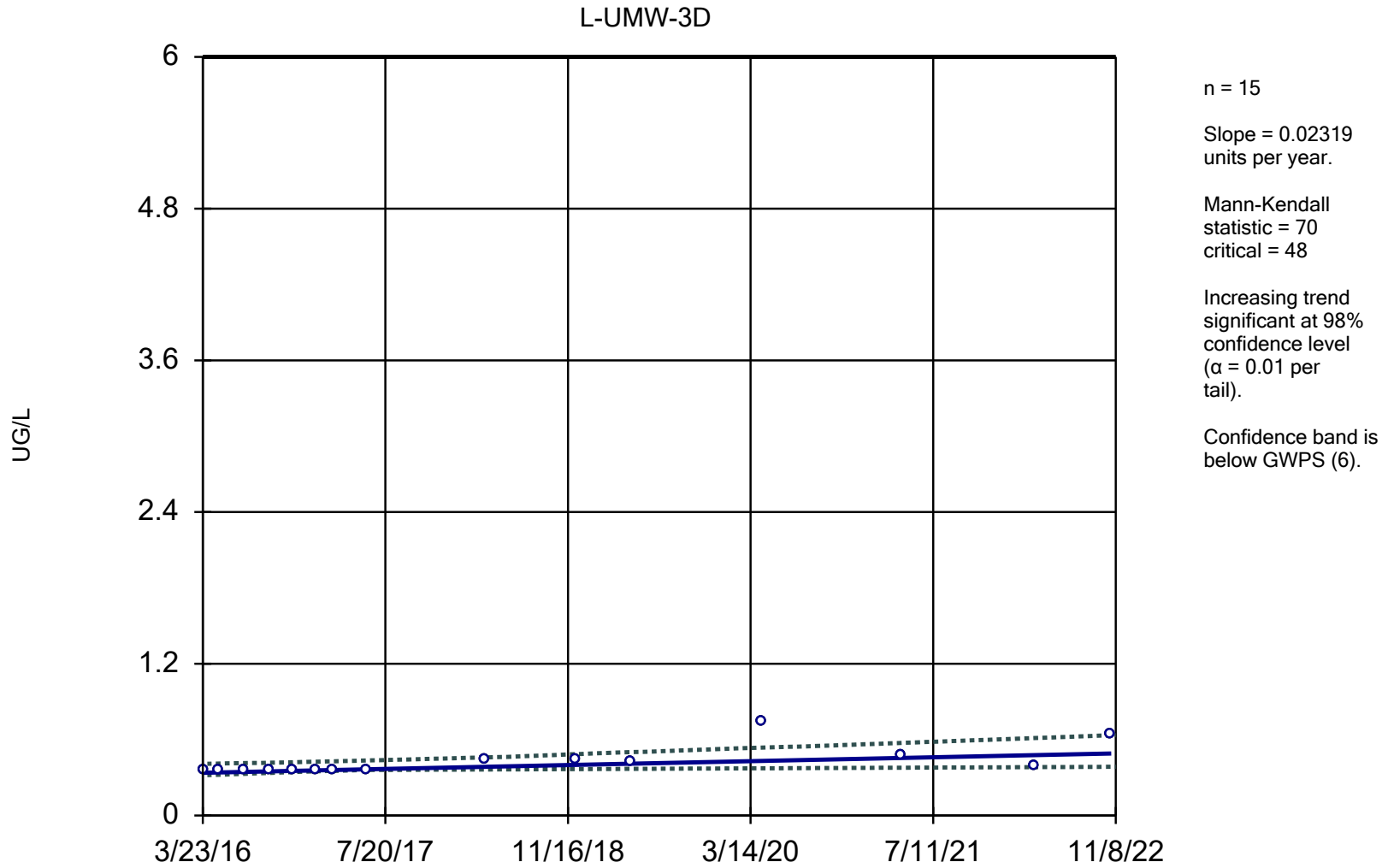
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

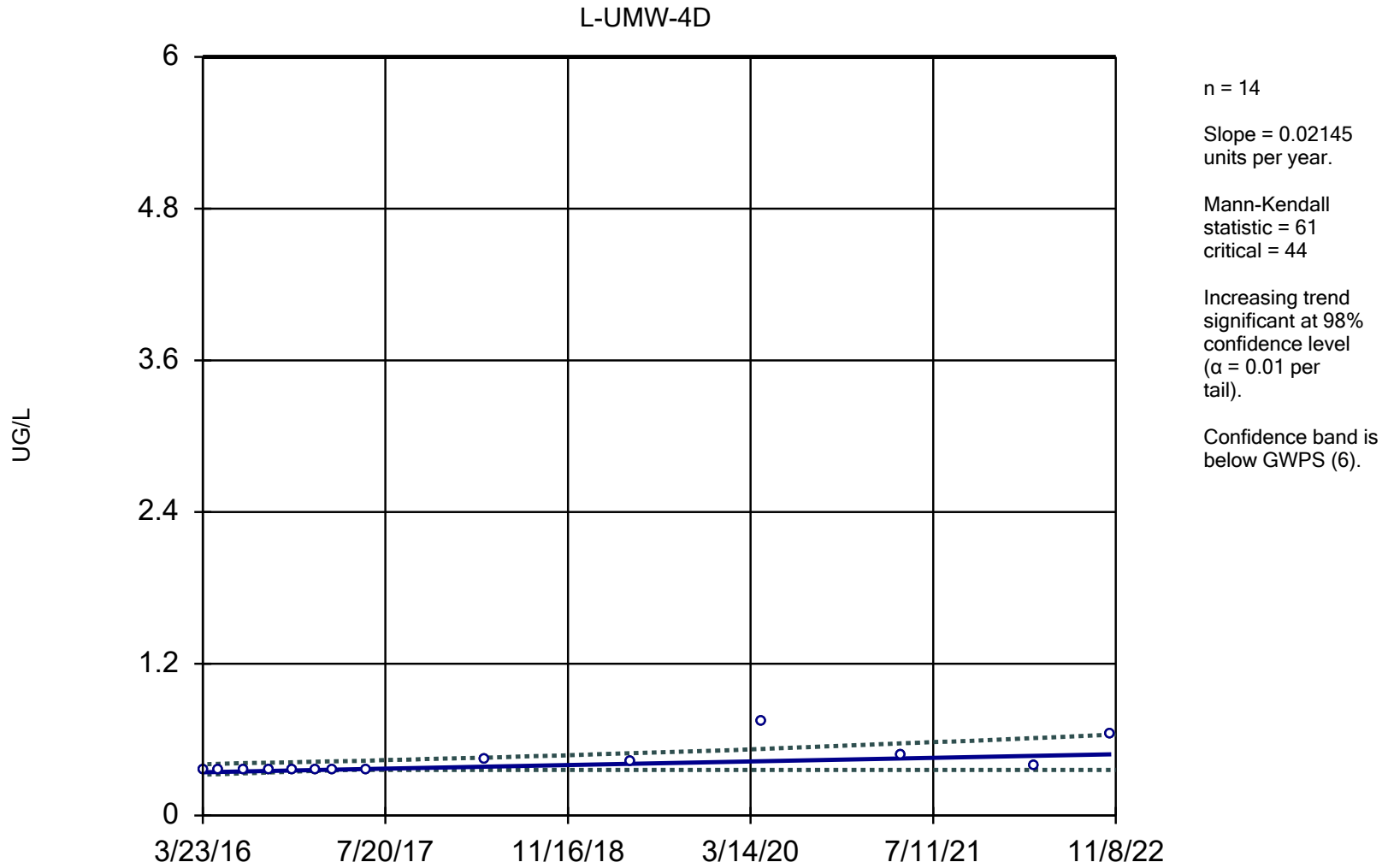
Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



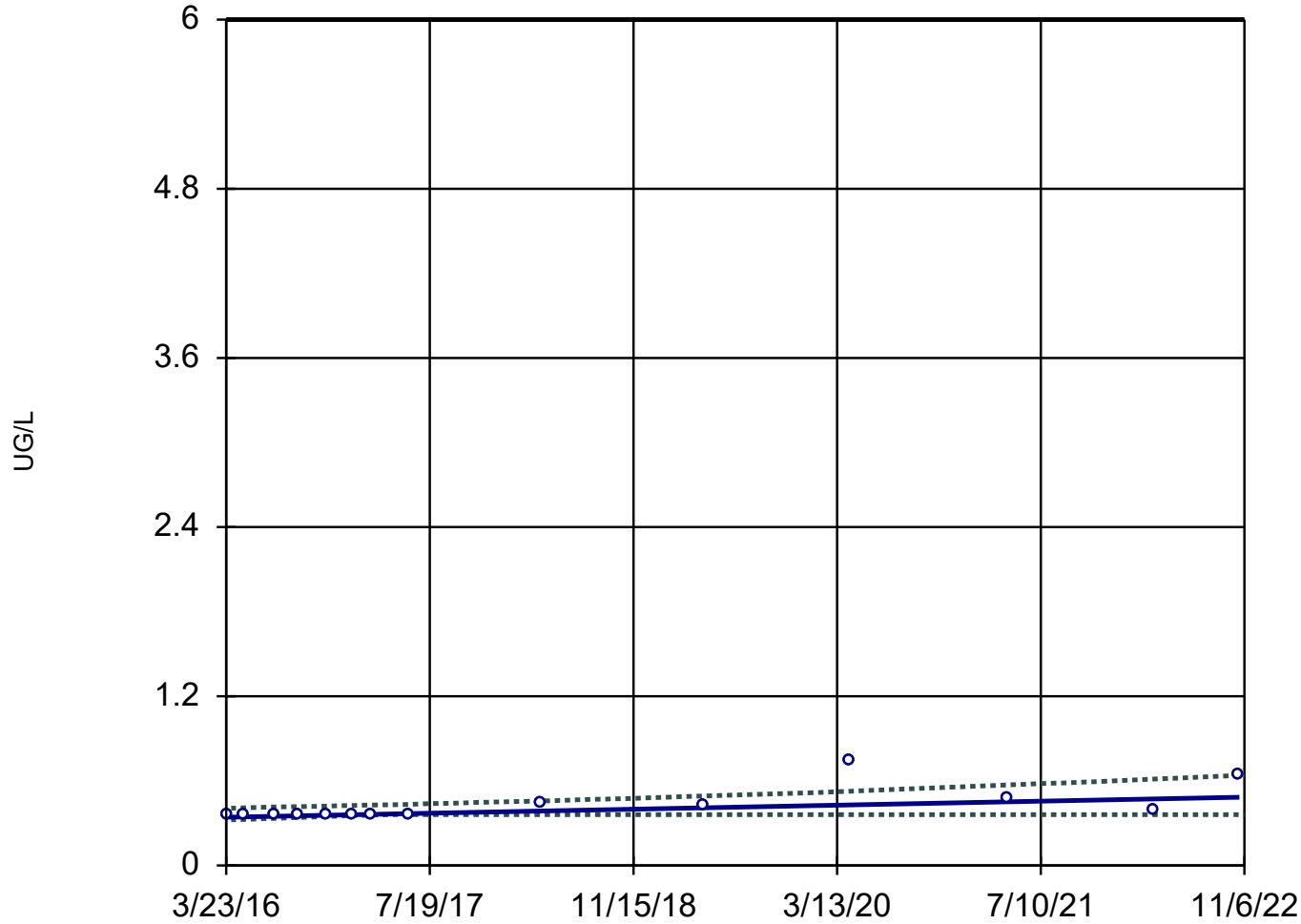
Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Sen's Slope and 95% Confidence Band

L-UMW-5D



n = 14

Slope = 0.02145
units per year.

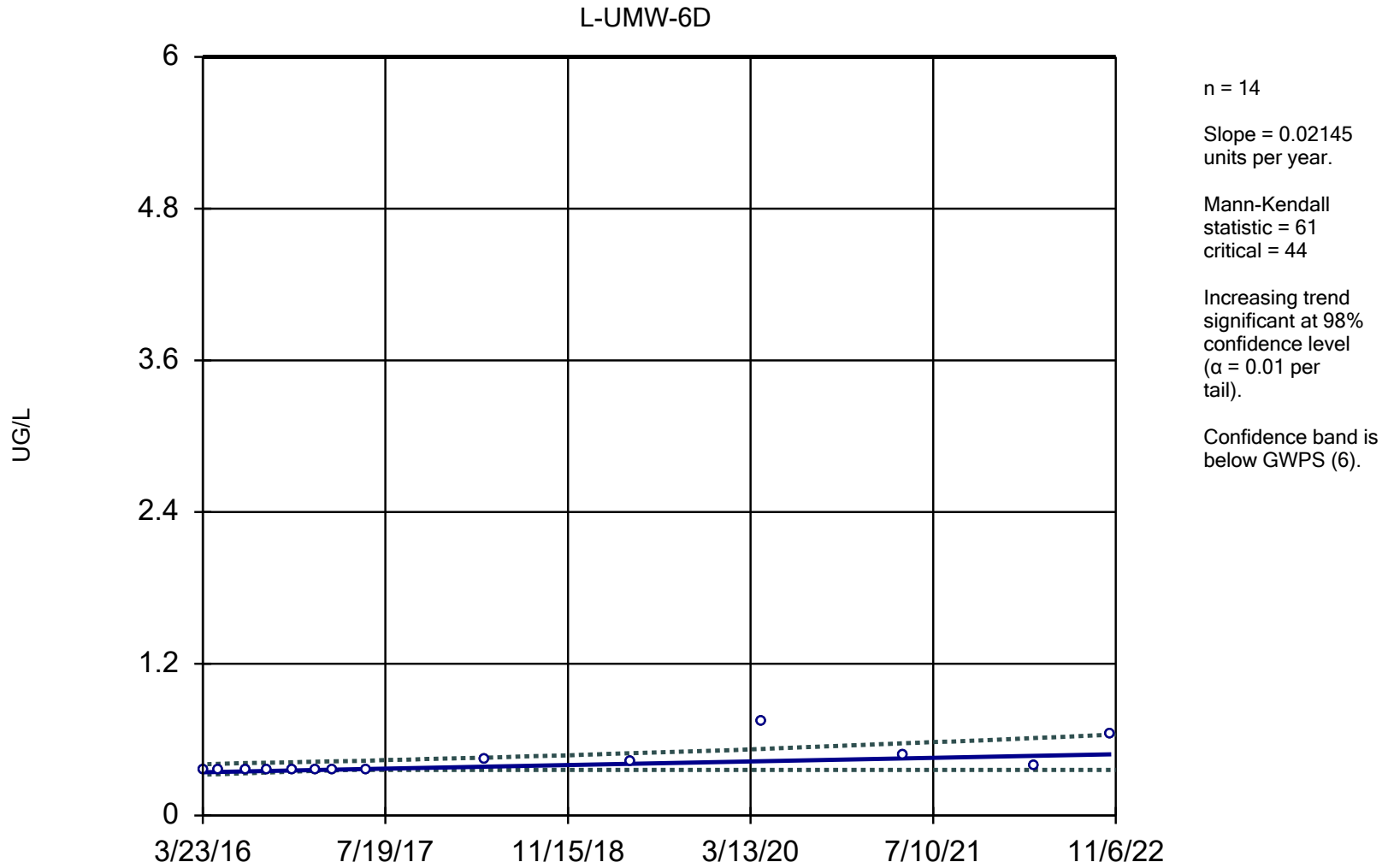
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

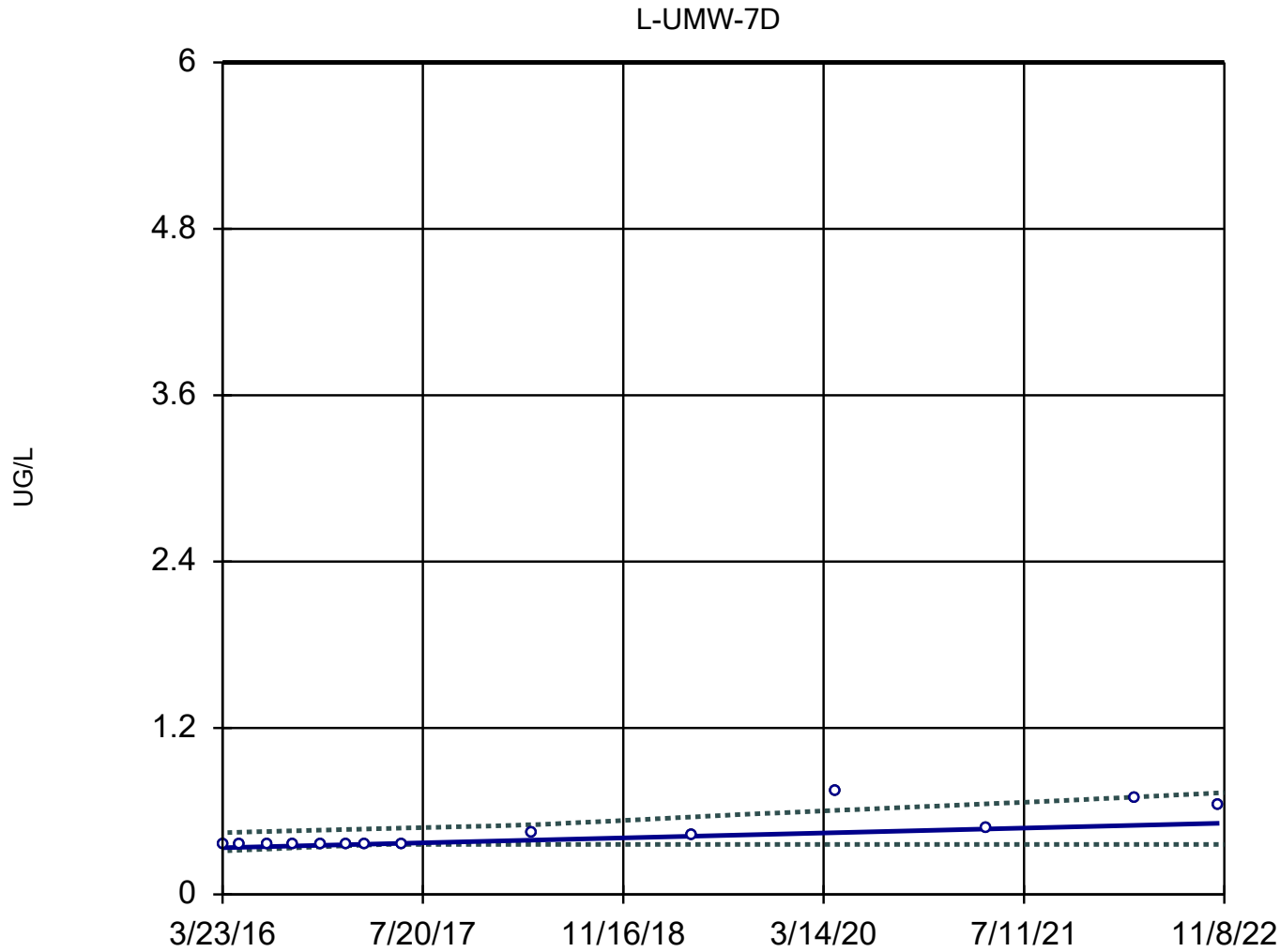
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02668
units per year.

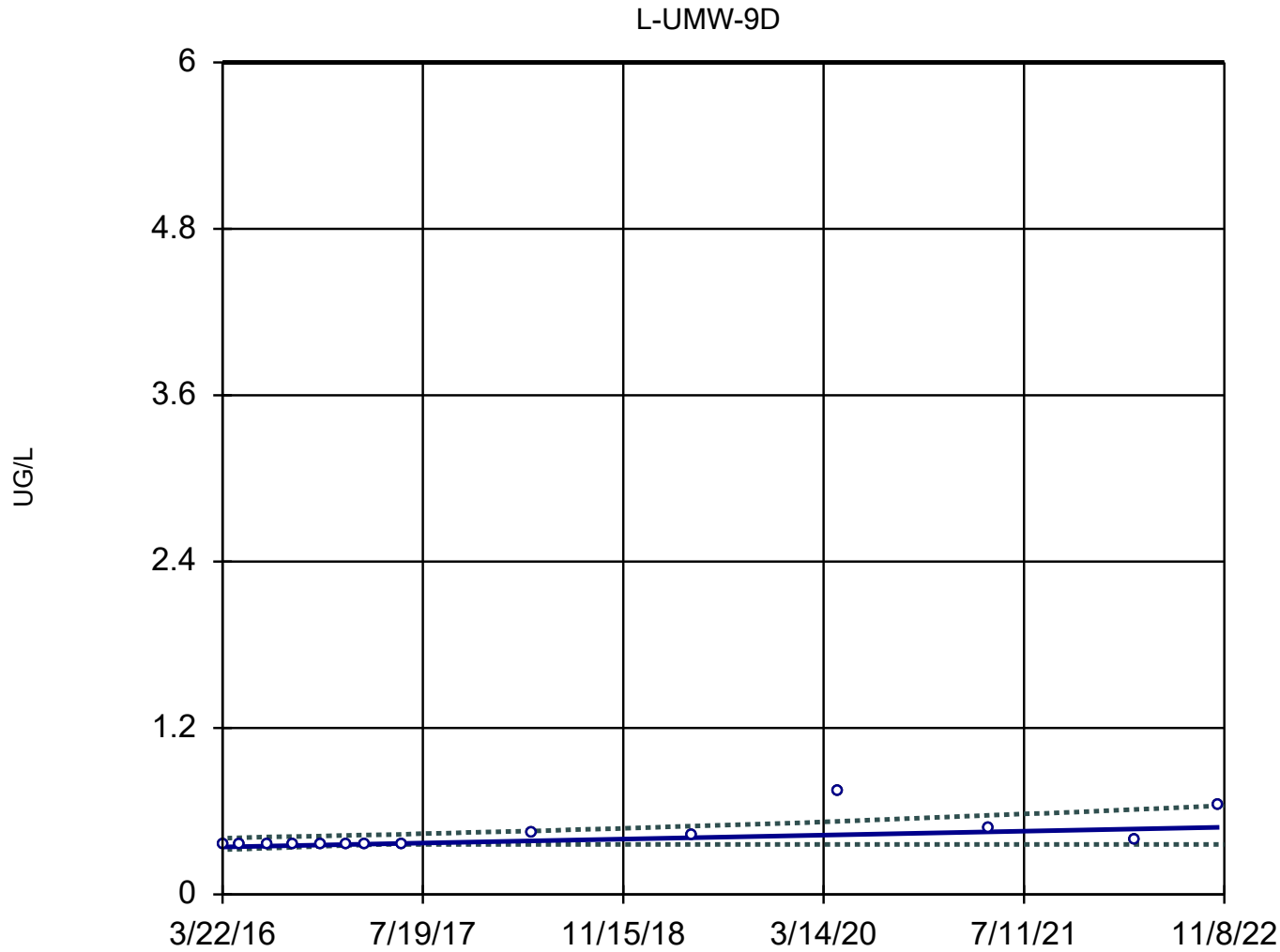
Mann-Kendall
statistic = 65
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band



n = 14

Slope = 0.02143
units per year.

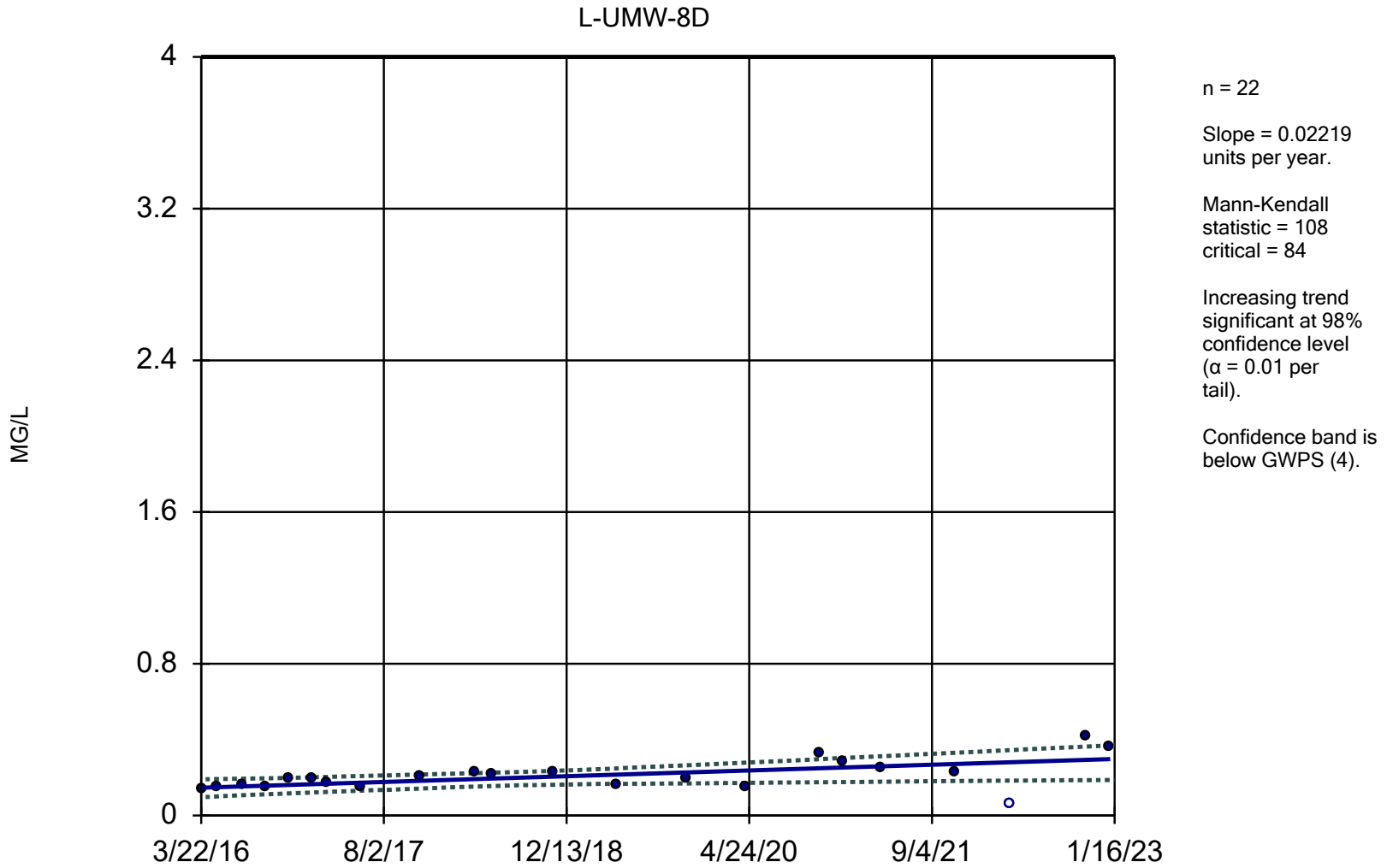
Mann-Kendall
statistic = 61
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

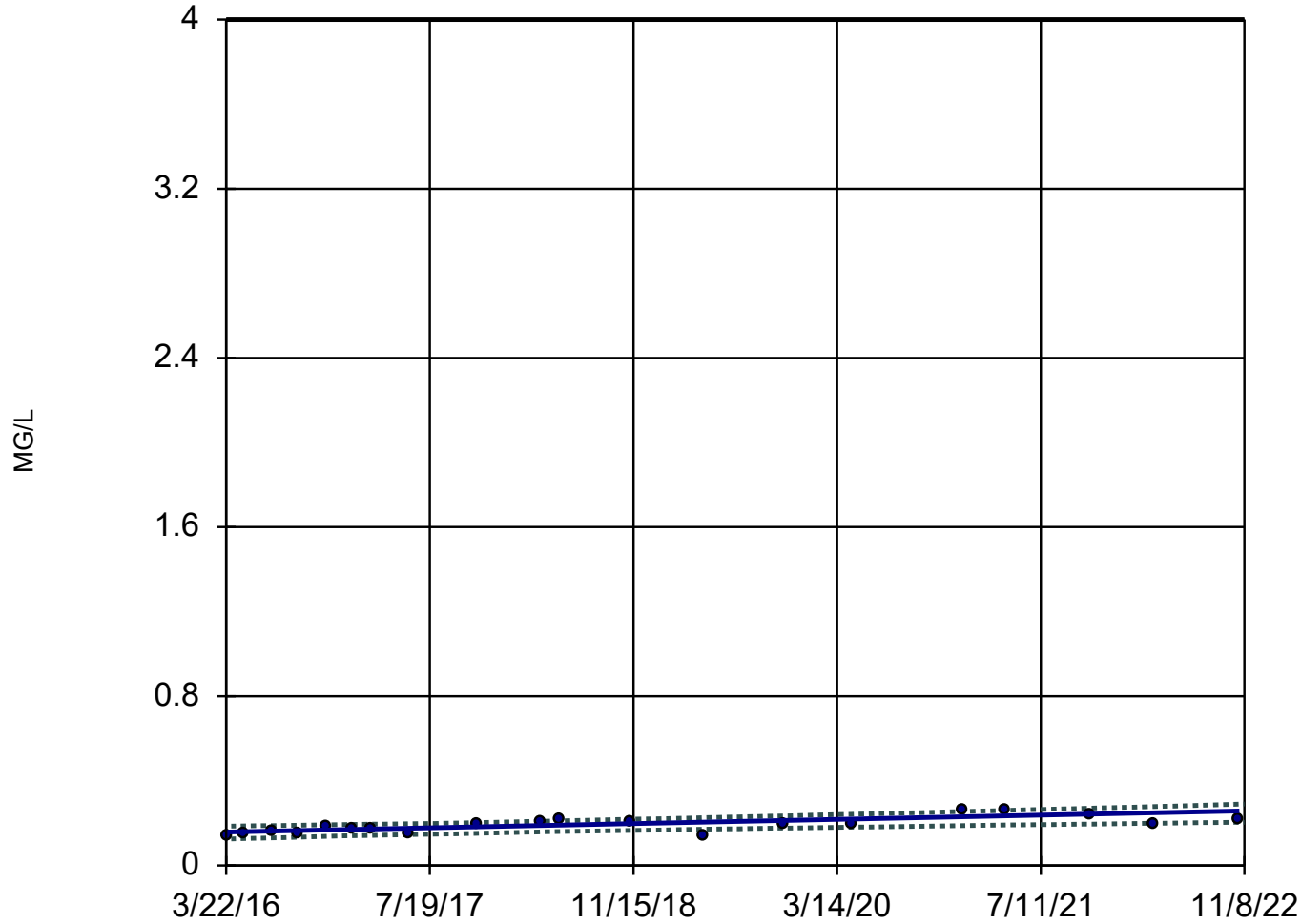
Sen's Slope and 95% Confidence Band



Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-9D



n = 20

Slope = 0.01509
units per year.

Mann-Kendall
statistic = 102
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

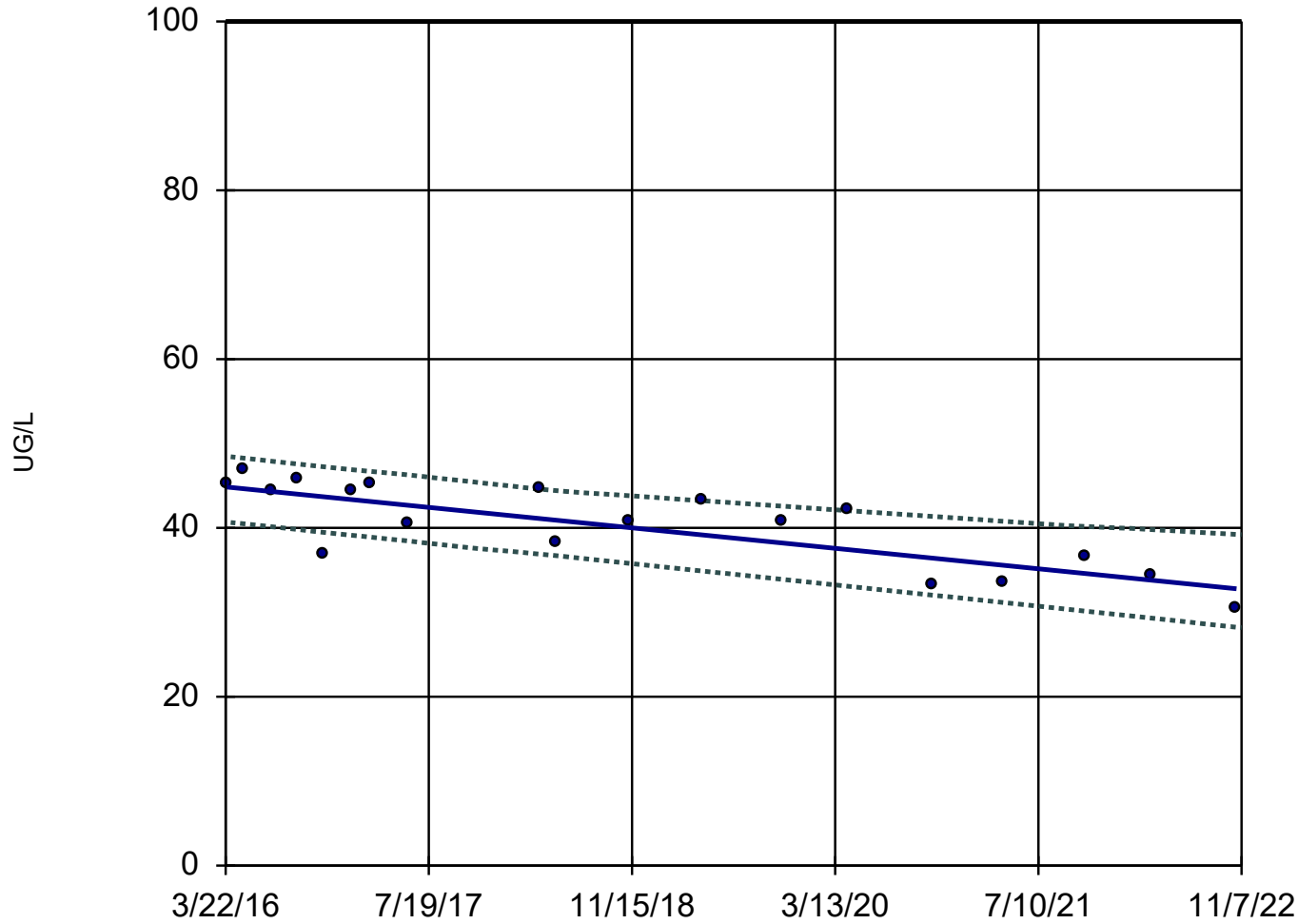
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 9:05 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-2D



n = 19

Slope = -1.829
units per year.

Mann-Kendall
statistic = -101
critical = -68

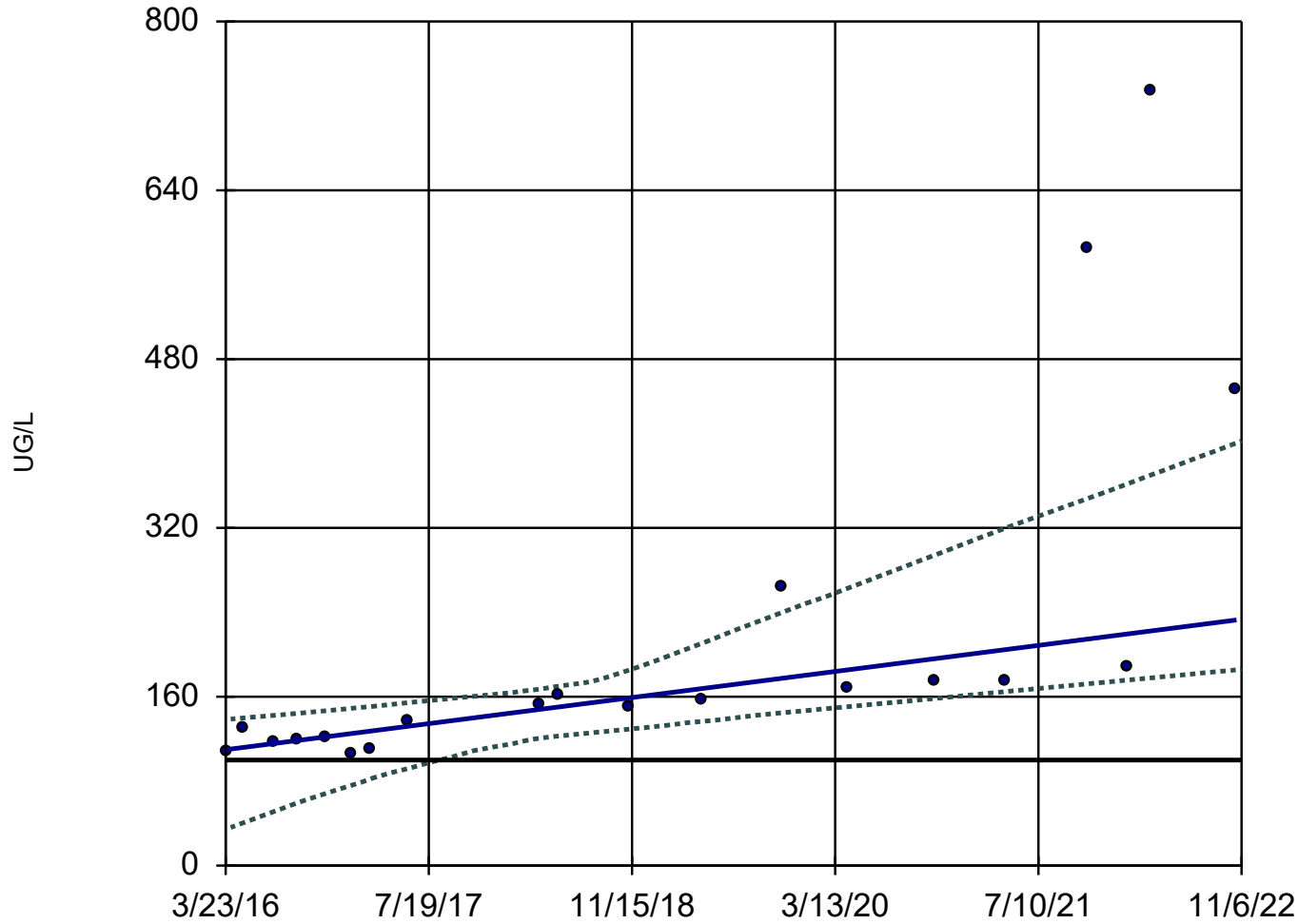
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:05 AM
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-UMW-5D



n = 20

Slope = 18.65
units per year.

Mann-Kendall
statistic = 146
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 08/22/17.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 9:05 AM

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	L-UMW-1D	0.004327	34	44	No	14	85.71	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-2D	0.004222	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-3D	0.004137	27	48	No	15	86.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-4D	0.004134	27	44	No	14	92.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-5D	0.001472	8	44	No	14	57.14	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-6D	0.003575	21	44	No	14	92.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-7D	0.004217	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-8D	0.004222	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	L-UMW-9D	0.004332	50	44	Yes	14	92.86	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-1D	2.757	77	63	Yes	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-2D	-0.1508	-83	-68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-3D	0.3523	45	63	No	18	5.556	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-4D	-0.00...	-14	-68	No	19	31.58	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-5D	-0.379	-23	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-6D	1.527	39	63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-7D	1.526	100	68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-8D	-0.2767	-32	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-UMW-9D	-0.53	-41	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-1D	22.14	95	68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-2D	1.271	14	68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-3D	-3.276	-27	-73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-4D	3.555	54	68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-5D	0	-1	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-6D	-3.893	-65	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-7D	-12.68	-84	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-8D	-21.81	-116	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-UMW-9D	-3.133	-51	-68	No	19	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-1D	0	-8	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-2D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-3D	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-4D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-5D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-6D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-7D	0	0	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-8D	0	6	39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	L-UMW-9D	0	6	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-1D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-2D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-3D	0.01049	35	44	No	14	64.29	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-4D	0	14	39	No	13	92.31	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-5D	0.001623	18	39	No	13	76.92	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-6D	0.009812	27	39	No	13	61.54	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-7D	0	14	39	No	13	84.62	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-8D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	L-UMW-9D	0.000...	20	39	No	13	100	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-1D	0.01578	21	44	No	14	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-2D	0	-3	-48	No	15	73.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-3D	0	15	53	No	16	75	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-4D	-0.0107	-14	-44	No	14	71.43	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-5D	0	-8	-48	No	15	73.33	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-UMW-6D	-0.03782	-21	-48	No	15	60	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-7D	0	-3	-48	No	15	46.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-8D	-0.01594	-24	-48	No	15	66.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	L-UMW-9D	0	-8	-48	No	15	73.33	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-1D	0.02468	56	39	Yes	13	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-2D	0.02141	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-3D	0.02319	70	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-4D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-5D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-6D	0.02145	61	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-7D	0.02668	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-8D	0.01372	42	44	No	14	92.86	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	L-UMW-9D	0.02143	61	44	Yes	14	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-1D	0.005935	53	84	No	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-2D	-0.00...	-20	-78	No	21	9.524	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-3D	0.006443	28	89	No	23	26.09	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-4D	0	3	89	No	23	4.348	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-5D	0.01268	49	78	No	21	23.81	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-6D	-0.00...	-20	-73	No	20	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-7D	-0.00...	-27	-84	No	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-8D	0.02219	108	84	Yes	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-UMW-9D	0.01509	102	73	Yes	20	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-1D	0.1147	10	39	No	13	69.23	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-2D	0.164	27	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-3D	0.1607	34	44	No	14	78.57	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-4D	0.1443	34	39	No	13	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-5D	0.1339	15	39	No	13	84.62	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-6D	0.1339	15	39	No	13	84.62	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-7D	0.2313	37	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-8D	0.1612	32	39	No	13	76.92	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	L-UMW-9D	0.1469	6	39	No	13	53.85	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-1D	0.5222	56	68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-2D	-0.4506	-21	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-3D	-0.09021	-9	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-4D	-0.7644	-62	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-5D	-0.1386	-5	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-6D	0.6008	41	68	No	19	5.263	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-7D	0.9697	50	68	No	19	5.263	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-8D	-0.1394	-12	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-UMW-9D	-0.1515	-24	-68	No	19	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-1D	0.003849	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-2D	0.003844	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-3D	0.004499	43	44	No	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-4D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-5D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-6D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-7D	0.00384	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-8D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	L-UMW-9D	0.003855	35	39	No	13	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-1D	0.2446	46	68	No	19	26.32	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 2/3/2023, 9:06 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	L-UMW-2D	-1.829	-101	-68	Yes	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-3D	1.962	11	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-4D	-3.815	-22	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-5D	18.65	146	73	Yes	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-6D	-9.372	-40	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-7D	0	1	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-8D	0.6209	46	58	No	17	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-UMW-9D	-4.5e-8	-10	-68	No	19	47.37	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-1D	0.008701	12	63	No	18	16.67	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-2D	0.03891	9	68	No	19	31.58	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-3D	-0.00...	-2	-73	No	20	70	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-4D	0.02845	27	68	No	19	73.68	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-5D	-0.02283	-14	-58	No	17	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-6D	-0.01685	-15	-68	No	19	52.63	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-7D	0.007588	5	68	No	19	73.68	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-8D	-0.1091	-57	-68	No	19	47.37	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-UMW-9D	-0.02595	-35	-68	No	19	89.47	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-1D	0	3	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-2D	0	3	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-3D	0	-7	-58	No	17	58.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-4D	0	8	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-5D	0.01311	52	53	No	16	56.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-6D	0	0	53	No	16	25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-7D	0	1	53	No	16	81.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-8D	0	-1	-53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-UMW-9D	0	-3	-53	No	16	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-1D	-0.03183	-36	-39	No	13	84.62	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-2D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-3D	-0.0305	-32	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-4D	-0.03098	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-5D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-6D	-0.03191	-36	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-7D	-0.03093	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-8D	-0.03097	-28	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	L-UMW-9D	-0.03095	-28	-39	No	13	100	n/a	n/a	0.02	NP

Appendix E

May 2023 Corrective Action Statistical Evaluation



To: Bill Kutosky – Ameren Missouri **Project Number:** 23007

CC: Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson

From: Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey **Email:** Jeff.Ingram@Rocksmithgeo.com

RE: **Corrective Action Statistical Evaluation – LCPA Surface Impoundment Labadie Energy Center, Franklin County, Missouri**

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the May 2023 sampling event for the LCPA Surface Impoundment at the Labadie Energy Center (LEC) located in Franklin County, Missouri. As outlined in the remedy selection report for the LCPA, Corrective Action at the LCPA consists of two phases, as follows:

- 1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
- 2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modeling evaluations to document concentration trends following Corrective Action.

Phase 1 of Corrective Action commenced on September 28, 2019 and was substantially completed on December 30, 2020 with the installation of a low permeability cover system. Included in this memorandum is a brief summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

The initial Corrective Action sampling event was completed in April 2020, and eight (8) sampling events have been completed in total as a part of the Corrective Action Program at the LEC. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time were collected during active conditions at the LCPA, prior to cessation of CCR disposal in the LCPA and are not representative of groundwater conditions since the initiation of closure. Several constituents were reported at concentrations below the Practical Quantitation Limit (PQL) during the spring 2020, 2021, 2022, and/or 2023 sampling events, including: antimony, beryllium, cadmium, chromium, cobalt, lead, mercury, and thallium. During years when a constituent reported at concentrations below the PQL in all wells, they were not re-sampled during the subsequent semi-annual sampling event in the fall. There are now at least four results available for each of these constituents, so this is the first Corrective Action statistical evaluation where confidence intervals could be calculated for beryllium, cadmium, lead, mercury, and thallium, in addition to the remaining Appendix IV parameters.

Additionally, now that 8 rounds of Corrective Action Sampling have been completed, trend tests using the Sen's Slope / Mann Kendall can be completed as outlined in the USEPA Unified Guidance. Therefore, trend tests can now be completed for the following constituents: arsenic, barium, fluoride, lithium, molybdenum, radium 226 + 228, and selenium.

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plan's (CAGMP's) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis was performed only on the results collected as a part of the Corrective Action Monitoring Program. In addition to outliers noted in previous Corrective Action evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Arsenic
 - L-S-1 at 1.6 micrograms per liter ($\mu\text{g/L}$) on 11/13/2020. The result is statistically higher than other arsenic values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Barium
 - L-TP-2M at 89.5 $\mu\text{g/L}$ on 10/26/2022. The result is statistically lower than other barium values at the same well. The low result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Cobalt
 - L-LMW-1S at 1.8 J $\mu\text{g/L}$ on 4/16/2020. The result is statistically higher than other cobalt values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Fluoride
 - L-AM-1D at Non-Detect [<0.12 milligrams per liter (mg/L)] on 10/26/2022. The result is statistically lower than other fluoride values at the same well. The low result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - L-TP-2D at 0.14 J mg/L on 10/26/2022. The result is statistically lower than other fluoride values at the same well. The low result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Lithium
 - L-BMW-1S at Non-Detect (<23.0 $\mu\text{g/L}$) on 11/1/2021. Analysis of the November 2021 sampling event data revealed that laboratory dilution was required for analysis of this sample. The sample dilution caused the MDL to be greater than the GWPS. The sample was re-analyzed on 2/9/2022

and the resultant data is not consistent with historical results. The low result has not been confirmed during previous or subsequent sampling events and is an outlier.

- L-BMW-1S at 23.8 µg/L on 4/6/2022. The result is statistically higher than other lithium values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.

- Molybdenum
 - L-TP-1D at Non-Detect (<20 µg/L) on 10/26/2022. Following data validation procedures, the result was qualified as a non-detect at the practical quantitation limit (PQL), making the effective result higher than other molybdenum values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - L-TP-4D at Non-Detect (<20 µg/L) on 10/24/2022. Following data validation procedures, the result was qualified as a non-detect at the PQL, making the effective result higher than other molybdenum values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - L-MW-24 at Non-Detect (<20 µg/L) on 10/24/2022. Following data validation procedures, the result was qualified as a non-detect at the PQL, making the effective result higher than other molybdenum values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - L-S-1 at Non-Detect (<20 µg/L) on 10/26/2022. Following data validation procedures, the result was qualified as a non-detect at the PQL, making the effective result higher than other molybdenum values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.

- Thallium
 - L-MW-35[D] at 7.9 µg/L on 11/2/2021. The result is statistically higher than other thallium results at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.

An analysis of the outliers removed to date was completed and the following statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits:

- Cobalt
 - L-BMW-1S at 1.9 J µg/L on 2/18/2021. The result was removed as an outlier in October 2022 because it was statistically higher than other values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in cobalt concentrations than observed with the data available for the October 2022 statistical evaluation. This cobalt result is no longer considered an outlier.

- Lithium

- L-BMW-2S at Non-Detect (<23 µg/L) on 11/1/2021. The result was removed as an outlier in October 2022 because it was statistically lower than other lithium values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in lithium concentrations than observed with the data available for the October 2022 statistical evaluation. This lithium result is no longer considered an outlier.
- L-LMW-4S at 29 J µg/L on 11/3/2021. The result was removed as an outlier in October 2022 because it was statistically lower than other lithium values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in lithium concentrations than observed with the data available for the October 2022 statistical evaluation. This lithium result is no longer considered an outlier.
- L-LMW-8S at Non-Detect (<23 µg/L) on 11/5/2021. The result was removed as an outlier in October 2022 because it was statistically lower than other lithium values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in lithium concentrations than observed with the data available for the October 2022 statistical evaluation. This lithium result is no longer considered an outlier.
- L-MW-24 at 26.2 J µg/L on 11/4/2021. The result was removed as an outlier in October 2022 because it was statistically higher than other lithium values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in lithium concentrations than observed with the data available for the October 2022 statistical evaluation. This lithium result is no longer considered an outlier.
- Molybdenum
 - L-BMW-1S at 2.3 J µg/L on 11/1/2021. The result was removed as an outlier in April 2022 because it was statistically higher than other molybdenum values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in molybdenum concentrations than observed with the data available for the April 2022 statistical evaluation. This molybdenum result is no longer considered an outlier.
 - L-MW-24 at 2.9 J µg/L on 11/4/2021. The result was removed as an outlier in April 2022 because it was statistically higher than other molybdenum values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in molybdenum concentrations than observed with the data available for the April 2022 statistical evaluation. This molybdenum result is no longer considered an outlier.

L-TP-1D at 5.1 J µg/L on 11/4/2021. The result was removed as an outlier in April 2022 because it was statistically higher than other molybdenum values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in molybdenum concentrations than observed with the data available for the April 2022 statistical evaluation. This molybdenum result is no longer considered an outlier.

 - L-TP-4D at 4.0 J µg/L on 11/3/2021. The result was removed as an outlier in April 2022 because it was statistically higher than other molybdenum values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in molybdenum

concentrations than observed with the data available for the April 2022 statistical evaluation. This molybdenum result is no longer considered an outlier.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the site-specific GWPS (**Appendix A**). Confidence interval evaluation was supplemented with Sen's Slope/Mann Kendall Analyses on constituents that have eight independent sampling results at a given well, per the USEPA Unified Guidance (**Appendix B**). The Sen's Slope/Mann-Kendall Analysis identifies well-analyte pairs that have statistically significant trends and calculates confidence bands that vary with time. The upper confidence band, in relation to the GWPS for a given constituent, is used to determine exceedances, as outlined in the site CAGMP. As discussed previously, antimony, beryllium, cadmium, chromium, cobalt, lead, mercury, and thallium do not have the requisite quantity of results to perform Sen's Slope/Mann Kendall Analyses, so only confidence intervals were produced for those constituents.

Using these corrective action statistical methods with data through May 2023, wells with constituents exceeding the GWPS are as follows:

- Arsenic at L-LMW-2S
- Cobalt at L-AM-1S
- Lithium at L-LMW-7S
- Molybdenum at L-LMW-2S, L-LMW-4S, L-LMW-8S, L-AM-1D, L-TP-2D, L-TP-3D, L-TP-3M, L-AMW-8, L-MW-33[D], L-MW-34[D], L-MW-35[D]

Radium 226 + 228 at TP-1D was previously identified as an exceedance in the October 2022 corrective action statistical evaluation. It is no longer an exceedance as of May 2023 since the upper confidence limit is below the GWPS. All other arsenic, cobalt, lithium, and molybdenum exceedances previously identified in October 2022 remain as of this evaluation. Variability in the initial groundwater sampling results during and directly after the closure of the LCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported in these results following closure are expected to be variable but are expected to decrease over time as stabilization occurs and supplemental corrective measures are put into service.

3.0 CLOSING

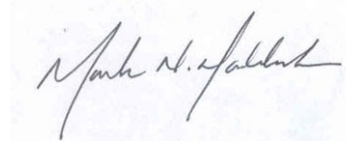
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – LCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

**Table 1 - LCPA Groundwater Protection Standards
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring ⁶
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	44.2	44.2
Barium	µg/L	2000	2000	1290
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.3074
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	47.4	47.4
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	4.14
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at <http://water.epa.gov/drink/contaminants/index.cfm>.
5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-2D.

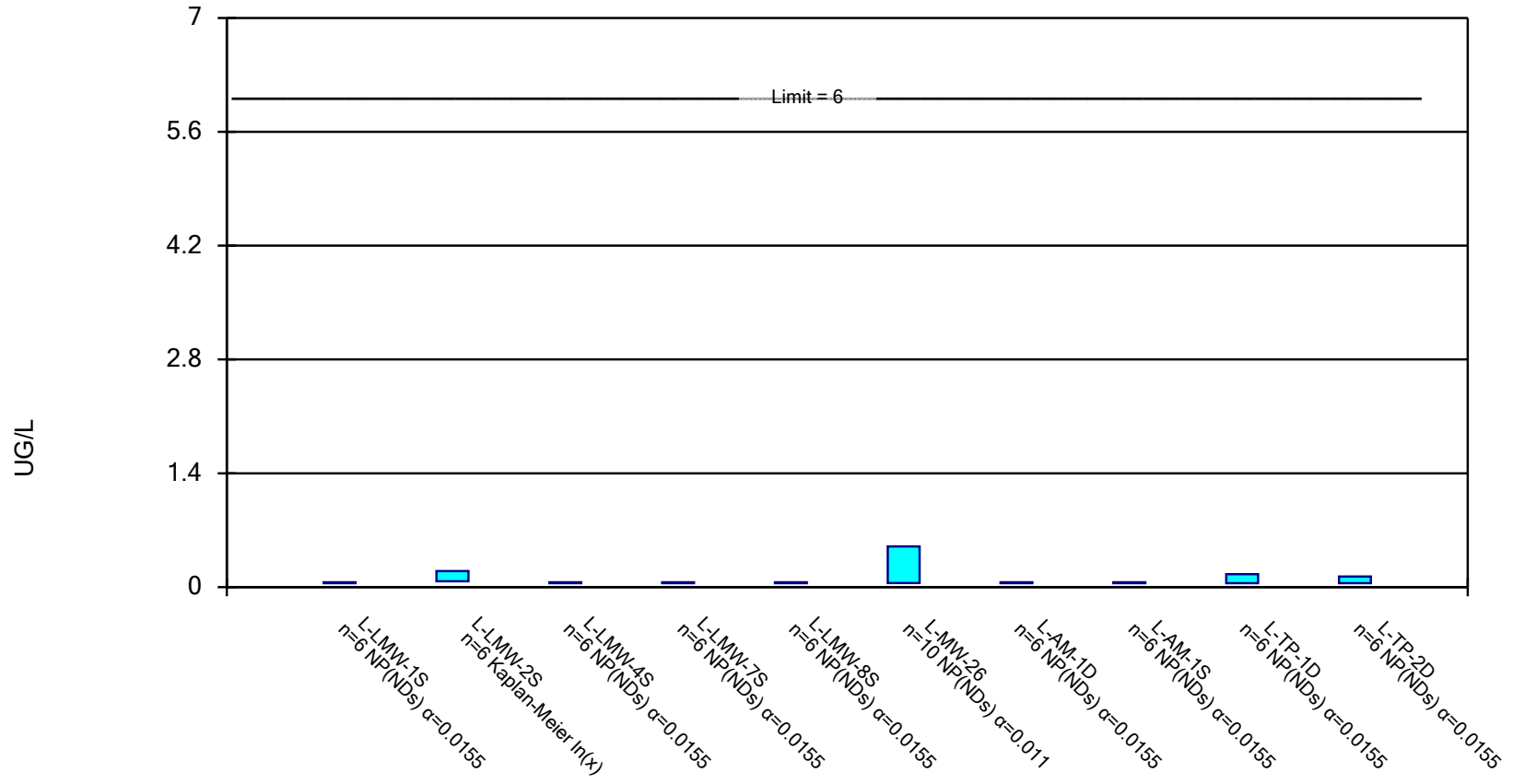


Appendix A

Sanitas Confidence Interval Statistical Output

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

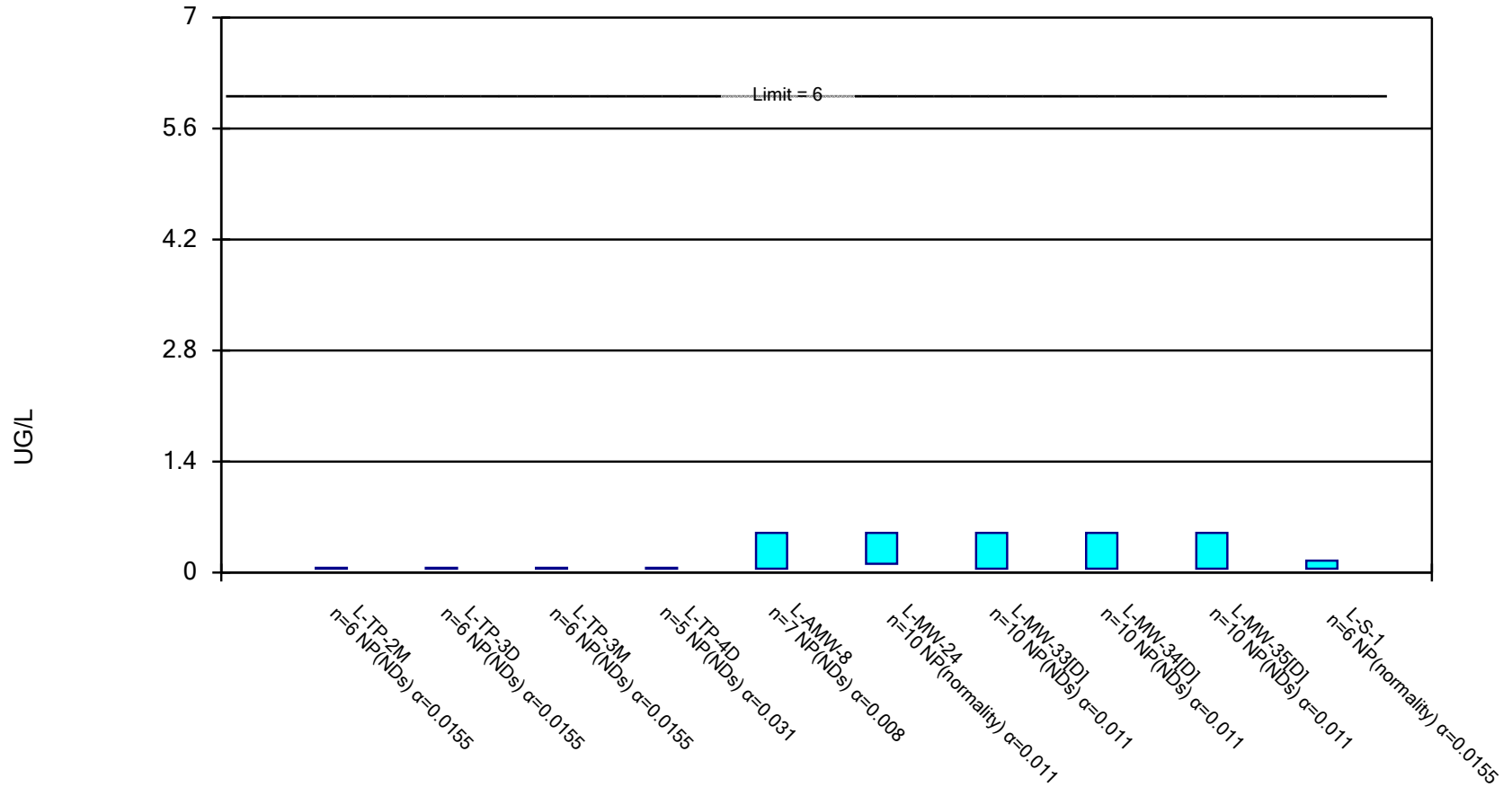
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 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

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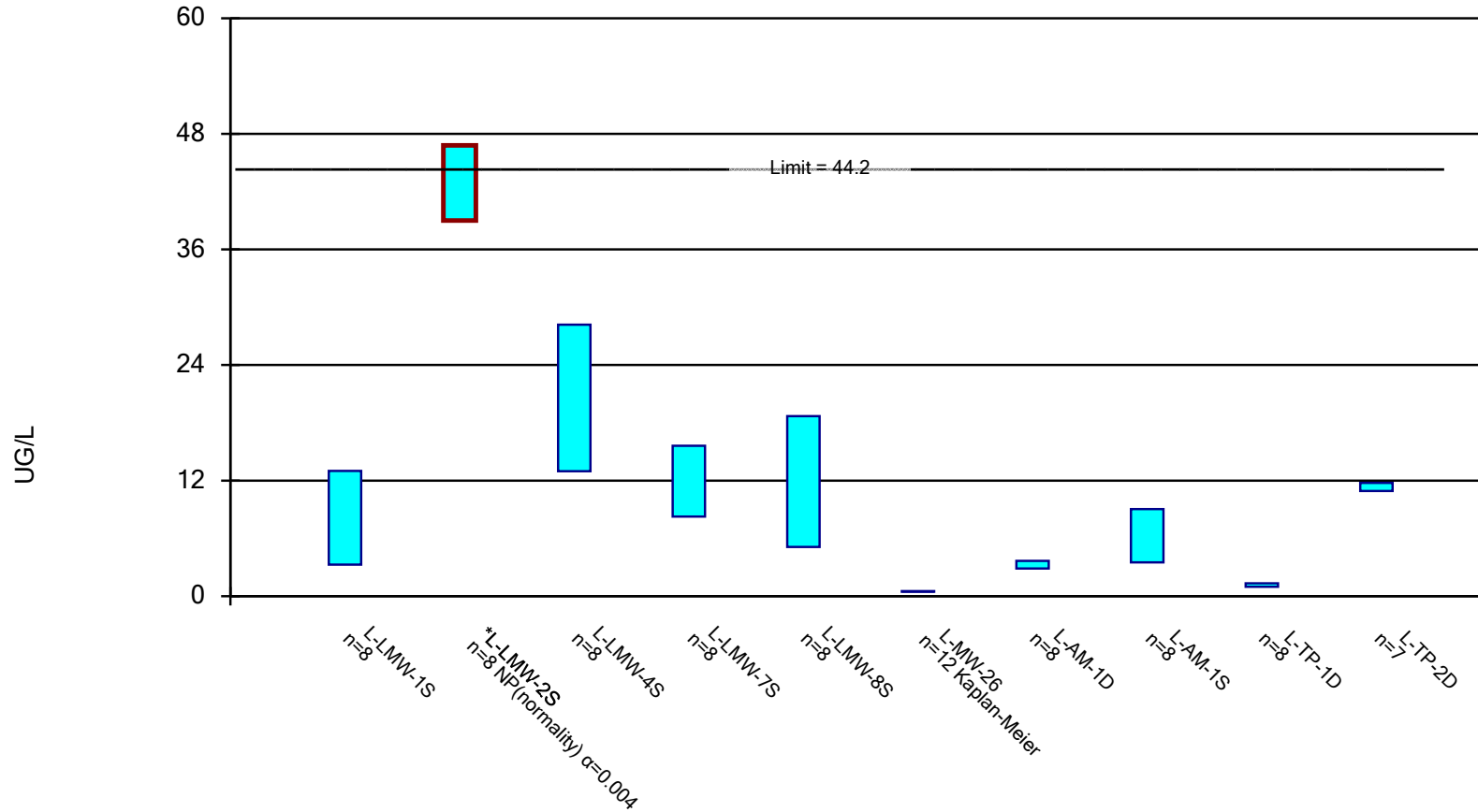


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

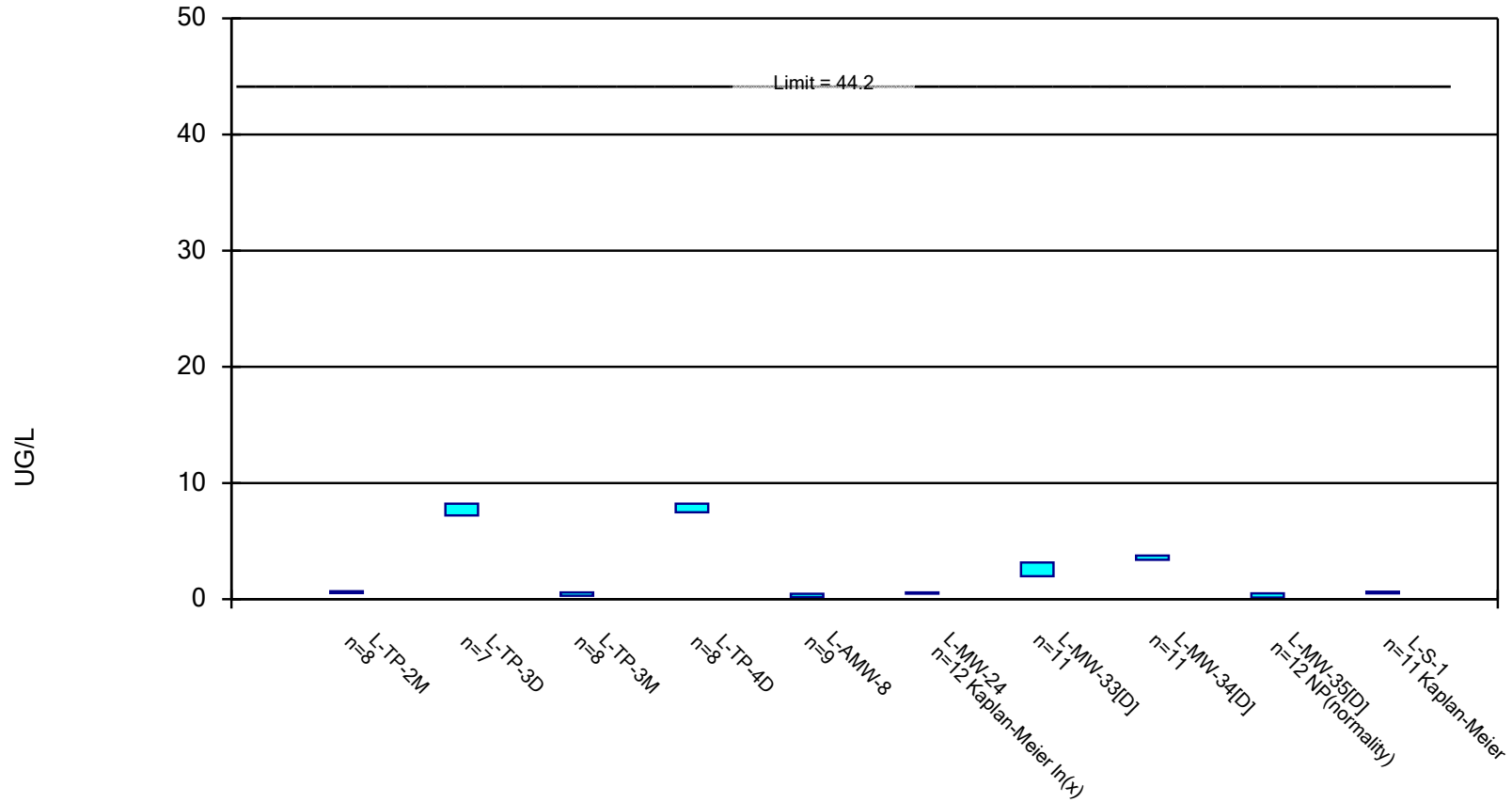
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

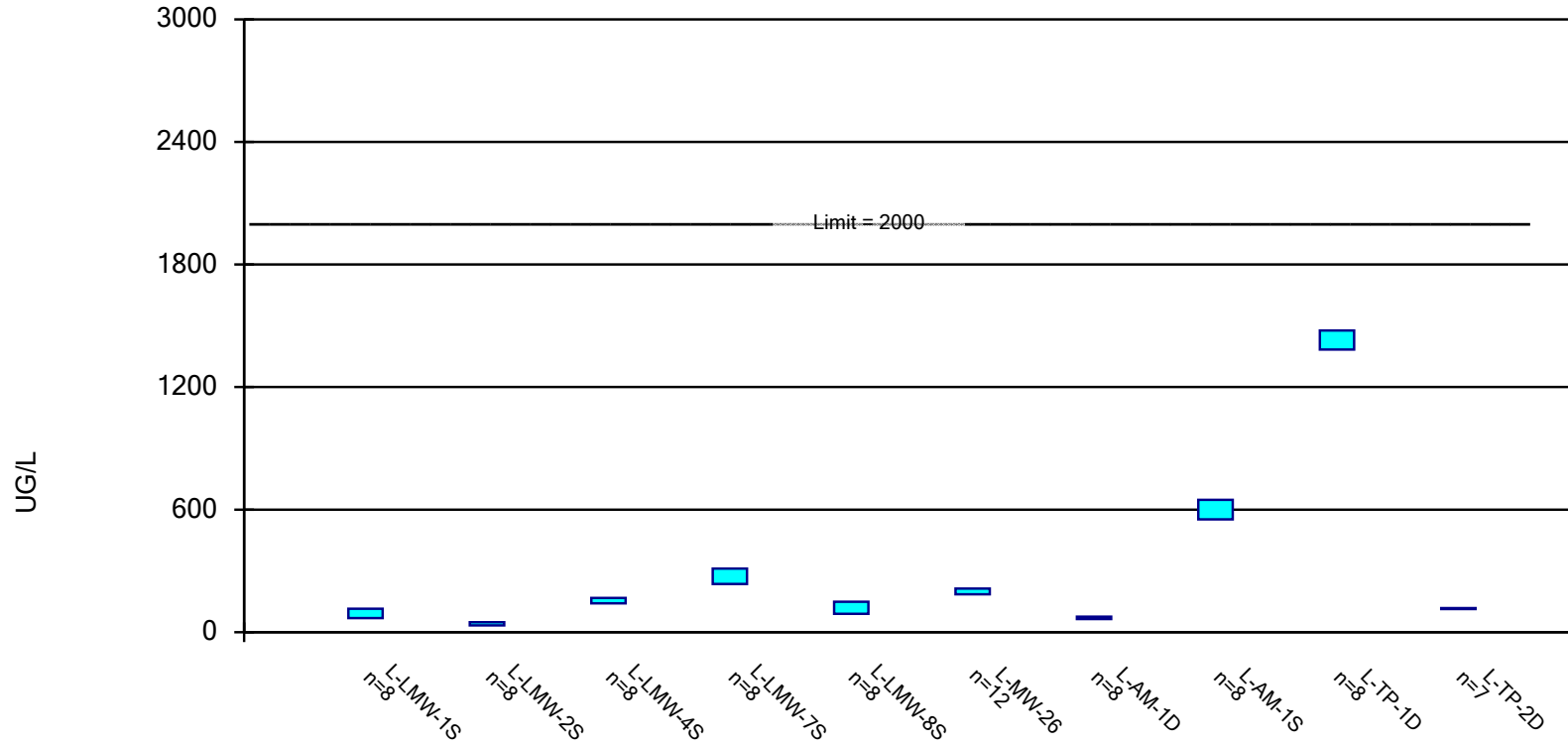
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: ARSENIC, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric Confidence Interval, Corrective Action Mode

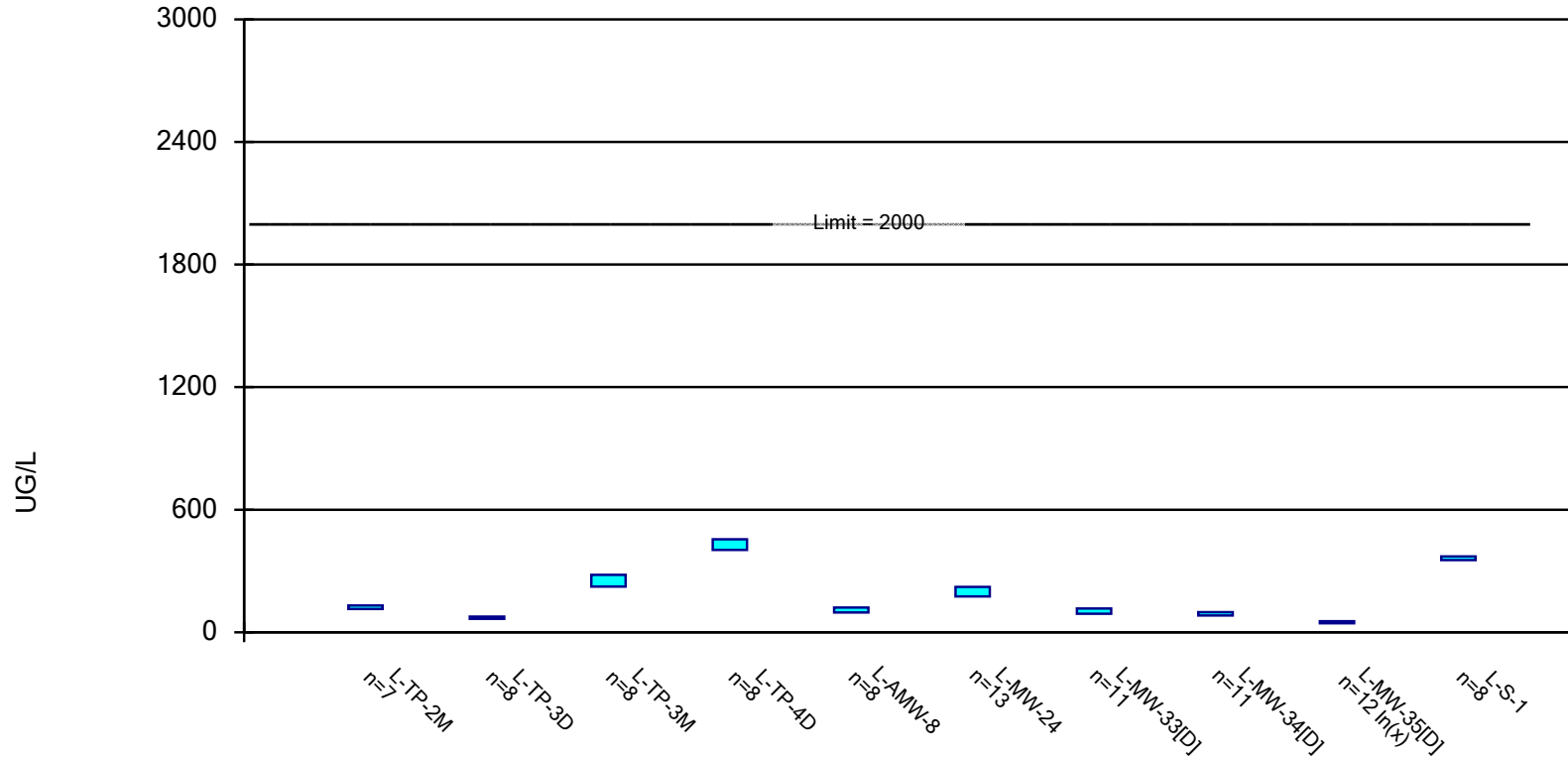
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric Confidence Interval, Corrective Action Mode

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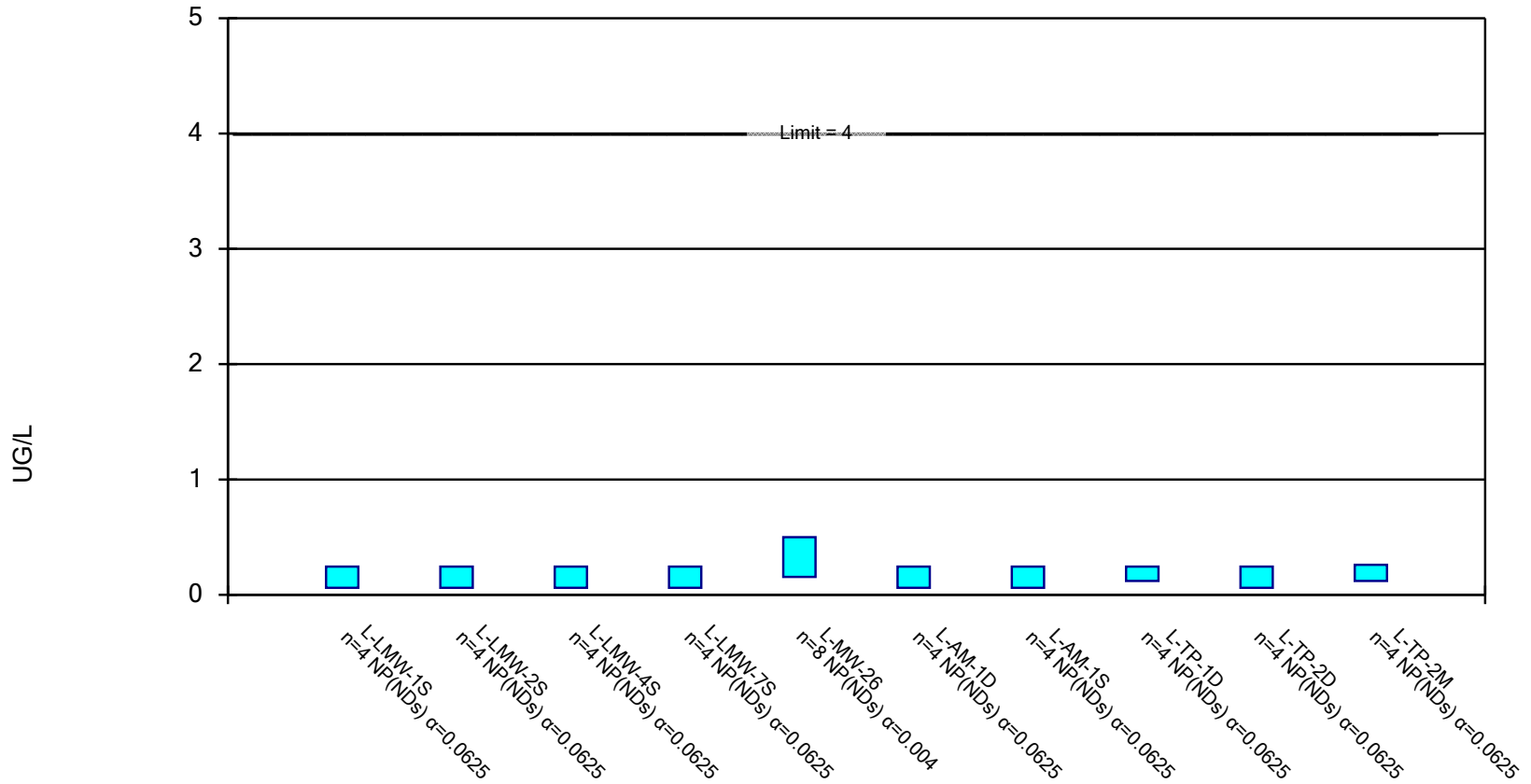


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

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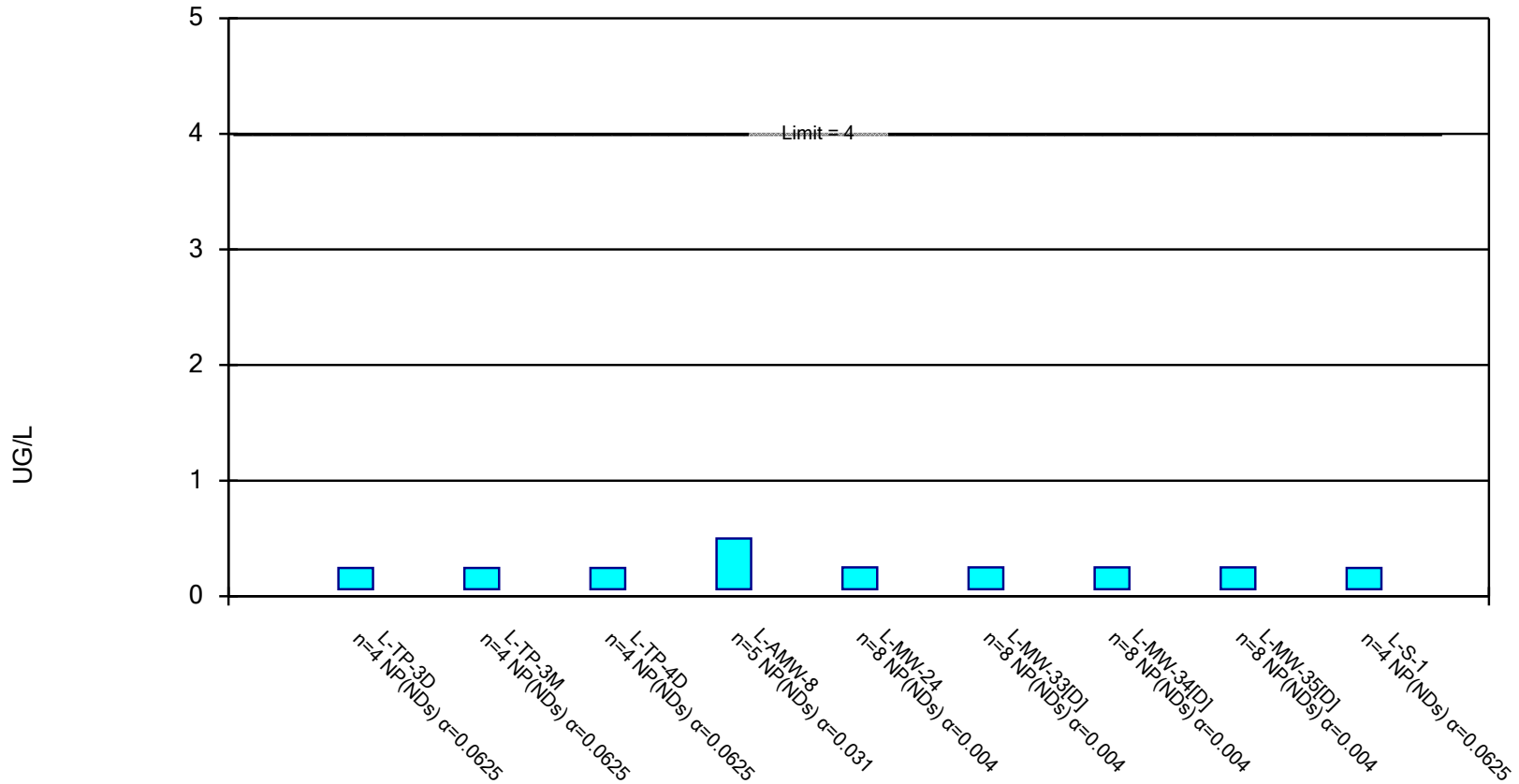


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

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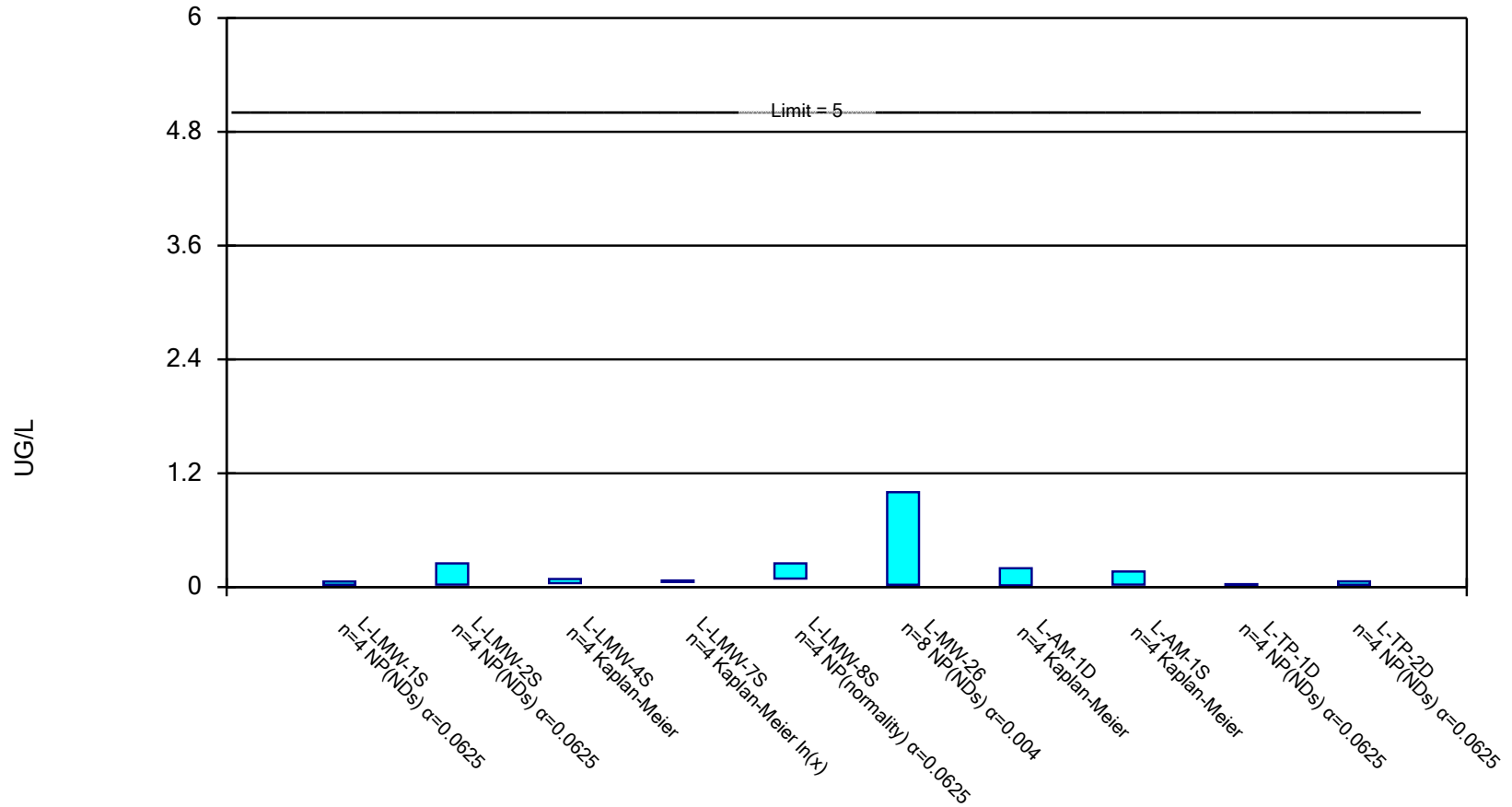


Constituent: BERYLLIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

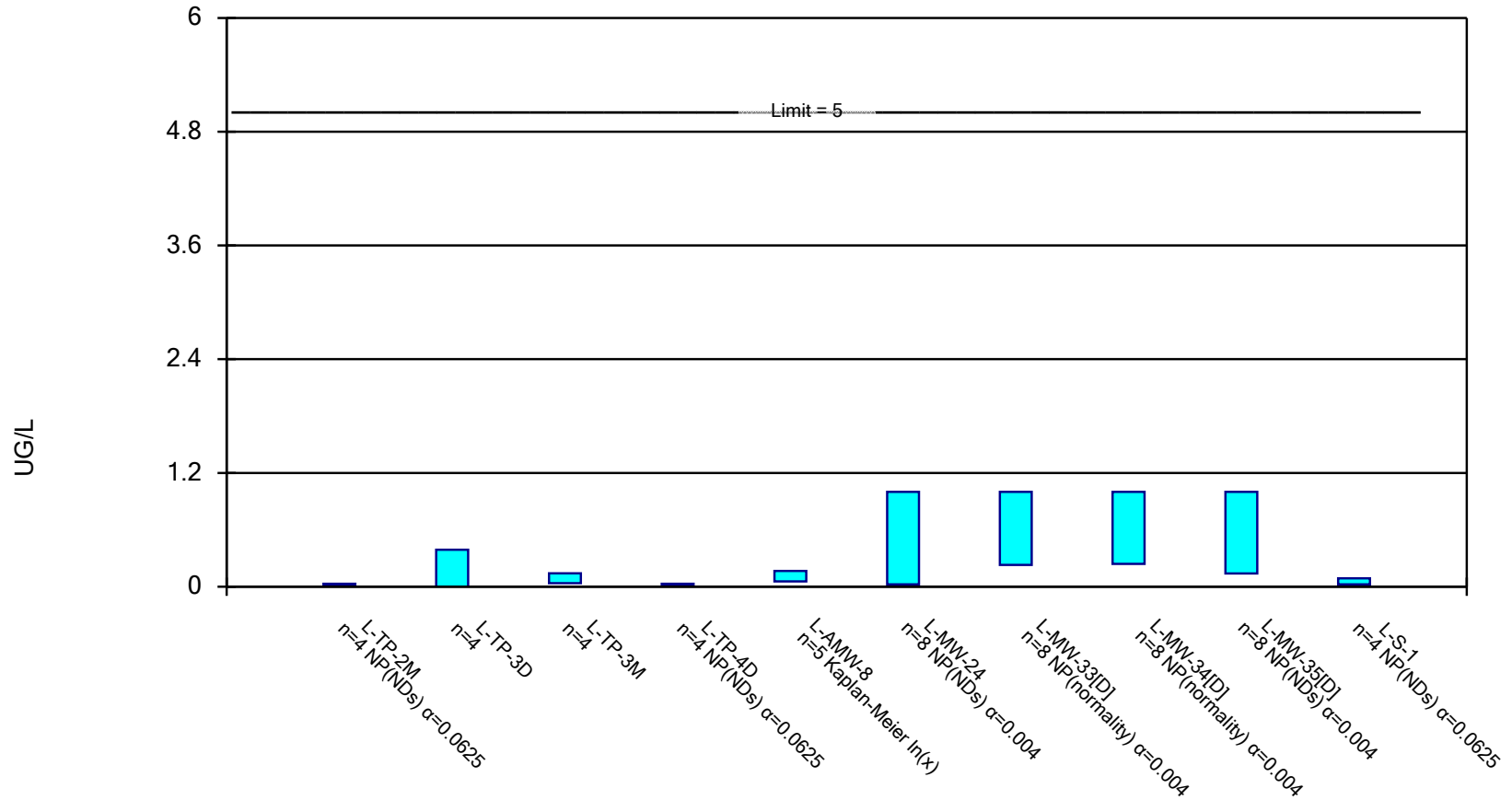
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 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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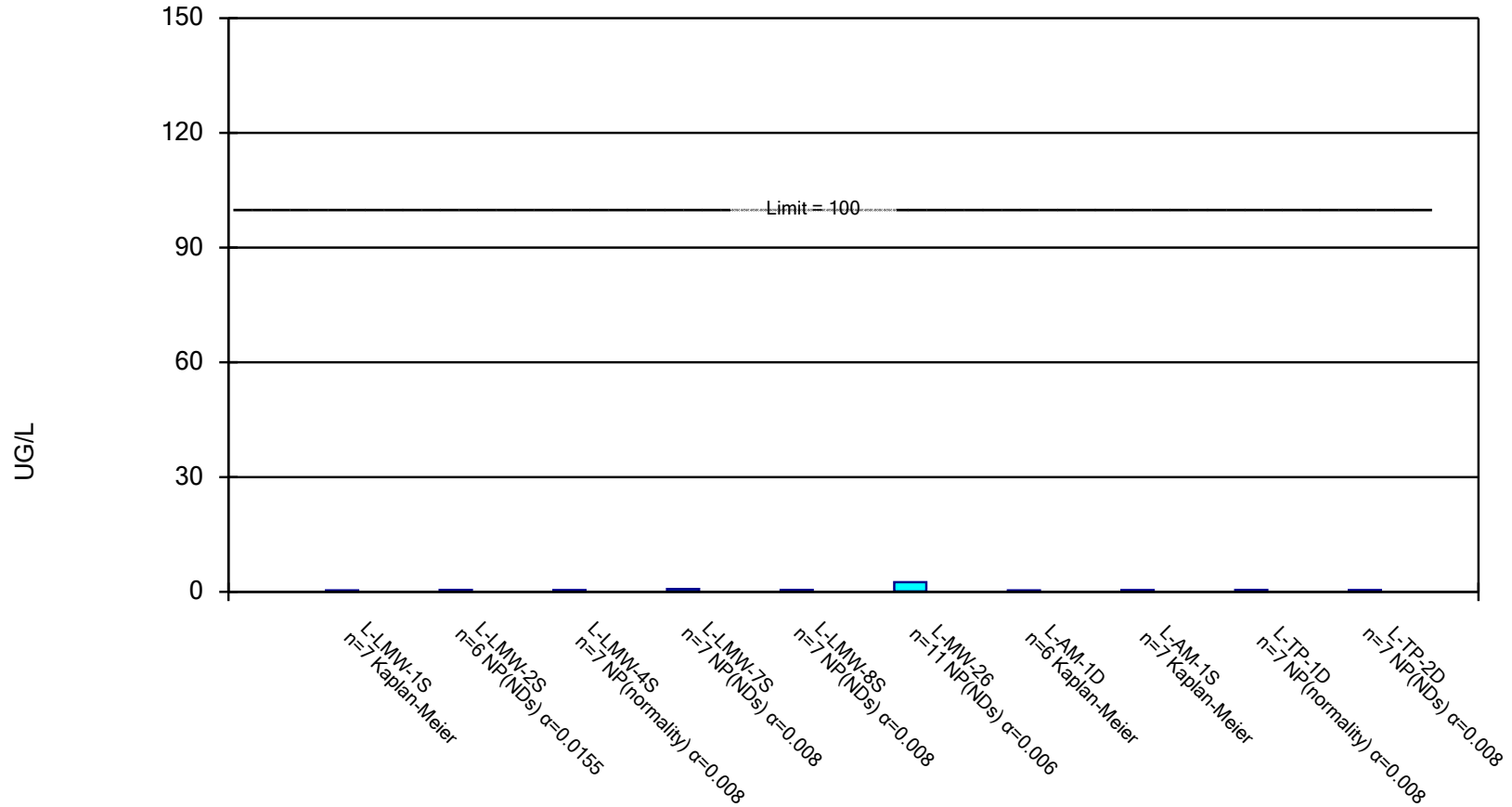


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

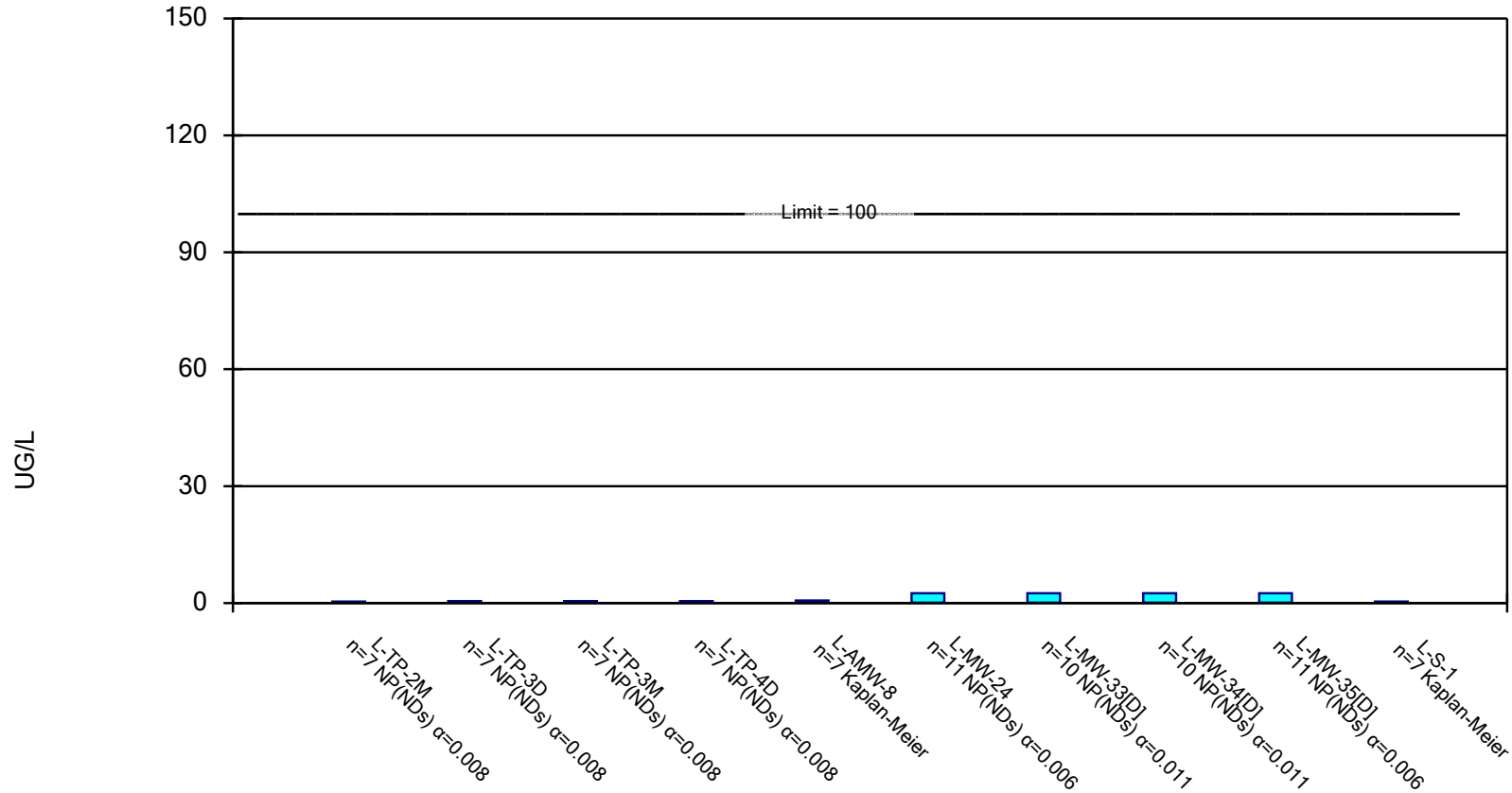
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

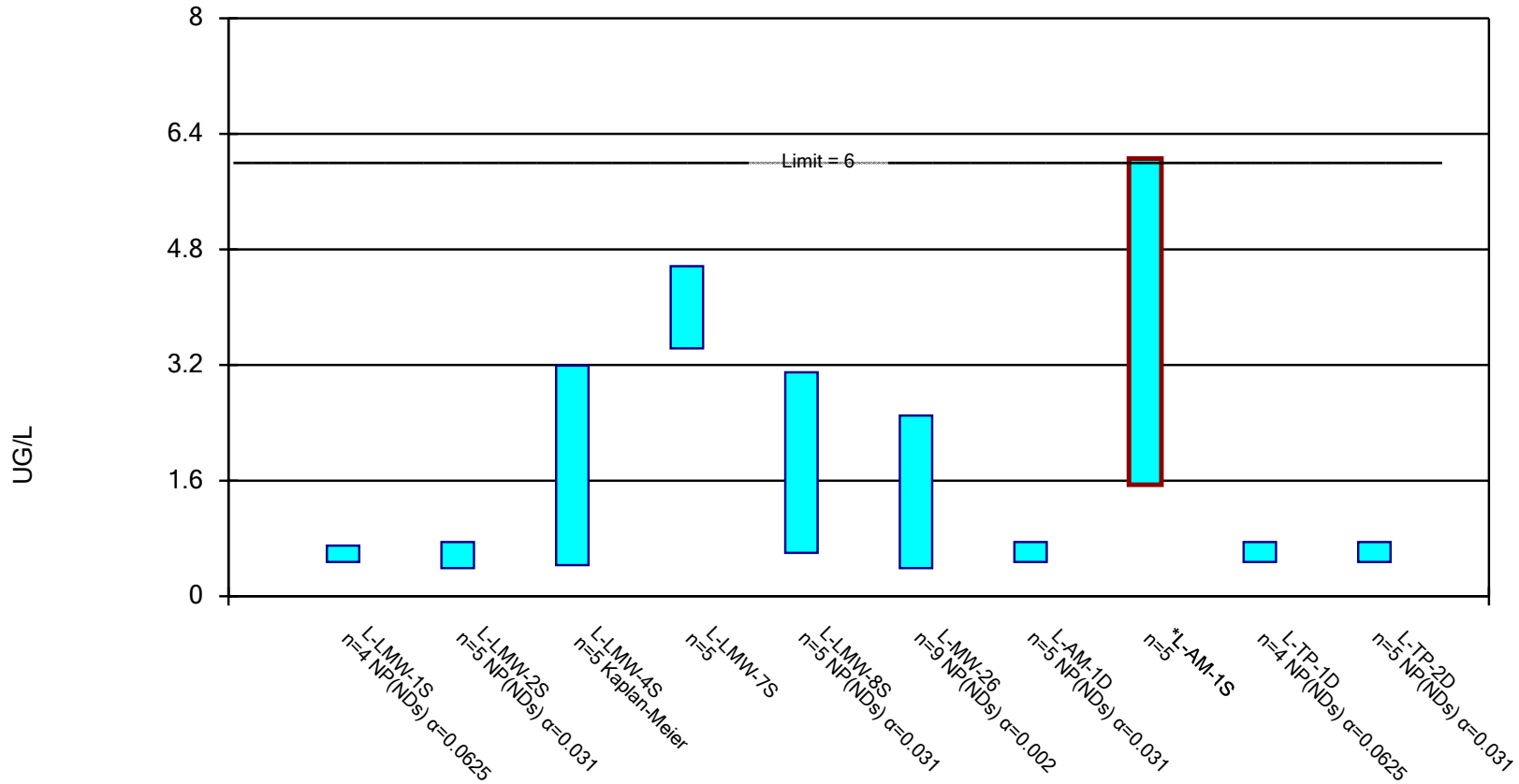
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Constituent: CHROMIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

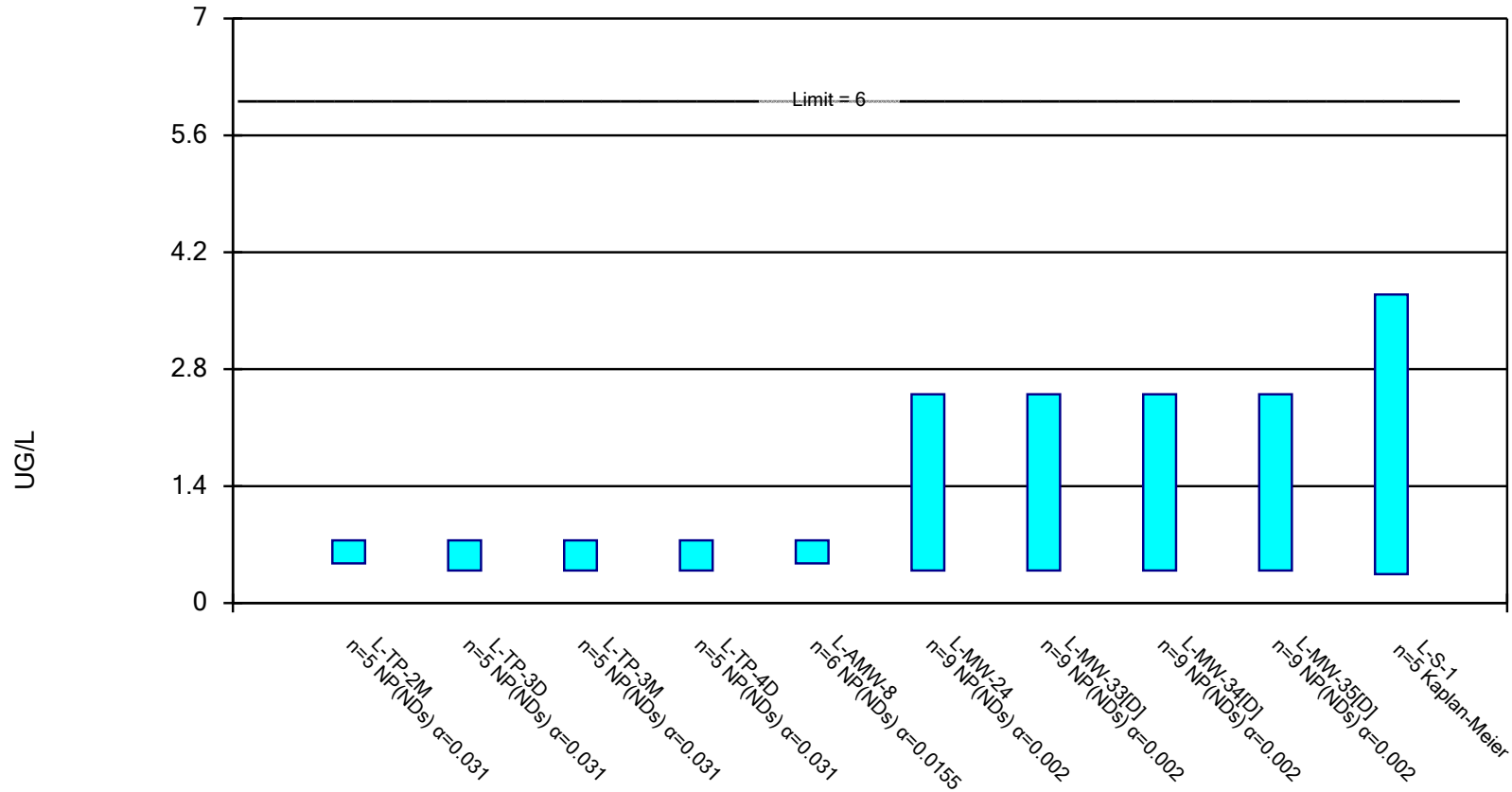


Constituent: COBALT, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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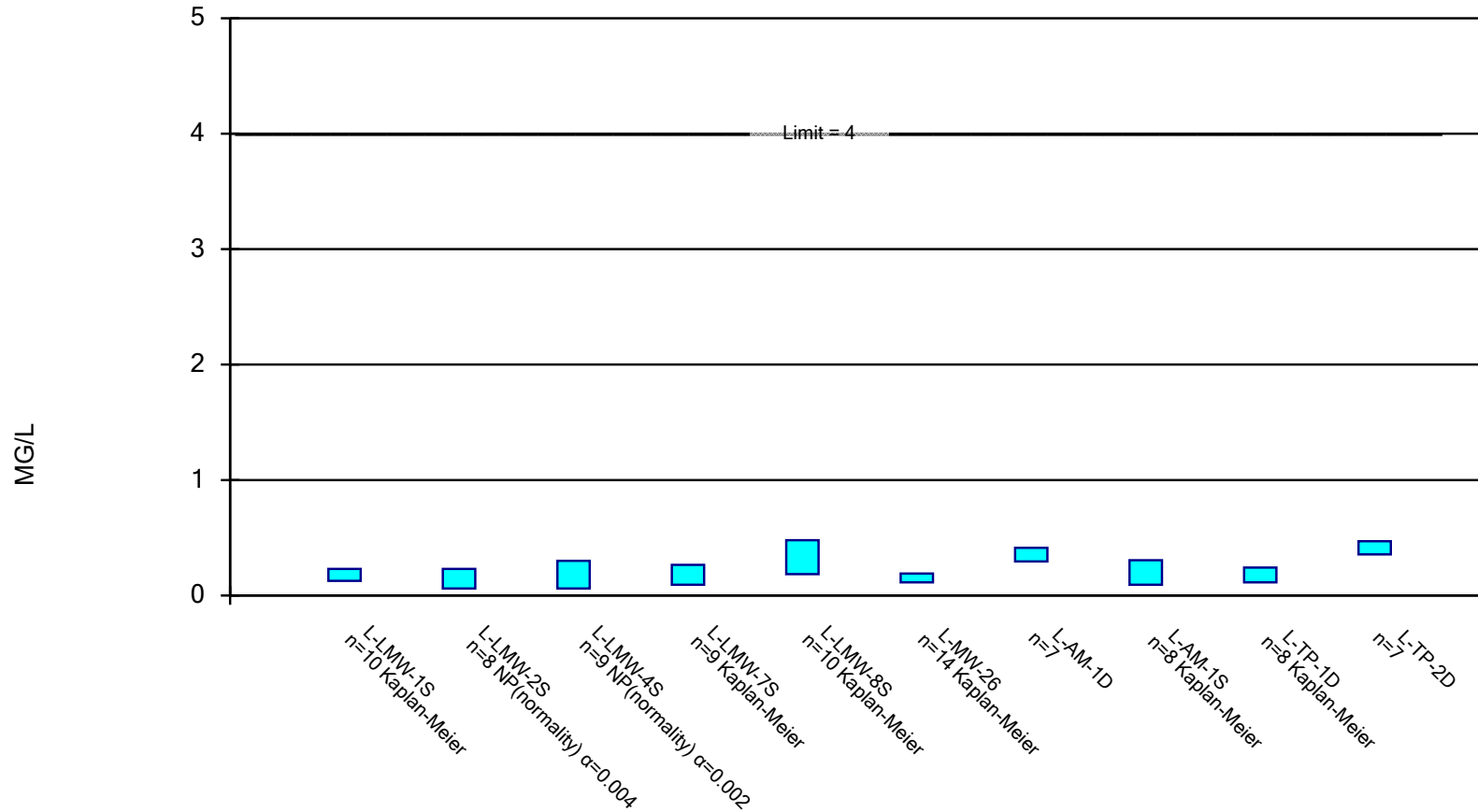


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

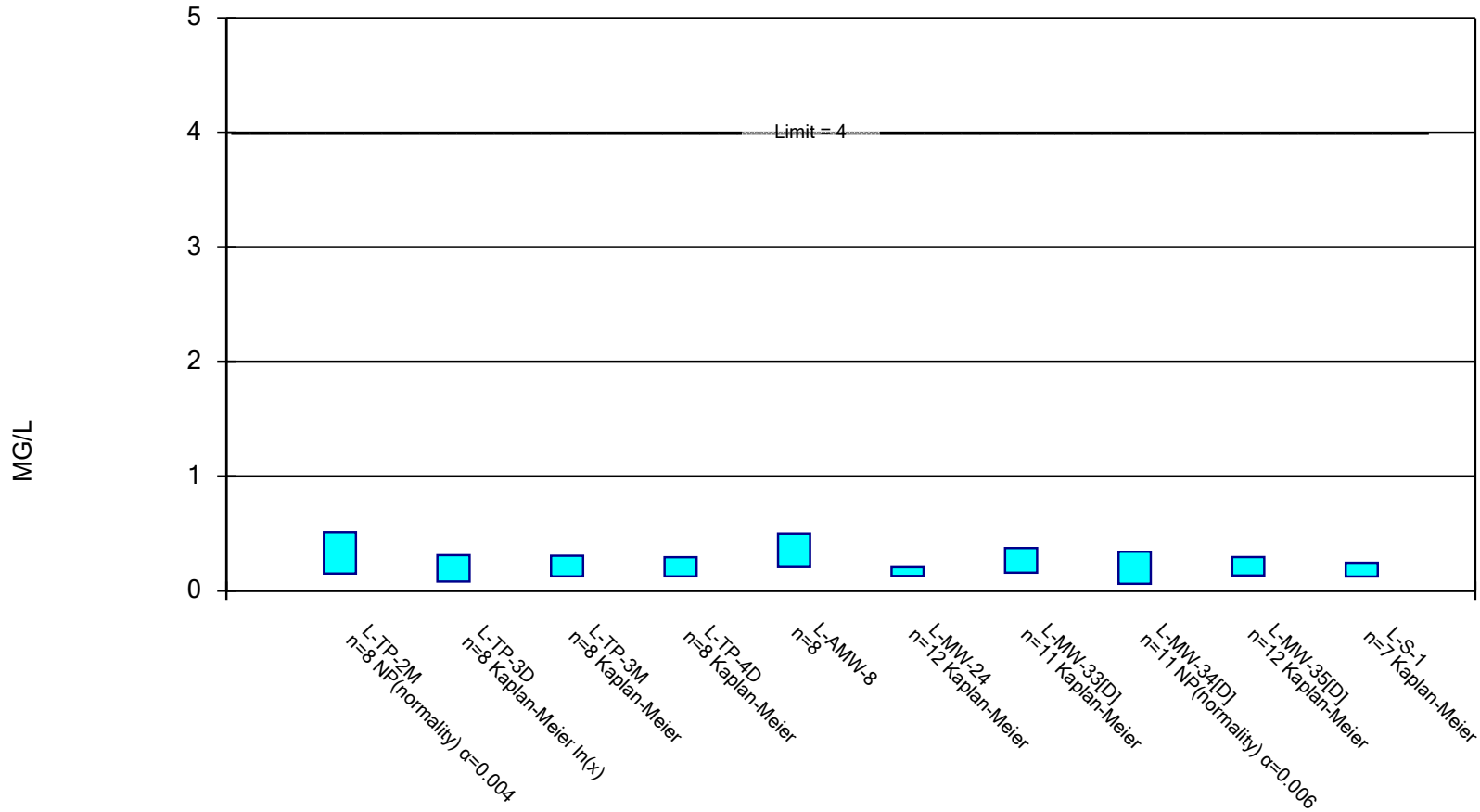
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

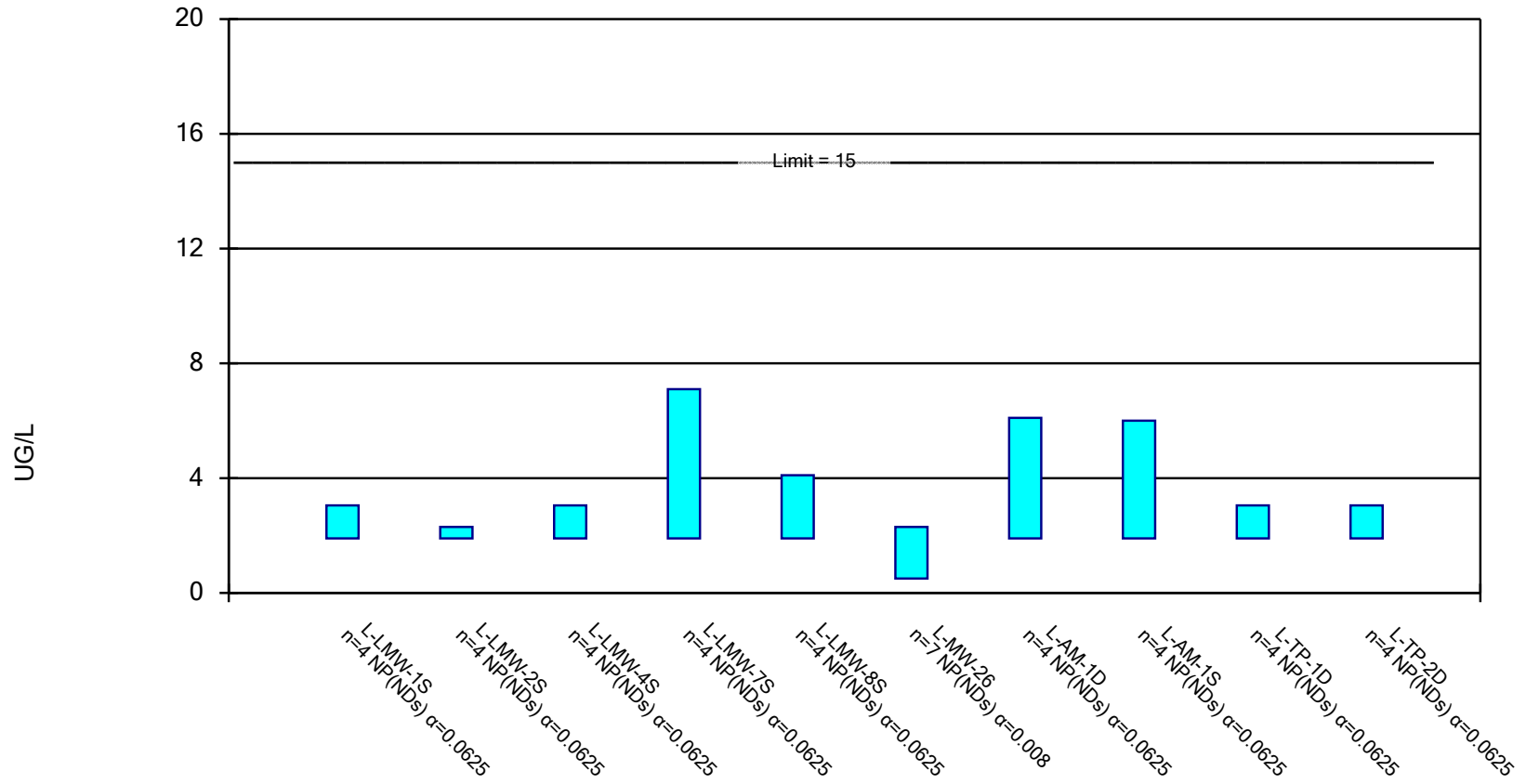


Constituent: FLUORIDE, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

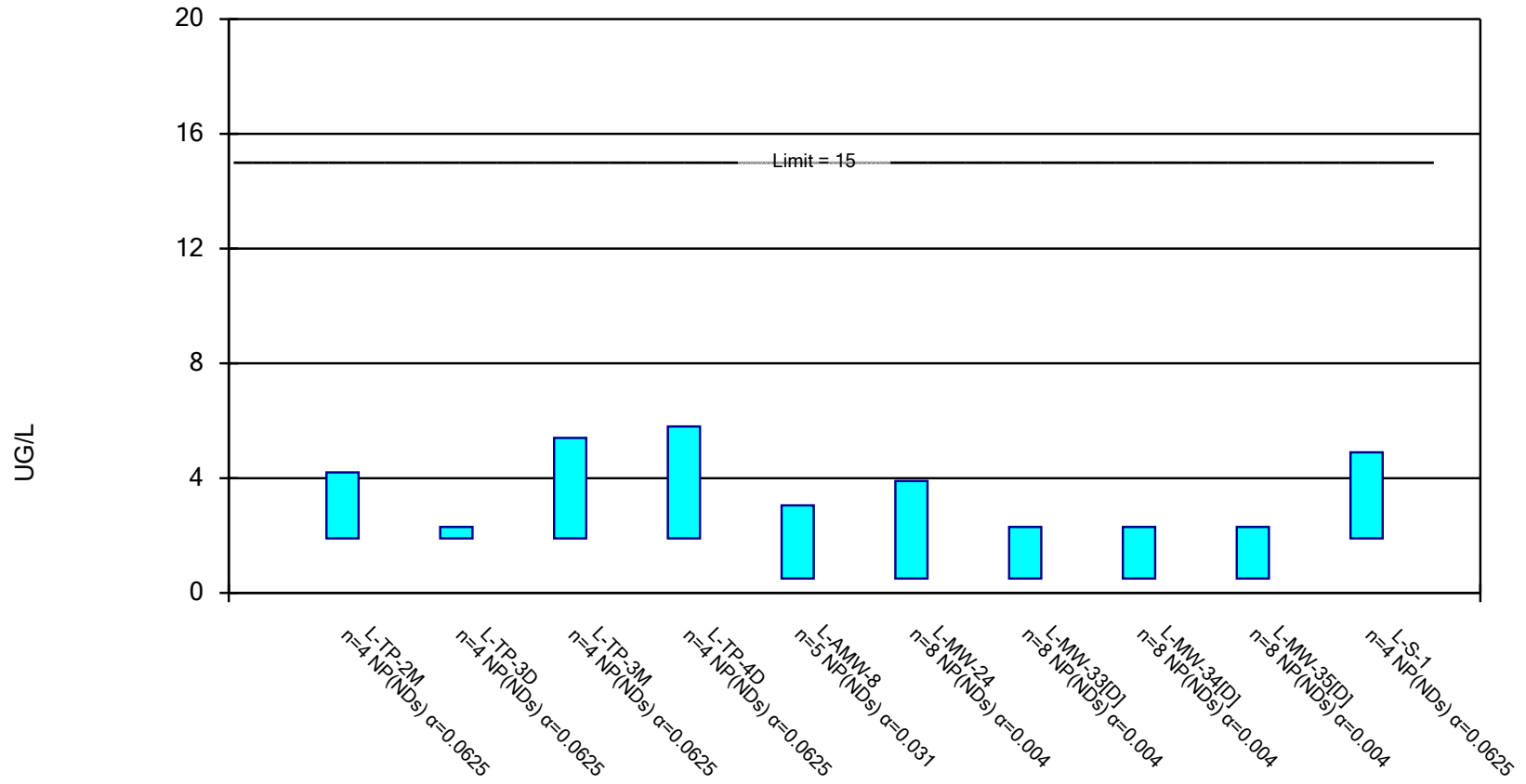
Compliance Limit is not exceeded.



Constituent: LEAD, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

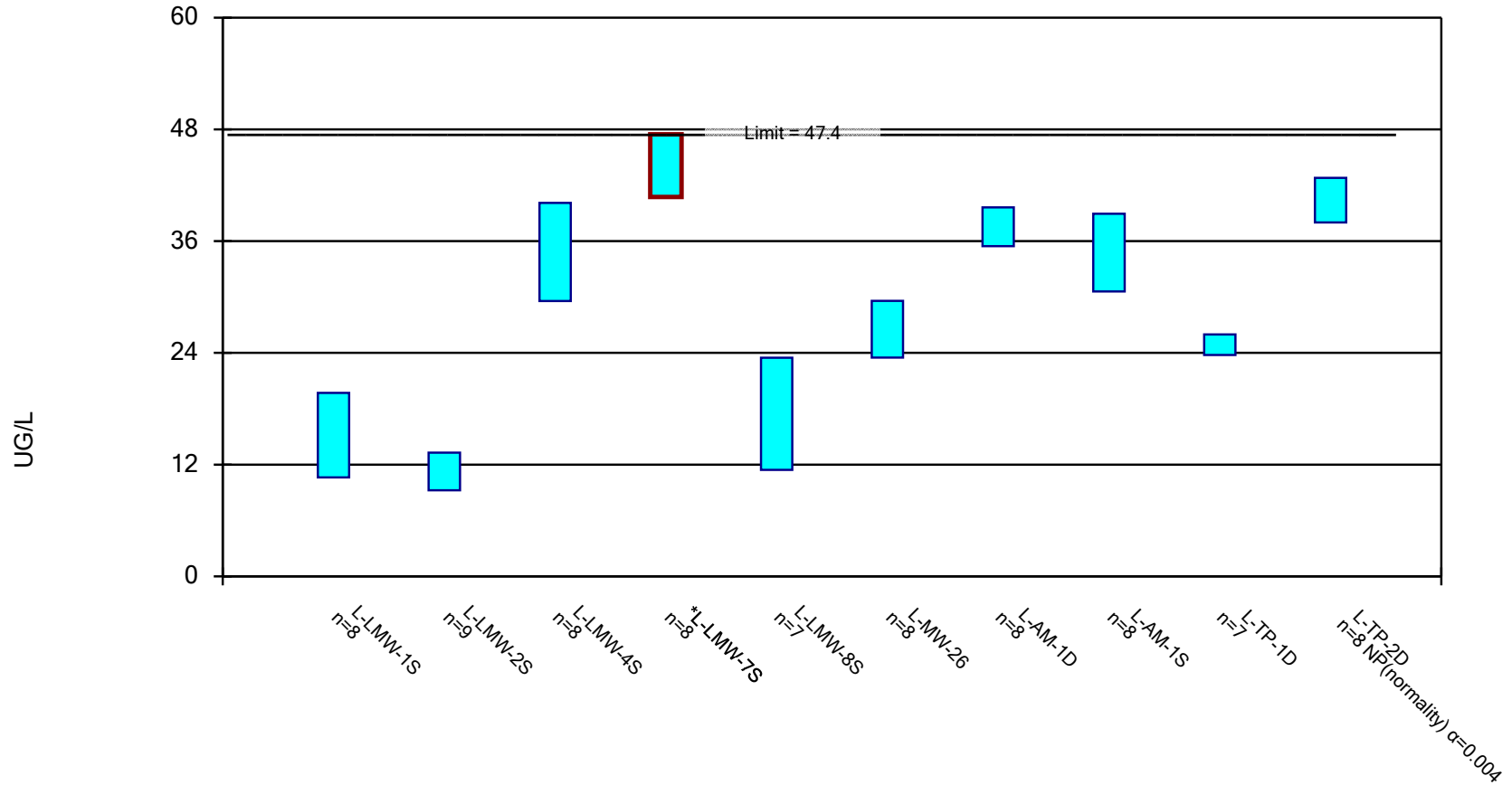
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

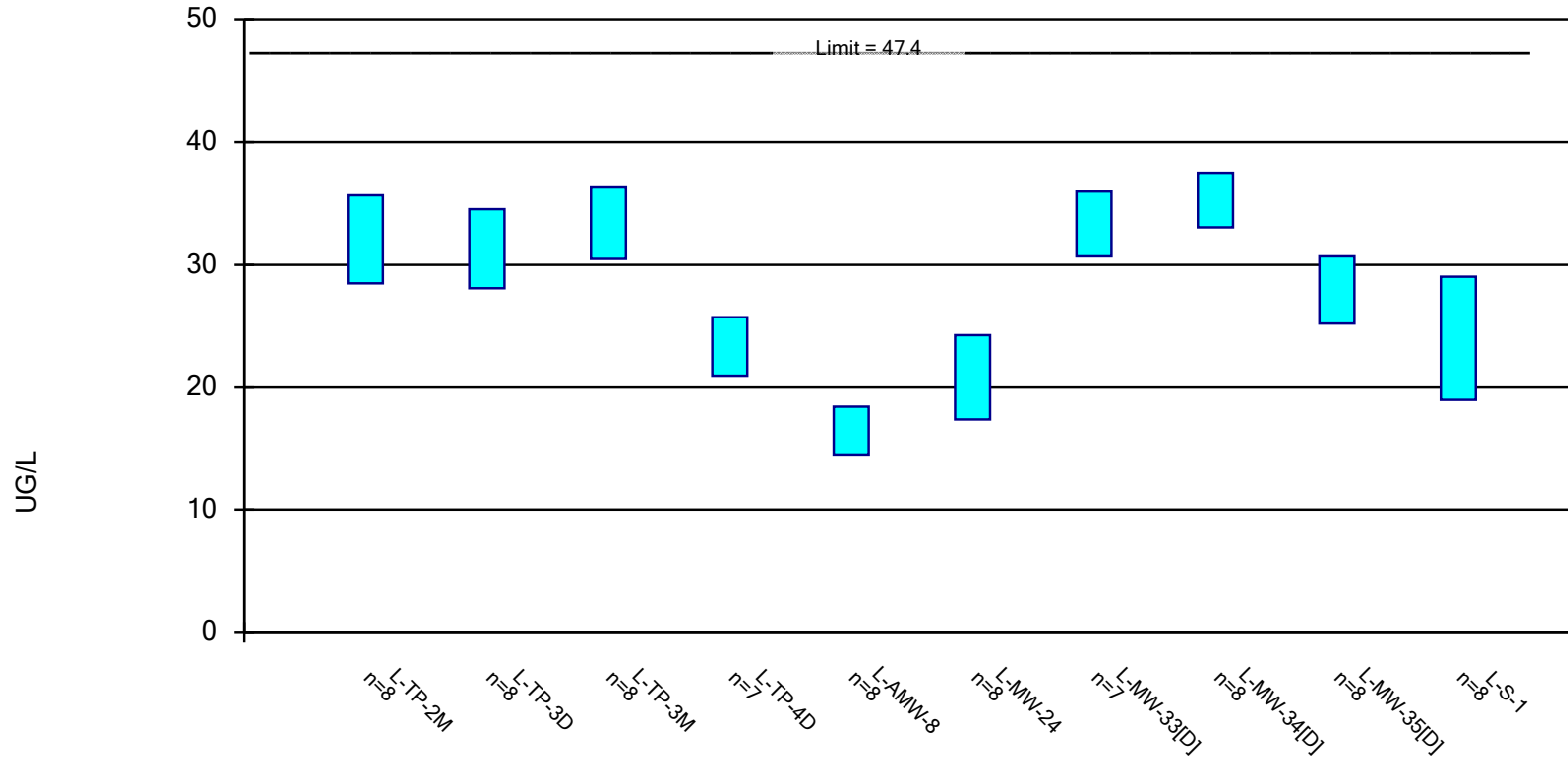
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Constituent: LITHIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
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Parametric Confidence Interval, Corrective Action Mode

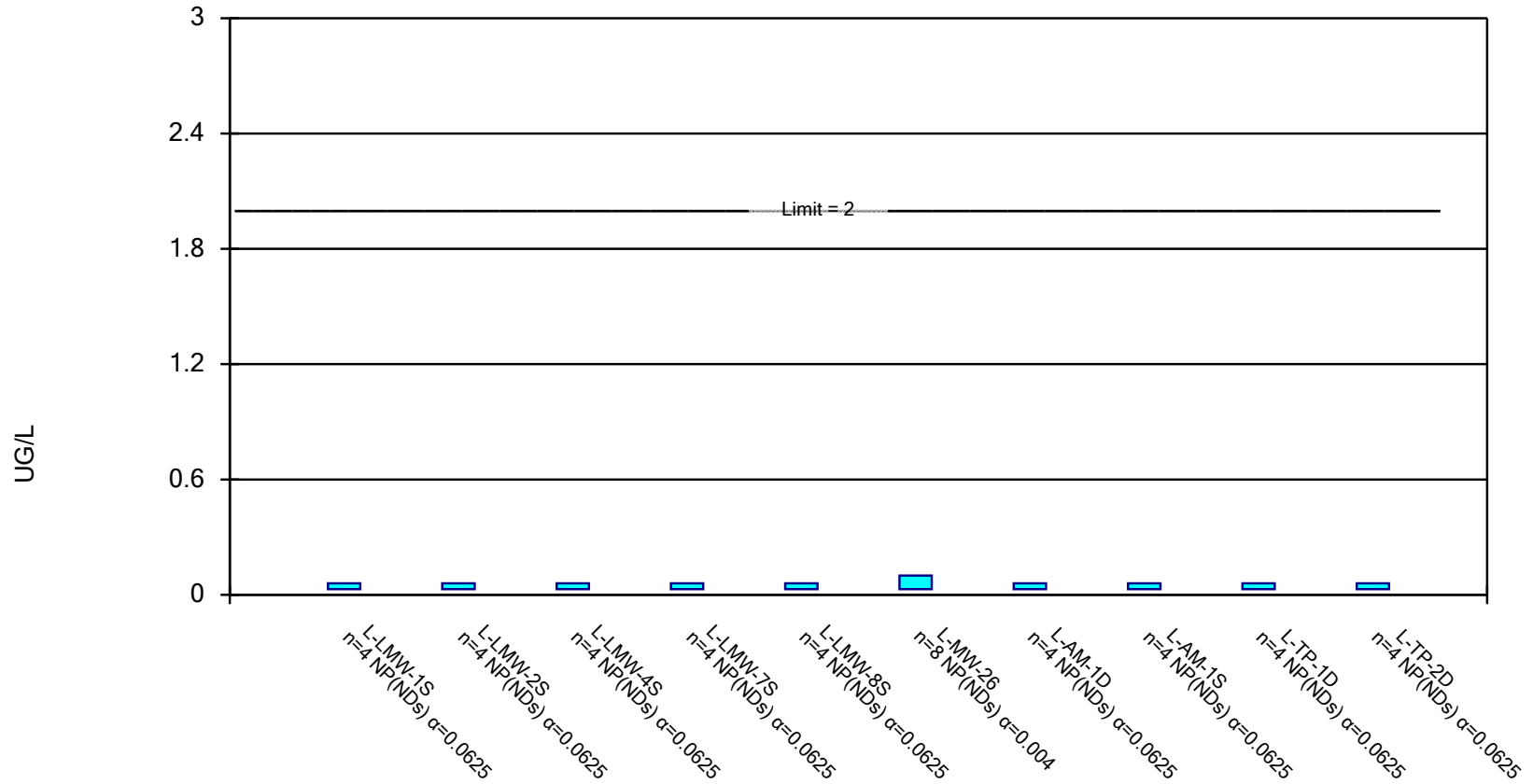
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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

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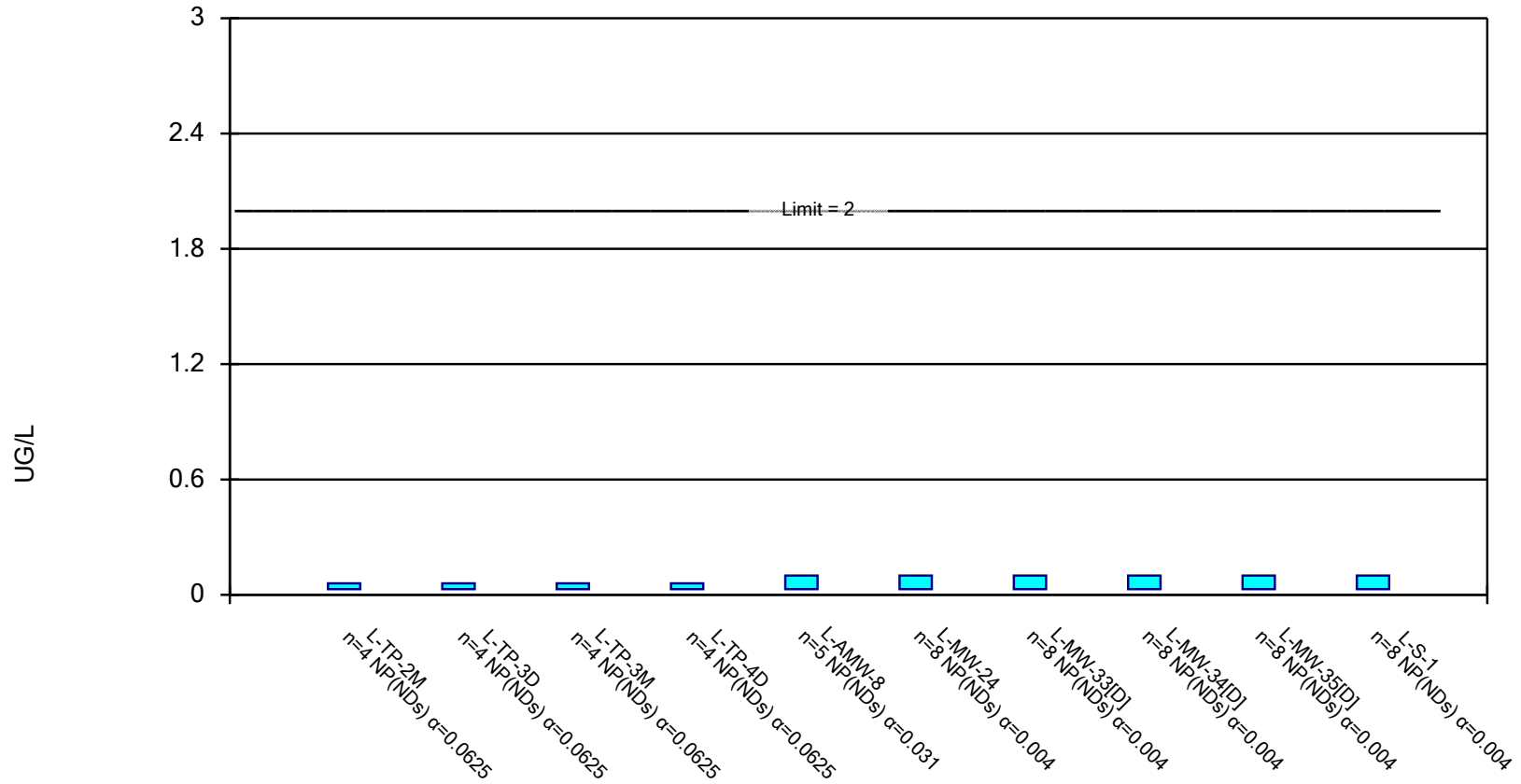


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Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

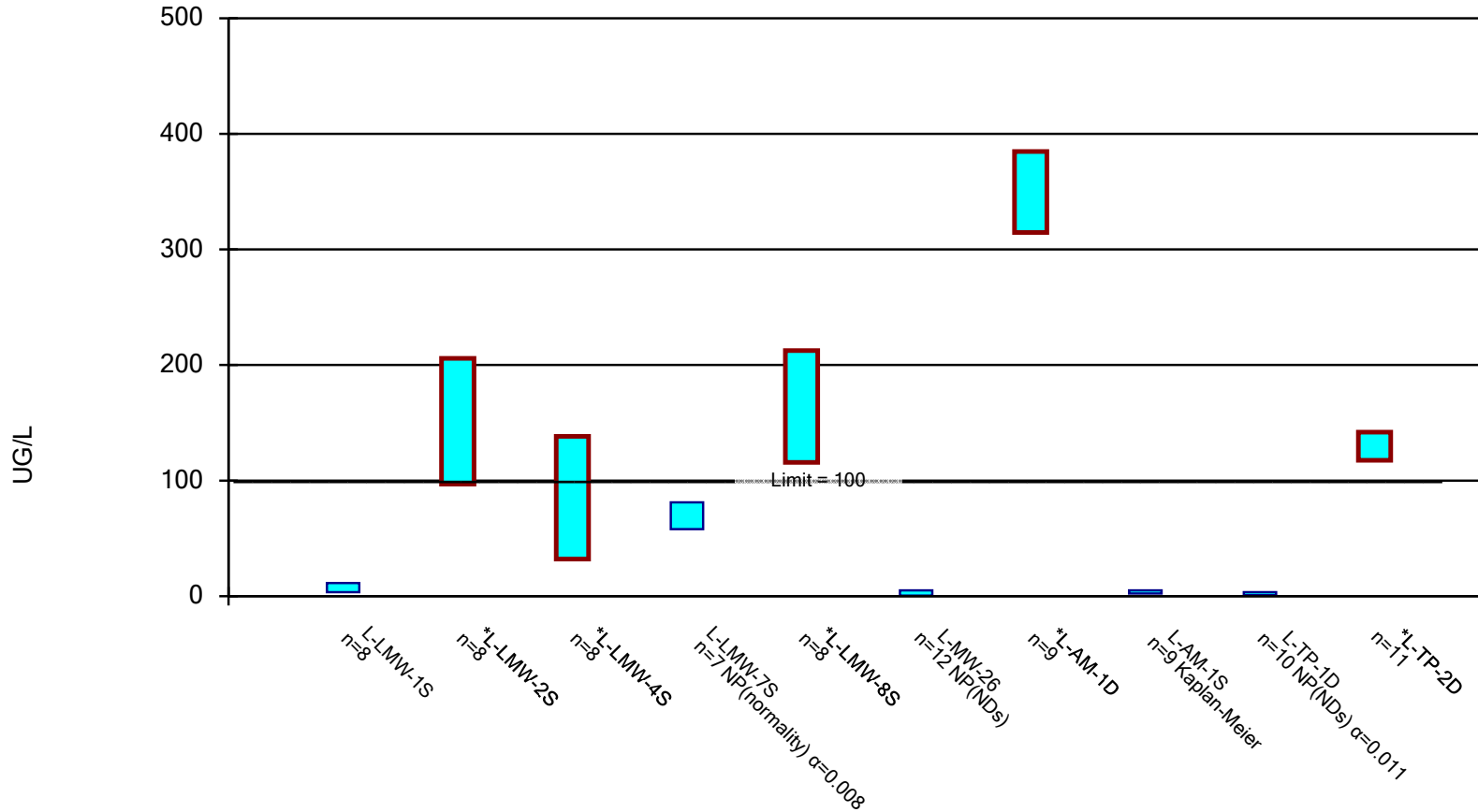


Constituent: MERCURY, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

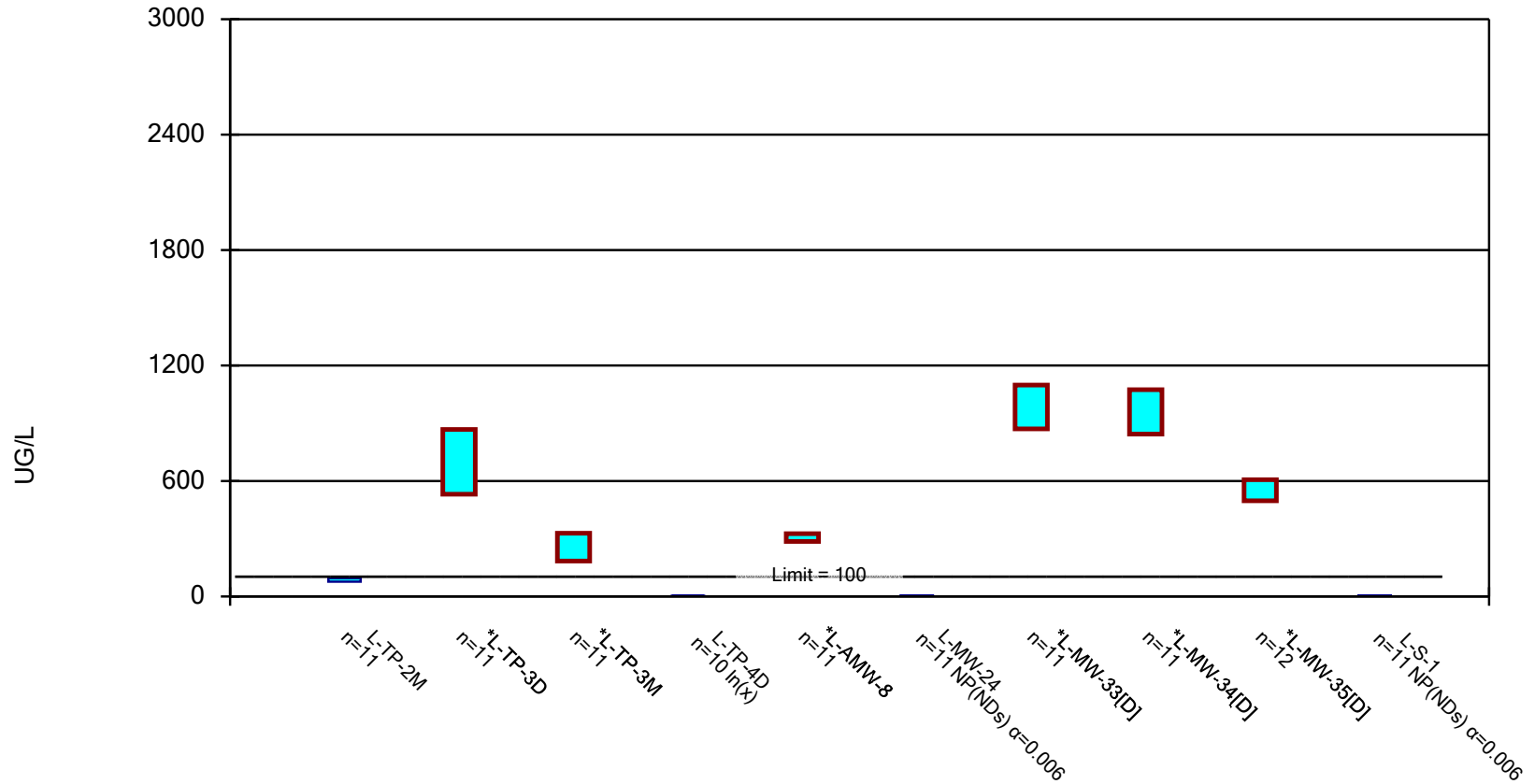
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Constituent: MOLYBDENUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

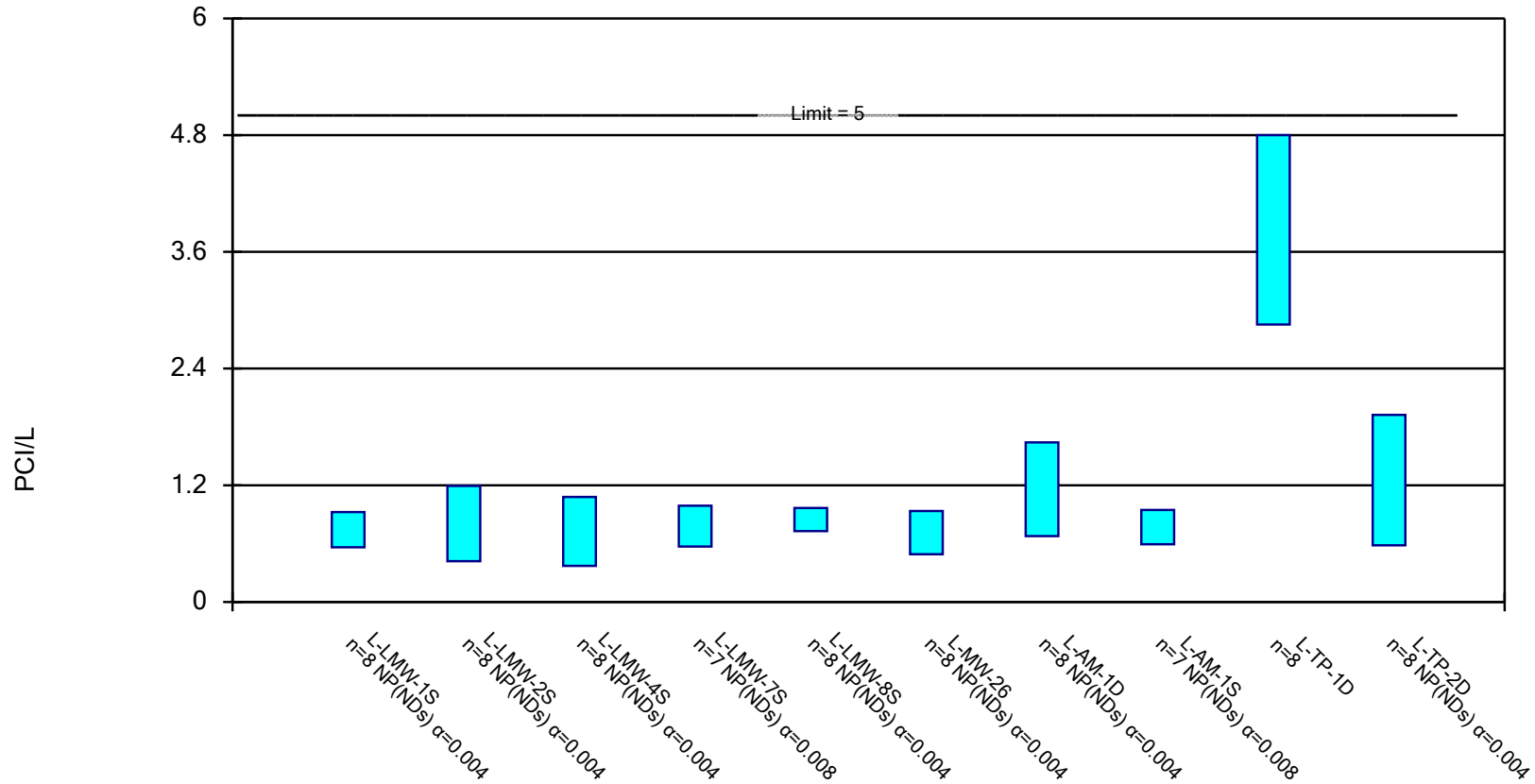
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: MOLYBDENUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
 Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

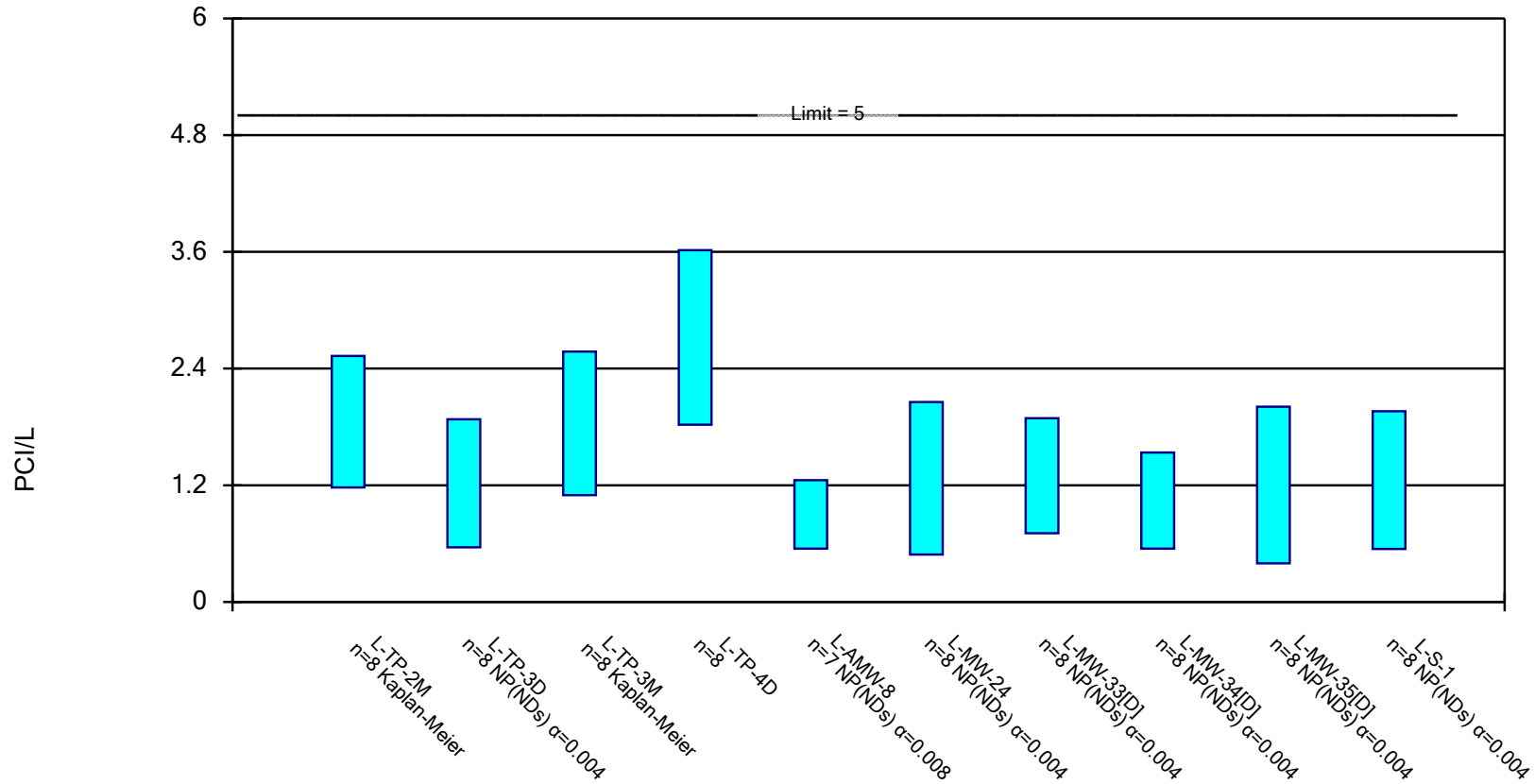


Constituent: Radium [226 + 228] Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

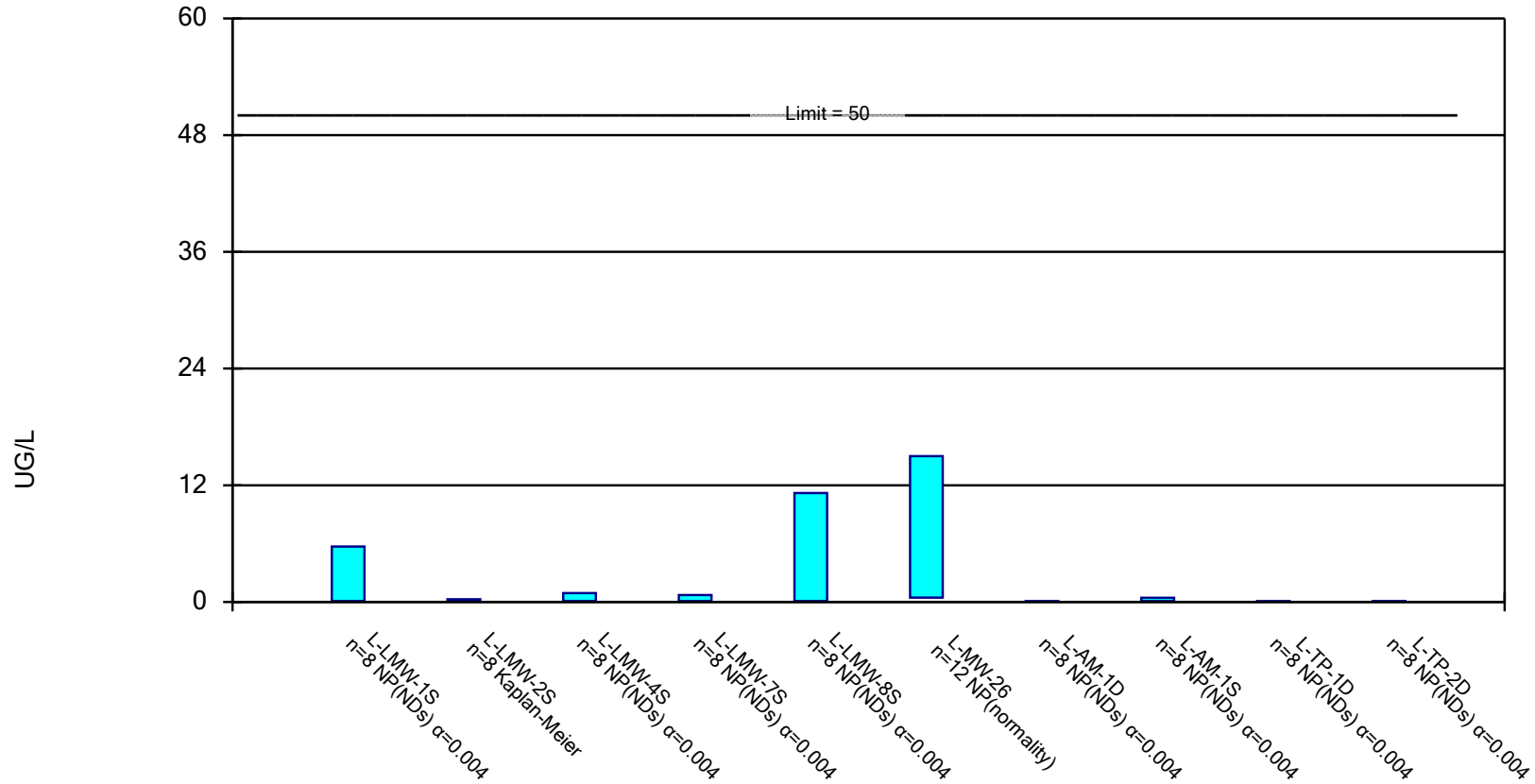


Constituent: Radium [226 + 228] Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

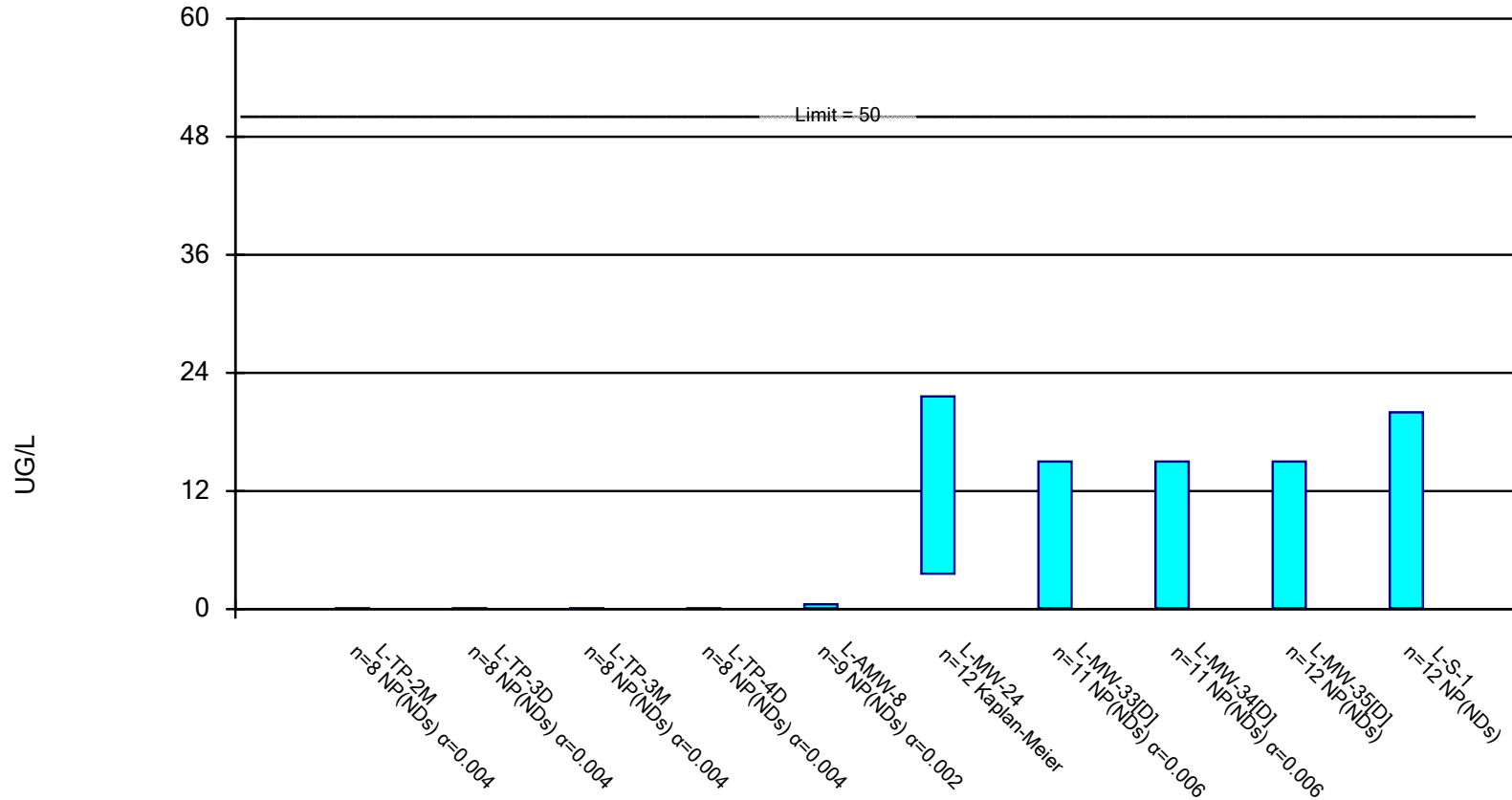


Constituent: SELENIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

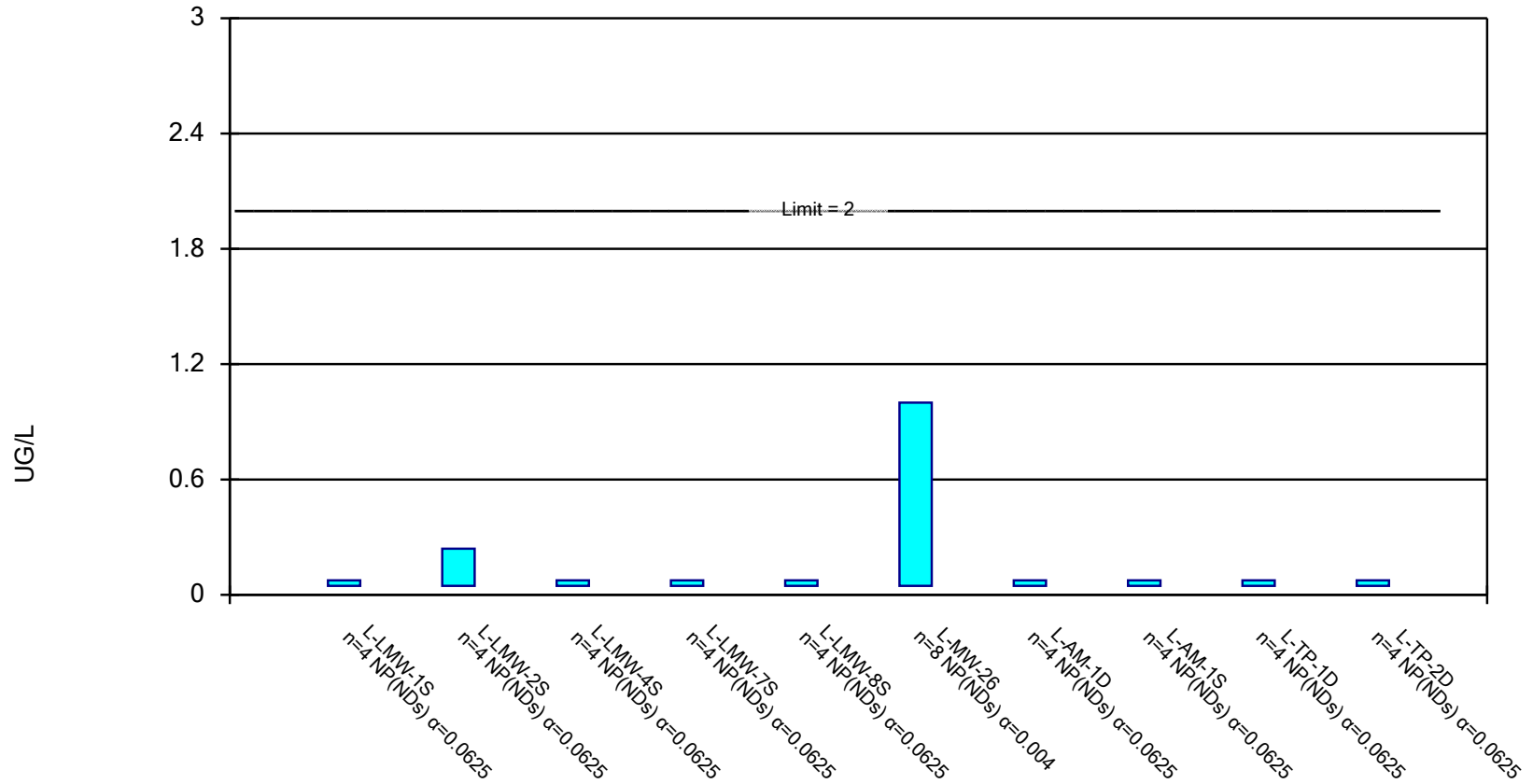
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: SELENIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

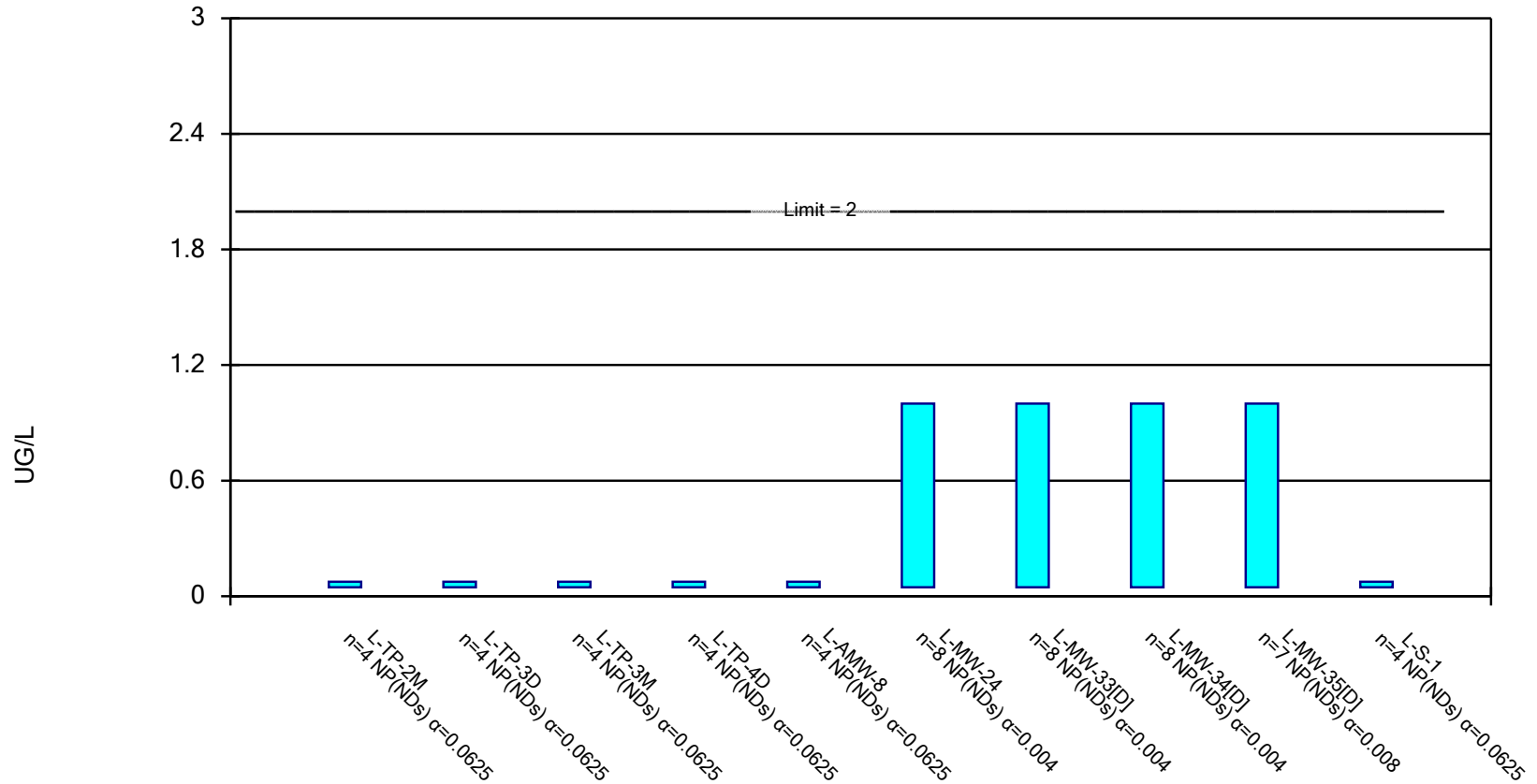


Constituent: THALLIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 8/10/2023 8:27 AM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/10/2023, 8:28 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	L-LMW-1S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-LMW-2S	0.1978	0.07188	6	No	6	50	ln(x)	0.01	Param.
ANTIMONY, TOTAL (UG/L)	L-LMW-4S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-LMW-7S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-LMW-8S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-MW-26	0.5	0.05	6	No	10	60	No	0.011	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-AM-1D	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-AM-1S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-1D	0.16	0.0485	6	No	6	66.67	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-2D	0.13	0.0485	6	No	6	83.33	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-2M	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-3D	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-3M	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-TP-4D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-AMW-8	0.5	0.0485	6	No	7	85.71	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-MW-24	0.5	0.11	6	No	10	40	No	0.011	NP (normality)
ANTIMONY, TOTAL (UG/L)	L-MW-33[D]	0.5	0.0485	6	No	10	100	No	0.011	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-MW-34[D]	0.5	0.0485	6	No	10	100	No	0.011	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-MW-35[D]	0.5	0.0485	6	No	10	100	No	0.011	NP (NDs)
ANTIMONY, TOTAL (UG/L)	L-S-1	0.15	0.0485	6	No	6	50	No	0.0155	NP (normality)
ARSENIC, TOTAL (UG/L)	L-LMW-1S	13	3.274	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-LMW-2S	46.8	39	44.2	Yes	8	0	No	0.004	NP (normality)
ARSENIC, TOTAL (UG/L)	L-LMW-4S	28.18	12.97	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-LMW-7S	15.61	8.267	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-LMW-8S	18.7	5.105	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-MW-26	0.5183	0.4674	44.2	No	12	41.67	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-AM-1D	3.659	2.866	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-AM-1S	9.046	3.504	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-1D	1.335	0.9828	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-2D	11.76	10.93	44.2	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-2M	0.6888	0.5337	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-3D	8.225	7.204	44.2	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-3M	0.5833	0.2992	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-TP-4D	8.222	7.478	44.2	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-AMW-8	0.4625	0.1798	44.2	No	9	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-MW-24	0.584	0.4824	44.2	No	12	41.67	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-MW-33[D]	3.151	1.976	44.2	No	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-MW-34[D]	3.756	3.39	44.2	No	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	L-MW-35[D]	0.5	0.14	44.2	No	12	41.67	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	L-S-1	0.6455	0.496	44.2	No	11	27.27	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-LMW-1S	114.9	68.64	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-LMW-2S	48.45	33.42	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-LMW-4S	167.9	141.3	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-LMW-7S	311.6	235.7	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-LMW-8S	149.3	89.76	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-MW-26	213.7	185.2	2000	No	12	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-AM-1D	75.73	64.27	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-AM-1S	648	552.5	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-TP-1D	1477	1383	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-TP-2D	118.1	113.6	2000	No	7	0	No	0.01	Param.

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/10/2023, 8:28 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
BARIUM, TOTAL (UG/L)	L-TP-2M	131.3	114.4	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-TP-3D	76.68	66.12	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-TP-3M	280.9	223.6	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-TP-4D	455.2	402.8	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-AMW-8	121	97.32	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-MW-24	222.3	175.1	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-MW-33[D]	116.4	90.93	2000	No	11	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-MW-34[D]	98.76	82.13	2000	No	11	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	L-MW-35[D]	54.29	43.98	2000	No	12	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	L-S-1	371.4	353.1	2000	No	8	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	L-LMW-1S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-LMW-2S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-LMW-4S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-LMW-7S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-MW-26	0.5	0.155	4	No	8	100	No	0.004	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-AM-1D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-AM-1S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-1D	0.245	0.12	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-2D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-2M	0.26	0.12	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-3D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-3M	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-TP-4D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-AMW-8	0.5	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-MW-24	0.25	0.06	4	No	8	100	No	0.004	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-MW-33[D]	0.25	0.06	4	No	8	100	No	0.004	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-MW-34[D]	0.25	0.06	4	No	8	100	No	0.004	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-MW-35[D]	0.25	0.06	4	No	8	100	No	0.004	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	L-S-1	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-LMW-1S	0.058	0.025	5	No	4	75	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-LMW-2S	0.25	0.0265	5	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-LMW-4S	0.08558	0.04217	5	No	4	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-LMW-7S	0.06906	0.05432	5	No	4	50	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-LMW-8S	0.25	0.089	5	No	4	25	No	0.0625	NP (normality)
CADMIUM, TOTAL (UG/L)	L-MW-26	1	0.025	5	No	8	75	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-AM-1D	0.198	0.01798	5	No	4	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-AM-1S	0.164	0.02647	5	No	4	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-TP-1D	0.031	0.025	5	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-TP-2D	0.06	0.025	5	No	4	75	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-TP-2M	0.031	0.025	5	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-TP-3D	0.3899	0.0001374	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-TP-3M	0.1404	0.03713	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-TP-4D	0.031	0.025	5	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-AMW-8	0.1664	0.0557	5	No	5	40	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	L-MW-24	1	0.025	5	No	8	87.5	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-MW-33[D]	1	0.23	5	No	8	50	No	0.004	NP (normality)
CADMIUM, TOTAL (UG/L)	L-MW-34[D]	1	0.24	5	No	8	50	No	0.004	NP (normality)
CADMIUM, TOTAL (UG/L)	L-MW-35[D]	1	0.14	5	No	8	62.5	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	L-S-1	0.088	0.025	5	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-LMW-1S	0.3674	0.2165	100	No	7	42.86	No	0.01	Param.

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/10/2023, 8:28 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	L-LMW-2S	0.5	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-LMW-4S	0.45	0.11	100	No	7	42.86	No	0.008	NP (normality)
CHROMIUM, TOTAL (UG/L)	L-LMW-7S	0.73	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-LMW-8S	0.5	0.11	100	No	7	85.71	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-MW-26	2.5	0.11	100	No	11	90.91	No	0.006	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-AM-1D	0.3927	0.204	100	No	6	16.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-AM-1S	0.4532	0.2154	100	No	7	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-TP-1D	0.51	0.11	100	No	7	42.86	No	0.008	NP (normality)
CHROMIUM, TOTAL (UG/L)	L-TP-2D	0.44	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-TP-2M	0.38	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-TP-3D	0.5	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-TP-3M	0.5	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-TP-4D	0.5	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-AMW-8	0.6341	0.2259	100	No	7	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	L-MW-24	2.5	0.11	100	No	11	72.73	No	0.006	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-MW-33[D]	2.5	0.11	100	No	10	80	No	0.011	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-MW-34[D]	2.5	0.11	100	No	10	60	No	0.011	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-MW-35[D]	2.5	0.11	100	No	11	90.91	No	0.006	NP (NDs)
CHROMIUM, TOTAL (UG/L)	L-S-1	0.37	0.21	100	No	7	42.86	No	0.01	Param.
COBALT, TOTAL (UG/L)	L-LMW-1S	0.7	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	L-LMW-2S	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-LMW-4S	3.193	0.4314	6	No	5	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	L-LMW-7S	4.568	3.432	6	No	5	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	L-LMW-8S	3.1	0.6	6	No	5	60	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-MW-26	2.5	0.39	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	L-AM-1D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-AM-1S	6.058	1.542	6	Yes	5	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	L-TP-1D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	L-TP-2D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-TP-2M	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-TP-3D	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-TP-3M	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-TP-4D	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	L-AMW-8	0.75	0.475	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	L-MW-24	2.5	0.39	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	L-MW-33[D]	2.5	0.39	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	L-MW-34[D]	2.5	0.39	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	L-MW-35[D]	2.5	0.39	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	L-S-1	3.694	0.3463	6	No	5	40	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-LMW-1S	0.2301	0.1269	4	No	10	20	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-LMW-2S	0.23	0.06	4	No	8	25	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-LMW-4S	0.3	0.06	4	No	9	22.22	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-LMW-7S	0.2652	0.09343	4	No	9	33.33	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-LMW-8S	0.4784	0.1855	4	No	10	20	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-MW-26	0.1902	0.1142	4	No	14	28.57	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-AM-1D	0.4132	0.2953	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-AM-1S	0.3047	0.09233	4	No	8	37.5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-TP-1D	0.2413	0.1132	4	No	8	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-TP-2D	0.4701	0.3556	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-TP-2M	0.51	0.15	4	No	8	0	No	0.004	NP (normality)

Confidence Interval

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/10/2023, 8:28 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	L-TP-3D	0.3105	0.07968	4	No	8	37.5	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-TP-3M	0.3049	0.1256	4	No	8	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-TP-4D	0.2919	0.1256	4	No	8	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-AMW-8	0.498	0.207	4	No	8	12.5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-MW-24	0.2062	0.129	4	No	12	16.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-MW-33[D]	0.3724	0.1572	4	No	11	18.18	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-MW-34[D]	0.34	0.06	4	No	11	18.18	No	0.006	NP (normality)
FLUORIDE, TOTAL (MG/L)	L-MW-35[D]	0.2934	0.1333	4	No	12	16.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	L-S-1	0.2448	0.1238	4	No	7	28.57	No	0.01	Param.
LEAD, TOTAL (UG/L)	L-LMW-1S	3.05	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-LMW-2S	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-LMW-4S	3.05	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-LMW-7S	7.1	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-LMW-8S	4.1	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-MW-26	2.3	0.5	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	L-AM-1D	6.1	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-AM-1S	6	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-1D	3.05	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-2D	3.05	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-2M	4.2	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-3D	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-3M	5.4	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-TP-4D	5.8	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	L-AMW-8	3.05	0.5	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	L-MW-24	3.9	0.5	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	L-MW-33[D]	2.3	0.5	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	L-MW-34[D]	2.3	0.5	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	L-MW-35[D]	2.3	0.5	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	L-S-1	4.9	1.9	15	No	4	75	No	0.0625	NP (NDs)
LITHIUM, TOTAL (UG/L)	L-LMW-1S	19.69	10.63	47.4	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-LMW-2S	13.28	9.25	47.4	No	9	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-LMW-4S	40.11	29.57	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-LMW-7S	47.46	40.74	47.4	Yes	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-LMW-8S	23.48	11.44	47.4	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-MW-26	29.58	23.49	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-AM-1D	39.62	35.45	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-AM-1S	38.93	30.59	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-TP-1D	25.98	23.77	47.4	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-TP-2D	42.8	38	47.4	No	8	0	No	0.004	NP (normality)
LITHIUM, TOTAL (UG/L)	L-TP-2M	35.64	28.49	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-TP-3D	34.5	28.08	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-TP-3M	36.36	30.49	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-TP-4D	25.7	20.9	47.4	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-AMW-8	18.43	14.44	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-MW-24	24.23	17.4	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-MW-33[D]	35.95	30.71	47.4	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-MW-34[D]	37.49	33.01	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-MW-35[D]	30.7	25.18	47.4	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	L-S-1	29.03	18.99	47.4	No	8	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	L-LMW-1S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)

Confidence Interval

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
MERCURY, TOTAL (UG/L)	L-LMW-2S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-LMW-4S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-LMW-7S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-LMW-8S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-MW-26	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MERCURY, TOTAL (UG/L)	L-AM-1D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-AM-1S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-1D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-2D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-2M	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-3D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-3M	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-TP-4D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	L-AMW-8	0.1	0.029	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	L-MW-24	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MERCURY, TOTAL (UG/L)	L-MW-33[D]	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MERCURY, TOTAL (UG/L)	L-MW-34[D]	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MERCURY, TOTAL (UG/L)	L-MW-35[D]	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MERCURY, TOTAL (UG/L)	L-S-1	0.1	0.029	2	No	8	100	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-LMW-1S	11.3	3.449	100	No	8	12.5	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-LMW-2S	205.7	97.03	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-LMW-4S	138.3	32.12	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-LMW-7S	81.2	58	100	No	7	0	No	0.008	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	L-LMW-8S	212.5	115.8	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-MW-26	5	0.5	100	No	12	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-AM-1D	384.7	314.7	100	Yes	9	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-AM-1S	5.045	2.33	100	No	9	22.22	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-TP-1D	3.5	0.85	100	No	10	80	No	0.011	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-TP-2D	141.9	117.6	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-TP-2M	94.27	76.62	100	No	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-TP-3D	867.8	531.1	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-TP-3M	328.3	184.1	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-TP-4D	3.387	2.291	100	No	10	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-AMW-8	326.2	285.4	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-MW-24	5	0.7	100	No	11	90.91	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	L-MW-33[D]	1099	870.6	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-MW-34[D]	1075	843.8	100	Yes	11	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-MW-35[D]	606.4	496.9	100	Yes	12	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	L-S-1	5	0.85	100	No	11	90.91	No	0.006	NP (NDs)
Radium [226 + 228] (PCI/L)	L-LMW-1S	0.925	0.5615	5	No	8	100	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-LMW-2S	1.193	0.4195	5	No	8	100	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-LMW-4S	1.08	0.3715	5	No	8	100	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-LMW-7S	0.9895	0.57	5	No	7	100	No	0.008	NP (NDs)
Radium [226 + 228] (PCI/L)	L-LMW-8S	0.9655	0.728	5	No	8	100	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-MW-26	0.9355	0.4905	5	No	8	100	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-AM-1D	1.641	0.677	5	No	8	87.5	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-AM-1S	0.946	0.5925	5	No	7	100	No	0.008	NP (NDs)
Radium [226 + 228] (PCI/L)	L-TP-1D	4.8	2.853	5	No	8	0	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-TP-2D	1.923	0.582	5	No	8	62.5	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-TP-2M	2.53	1.178	5	No	8	50	No	0.01	Param.

Confidence Interval

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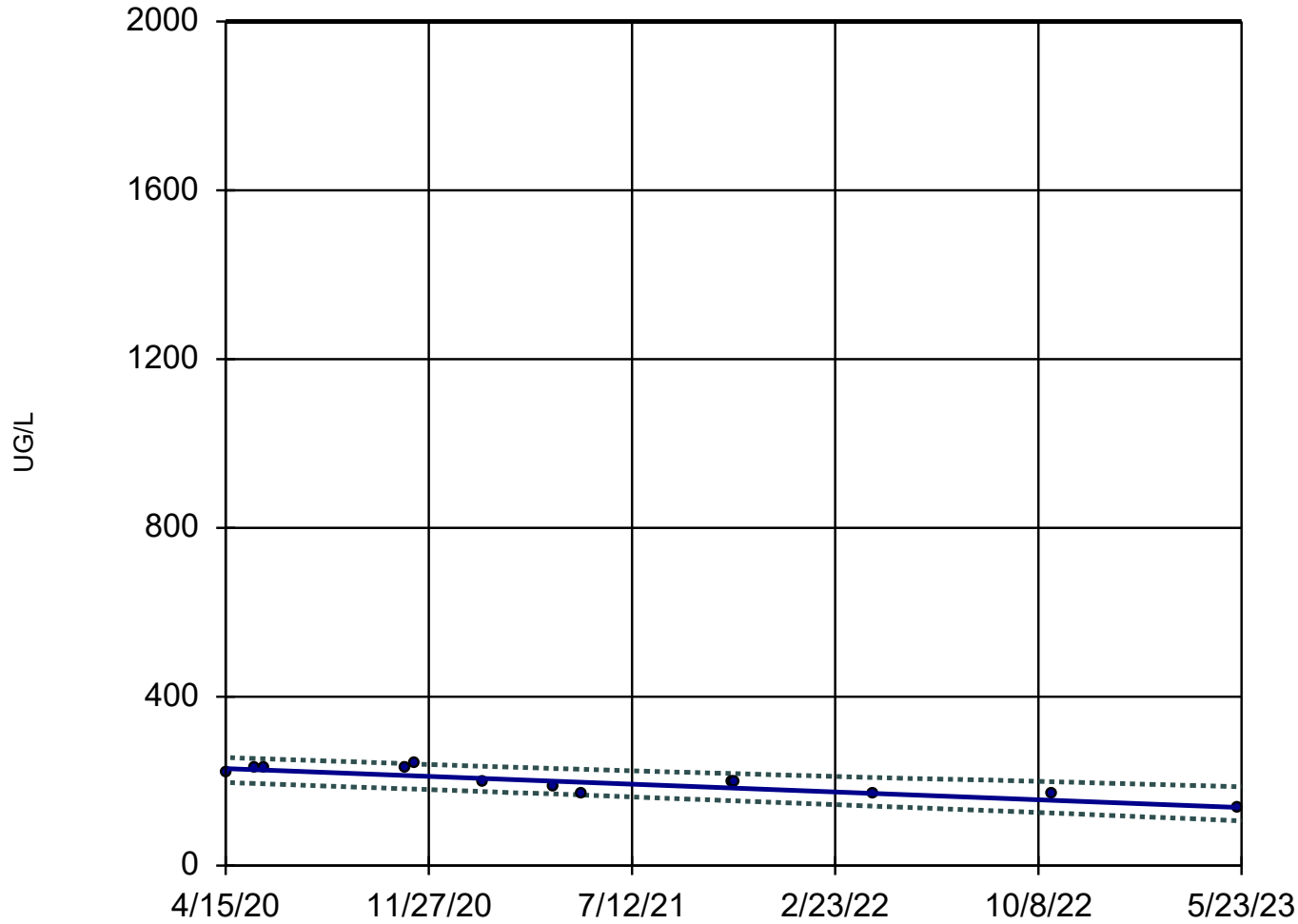
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Radium [226 + 228] (PCI/L)	L-TP-3D	1.878	0.5625	5	No	8	87.5	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-TP-3M	2.574	1.099	5	No	8	50	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-TP-4D	3.618	1.822	5	No	8	12.5	No	0.01	Param.
Radium [226 + 228] (PCI/L)	L-AMW-8	1.252	0.5478	5	No	7	100	No	0.008	NP (NDs)
Radium [226 + 228] (PCI/L)	L-MW-24	2.056	0.4878	5	No	8	75	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-MW-33[D]	1.89	0.707	5	No	8	75	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-MW-34[D]	1.537	0.5485	5	No	8	62.5	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-MW-35[D]	2.007	0.397	5	No	8	75	No	0.004	NP (NDs)
Radium [226 + 228] (PCI/L)	L-S-1	1.961	0.5455	5	No	8	75	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-LMW-1S	5.7	0.09	50	No	8	75	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-LMW-2S	0.2717	0.1533	50	No	8	37.5	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	L-LMW-4S	0.92	0.09	50	No	8	75	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-LMW-7S	0.71	0.09	50	No	8	75	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-LMW-8S	11.2	0.09	50	No	8	75	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-MW-26	15	0.44	50	No	12	33.33	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	L-AM-1D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-AM-1S	0.43	0.09	50	No	8	62.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-1D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-2D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-2M	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-3D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-3M	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-TP-4D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-AMW-8	0.5	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-MW-24	21.62	3.602	50	No	12	50	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	L-MW-33[D]	15	0.09	50	No	11	100	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-MW-34[D]	15	0.09	50	No	11	100	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-MW-35[D]	15	0.09	50	No	12	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	L-S-1	20	0.09	50	No	12	66.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-LMW-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-LMW-2S	0.24	0.0465	2	No	4	75	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-LMW-4S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-LMW-7S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-LMW-8S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-MW-26	1	0.0465	2	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-AM-1D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-AM-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-1D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-2D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-2M	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-3D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-3M	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-TP-4D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-AMW-8	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-MW-24	1	0.0465	2	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-MW-33[D]	1	0.0465	2	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-MW-34[D]	1	0.0465	2	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-MW-35[D]	1	0.0465	2	No	7	100	No	0.008	NP (NDs)
THALLIUM, TOTAL (UG/L)	L-S-1	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)

Appendix B

Sanitas Trending Confidence Bands Statistical Output

Sen's Slope and 95% Confidence Band

L-MW-24



n = 13

Slope = -29.83
units per year.

Mann-Kendall
statistic = -50
critical = -39

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

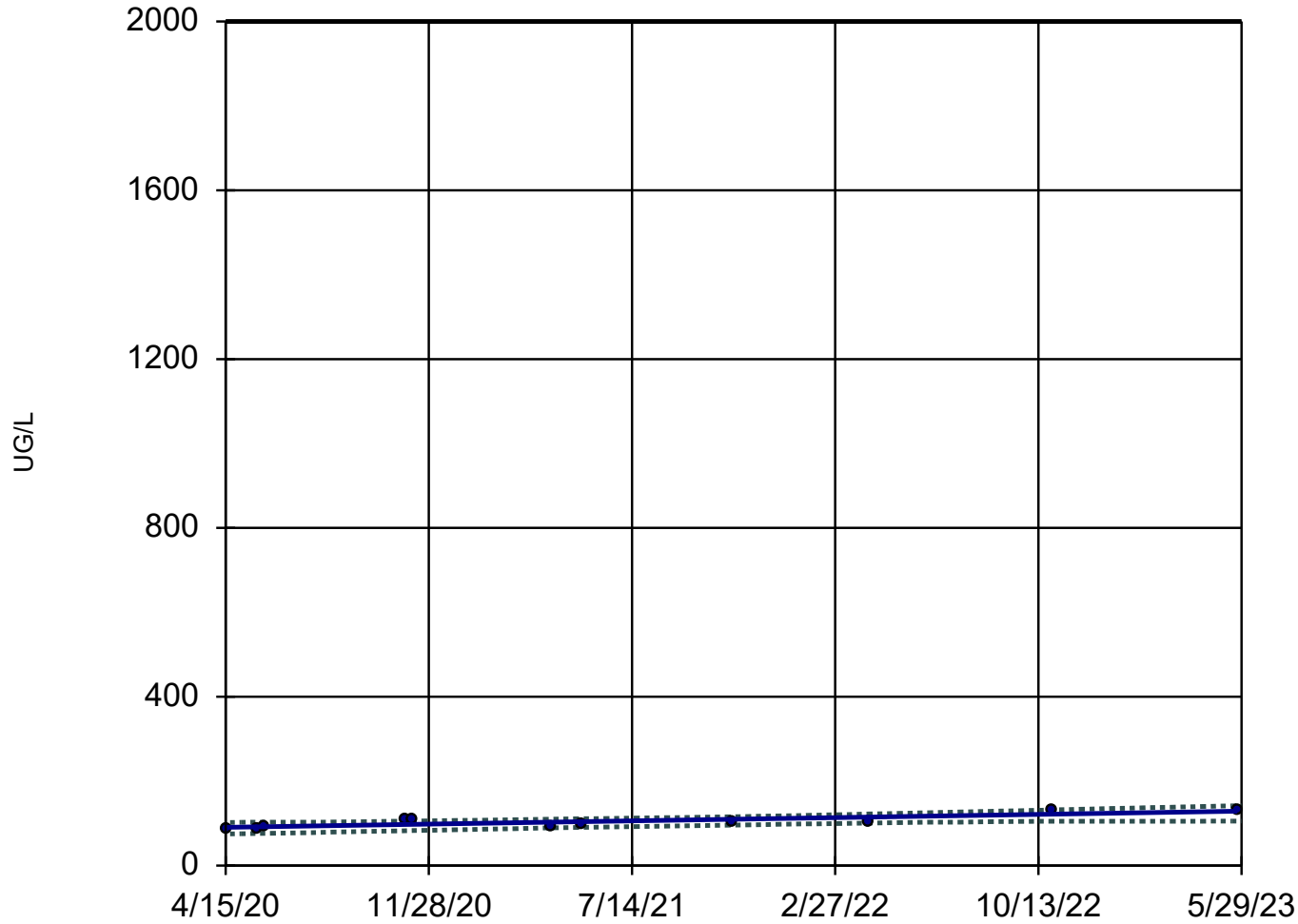
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/14/2023 2:04 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-MW-33[D]



n = 11

Slope = 12.36
units per year.

Mann-Kendall
statistic = 36
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

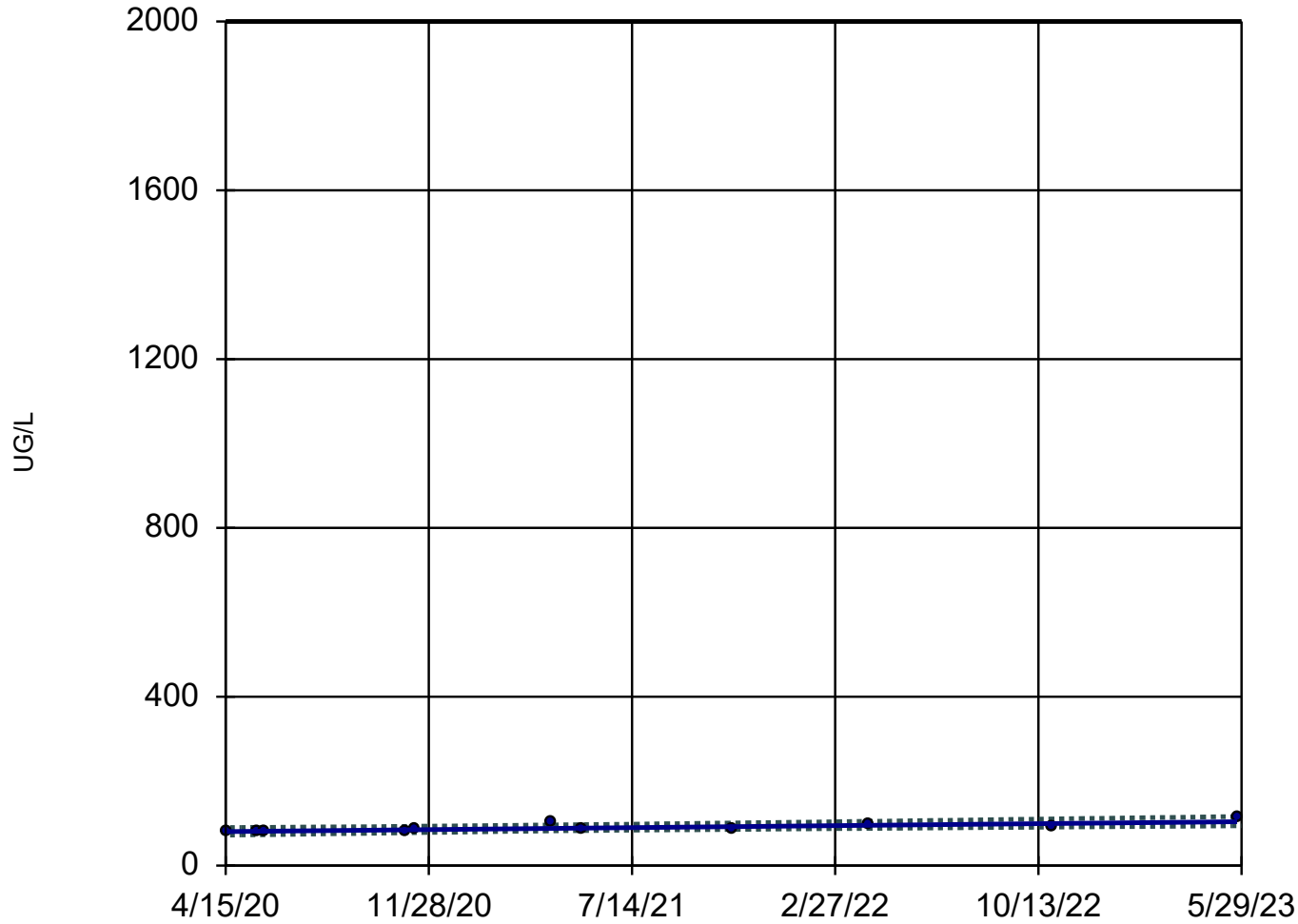
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/14/2023 2:04 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-MW-34[D]



n = 11

Slope = 7.526
units per year.

Mann-Kendall
statistic = 45
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

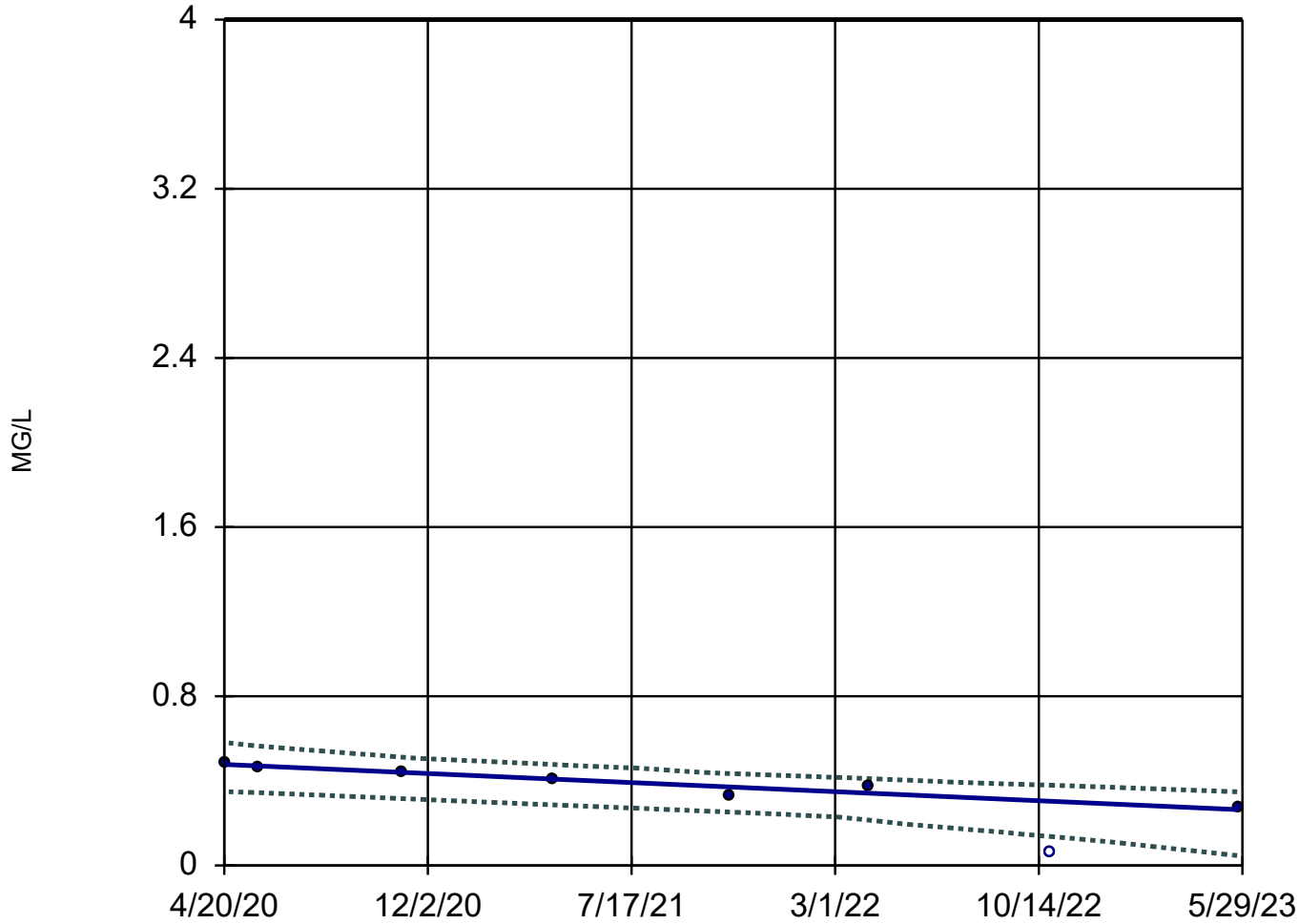
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/14/2023 2:04 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-AMW-8

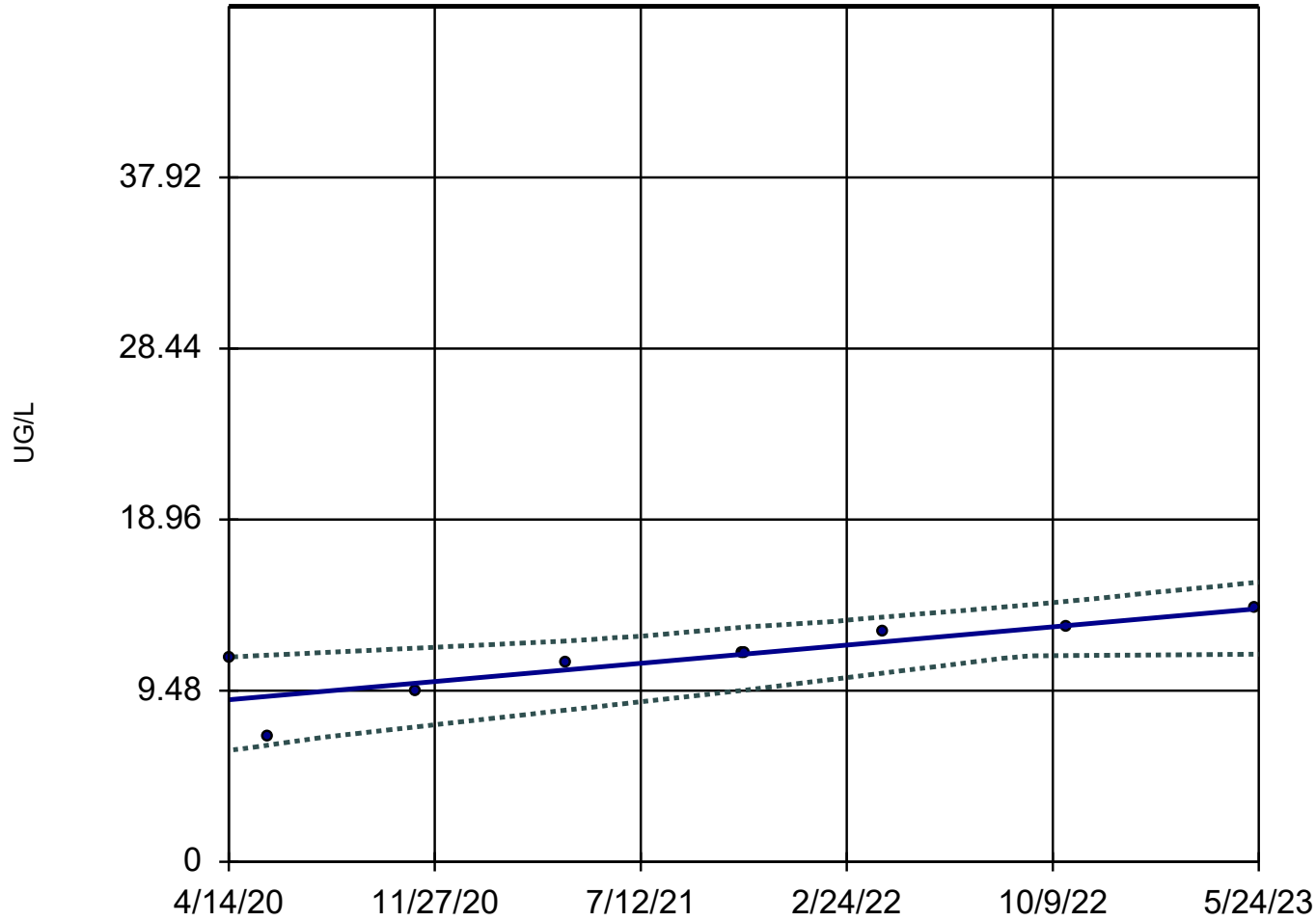


n = 8
Slope = -0.06895
units per year.
Mann-Kendall
statistic = -24
critical = -20
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/14/2023 2:05 PM View: Corrective Action
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-LMW-2S



n = 9

Slope = 1.622
units per year.

Mann-Kendall
statistic = 29
critical = 23

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

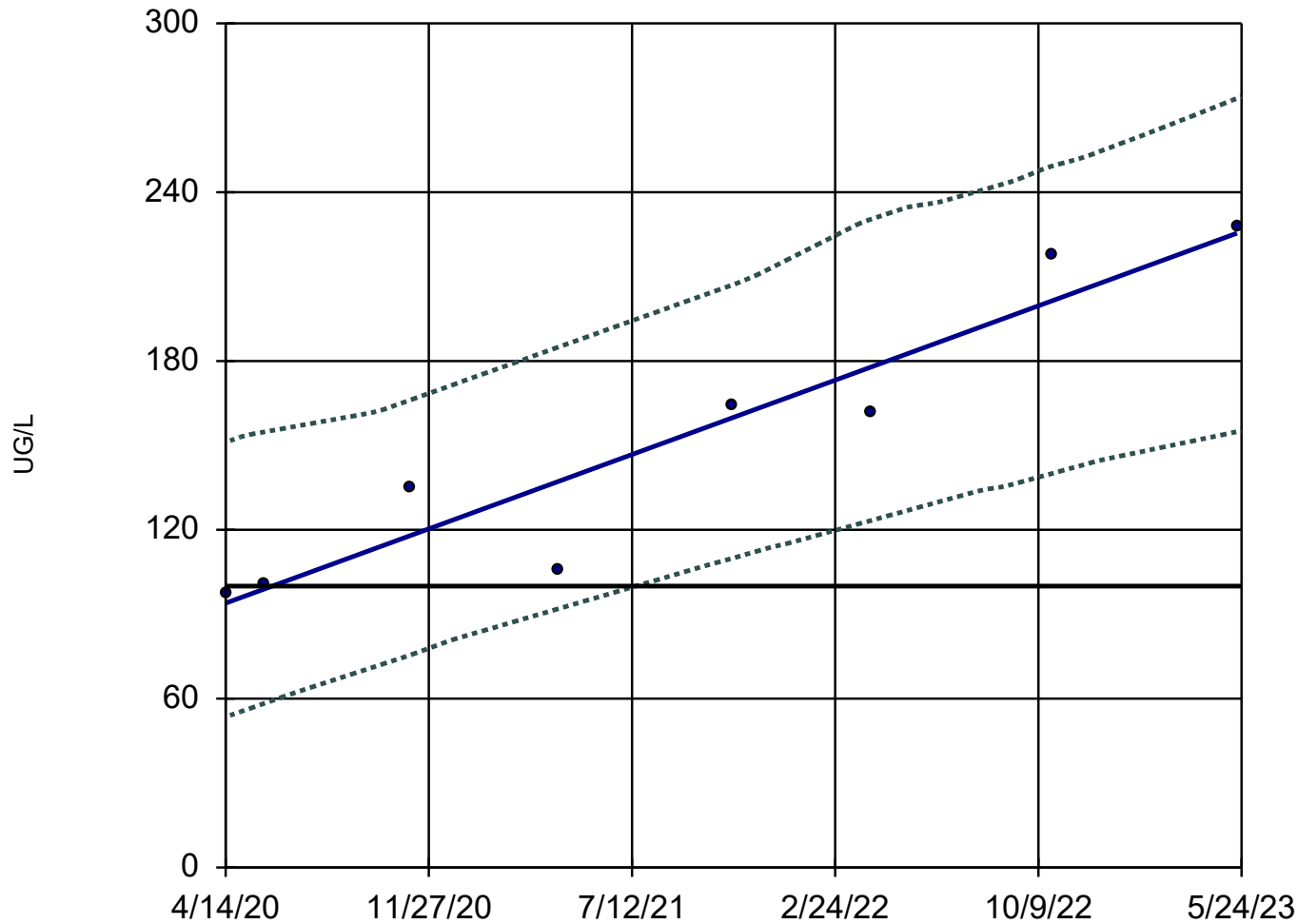
Confidence band is
below GWPS (47.4).

Constituent: LITHIUM, TOTAL Analysis Run 8/14/2023 2:05 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-LMW-2S



n = 8

Slope = 42.48
units per year.

Mann-Kendall
statistic = 24
critical = 20

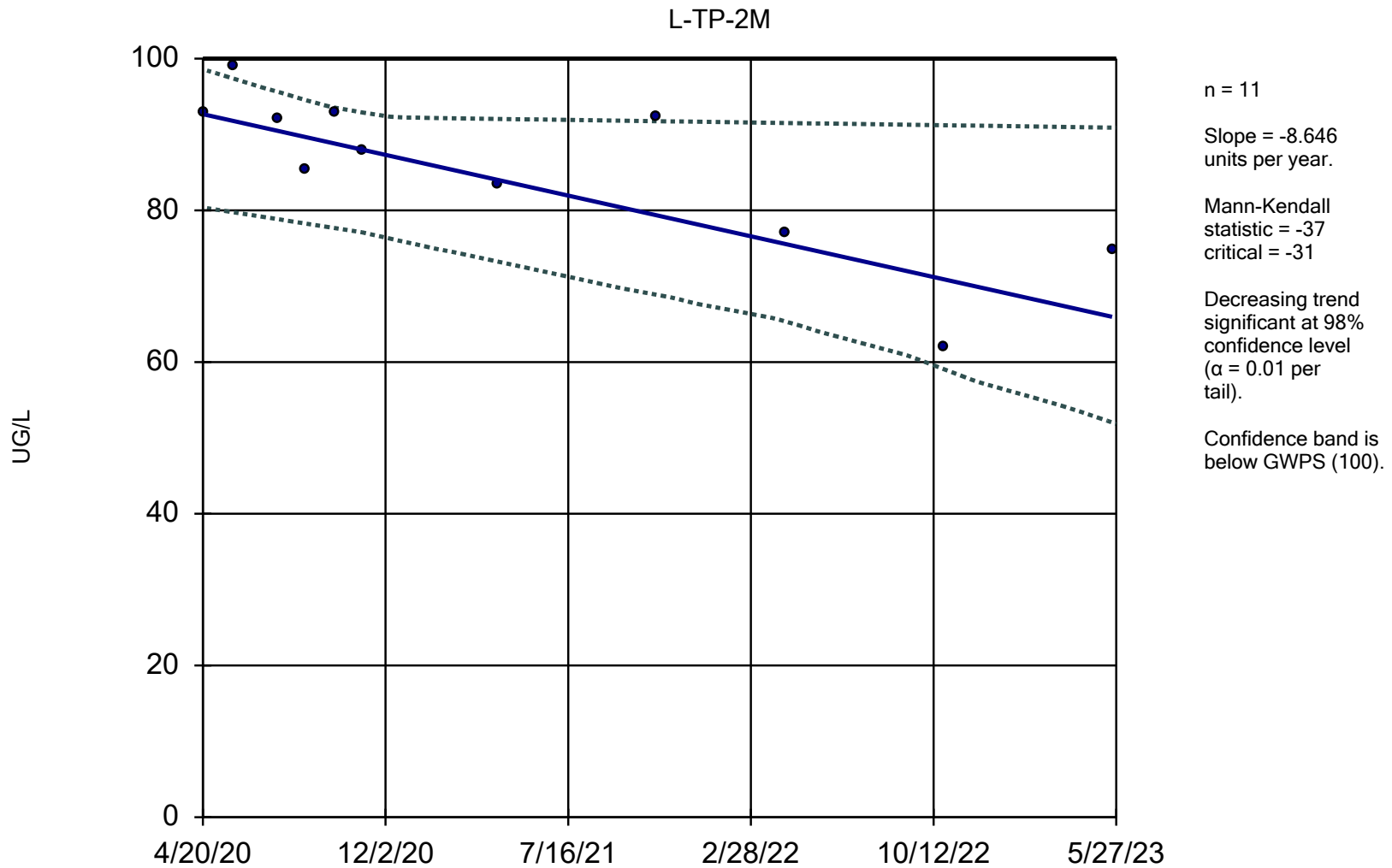
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 07/26/21.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 2:10 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

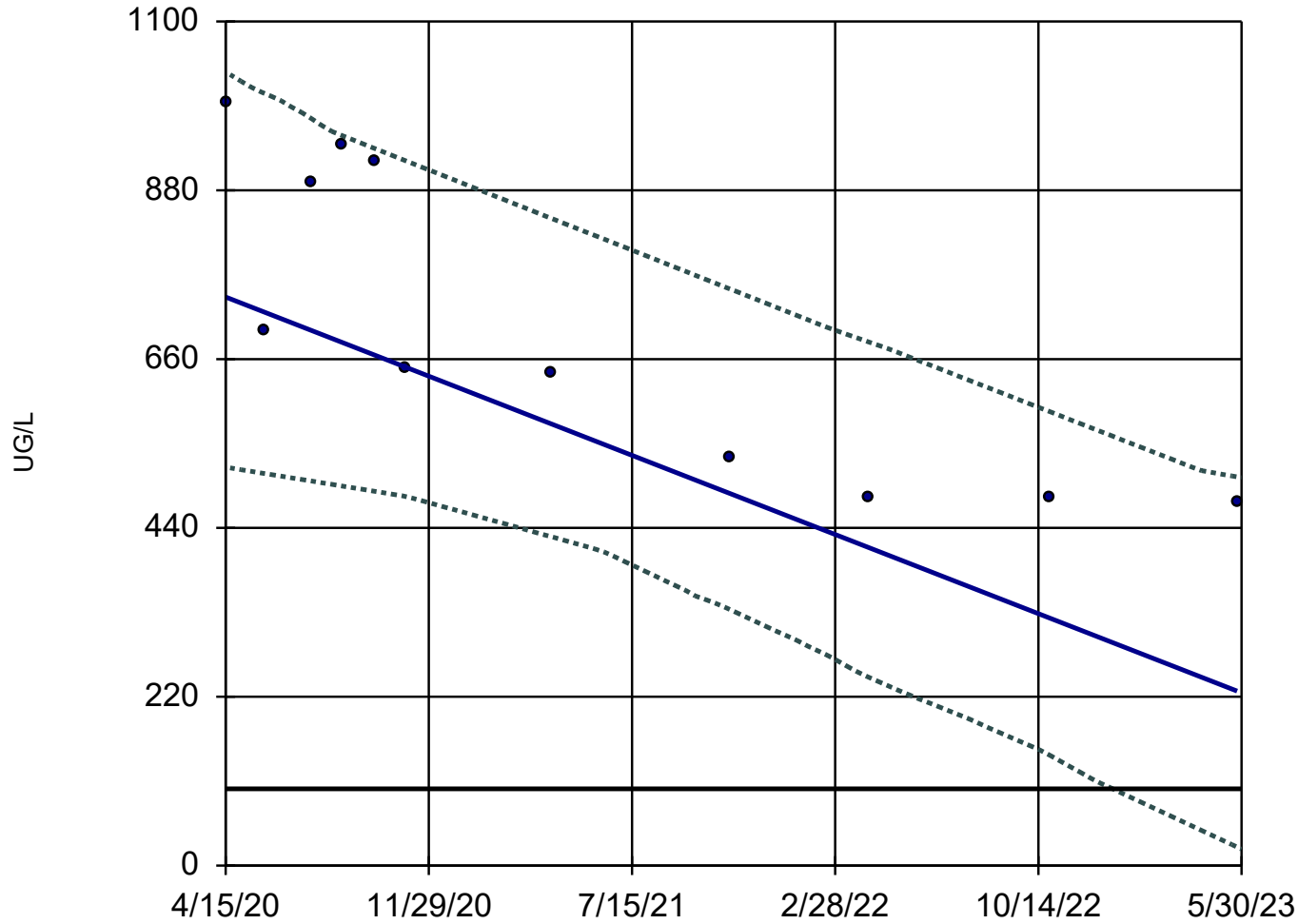
Sen's Slope and 95% Confidence Band



Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 2:05 PM View: Corrective Action
Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-TP-3D



n = 11

Slope = -165.1
units per year.

Mann-Kendall
statistic = -44
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

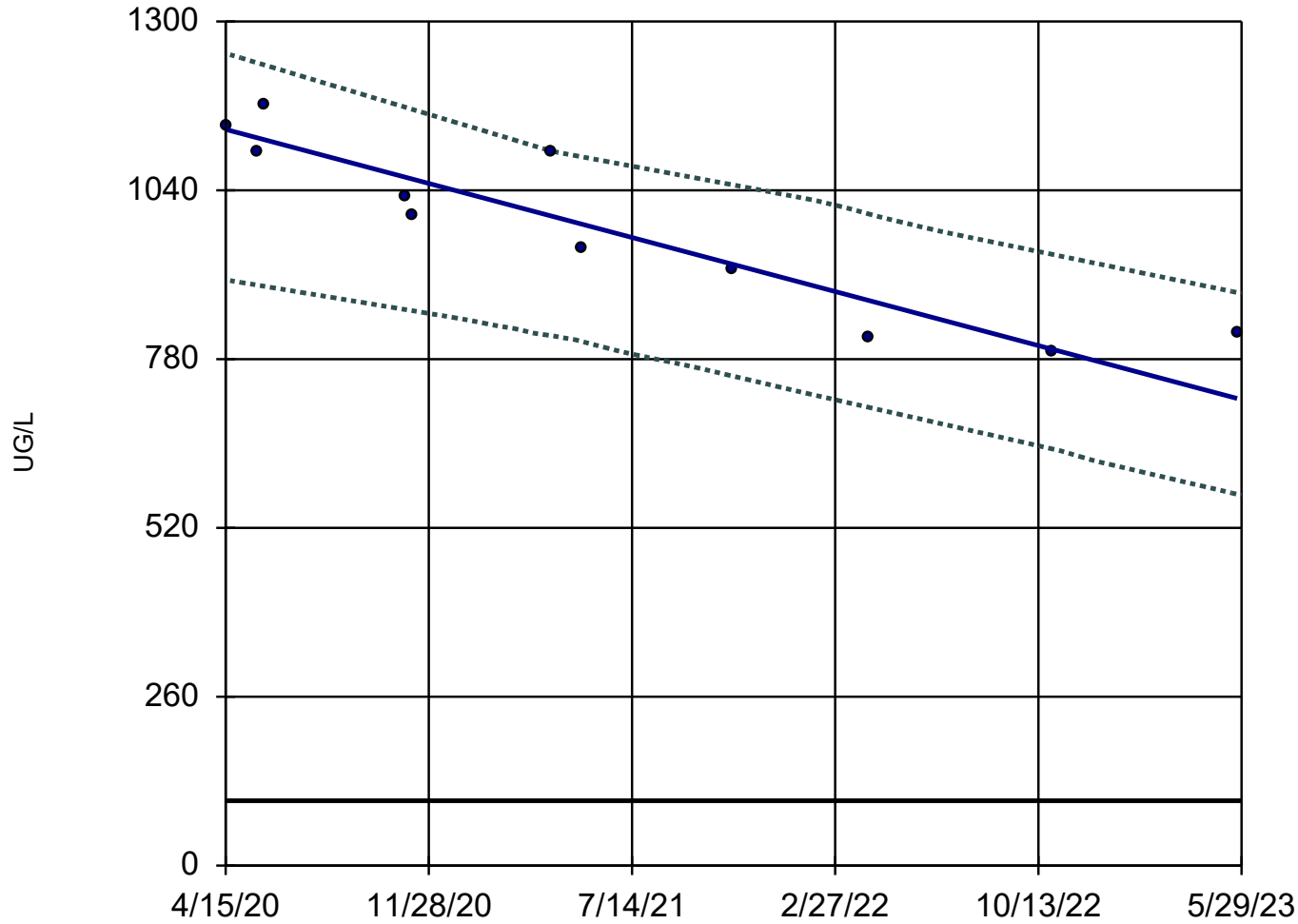
Confidence band intersects
GWPS (100) on 01/14/23.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 2:12 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-MW-33[D]



n = 11

Slope = -133.3
units per year.

Mann-Kendall
statistic = -42
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

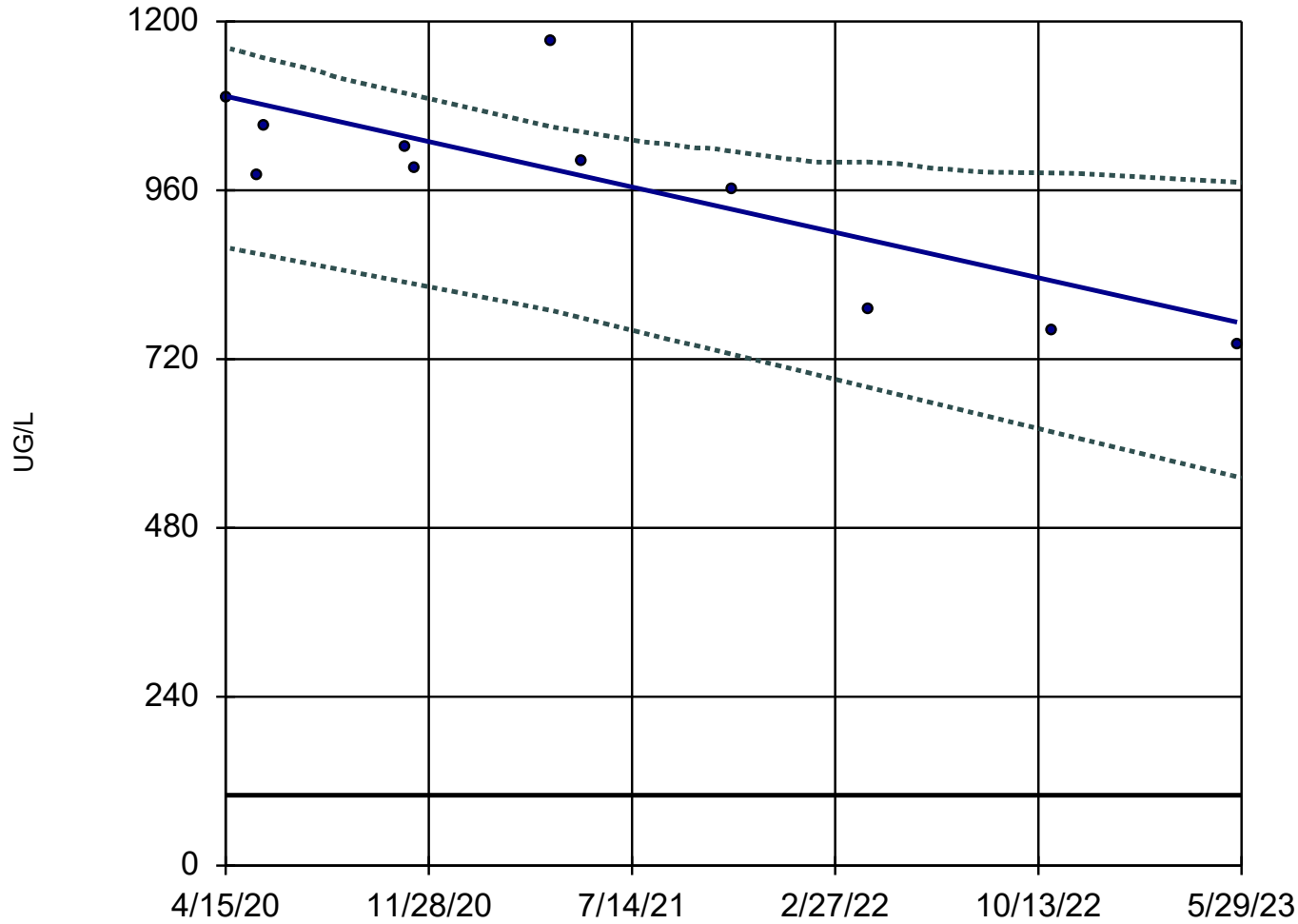
Confidence band is
above GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 2:14 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Sen's Slope and 95% Confidence Band

L-MW-34[D]



n = 11

Slope = -103.4
units per year.

Mann-Kendall
statistic = -35
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
above GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/14/2023 2:17 PM View: Corrective Action

Labadie E.C. Client: Ameren Data: LEC DATA (STATS)

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 2:08 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
ARSENIC, TOTAL (UG/L)	L-LMW-1S	-3.397	-20	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-LMW-2S	-0.2287	-6	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-LMW-4S	2.083	12	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-LMW-7S	-1.738	-6	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-LMW-8S	-4.767	-16	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-MW-26	0	-13	-35	No	12	41.67	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-AM-1D	-0.08266	-2	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-AM-1S	1.202	6	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-1D	0.1202	17	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-2D	-0.1519	-14	-17	No	7	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-2M	-0.03294	-9	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-3D	0.3916	11	17	No	7	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-3M	-0.04729	-7	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-TP-4D	-0.1609	-10	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-AMW-8	0.008398	3	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-MW-24	0	6	35	No	12	41.67	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-MW-33[D]	0	3	31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-MW-34[D]	-0.1021	-24	-31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-MW-35[D]	0	-5	-35	No	12	41.67	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	L-S-1	0.04551	20	31	No	11	27.27	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-LMW-1S	10.69	10	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-LMW-2S	4.958	20	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-LMW-4S	5.343	8	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-LMW-7S	-26.51	-14	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-LMW-8S	-13.39	-8	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-MW-26	-8.83	-23	-35	No	12	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-AM-1D	0.9876	2	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-AM-1S	9.003	4	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-1D	9.869	5	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-2D	-0.8286	-8	-17	No	7	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-2M	5.748	12	17	No	7	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-3D	-1.536	-6	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-3M	-22.41	-18	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-TP-4D	-8.024	-9	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-AMW-8	5.319	16	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-MW-24	-29.83	-50	-39	Yes	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-MW-33[D]	12.36	36	31	Yes	11	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-MW-34[D]	7.526	45	31	Yes	11	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-MW-35[D]	-5.197	-34	-35	No	12	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	L-S-1	-2.1	-3	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-LMW-1S	-0.04888	-21	-27	No	10	20	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-LMW-2S	-0.05078	-18	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-LMW-4S	-0.06086	-14	-23	No	9	22.22	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-LMW-7S	-0.05882	-14	-23	No	9	33.33	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-LMW-8S	0.005062	3	27	No	10	20	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-MW-26	-0.04078	-36	-44	No	14	28.57	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-AM-1D	0	-2	-17	No	7	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-AM-1S	-0.07721	-13	-20	No	8	37.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-TP-1D	-0.0585	-16	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-TP-2D	-0.0139	-3	-17	No	7	0	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 2:08 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	L-TP-2M	-0.05929	-15	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-TP-3D	-0.1102	-14	-20	No	8	37.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-TP-3M	-0.00...	-4	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-TP-4D	-0.06613	-17	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-AMW-8	-0.06895	-24	-20	Yes	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-MW-24	-0.0399	-25	-35	No	12	16.67	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-MW-33[D]	-0.0316	-7	-31	No	11	18.18	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-MW-34[D]	-0.06844	-24	-31	No	11	18.18	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-MW-35[D]	-0.06809	-28	-35	No	12	16.67	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	L-S-1	-0.05866	-10	-17	No	7	28.57	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-LMW-1S	-2.284	-14	-20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-LMW-2S	1.622	29	23	Yes	9	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-LMW-4S	0.5482	6	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-LMW-7S	0.9449	4	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-LMW-8S	-0.474	-9	-17	No	7	14.29	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-MW-26	1.044	8	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-AM-1D	-0.8658	-8	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-AM-1S	2.005	14	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-1D	0.1515	4	17	No	7	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-2D	-0.2218	-9	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-2M	0.08304	2	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-3D	2.12	14	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-3M	-2.215	-18	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-TP-4D	0.4595	3	17	No	7	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-AMW-8	0.4513	6	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-MW-24	-1.736	-12	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-MW-33[D]	1.423	11	17	No	7	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-MW-34[D]	0.9226	12	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-MW-35[D]	-0.756	-5	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	L-S-1	0.5548	4	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-LMW-1S	-2.15	-17	-20	No	8	12.5	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-LMW-2S	42.48	24	20	Yes	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-LMW-4S	8.967	2	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-LMW-7S	-7.125	-13	-17	No	7	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-LMW-8S	-23.25	-7	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-MW-26	-0.1157	-18	-35	No	12	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-AM-1D	-27.52	-19	-23	No	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-AM-1S	1.319	16	23	No	9	22.22	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-1D	0.03271	24	27	No	10	80	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-2D	-5.748	-19	-31	No	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-2M	-8.646	-37	-31	Yes	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-3D	-165.1	-44	-31	Yes	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-3M	58.77	29	31	No	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-TP-4D	0.515	23	27	No	10	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-AMW-8	-19.91	-23	-31	No	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-MW-24	0	-8	-31	No	11	90.91	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-MW-33[D]	-133.3	-42	-31	Yes	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-MW-34[D]	-103.4	-35	-31	Yes	11	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-MW-35[D]	-30.2	-11	-35	No	12	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	L-S-1	0	-7	-31	No	11	90.91	n/a	n/a	0.02	NP

Trend Test

Labadie E.C. Client: Ameren Data: LEC DATA (STATS) Printed 8/14/2023, 2:08 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Radium [226 + 228] (PCI/L)	L-LMW-1S	-0.02269	-4	-20	No	8	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-LMW-2S	-0.1901	-10	-20	No	8	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-LMW-4S	-0.125	-18	-20	No	8	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-LMW-7S	0.03362	3	17	No	7	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-LMW-8S	-0.00...	0	20	No	8	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-MW-26	-0.1282	-14	-20	No	8	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-AM-1D	0.009574	4	20	No	8	87.5	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-AM-1S	0.002383	1	17	No	7	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-1D	-0.3113	-10	-20	No	8	0	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-2D	-0.1064	-4	-20	No	8	62.5	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-2M	-0.3127	-8	-20	No	8	50	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-3D	0.007004	0	20	No	8	87.5	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-3M	-0.6002	-12	-20	No	8	50	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-TP-4D	0.04766	0	20	No	8	12.5	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-AMW-8	0.02306	1	17	No	7	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-MW-24	-0.1886	-20	-20	No	8	75	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-MW-33[D]	-0.07198	-4	-20	No	8	75	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-MW-34[D]	-0.06779	-8	-20	No	8	62.5	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-MW-35[D]	-0.1447	-8	-20	No	8	75	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	L-S-1	-0.01075	-2	-20	No	8	75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-LMW-1S	0	11	20	No	8	75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-LMW-2S	0.03057	10	20	No	8	37.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-LMW-4S	0	13	20	No	8	75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-LMW-7S	0	5	20	No	8	75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-LMW-8S	0	13	20	No	8	75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-MW-26	0.5533	12	35	No	12	33.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-AM-1D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-AM-1S	0.01437	10	20	No	8	62.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-1D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-2D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-2M	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-3D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-3M	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-TP-4D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-AMW-8	0	-6	-23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-MW-24	8.389	35	35	No	12	50	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-MW-33[D]	0	-8	-31	No	11	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-MW-34[D]	0	-8	-31	No	11	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-MW-35[D]	0	-8	-35	No	12	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	L-S-1	0	10	35	No	12	66.67	n/a	n/a	0.02	NP

Appendix F

Alternative Source Demonstration - October 2022 Sampling Event

REPORT

LCPA Corrective Action – Alternative Source Demonstration for Radium 226 + 228, Cobalt and Lithium Detection in Isolated Wells

Labadie Energy Center, Franklin County, Missouri, USA

May 19, 2023

Submitted to:

Submitted by:



Ameren Missouri
1901 Chouteau Ave, St. Louis, MO 63103



Rocksmith Geoengineering, LLC



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Certification Statement

This *LCPA Corrective Action – Alternative Source Demonstration, Labadie Energy Center, Franklin County, Missouri, USA* has been prepared to comply with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Rocksmith Geoengineering, LLC.

I hereby certify that this *LCPA Corrective Action – Alternative Source Demonstration, Labadie Energy Center, Franklin County, Missouri, USA* located at 226 Labadie Power Plant Road, Labadie Missouri 63055 has been prepared to meet the requirements of 40 CFR §257.98(a)(1)(i) and 257.95(g)(3)(ii).

Rocksmith Geoengineering, LLC



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), this LCPA Corrective Action – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for a statistical exceedance of the Groundwater Protection Standard (GWPS) calculated for Ameren Missouri's (Ameren) Labadie Energy Center (LEC) Bottom Ash Surface Impoundment (referred to as the LCPA) Corrective Action Monitoring Well Network. This document satisfies the requirements of §257.98(a)(1)(i) and §257.95(g)(3)(ii), which state that at a minimum, the Corrective Action program must meet that of the Assessment Monitoring Program under §257.95, which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused a constituent to be at a statistical level that exceeds the GWPS was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 SITE DESCRIPTION AND BACKGROUND

The LEC is located approximately 35 miles west of downtown St. Louis in Franklin County, Missouri, just south of the Missouri River. **Figure 1** depicts the site location and layout, including the location of LCPA, LCPB and the LCL1 CCR Units. The LEC encompasses approximately 2,400 acres and is located within the Missouri River Valley. The facility is bounded to the north by the Missouri River, to the west by Labadie Creek, to the northeast and east by agricultural land, and to the south by a railroad line and bedrock bluffs.

2.1 Geological and Hydrogeological Setting

The site lies between the Missouri River (to the north) and bedrock bluffs (to the south). Flow and deposition from the Missouri River have resulted in thick alluvial deposits that lie on top of bedrock. These alluvial deposits, which can range from approximately 90 to 120 feet thick, comprise the uppermost aquifer. Overall, this alluvial aquifer is described as a fining-upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Based on drilling records, the alluvial aquifer is divided into sub-units, including floodplain deposits, natural levee deposits, and channel deposits along with volumetrically less important loess deposits. Grain sizes of these alluvial deposits are variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region consists of Ordovician-aged rock. Formations include primarily limestone, dolomite, sandstone, and shale and are comprised of the Plattin Group, Joachim Dolomite, St. Peter Sandstone, Powell Dolomite, and the Cotter/Jefferson City Dolomites.

2.2 Coal Combustion Residuals (CCR) LCPA Surface Impoundment

The LCPA is in the floodplain of the Missouri River to the south of the LEC generating plant and is constructed with perimeter berms at an elevation of approximately 494 feet above mean sea level (feet MSL), which is above the 100-year flood elevation of 484 feet MSL. Both fly ash and bottom ash have been historically managed and stored in this surface impoundment. Construction drawings indicate that in the deepest portions of the CCR Unit the base depth of CCR extends down approximately 90 feet to an elevation of approximately 400 feet MSL. Directly to the east of the LCPA are two additional CCR Units, the fly ash surface impoundment (LCPB) and the Utility Waste Landfill (UWL) Cell 1 (LCL1), both of which have berm elevations higher than 488 feet MSL. To the south of the LCPA are lower elevation agricultural fields ranging from approximately 465 to 475 feet MSL which extend to the south to the railroad. South of the railroad, bedrock bluffs rise to an elevation of over 600 feet MSL. The western side of the surface impoundment is bounded by a forested area and Labadie Creek, which flows north to the Missouri River.

2.3 Corrective Action Background

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 29, 2019, and responses to public comments are posted on Ameren's CCR website. On August 30, 2019, Ameren published its "Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins" (Remedy Selection Report) that identified source control through installation of a low permeability cover system and use of Monitored Natural Attenuation (MNA) as its

chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two phases as follows:

- 1) Source control, stabilization, and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1×10^{-7} centimeters per second (cm/sec) versus 1×10^{-5} cm/sec required by the CCR Rule).
- 2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. Natural attenuation occurs due to naturally occurring processes within the aquifer.

As required by the CCR Rule, the following were completed within 90 days of selecting the remedy (i.e., November 27, 2019): (1) a groundwater monitoring well system was selected and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, and (3) a Groundwater Monitoring Plan (GMP) was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record. The Corrective Action Monitoring Well Network consists of 22 monitoring wells, installed within the shallow, intermediate, and deep zones of the alluvial aquifer as shown on **Figure 1**.

On September 28, 2019, Ameren commenced Phase 1 by initiating closure at the LCPA. Closure of the LCPA has been completed and the first Corrective Action sampling event associated with Phase 2 of the Corrective Measures Remedial Plan was completed in April 2021. On February 20, 2023, Corrective Action statistical methods were used to determine that the following constituents were present at concentrations exceeding the site specific GWPS as follows:

- Arsenic – LMW-2S
- Cobalt – AM-1S
- Lithium – LMW-7S
- Molybdenum – LMW-2S, LMW-4S, LMW-8S, AM-1D, TP-2D, TP-3D, TP-3M, AMW-8, MW-33D, MW-34D, MW-35D
- Radium 226 + 228 (Radium) – TP-1D

3.0 EVIDENCE THAT ISOLATED EXCEEDANCES OVER THE GWPS ORIGINATE FROM DIFFERENT SOURCE

Isolated exceedances of the site GWPS using corrective action statistical methods¹ exist for cobalt at monitoring well AM-1S, for lithium at LMW-7S, and for radium at TP-1D. The locations of these monitoring wells are provided in **Figure 1**. For each of these exceedances there are several different lines of evidence that indicate that the statistical exceedance(s) over the GWPS at these monitoring wells are not the result of a release from the LCPA, but rather are from an alternative source. The following detail the different lines of evidence that support this ASD:

- A lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium, cobalt, and radium.

¹ The statistical testing method used to evaluate the Corrective Action monitoring data is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the GWPS for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the Groundwater Protection Standard (GWPS) instead of the Lower Confidence Limit (LCL) [as was used during Assessment Monitoring].

- The presence of lithium, cobalt, and radium at similar concentrations in groundwater samples collected upgradient of the LCPA.
- The presence of naturally occurring cobalt, lithium, and radium in sediments in background locations at the LCPA.
- Cobalt, lithium, and radium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous and metamorphic rocks within the Missouri and Mississippi River watersheds.

3.1 CCR Indicators

Several types of CCR by-products are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 1** describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

Table 1: Types of CCR and Typical Indicator Parameters

Type of CCR	Description of CCR (USEPA 2018)	Key Indicators (EPRI 2011, 2012, 2017)
Fly Ash	Fine grained, powdery material composed mostly of silica made from the burning of finely ground coal in the boiler.	<ul style="list-style-type: none"> ■ Boron ■ Molybdenum ■ Lithium ■ Sulfate
Boiler Slag / Bottom Ash	Molten bottom ash from the slag tap and cyclone type furnaces that turns into pellets that have a smooth glassy appearance after quenching with water.	<ul style="list-style-type: none"> ■ Bromide ■ Potassium ■ Sodium ■ Fluoride
Flue Gas Desulfurization Material (FGD)	A material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler that can be a wet sludge consisting of calcium sulfite or calcium sulfate or a dry powdered material that is a mixture of sulfites and sulfates.	<ul style="list-style-type: none"> ■ Sulfate ■ Fluoride ■ Calcium ■ Boron ■ Bromide ■ Chloride

Notes:

- 1) Fly ash and boiler slag/bottom ash typically have the same indicator parameters.
- 2) Definitions from USEPA website, available at <https://www.epa.gov/coalash/coal-ash-basics>.
- 3) Key indicators from EPRI 2011, 2012, and 2017.

3.2 Site Specific Key CCR Indicators

To be a key CCR Indicator parameter for a specific site, a constituent should be present in relatively high concentrations in the leachate (CCR porewater) when compared to background or other sources (nearby rivers, etc.), not be a common anthropogenic contaminant, and be mostly non-reactive and mobile in the site’s hydrogeological environment (EPRI 2012). In 2012, EPRI investigated which constituents are the best indicator parameters for coal ash impacts as outlined in **Table 1**. Of the key indicators listed in **Table 1** for fly ash and boiler slag/bottom ash, boron, molybdenum, lithium, sulfate and fluoride are regularly sampled as part of the CCR Rule. Potassium and sodium are sampled periodically for major ion analysis and testing under the CCR Rule and testing for bromide has not been completed at the site.

Table 2 provides a snapshot of the concentrations present onsite in the background, Missouri River, and LCPA porewater for each of the constituents sampled on the key indicator list.

Table 2 – Summary of Potential CCR Impact Indicator Parameters at the Labadie Energy Center

Constituent (Units)		Back-ground	Missouri River	LCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Boron (µg/L)	Minimum	ND<50	78.7	3,360	Typically present in leachate, non-reactive and mobile in common hydrogeologic environments, and not a common anthropogenic contaminant.
	Average	77.31	100.1	10,317	
	Maximum	151	123	21,700	
Sulfate (mg/L)	Minimum	12.3	172	254	Commonly analyzed and very mobile in all hydrogeologic environments. Concentration in impoundment leachate may in some cases be too low relative to background to be useful. Less useful in strongly reducing environments where sulfate can be reduced to hydrogen-sulfide gas.
	Average	39.84	192.3	275.2	
	Maximum	146	224	306	
Molybdenum (µg/L)	Minimum	ND<0.52	2.0	83.7	Most useful for dry-managed coal ash. May be less mobile than boron in some hydrogeologic environments. Concentrations may be too low in impoundment leachate to be useful if background groundwater has detectable concentrations.
	Average	1.584	3.165	405.3	
	Maximum	7.0	6.2	1,430	
Lithium (µg/L)	Minimum	11.5	34.2	5.5	Useful for coal ash management sites where the power plant burned bituminous coal. Leachate concentrations are typically low in coal ash derived from subbituminous and lignite coal
	Average	29.06	38.36	40.28	
	Maximum	47.4	42.8	61.4	
Potassium (µg/L)	Minimum	3,990	Not Sampled	3,540	Commonly analyzed, although may be less mobile than boron and sulfate. Assume that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields where potassium may be applied in fertilizers.
	Average	5,023		18,040	
	Maximum	7,530		42,100	
Sodium (µg/L)	Minimum	3,570	Not Sampled	50,500	Useful for coal ash management sites where the power plant injects trona or sodium bicarbonate or burned subbituminous coal. Absent dry sorbent injection, leachate concentrations are considerably lower in coal ash derived from bituminous coal, particularly at impoundments. Assume that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields, or major highways in northern climates where sodium may be applied in road salts.
	Average	10,085		66,967	
	Maximum	24,900		84,000	
Fluoride (mg/L)	Minimum	0.0425	0.125	0.088	Mobile and non-reactive in common hydrogeologic environments. Assume that leachate concentration is higher than background.
	Average	0.1787	0.4118	0.153	
	Maximum	0.38	0.57	0.2	

Notes:

- 1) Unit abbreviations - mg/L – milligrams per liter, µg/L – micrograms per liter
- 2) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Based on the results of **Table 2**, boron and molybdenum appear to be the best indicator parameters for impacts from the LCPA because they have a much higher concentration in the CCR porewater than the background concentrations and are non-reactive and highly mobile at the site. Sulfate, which is typically a good CCR indicator parameter may not be as useful at the LEC, since sulfate values within the Missouri River are close in concentration to those within the CCR Unit. Therefore, samples collected closer to the Missouri River may have higher sulfate values, caused by temporary recharge to the aquifer from the Missouri River instead of impacts from the CCR. Fluoride can also be a good indicator, however, porewater concentrations are not significantly higher than background, and therefore it would be difficult to detect impacts using fluoride concentrations. Average lithium concentrations in the porewater are also not significantly elevated when compared to background groundwater samples or the Missouri River, therefore determining the source of impacts would be difficult. Potassium and sodium are also not ideal indicators as many of the wells onsite are either near roadways or

located within the many agricultural fields around the plant, which may display elevated concentrations caused from anthropogenic sources (road salt, fertilizers, etc.).

Boron and molybdenum concentrations are above background concentrations at 7 of the 9 monitoring wells used for Detection and Assessment monitoring wells adjacent to the LCPA (WSP 2023). Therefore, boron and molybdenum appear to be the best indicator parameters for CCR impacts at the LEC. However, though molybdenum appears to be a good indicator, it may not be present at the furthest extents of the plume. Therefore, boron appears to be the best indicator parameter for CCR impacts at the LEC.

4.0 EVALUATION OF STATISTICAL EXCEEDANCE FOR RADIUM AT TP-1D

An initial ASD for radium at TP-1D was completed in November 2021 for the February/April 2021 sampling event. This evaluation determined that the statistical exceedance of radium at TP-1D was not caused by impacts from the LCPA, but rather a result of naturally occurring geochemical variability within the alluvial aquifer. This conclusion was supported by several factors including: (1) absence of key CCR indicators (boron, sulfate, and molybdenum) in monitoring well TP-1D, (2) a stable geochemical fingerprint in TP-1D, which closely resembles that of background wells BMW-1D and BMW-2D, which are located approximately 1.5 miles upgradient of the LCPA, (3) lack of radium in monitoring wells immediately adjacent to the LCPA, (4) similarity in radium concentrations between TP-1D and background monitoring well BMW-1D, (5) radium is a naturally occurring element in soils and alluvial aquifer sediments that are derived from igneous rocks within the Missouri River watershed, and (6) the Ozark Aquifer, which discharges into the Missouri River Alluvium, is known to have elevated radium concentrations. A copy of the ASD report for the February/April 2021 sampling event is provided in Appendix E of the 2021 LCPA Annual Groundwater Monitoring and Corrective Action Report.

4.1 October 2022 Sampling Event

There have been no significant changes in the six lines of evidence (LOE) presented in the February/April 2021 sampling event ASD as summarized in Section 4.0 for radium at TP-1D. TP-1D was installed in June 2018 as a part of the nature and extent evaluation completed under Assessment Monitoring and is used as a Corrective Action Monitoring Well. As displayed in **Figure 1**, TP-1D is located approximately 10,000 feet to the northeast of the LCPA and is not impacted by the LCPA. The following reviews each of the LOEs demonstrating the statistical exceedance from radium is still the result of an alternative source, incorporating the data from the April 2022 sampling event.

- **LOE 1 - A lack of key CCR indicators (boron, sulfate, and molybdenum) in monitoring well TP-1D when compared to background monitoring wells and those adjacent to the LCPA.**

A review of key CCR indicators including boron, sulfate, and molybdenum at TP-1D displays that concentrations at TP-1D are within the same range of concentrations reported for background monitoring wells BMW-1D and BMW-2D, and thus are not statistically elevated compared to background wells. Figures with updated timeseries plots including data through the October 2022 sampling event are provided in **Figure 2-4** for these key constituents.

- **LOE 2 - A stable geochemical fingerprint in TP-1D, which closely resembles that of background wells BMW-1D and BMW-2D approximately 1.5 miles upgradient of the LCPA.**

Figure 5 displays a piper diagram that demonstrates that TP-1D data continue to plot in the area of background groundwater and thus the recent statistical exceedance over the GWPS for radium is not a result of influence from the LCPA.

- **LOE 3 & 4 - Lack of radium in monitoring wells immediately adjacent to the LCPA as well as similarities in radium concentrations between TP-1D and background monitoring well BMW-1D.**

Radium concentrations have been evaluated from the monitoring well network adjacent to the LCPA used for Detection and Assessment Monitoring since 2016. **Figure 6** displays a box and whisker plot of radium concentrations since the start of CCR monitoring at TP-1D (November 2018) for background monitoring wells

(BMW-1D and BMW-2D), TP-1D, and the LCPA Detection/Assessment Monitoring Well Network. As shown in **Figure 6** and **Figure 7**, radium concentrations at TP-1D are most similar to background well BMW-1D and are higher than the concentrations in monitoring wells located immediately adjacent to the LCPA. Additionally, it should be noted that radium has not been present at an SSL (Statistically Significant Level) in the Assessment Monitoring Well Network. If elevated impacts for radium were caused by the LCPA, it would be expected that the wells immediately adjacent to the LCPA would show elevated concentrations, like those reported for boron, sulfate, and molybdenum.

- **LOE 5 & 6 - Radium is a naturally occurring element in soils and alluvial aquifer sediments that are derived from igneous rocks within the Missouri River watershed and the Ozark Aquifer, which discharges into the Missouri River Alluvium and is known for higher radium concentrations.**

No new information is available since the February/April 2021 sampling event ASD was prepared. Radium is a natural breakdown product of the radioactive decay of uranium, and both radium and uranium are known to naturally occur within the Missouri River Alluvial Aquifer from the igneous source rocks that comprise the sediments from upgradient locations along the Missouri River and from discharges from the Ozark Aquifer into the alluvial deposits (Herrmann et al., 2022, Imes and Emmett, 1994, Kleeschulte, 1993, and USGS, 2014).

The Ozark Aquifer is a regional aquifer that is present south of the Missouri River and West of the Mississippi River in the southern parts of Missouri, eastern Kansas, and northern Arkansas. The aquifer is made up mostly of carbonate rocks that are Cambrian through Mississippian in age. The discharges for the Ozark Aquifer in Missouri are the Missouri River to the north and the Mississippi River to the east. In 2012, the United States Geological Survey completed a nationwide study on radium within groundwater aquifers and found that the Mid-Continent and the Ozark Aquifers had the highest average radium concentrations (Szabo et al., 2012), with more than 20% of the samples included in the study had radium concentrations above the MCL of 5 pCi/L. TP-1D is in the deep zone of the alluvial aquifer, and is situated such that discharges from the Ozark Aquifer may be contributing to the increased radium 226 + 228 at this location.

Additionally, the Missouri River Alluvial Aquifer is comprised of alluvial deposits from the Missouri River basin, which encompasses a vast area of the United States including parts of Missouri, Iowa, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, and Colorado. The sediments in the Missouri River Alluvial Aquifer at the site are made up of a mixture of sediments from all reaches of the Missouri River Basin. Uranium deposits and many igneous rocks containing uranium occur at numerous locations within the Missouri River Basin. Therefore, the alluvial aquifer sediments in the vicinity of TP-1D (as well as background well BMW-1D) likely include naturally occurring uranium-containing deposits which are resulting in the radium concentrations measured at these locations.

In summary, based on the information presented in this ASD, the statistical exceedance for radium in TP-1D is not a result of impacts from the LCPA, but is the result of natural geochemical variability within the alluvial aquifer.

5.0 EVALUATION OF STATISTICAL EXCEEDANCE FOR LITHIUM AT LMW-7S

As indicated in **Tables 1** and **2**, lithium can be a key indicator for fly ash and boiler slag/bottom ash impacts if it is present at elevated levels in the CCR porewater compared to background and is mobile at the site. However, as discussed in Section 3.2, boron and molybdenum are better indicator parameters than lithium for the LEC, as most porewater samples are not significantly higher than background or Missouri River concentrations. Four of the six CCR porewater samples collected in 2018 as a part of the LCPB ASD (available in the 2018 Annual Report for the LCPB, Golder 2019b) have lithium concentrations below the site-specific GWPS for lithium (47.4 µg/L). Additionally, lithium concentrations in the monitoring wells adjacent to the LCPA used for Assessment Monitoring (UMW-1D through UMW-9D) range from Non-Detect (ND) <10 - 39.3 µg/L, while background values range from 11.5 – 47.4 µg/L and Missouri River samples range from 34.2 – 42.8 µg/L. This further establishes that lithium is not a useful CCR impact indicator parameter for the LCPA and the LEC area.

Table 3 displays results from the October 2022 sampling event for lithium, boron, and molybdenum at LMW-7S.

Table 3 – October 2022 Analytical Results of Key Constituents at LMW-7S

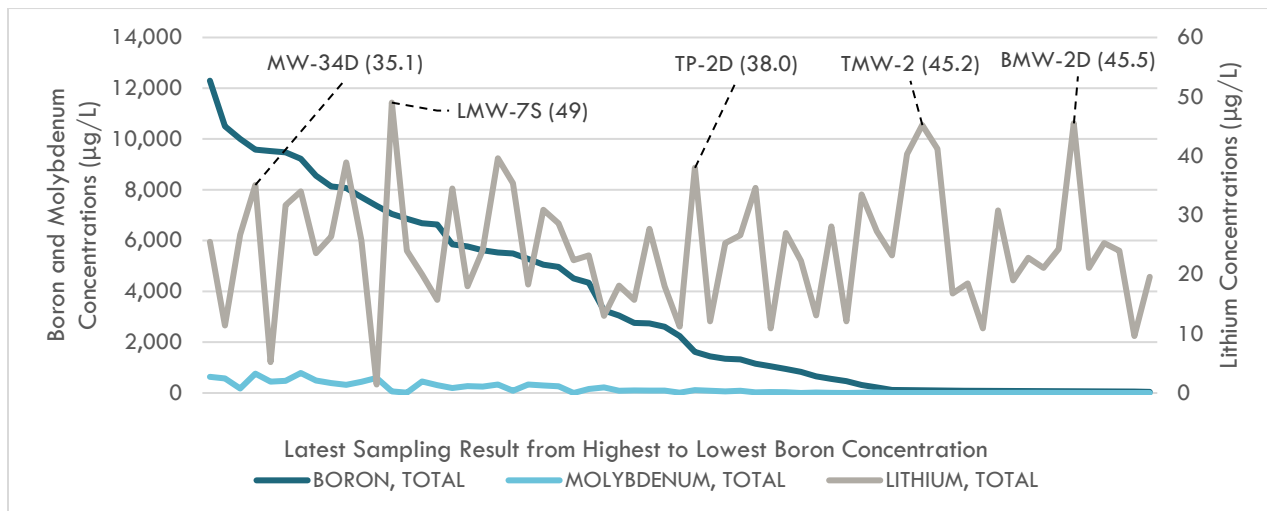
Well ID	Lithium (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-7S	49.0	7,050	59.7

Notes:

- 1) µg/L – micrograms per liter.

To evaluate the correlation between key CCR indicators and lithium concentrations onsite, a graph that displays boron, lithium and molybdenum concentrations from the most recent sampling result at each monitoring well is provided in **Figure 8** (data used for **Figure 8** provided in **Table 4**). As displayed on the graph, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Lithium concentrations do not track with either boron or molybdenum concentrations, indicating that lithium concentrations are not linked to impacts from the LCPA.

Figure 8 – Comparison of Most Recent Boron, Molybdenum, and Lithium Concentrations



Notes:

- 1) µg/L – micrograms per liter.
- 2) Values displayed in order from highest to lowest boron concentrations. Data used to prepare **Figure 7** are provided in **Table 4**.
- 3) Lithium concentrations displayed on secondary axis, with values on the right side of the graph.

As displayed in **Table 4**, there are 15 monitoring wells onsite where boron and/or molybdenum concentrations are below background and 48 monitoring wells onsite where boron and/or molybdenum are above background concentrations. **Figure 9** displays the distribution of lithium concentrations for the following datasets: 1) monitoring wells where there is a corresponding molybdenum and/or boron exceedance (48 monitoring wells, 399 Total Results) and 2) monitoring wells where there is not a corresponding boron or molybdenum exceedance (15 monitoring wells, 160 Total Results). For this figure, historical datasets for each monitoring well were used to generate the distributions. The results of this box and whisker plot display a nearly identical distribution between the two datasets including lower quartile, median, average, and upper quartile values all within 4 µg/L of one another. This further demonstrates that lithium concentrations do not correlate with key CCR indicator parameters, and therefore, elevated lithium concentrations onsite are not related to CCR impacts.

Using the data identified in **Figure 9**, for those wells without a boron or molybdenum exceedance above background, a non-parametric (highest value in the dataset) upper prediction limit of 57.5 µg/L was calculated, which is higher than the current Site GWPS of 47.4 µg/L.

5.1.1 Sequential Extraction Data Confirms Presence of Naturally Occurring Lithium in Alluvial Sediments

A seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of lithium in soils (i.e., the operationally defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The seven-step SEP is defined by specific extraction steps as follows (based on a modified Tessier et al. 1979 method):

Figure 9 – Distribution of Lithium Concentrations in Monitoring Wells With and Without Key CCR Indicators

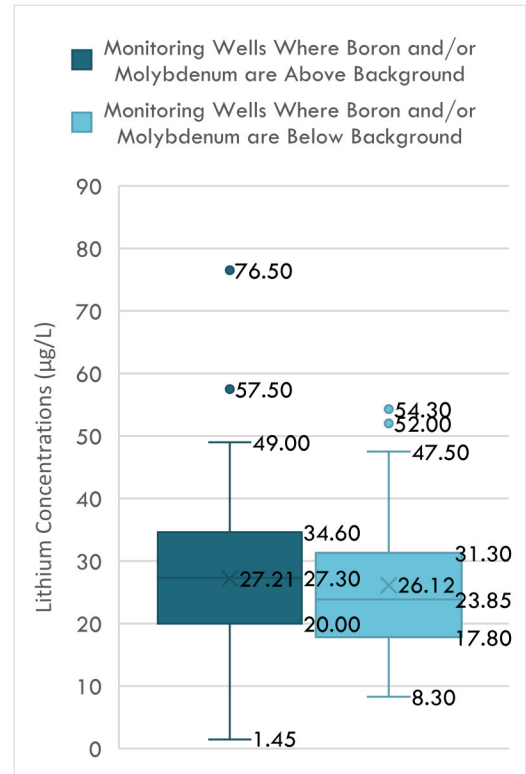


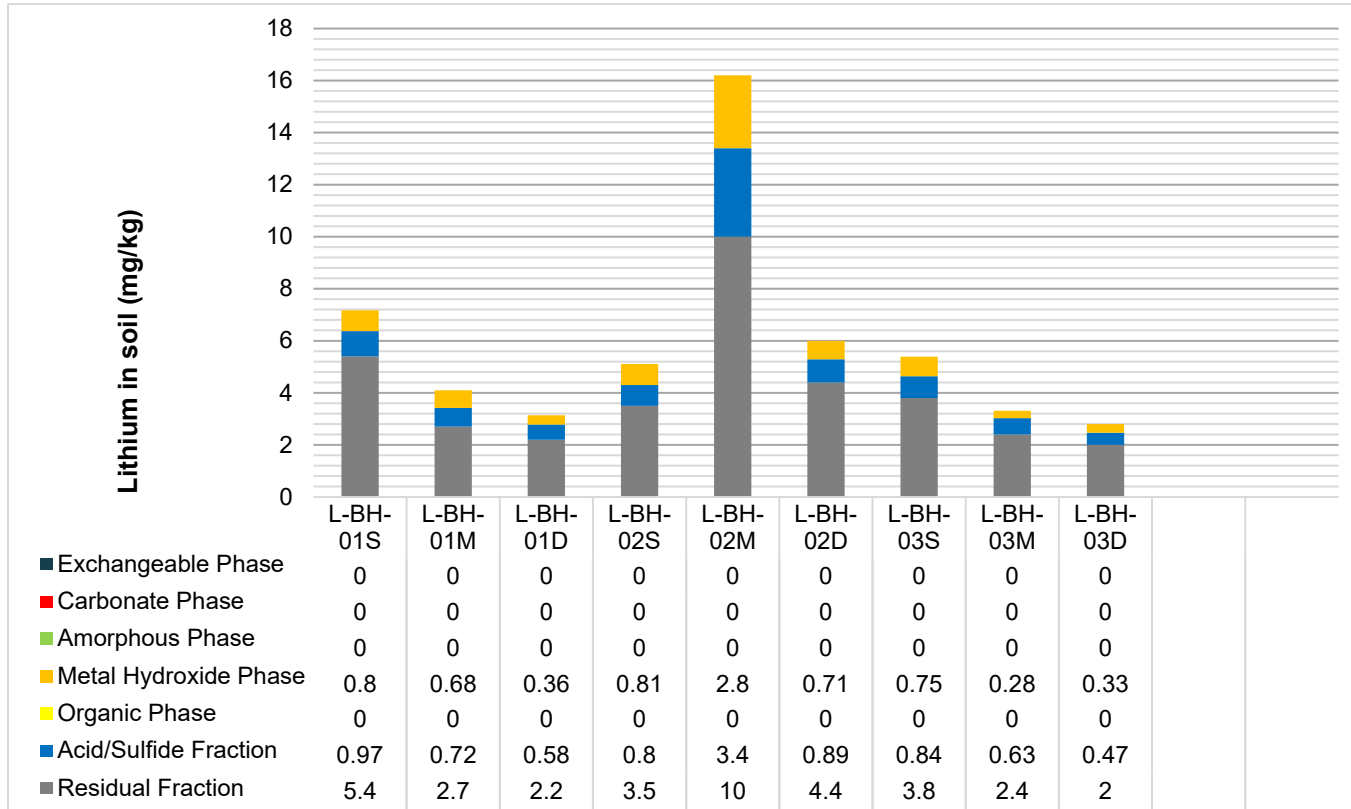
Figure 10 – Sequential Extraction Procedure

SEQUENTIAL EXTRACTION PROCEDURE			
ENVIRONMENTALLY AVAILABLE ↑ Increasing Availability	Step 1	Exchangeable Fraction:	This extraction includes trace elements that are electrostatically adsorbed to overburden minerals
	Step 2	Carbonate Fraction:	This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals
	Step 3	Non-Crystalline Materials Fraction:	This extraction targets trace elements that are complexed by amorphous minerals
	Step 4	Metal Hydroxide Fraction:	This extraction targets trace elements bound to hydroxides of iron, manganese, and/or aluminum
	Step 5	Organic Fraction:	This extraction targets trace elements strongly bound via chemisorption to organic material
NON-ENVIRONMENTALLY AVAILABLE ↓	Step 6	Acid/Sulfide Fraction:	The extraction is used to identify trace elements precipitated as sulfide minerals
	Step 7	Residual Fraction:	Trace elements remaining in the overburden after the previous extractions will be distributed between silicates, phosphates, and refractory oxide

Results of the sequential extraction testing as displayed in **Figure 11** indicate the presence of naturally occurring lithium in soils at the LEC in fractions 6 and 7 in each of the soil borings, regardless of if the locations were

directly adjacent to the LCPA or at background locations. Lithium is reported in soils at concentrations ranging from 2.8 to 16.2 milligrams per kilogram (mg/kg, from the SEP) and is predominantly (83 to 92%) present in the residual and sulfide component of the soil, i.e., the non-environmentally-available fractions. The absence of lithium in the environmentally available fractions (specifically exchangeable and carbonate fractions) indicates a general lack of lithium transport and attenuation (e.g., through sorption and/or co-precipitation).

Figure 11 - Sequential Extraction of Lithium Results



Notes:

- 1) Detection with JB flags for the organic phase were not used for this evaluation, as these results were detected in the blank, are estimated, and are therefore not considered accurate for this evaluation.
- 2) Mg/kg – milligrams per kilogram.
- 3) Sample locations provided in **Figure 1**. BH-01 is near the background wells, BH-02 is just south of the LCPA CCR Unit and BH-03 is located near AM-1S and the Missouri River.

5.1.2 Lithium at LMW-7S

LMW-7S is located approximately 1,300 feet to the northeast of the LCPA, near the eastern perimeter of the LCPB. Boron and molybdenum concentrations have historically been elevated at LMW-7S. LMW-7S was installed in 2016 to monitor the LCPB, and since that time lithium concentrations have ranged from 25.6 to 49.0 µg/L. During the statistical evaluation of the October 2022 sampling event (which only uses data collected since April 2020), a LCL of 39.9 µg/L and UCL of 47.93 µg/L were calculated for lithium. Therefore, the UCL is only 0.93 µg/L above the Site GWPS. This UCL is below the calculated limit using monitoring wells with no boron and/or molybdenum impacts of 57.5 µg/L. The lack of elevated lithium when compared with non-impacted wells, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts, indicates that the elevated lithium at LMW-7S is not from the LCPA, but rather is naturally occurring in the alluvial aquifer at this location.

5.1.3 Naturally Occurring Lithium Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

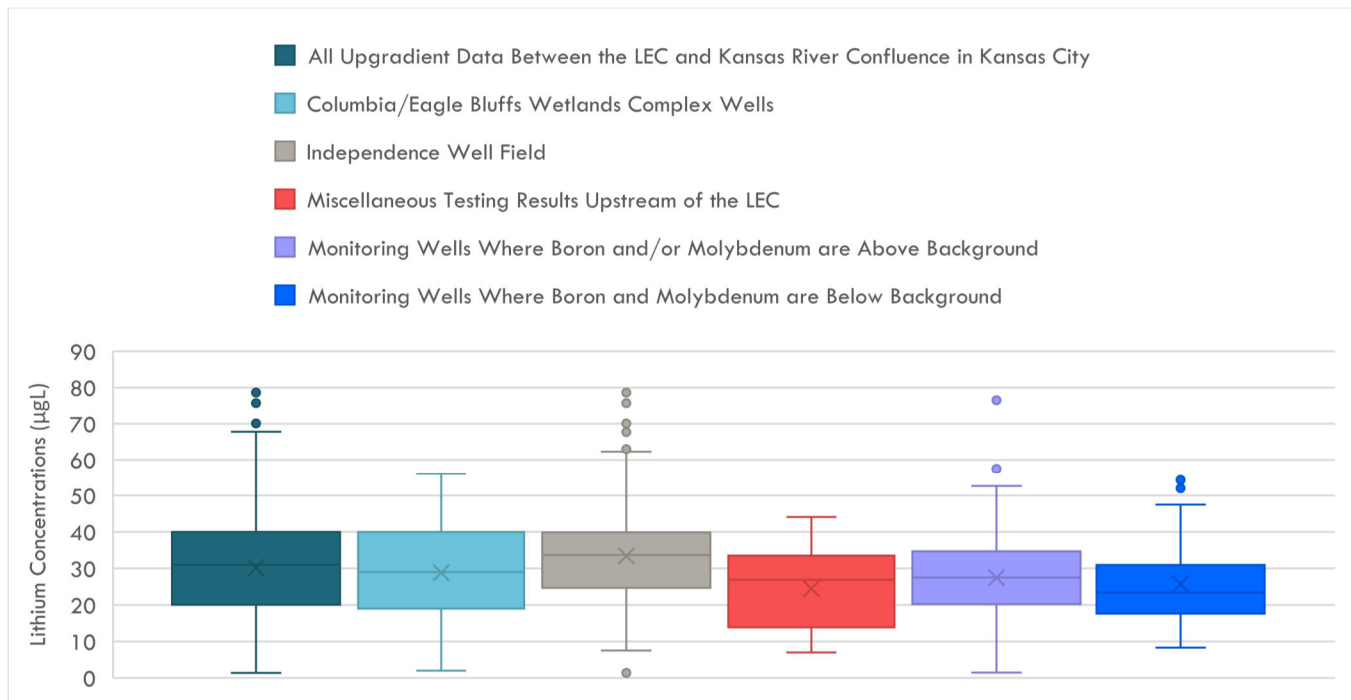
Naturally occurring lithium is present in groundwater across the United States (US), can be found in nearly all rock and soil types, and is most commonly found to be associated with silicate minerals (Tomazscak 2015). The weathering of silicate minerals is known to cause the release of naturally occurring lithium into groundwater (Tomazscak 2015). Site-specific test results (i.e., SEP results) confirm this finding for the LEC.

The National Water Quality Monitoring Council’s (NWQMC) Water Quality Portal (available at <https://www.waterqualitydata.us/>) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of lithium results from within the Missouri Alluvial Aquifer from the NWQMC database includes lithium results from a total of 1,325 groundwater sample results for wells located upgradient of the LEC within the Missouri River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of lithium, the database results were divided different groups as follows:

- Independence Well Field near Independence, Missouri (Kelly 2010) – Total of 433 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 851 results.
- Miscellaneous testing results upstream of the LEC – Total of 41 results

Figure 12 displays a box and whisker plot that compares the publicly available groundwater lithium concentration data in the upgradient alluvial aquifers to lithium concentrations at SEC as displayed in **Figure 9**.

Figure 12 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and LEC Results



Notes:

- 1) µg/L – micrograms per liter

Overall, the results display a very similar distribution of lithium results across the state within the Missouri River Alluvium. In fact, lithium concentrations appear to be lower, on average, than those in Independence,

Columbia/Eagle Bluffs, as well as other miscellaneous upstream locations. This consistency with upgradient alluvial aquifer samples demonstrates that the lithium concentrations onsite are not from the LCPA, but rather are naturally occurring within the alluvial aquifer.

6.0 STATISTICAL EXCEEDANCE FOR COBALT AT AM-1S

Cobalt is present at a level that is statistically above the Site Specific GWPS of 6 µg/L using corrective action statistical evaluations at AM-1S. This is the first corrective action sampling event where cobalt at AM-1S is present at a statistical level above the GWPS using Corrective Action statistical methods. AM-1S is located approximately 3,000 feet north of the LCPA, adjacent to the Missouri River. As displayed in **Table 5**, boron is present at AM-1S at a concentration just above background, while molybdenum is not detected, and is present below background concentrations.

Table 5 – October 2022 Analytical Results of Key Constituents at AM-1S

Well ID	Cobalt (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
AM-1S	3.5 J	316	Non-Detect (<20.0)

Notes:

- 1) µg/L – micrograms per liter

As displayed on **Table 1**, cobalt is not typically considered a key CCR indicator parameter because it is usually present at a low concentration in CCR leachate relative to typical background, has low mobility, and has a higher potential for reactivity (EPRI 2017). Since AM-1S well installation in 2018, cobalt concentrations have ranged between 3.2 µg/L and 5.8 µg/L at AM-1S, with all results being below the Site GWPS. Based on the results of the October 2022 Corrective Action Statistical Evaluation, cobalt was present a level statistically above the GWPS with a LCL of 1.559 µg/L and an UCL of 6.841 µg/L. This evaluation only uses results from the Corrective Action Program sampling, and since April 2020, only 4 sampling results have been collected at AM-1S. If all results (6 total) from AM-1S are used to calculate the upper and lower confidence limits, then AM-1S would be in compliance with the GWPS with a LCL of 1.061 µg/L and an UCL of 5.941 µg/L. However, as prescribed in the Corrective Action Statistical Analysis Plan, only results since the start of Corrective Action monitoring are used for the evaluation, therefore, although no single result has been above the site specific GWPS of 6 µg/L, the UCL is still above the GWPS causing a statistical exceedance using Corrective Action statistical methods.

Provided in **Table 6** is a summary of cobalt minimum, average, and maximum concentrations in the different potential source areas including background, porewater, and Missouri River. As displayed on **Table 6**, concentrations in AM-1S are above those present in background, river, and LCPA porewater.

Table 6 – Summary of Cobalt Concentrations

Constituent (Units)		AM-1S	Background	Assessment Monitoring Wells Adjacent to LCPA (UMW 1-9)	Missouri River	LCPA Porewater	LCPB Porewater
Cobalt (µg/L)	Minimum	3.2	ND<0.72	ND <0.72	ND <1.0	ND <0.73	ND <0.87
	Average	4.483	0.5504	0.4355	1.762	NA	ND <0.87
	Maximum	5.8	1.8	0.79	4.4	ND <0.83	ND <0.87

Notes:

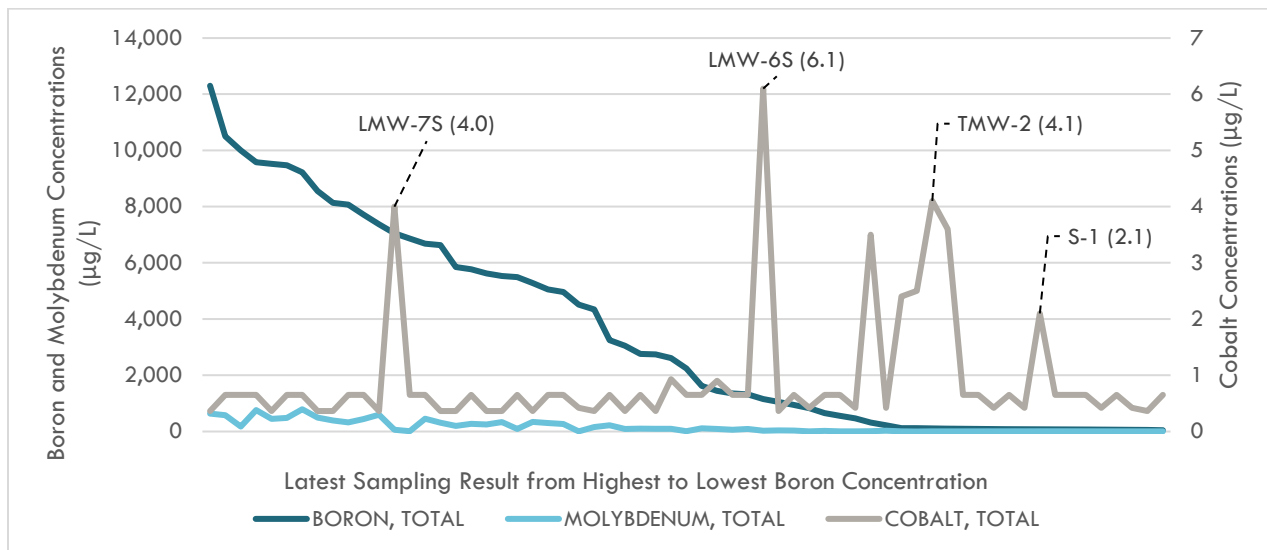
- 1) µg/L – micrograms per liter.
- 2) NA - Not applicable.
- 3) ND – Non-Detect.

In January 2018, as part of the initial LCPB ASD, porewater was sampled in the LCPA and LCPB CCR units. All nine results from this analysis were non-detect (<0.73 to <0.87 µg/L). This lack of cobalt in the CCR materials has been confirmed in other studies as well, including the current NPDES permit (#MO-0004812) where cobalt is not listed as a Pollutant of Concern (POC) since the test result collected from the LCPA outfall is non-detect <1 µg/L. Lack of cobalt within the pore-water of the LCPA, coupled with the lack of cobalt at a statistically significant level above the GWPS in any other monitoring well onsite, indicates that cobalt concentrations in AM-1S are not derived from the LCPA, but rather an alternative source.

Further evidence that the LCPA is not a source of elevated cobalt concentrations is the lack of cobalt in the groundwater monitoring wells directly adjacent to the CCR Unit used for Detection and Assessment Monitoring. These wells (UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, UMW-7D, UMW-8D, and UMW-9D as displayed in **Figure 1**), show elevated key CCR indicator parameter concentrations for boron and molybdenum but do not have elevated cobalt concentrations. Of the 126 testing results for these 9 monitoring wells, only 2 results have a value over the method detection limit (MDL) at 2.7 J² and 0.79 J µg/L (still below the Practical Quantitation Limit (PQL)). Therefore, 98.4% of all cobalt results in monitoring wells located directly adjacent to the LCPA are present at a non-detect level.

Concentrations of cobalt do not closely track with key indicator parameters of boron or molybdenum. **Figure 13** is a graph that displays boron, cobalt, and molybdenum concentrations from the most recent sampling result at each monitoring well (data used to generate this graph is available in **Table 4**). Molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Cobalt concentration do not track closely with either boron or molybdenum concentrations and range between non-detect <0.73 µg/L to 6.9 µg/L.

Figure 13 – Comparison of Boron, Molybdenum, and Cobalt Concentrations



Notes:

- 1) µg/L – micrograms per liter.
- 2) Values displayed in order from highest to lowest boron concentrations. Data used to prepare **Figure 7** are provided in **Table 4**.
- 3) Cobalt concentrations displayed on secondary axis, with values on the right side of the graph.

² J indicates an estimated value as the result was detected above the MDL but below the PQL. Additionally, the 2.7 J result from 4/11/22 at UMW-1D is considered an outlier using the methods outlined in the sites Statistical Analysis Plan.

As displayed in **Table 4**, there are 15 monitoring wells onsite where boron and molybdenum concentrations are below background and 48 monitoring wells onsite where boron or molybdenum are above background concentrations. **Figure 14** displays the distribution of cobalt concentrations between these two datasets (with and without boron or molybdenum exceedances). For this figure, historical data for each of the wells identified above were used to generate the distribution. The results of this box and whisker plot display a nearly identical distribution between the two datasets. This further demonstrates that cobalt concentrations do not correlate with key CCR indicator parameters, and therefore, elevated cobalt concentrations onsite are naturally occurring and not related to CCR impacts.

6.1.1 Sequential Extraction Data Confirms Presence of Naturally Occurring Cobalt in Sediments

As with lithium, a seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of cobalt in soils (i.e. the operationally-defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The locations of the sequential extraction sample locations are provided in **Figure 1**.

Results of the sequential extraction testing indicate naturally occurring cobalt is present in soils at the LEC in fractions 6 and 7 of each of the soil borings, regardless of if the location is directly adjacent to the LCPA or at background locations. Cobalt is reported at concentrations ranging from 1.8 to 5.9 milligrams per kilogram (mg/kg, from the SEP) and is present in the residual and sulfide component of the soil (28 to 45%), i.e., the non-environmentally available fractions. Background soil samples, outside of the impacts from the LCPA, display similar results as those soil samples collected adjacent to the CCR unit, indicating that cobalt is not from impacts from the CCR Unit, but rather is naturally occurring in the alluvial aquifer.

Figure 14 – Distribution of Cobalt Concentrations in Monitoring Wells With and Without Key CCR Indicators

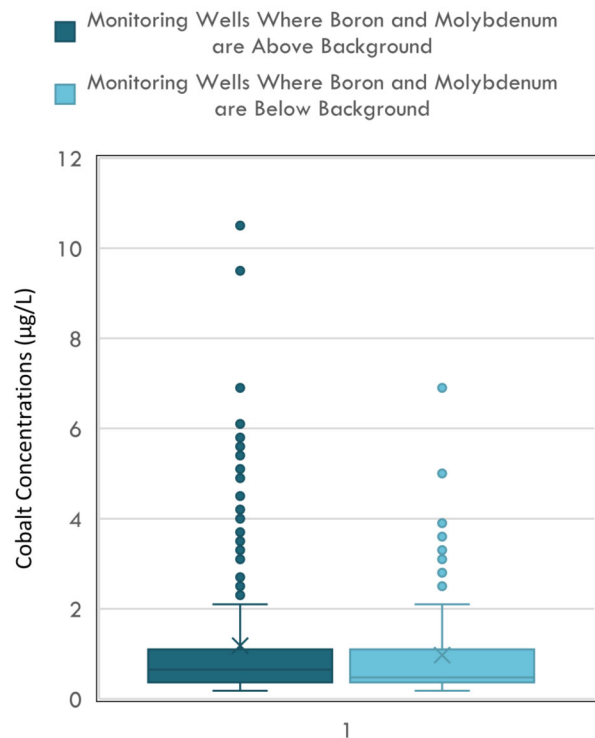
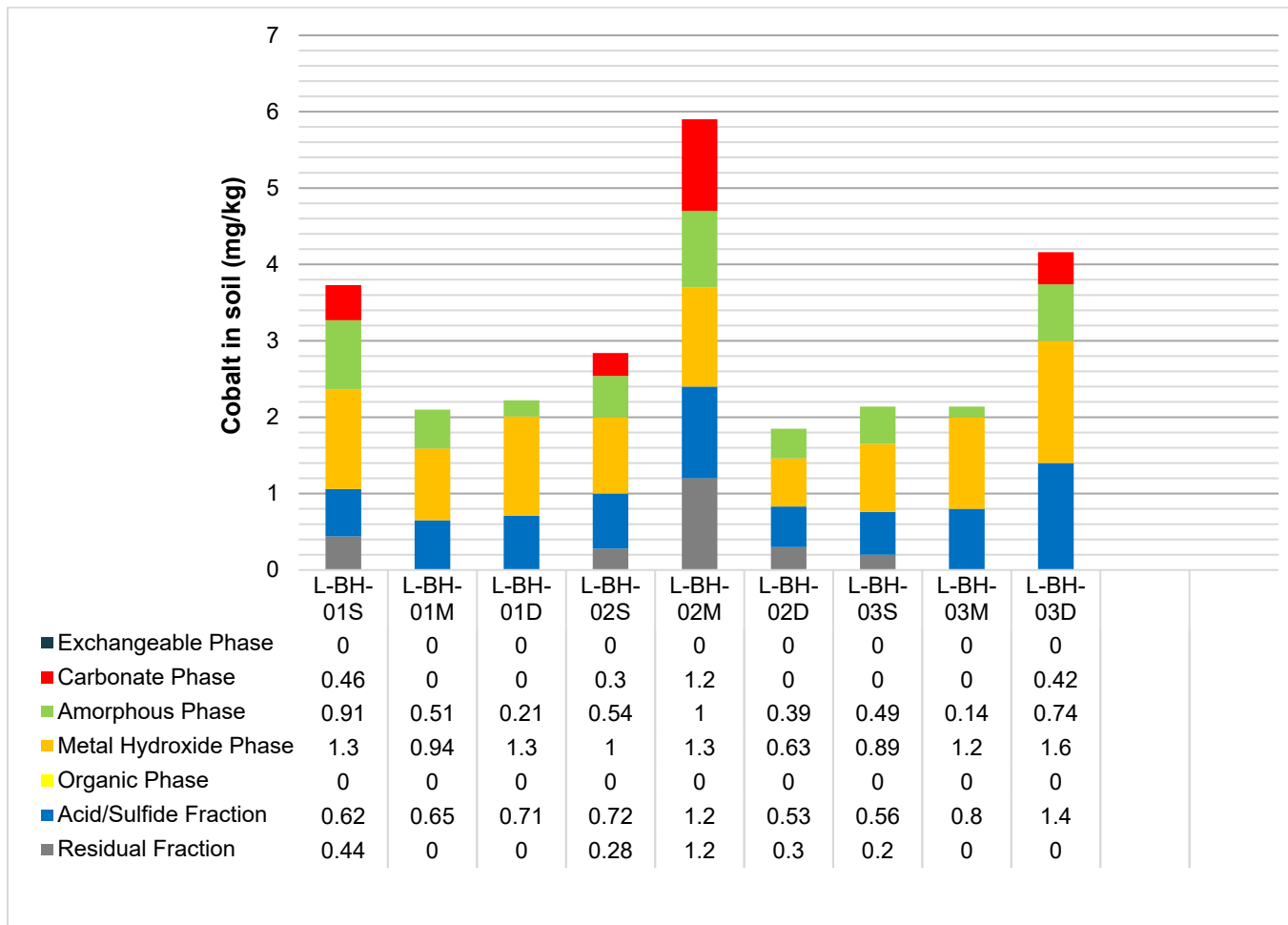


Figure 15 - Sequential Extraction of Cobalt Results



Notes:

1) Mg/kg – milligrams per kilogram.

2) Sample locations provided in **Figure 1**. BH-01 is near the background wells, BH-02 is just south of the LCPA CCR Unit and BH-03 is located near AM-1S and the Missouri River.

6.1.2 Naturally Occurring Cobalt Values at the LEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

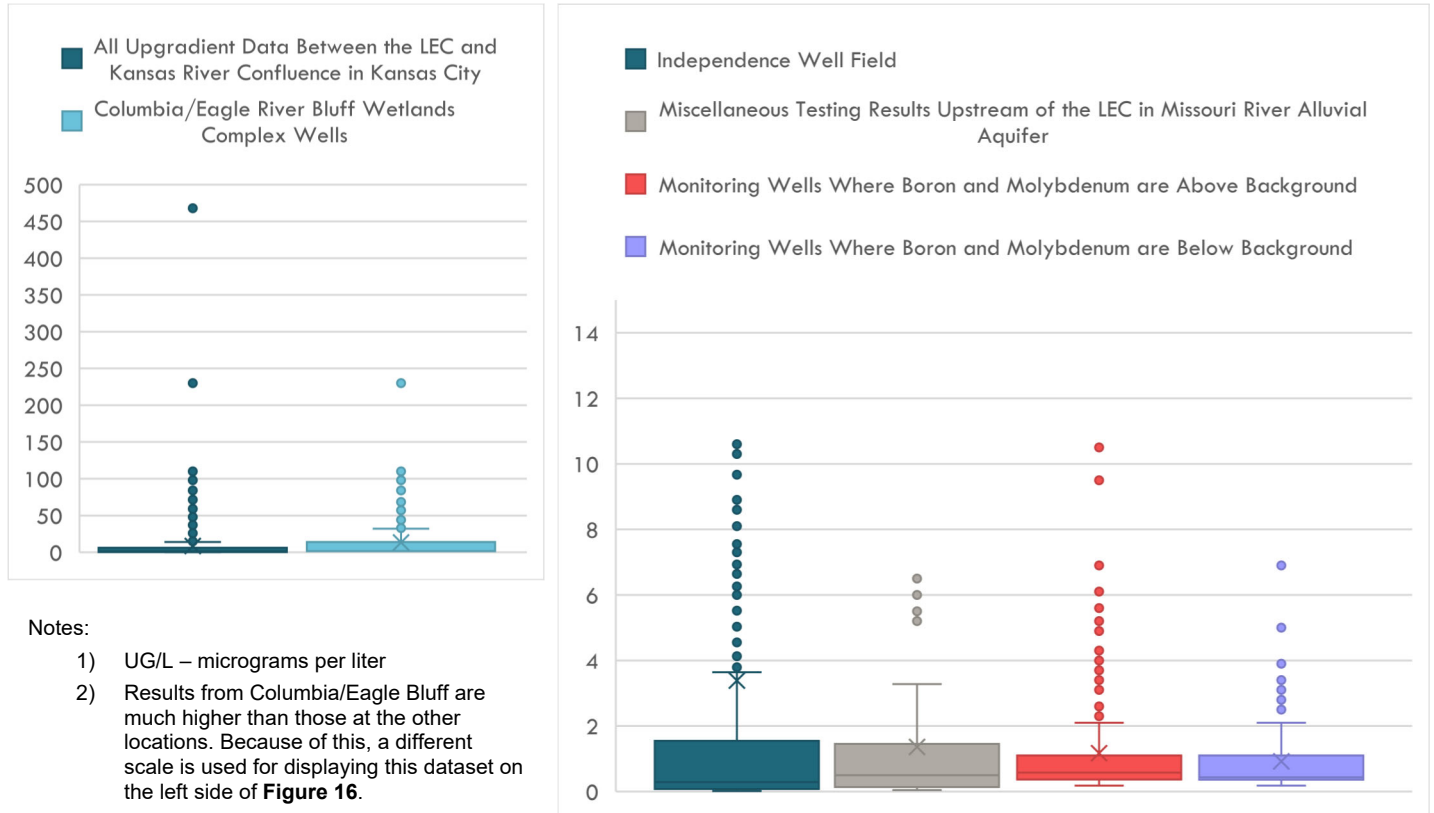
Cobalt may be present in mineral form as a constituent in arsenides, carbonates, sulfides and oxides (Hem, 1989; Smith and Carson, 1981). During weathering of these minerals (i.e., dissolution and/or oxidation), any cobalt is typically released and redistributed to iron or manganese (hydr)oxides (Butt et al., 2000) or other sorbent (e.g., clays, organic matter). The National Water Quality Monitoring Council’s (NWQMC) Water Quality Portal (available at <https://www.waterqualitydata.us/>) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of Cobalt results from within the Missouri River Alluvial Aquifer from the NWQMC database includes Cobalt results from a total of 917 groundwater sample results for wells located upgradient of the LEC within the Missouri River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of cobalt, the database results were divided different groups as follows:

- Independence Well Field near Independence, Missouri (Kelly 2010) – Total of 406 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 470 results.

- Miscellaneous testing results upstream of the LEC – Total of 41 results.

Figure 16 displays a box and whisker plot that compares the publicly available groundwater cobalt data in the upgradient alluvial aquifers to those completed onsite as displayed in Figure 13.

Figure 16 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and LEC Results



The cobalt concentrations from the Columbia/Eagle Bluffs Wetlands complex are much higher than those at the SEC and those further upgradient at the Independence Well Field. It is unknown why these results are at such elevated concentrations, therefore, they are not used for this evaluation. Excluding the data from Columbia/Eagle Bluffs Wetlands complex, the results display that the majority of cobalt concentrations across the Missouri River alluvial aquifer are below 4 µg/L with some outliers above 6 µg/L at each site. This is likely caused by the heterogeneous nature of the Missouri River Basin alluvial aquifer deposits, which are derived from a vast area of the United States including parts of Missouri, Iowa, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, and Colorado. The sediments in the Missouri River Alluvial Aquifer at the site are made up of a mixture of sediments from all reaches of the Missouri River Basin. Cobalt deposits and many metamorphic and igneous rocks containing cobalt occur at numerous locations within the Missouri River Basin. Therefore, the alluvial aquifer sediments in the vicinity of AM-1S (as well as other various locations within the Missouri River Alluvium) likely include localized zones/particles of increased cobalt concentrations and most likely the cause of the elevated concentrations observed at the LEC.

This consistency with upgradient alluvial aquifer samples displays that the cobalt concentrations onsite are not from the LCPA, but rather are naturally occurring levels that can vary over time within the aquifer groundwater.

7.0 SUMMARY

Based on the information presented in in this ASD, the statistical exceedances for radium, lithium and cobalt at the site using Corrective Action statistical methods are not the result of impacts from the LCPA, but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. The natural geochemical source for radium, lithium, and cobalt exceedances is supported by several factors including: (1) a lack of correlation between key CCR indicators (boron and molybdenum) and isolated exceedances, (2) the presence of lithium and cobalt at similar levels in alluvial aquifer samples upgradient of the site, (3) radium, cobalt, and lithium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous rocks within the Missouri River watershed.

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Tables

Table 4
Summary of Latest CCR Rule Groundwater Sampling Results for Constituents of Concern
LCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Background Limit	Boron Concentrations		Molybdenum Concentrations		Lithium Concentrations		Cobalt Concentrations	
	DQR (100 µg/L)		DQR (20 µg/L)		47.4 µg/L		DQR (0.73 µg/L)	
Groundwater Monitoring Wells	Date	µg/L	Date	µg/L	Date	µg/L	Date	µg/L
L-ASD-5M	2/15/2018	12,300	2/15/2018	636	2/15/2018	25.5	2/15/2018	ND < 0.73
L-UMW-6D	10/25/2022	10,500	10/25/2022	575	10/25/2022	11.4 J	10/25/2022	ND < 1.3
L-UMW-3D	10/27/2022	10,000	10/27/2022	173	10/27/2022	26.7	10/27/2022	ND < 1.3
L-MW-34[D]	10/28/2022	9,580	10/28/2022	762	10/28/2022	35.1	10/28/2022	ND < 1.3
L-ASD-2S	2/20/2018	9,520	2/20/2018	445	2/20/2018	5.2 J	2/20/2018	ND < 0.73
L-TP-3D	10/28/2022	9,470	10/28/2022	481	10/28/2022	31.7	10/28/2022	ND < 1.3
L-MW-33[D]	10/28/2022	9,220	10/28/2022	792	10/28/2022	34.0	10/28/2022	ND < 1.3
L-ASD-2M	2/20/2018	8,550	2/20/2018	490	2/20/2018	23.6	2/20/2018	ND < 0.73
L-ASD-2D	2/20/2018	8,130	2/20/2018	392	2/20/2018	26.4	2/20/2018	ND < 0.73
L-AM-1D	10/26/2022	8,070	10/26/2022	321	10/26/2022	38.9	10/26/2022	ND < 1.3
L-MW-35[D]	10/24/2022	7,710	10/24/2022	442	10/24/2022	25.7	10/24/2022	ND < 1.3
L-ASD-1S	2/22/2018	7,370	2/22/2018	593	2/22/2018	ND < 2.9	2/22/2018	ND < 0.73
L-LMW-7S	10/28/2022	7,050	10/28/2022	59.7	10/28/2022	49	10/28/2022	4.0 J
L-TP-4D	10/24/2022	6,860	10/24/2022	ND < 20.0	10/24/2022	24.0	10/24/2022	ND < 1.3
L-UMW-5D	10/25/2022	6,680	10/25/2022	451 J	10/25/2022	20.0	10/25/2022	ND < 1.3
L-ASD-4M	2/16/2018	6,630	2/16/2018	309	2/16/2018	15.7	2/16/2018	ND < 0.73
L-ASD-3D	2/17/2018	5,850	2/17/2018	196	2/17/2018	34.5	2/17/2018	ND < 0.73
L-AMW-8	10/26/2022	5,770	10/26/2022	269	10/26/2022	18.00	10/26/2022	ND < 1.3
L-ASD-4D	2/16/2018	5,620	2/16/2018	249	2/16/2018	24.1	2/16/2018	ND < 0.73
L-ASD-1M	2/22/2018	5,530	2/22/2018	334	2/22/2018	39.6	2/22/2018	ND < 0.73
L-LMW-4S	10/25/2022	5,490	10/25/2022	87.7	10/25/2022	35.4	10/25/2022	ND < 1.3
L-ASD-1D	2/22/2018	5,280	2/22/2018	336	2/22/2018	18.3	2/22/2018	ND < 0.73
L-TP-3M	10/28/2022	5,050	10/28/2022	296	10/28/2022	30.9	10/28/2022	ND < 1.3
L-UMW-4D	10/27/2022	4,960	10/27/2022	263	10/27/2022	28.6	10/27/2022	ND < 1.3
L-TP-5D	5/9/2019	4,510	5/9/2019	ND < 2.6	5/9/2019	22.4	5/9/2019	ND < 0.84
L-LMW-3S	10/25/2022	4,340	5/2/2019	157	5/2/2019	23.2	6/1/2017	ND < 0.73
L-LMW-2S	10/25/2022	3,250	10/25/2022	218	10/25/2022	13.0	10/25/2022	ND < 1.3
L-ASD-3M	2/18/2018	3,050	2/18/2018	90.3	2/18/2018	18.1	2/18/2018	ND < 0.73
L-LMW-8S	10/27/2022	2,760	10/27/2022	99.2	10/27/2022	15.7	10/27/2022	ND < 1.3
L-ASD-5D	2/15/2018	2,740	2/15/2018	93.1	2/15/2018	27.7	2/15/2018	ND < 0.73
L-ASD-3S	2/18/2018	2,610	2/18/2018	93.7	2/18/2018	18.0	2/18/2018	0.93 J
L-LMW-1S	10/27/2022	2,240	10/27/2022	ND < 20.0	10/27/2022	11.2	10/27/2022	ND < 1.3
L-TP-2D	10/26/2022	1,620	10/26/2022	110	10/26/2022	38.0	10/26/2022	ND < 1.3
L-ASD-5S	2/15/2018	1,440	2/15/2018	87.4	2/15/2018	12.1	2/15/2018	0.90 J
L-TP-2M	10/26/2022	1,350	10/26/2022	62.1	10/26/2022	25.3	10/26/2022	ND < 1.3
L-UMW-7D	10/27/2022	1,320	10/27/2022	89.9	10/27/2022	26.6	10/27/2022	ND < 1.3
L-LMW-6S	10/28/2022	1,150	5/8/2019	26.2	5/8/2019	34.6	6/2/2017	6.1
L-ASD-4S	2/16/2018	1,050	2/16/2018	39.3	2/16/2018	10.9	2/16/2018	ND < 0.73
L-UMW-2D	10/26/2022	941	10/26/2022	30.5	10/26/2022	27.0	10/26/2022	ND < 1.3
L-TP-5M	5/9/2019	828	5/9/2019	ND < 2.6	5/9/2019	22.3	5/9/2019	ND < 0.84
L-UMW-8D	10/28/2022	654	10/28/2022	18.5 J	10/28/2022	13.1	10/28/2022	ND < 1.3
L-UMW-1D	10/26/2022	556	10/26/2022	2.9 J	10/26/2022	28.1	10/26/2022	ND < 1.3
L-TP-4M	8/20/2019	463	8/20/2019	ND < 2.6	8/20/2019	12.1	8/20/2019	ND < 0.84
L-AM-1S	10/26/2022	316	10/26/2022	ND < 20.0	10/26/2022	33.5	10/26/2022	3.5 J
L-TP-2S	8/20/2019	221	8/20/2019	22.4	8/20/2019	27.3	8/20/2019	ND < 0.84
L-TP-5S	5/9/2019	119	5/9/2019	ND < 2.6	5/9/2019	23.2	5/9/2019	2.4 J
L-TMW-1	10/26/2022	115	11/20/2019	ND < 3.7	5/2/2019	40.3	11/4/2021	ND < 5.0
L-TMW-2	10/25/2022	115	5/2/2019	ND < 2.6	5/2/2019	45.2	6/2/2017	4.1 J
L-TMW-3	10/26/2022	98.3 J	5/8/2019	ND < 2.6	5/8/2019	41.2	6/2/2017	3.6 J
L-BMW-1S	10/27/2022	91.2 J	10/27/2022	ND < 0.91	10/27/2022	16.8	10/27/2022	ND < 1.3
L-UMW-9D	10/27/2022	86.4 J	10/27/2022	1.8 J	10/27/2022	18.5	10/27/2022	ND < 1.3
L-TP-4S	8/20/2019	83.5 J	8/20/2019	ND < 2.6	8/20/2019	10.9	8/20/2019	ND < 0.84
L-BMW-1D	10/27/2022	79.1 J	10/27/2022	1.9 J	10/27/2022	30.8	10/27/2022	ND < 1.3
L-TP-1S	5/8/2019	77.4 J	5/8/2019	ND < 2.6	5/8/2019	19.0	5/8/2019	ND < 0.84
L-S-1	10/26/2022	75.1 J	10/26/2022	ND < 20.0	10/26/2022	22.8	10/26/2022	2.1 J
L-MW-24	10/24/2022	71.1 J	10/24/2022	ND < 20.0	10/24/2022	21.1	10/24/2022	ND < 1.3
L-MW-26	10/24/2022	68.3 J	10/24/2022	ND < 0.91	10/24/2022	24.3	10/24/2022	ND < 1.3
L-BMW-2D	10/27/2022	67.9 J	10/27/2022	1.4 J	10/27/2022	45.5	10/27/2022	ND < 1.3
L-TP-3S	5/9/2019	67.2 J	5/9/2019	3.3 J	5/9/2019	21.1	5/9/2019	ND < 0.84
L-TP-1D	10/26/2022	60.6 J	10/26/2022	ND < 20.0	10/26/2022	25.3	10/26/2022	ND < 1.3
L-TP-1M	5/8/2019	60.6 J	5/8/2019	ND < 2.6	5/8/2019	24.0	5/8/2019	ND < 0.84
L-LMW-5S	10/26/2022	55.6 J	5/1/2019	ND < 2.6	5/1/2019	9.6 J	6/2/2017	ND < 0.73
L-BMW-2S	10/27/2022	45.3 J	10/27/2022	2.2 J	10/27/2022	19.6	10/27/2022	ND < 1.3

- Notes
- 1) µg/L - micrograms per liter
 - 2.) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
 - 3.) J - Result is an estimated value.
 - 4.) Date corresponds with most recent result for each analyte.
 - 5.) Well ID's highlighted in light red have values above the background limit for boron and molybdenum. These values are used in the "concentrations with a boron or molybdenum value over background" for the box and whisker plots provided in the text. Well ID's in blue do not have a molybdenum or boron value above background, and these well are used in the "concentrations without a boron or molybdenum value over background" column for the box and whisker plots provided in the text.



Figures

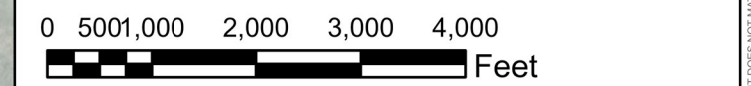


TITLE
LABADIE ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND MONITORING WELL LOCATION MAP

- Legend**
- Approximate Property Boundary
 - Labadie Energy Center CCR Units**
 - LCPA - Bottom Ash Surface Impoundment
 - LCPB - Fly Ash Surface Impoundment
 - LCL1 - Utility Waste Landfill Cell 1
 - Monitoring Well Network**
 - Corrective Action Monitoring Well
 - LCPA Monitoring Well
 - LCPB Monitoring Well
 - LCPB and Corrective Action Monitoring Well
 - LCL1 Monitoring Well
 - LCL1 and Corrective Action Monitoring Well
 - Background Well Used for LCPA, Corrective Action, LCPB, and LCL1 Monitoring
 - Monitoring Well Used for Water Level Elevation Measurements Only
 - Soil Sample Borehole Location

NOTES
 1. All locations and boundaries are approximate.

- REFERENCES**
1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
 2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

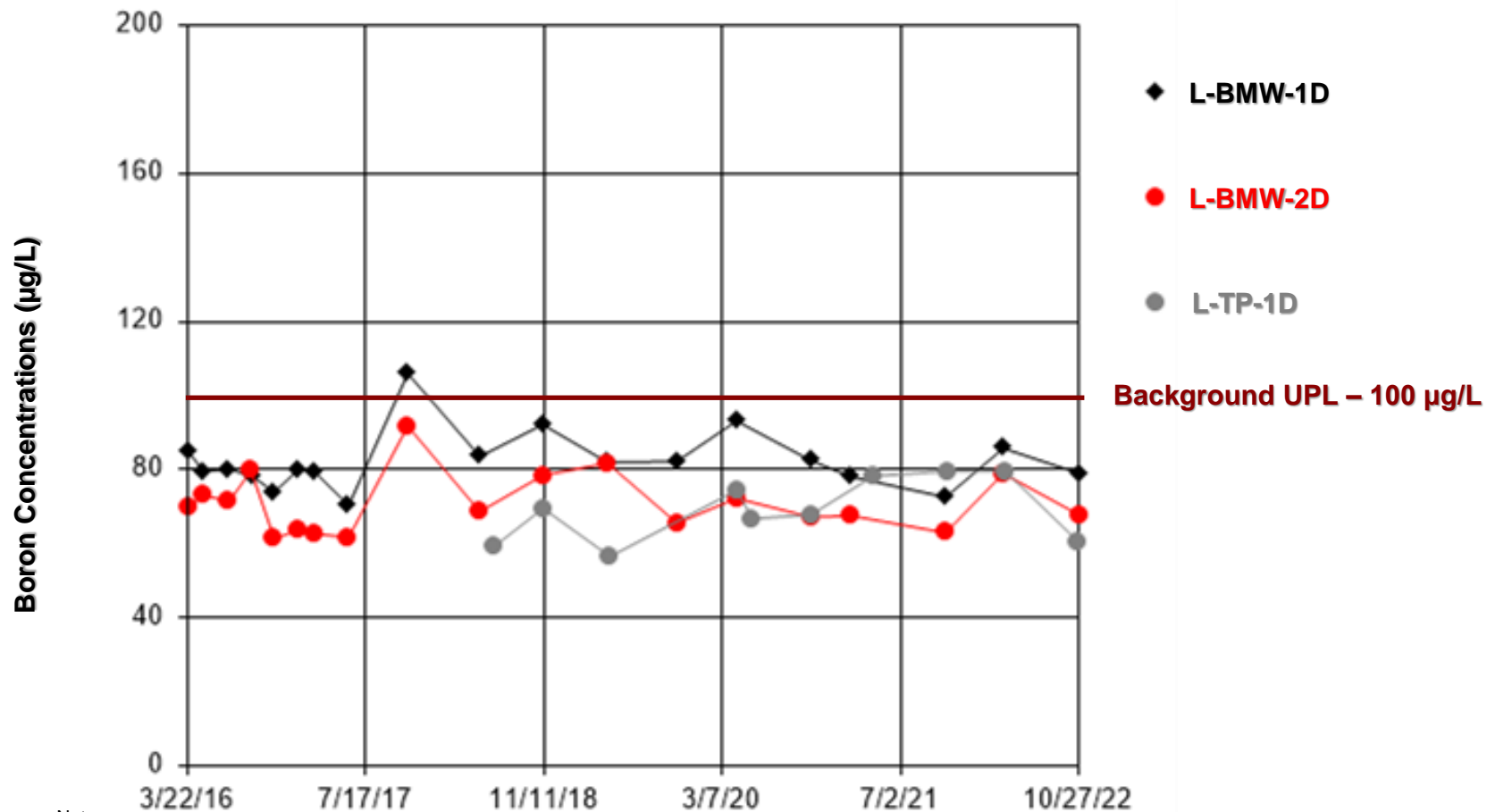
CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER

	DESIGN	JSI	YYYY-MM-DD	2023-03-14
	PREPARED	JSI	PROJECT No.	23007
	REVIEW	MNH	FIGURE 1	
	APPROVED	MNH		

Service Layer Credits: World Imagery:
 Earthstar Geographics


Path: C:\Users\jrodriguez\OneDrive\Documents\Rocksmith Geoenvironmenting\LLC\23007 - Ameren CCR - Document\100 - Drawings - Figures\1.1.EC04-1.2 - Production\ASDU\230314_LCPACL_ASD.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



Notes

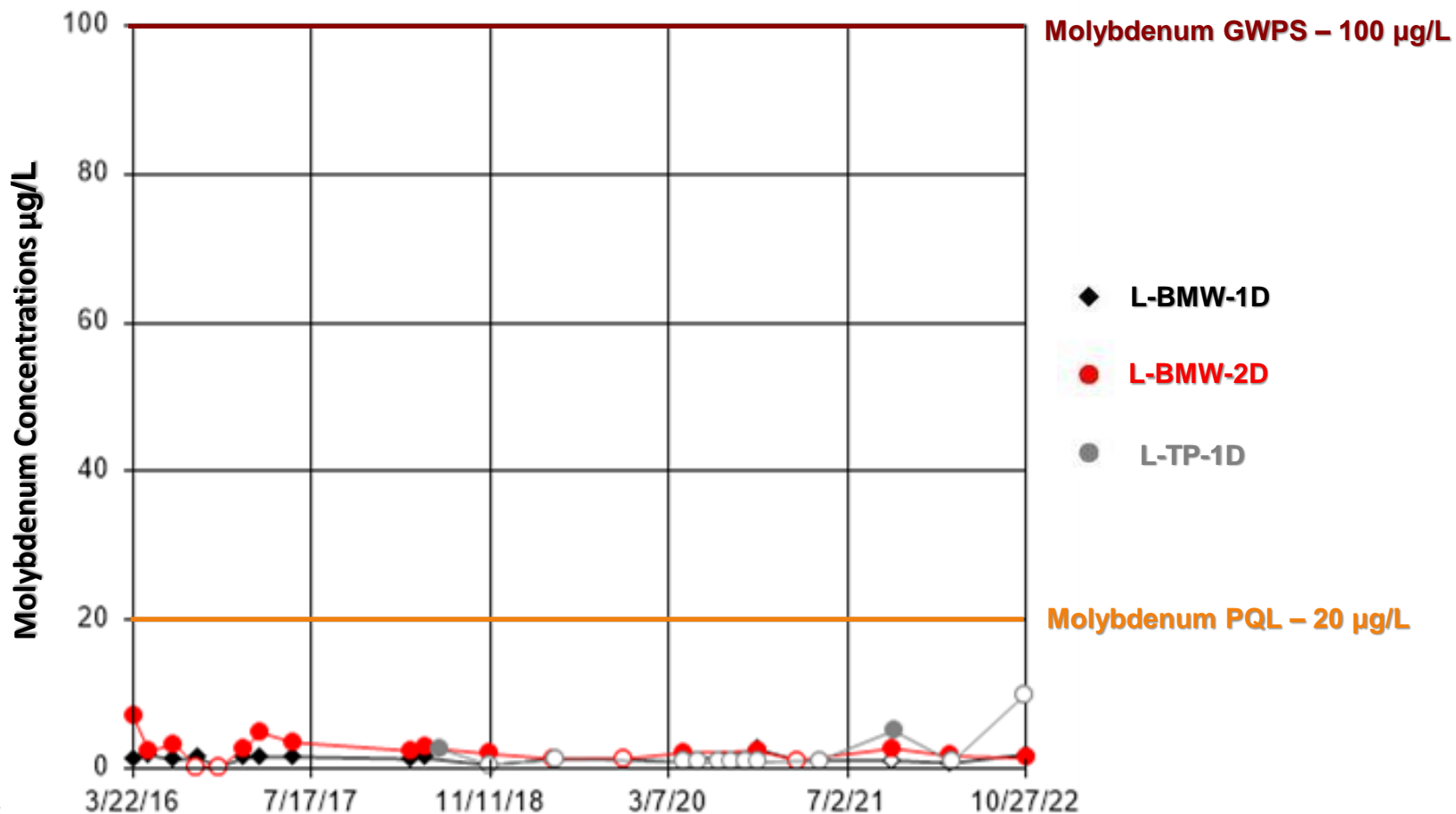
- 1) µg/L – Micrograms per liter.
- 2) UPL – Upper Prediction Limit.
- 3) The UPL for background monitoring wells BMW-1D and BMW-2D is set at the Double Quantification Rule (DQR) because the entire background dataset is reported as non-detect or estimated (J-flag). In this case the DQR can be numerically represented as the practical quantitation limit (PQL).
- 4) PQL – Practical Quantitation Limit is the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration (typically 5-10x higher than the MDL). In this case, 100 µg/L is the general PQL for boron.

CLIENT/PROJECT AMEREN MISSOURI LABADIE ENERGY CENTER				
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-10	



TITLE **Timeseries Plot of Boron Concentrations at TP-1D and Background Monitoring Wells**

Rev No. NA	JOB NO. 23007	FIGURE 2
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Notes

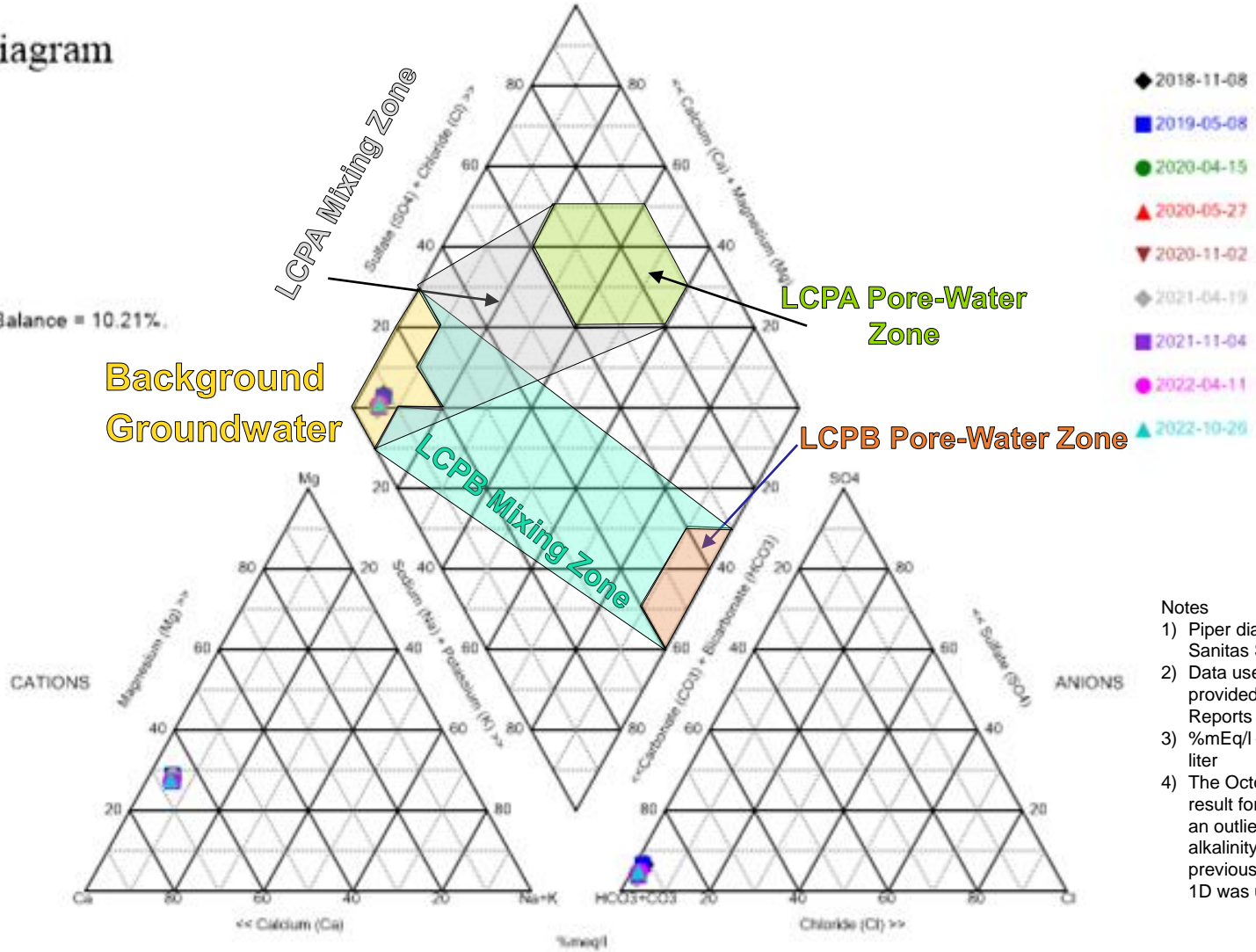
- 1) µg/L – Micrograms per liter.
- 2) GWPS – Groundwater Protection Standard.
- 3) The UPL for background monitoring wells BMW-1D and BMW-2D is set at the Double Quantification Rule (DQR) because the entire background dataset is reported as non-detect or estimated (J-flag). In this case the DQR can be numerically represented as the practical quantitation limit (PQL).
- 4) PQL – Practical Quantitation Limit, the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration (typically 5-10x higher than the MDL). Generally, the PQL for molybdenum is 20 µg/L.
- 5) Data points not filled in indicate a Non-Detect result.
- 6) Data points not connected to lines are considered outliers.

CLIENT/PROJECT AMEREN MISSOURI LABADIE ENERGY CENTER						TITLE Timeseries Plot of Molybdenum Concentrations at TP-1D and Background Monitoring Wells		
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-10			Rev No. NA	JOB NO. 23007	FIGURE 4

Piper Diagram

L-TP-1D

Cation-Anion Balance = 10.21%



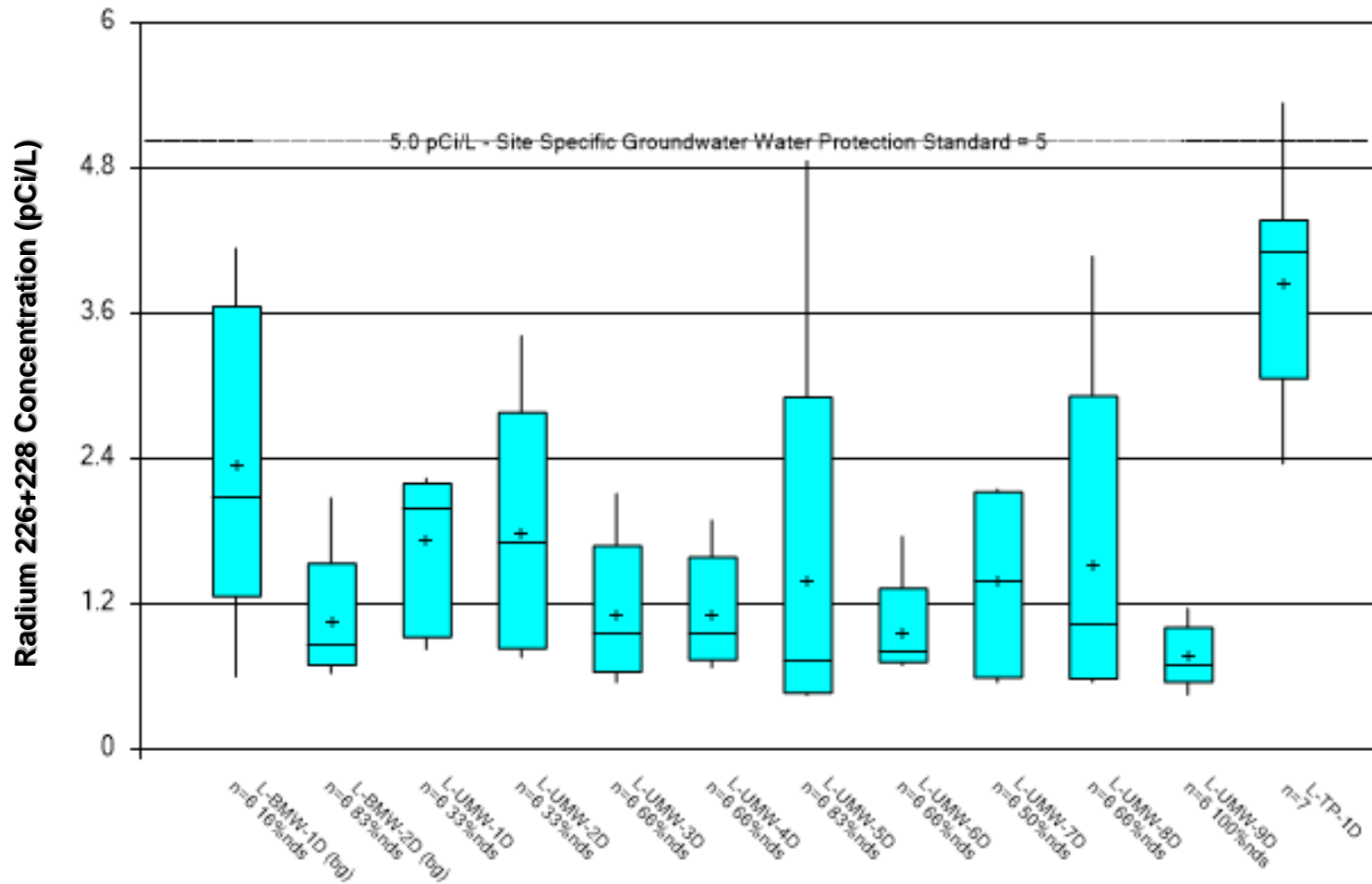
Notes

- 1) Piper diagram generated using Sanitas Software.
- 2) Data used to calculate diagrams provided in previous Annual Reports for the LCPA.
- 3) %mEq/l – milliequivalents per liter
- 4) The October 2022 sampling result for alkalinity appears to be an outlier, therefore, the average alkalinity results from the previous sampling events at TP-1D was used (490.5 mg/l).

CLIENT/PROJECT AMEREN MISSOURI LABADIE ENERGY CENTER				
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-10	

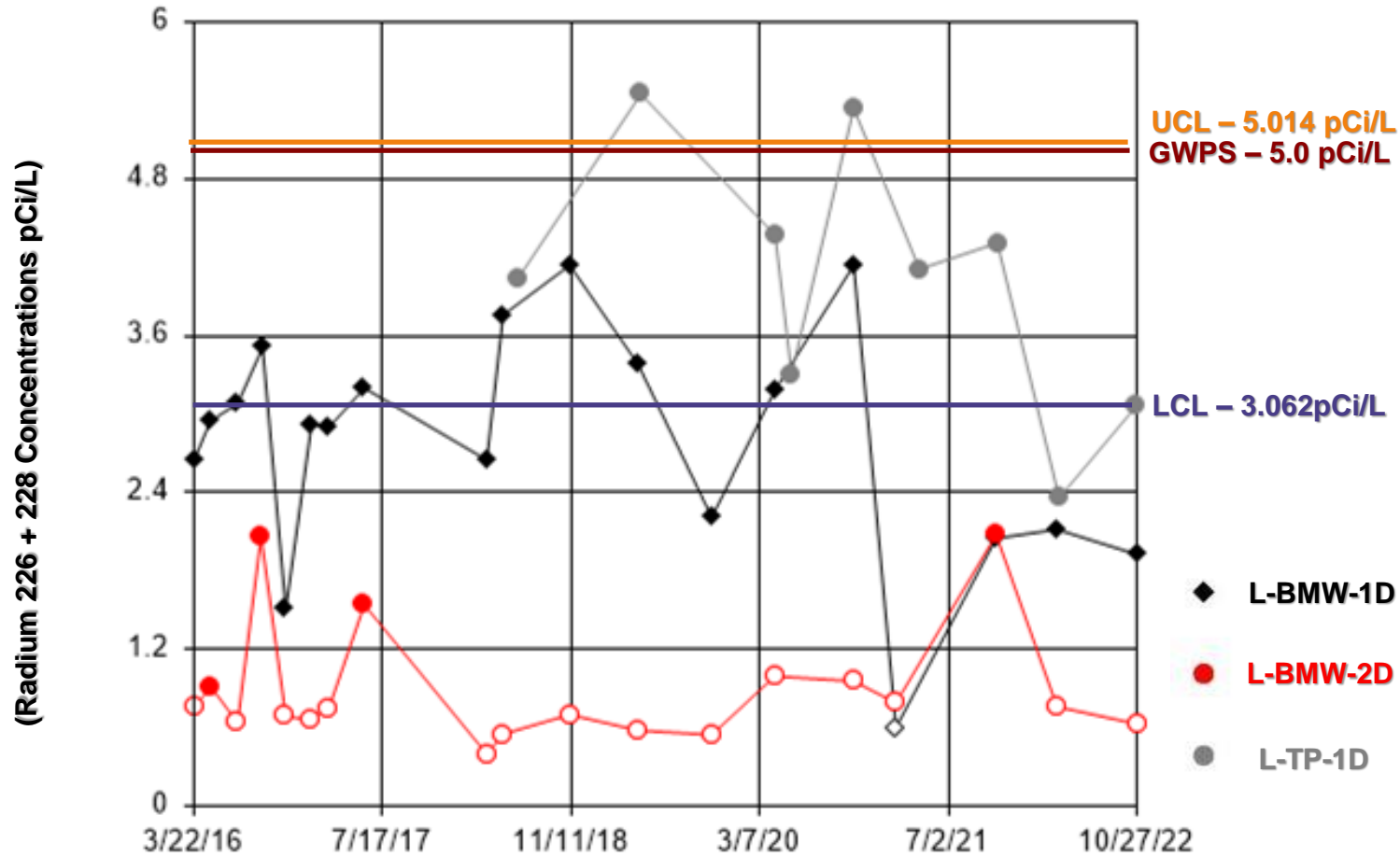


TITLE TP-1D Piper Diagram		
Rev No. NA	JOB NO. 23007	FIGURE 5




Notes
 1) pCi/L – PicoCuries per liter.

CLIENT/PROJECT AMEREN MISSOURI LABADIE ENERGY CENTER						TITLE Box and Whiskers Plot of Radium 226 + 228 at TP-1D & LCPA Monitoring Wells		
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-10			Rev No. NA	JOB NO. 23007	FIGURE 6



- Notes
- 1) pCi/L – Picocuries per liter.
 - 2) GWPS – Groundwater Protection Standard.
 - 3) UCL – Upper Confidence Limit.
 - 4) LCL – Lower Confidence Limit.
 - 5) Data points not filled in indicate a Non-Detect result.

CLIENT/PROJECT AMEREN MISSOURI LABADIE ENERGY CENTER				
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-10	



TITLE Timeseries Plot of Radium 226 + 228 Concentrations at TP-1D and Background Monitoring Wells		
Rev No. NA	JOB NO. 23007	FIGURE 7

Appendix G

Alternative Source Demonstration - May 2023 Sampling Event

REPORT

LCPA Corrective Action – Alternative Source Demonstration for Cobalt and Lithium Detection in Isolated Wells

Labadie Energy Center, Franklin County, Missouri, USA

December 21, 2023

Project Number 23007

Submitted to:



Ameren Missouri
1901 Chouteau Ave
St. Louis, MO 63103

Submitted by:



Rocksmith Geoengineering, LLC
2320 Creve Coeur Mill Rd
Maryland Heights, MO 63043



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Figure 4 – Sequential Extraction Procedure (in text)

Figure 5 – Sequential Extraction of Lithium Results (in text)

Figure 6 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and LEC Results (in text)

Figure 7 – Comparison of Boron, Molybdenum, and Cobalt Concentrations (in text)

Figure 8 – Distribution of Cobalt Concentrations in Monitoring Wells with and Without Key CCR Indicators (in text)

Figure 9 – Sequential Extraction of Cobalt Results (in text)

Figure 10 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and LEC Results (in text)

1.0 CERTIFICATION STATEMENT

This *LCPA Corrective Action – Alternative Source Demonstration for Cobalt and Lithium Detection in Isolated Wells, Labadie Energy Center, Franklin County, Missouri, USA* has been prepared to comply with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Rocksmith Geoengineering, LLC.

I hereby certify that this *LCPA Corrective Action – Alternative Source Demonstration for Cobalt and Lithium Detection in Isolated Wells, Labadie Energy Center, Franklin County, Missouri, USA* located at 226 Labadie Power Plant Road, Labadie Missouri 63055 has been prepared to meet the requirements of 40 CFR §257.98(a)(1)(i) and 257.95(g)(3)(ii).

Rocksmith Geoengineering, LLC



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

2.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), this LCPA Corrective Action – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for a statistical exceedance of the Groundwater Protection Standard (GWPS) calculated for Ameren Missouri's (Ameren) Labadie Energy Center (LEC) Bottom Ash Surface Impoundment (referred to as the LCPA) Corrective Action Monitoring Well Network. This document satisfies the requirements of §257.98(a)(1)(i) and §257.95(g)(3)(ii), which state that at a minimum, the Corrective Action program must meet that of the Assessment Monitoring Program under §257.95, The Assessment Monitoring Program allows the owner or operator to demonstrate that a source other than the CCR Unit has caused a constituent to be at a statistical level exceeding the GWPS, and that the statistical exceedance was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.0 SITE DESCRIPTION AND BACKGROUND

The LEC is located approximately 35 miles west of downtown St. Louis in Franklin County, Missouri, just south of the Missouri River. **Figure 1** depicts the site location and layout, including the location of LCPA, LCPB and the LCL1 CCR Units. The LEC encompasses approximately 2,400 acres and is located within the Missouri River Valley. The facility is bounded to the north by the Missouri River, to the west by Labadie Creek, to the northeast and east by agricultural land, and to the south by a railroad line and bedrock bluffs.

3.1 Geological and Hydrogeological Setting

The site lies in an agricultural area called the Labadie bottoms that is between the Missouri River (to the north) and bedrock bluffs (to the south). Flow and deposition from the Missouri River have resulted in thick alluvial deposits that lie on top of bedrock. These alluvial deposits, which can range from approximately 90 to 120 feet thick, comprise the uppermost aquifer. Overall, this alluvial aquifer is described as a fining-upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Based on drilling records, the alluvial aquifer is divided into sub-units, including floodplain deposits, natural levee deposits, and channel deposits along with volumetrically less important loess deposits. Grain sizes of these alluvial deposits are variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region consists of Ordovician-aged rock. Formations include primarily limestone, dolomite, sandstone, and shale and are comprised of the Platin Group, Joachim Dolomite, St. Peter Sandstone, Powell Dolomite, and the Cotter/Jefferson City Dolomites.

3.2 Coal Combustion Residuals (CCR) LCPA Surface Impoundment

The LCPA is in the floodplain of the Missouri River to the south of the LEC generating plant and is constructed with perimeter berms at an elevation of approximately 494 feet above mean sea level (feet MSL), which is above the 100-year flood elevation of 484 feet MSL. Both fly ash and bottom ash have been historically managed and stored in this surface impoundment. Construction drawings indicate that in the deepest portions of the CCR Unit the base depth of CCR extends down approximately 90 feet to an elevation of approximately 400 feet MSL. Directly to the east of the LCPA are two additional CCR Units, the fly ash surface impoundment (LCPB) and the Utility Waste Landfill (UWL) Cell 1 (LCL1), both of which have berm elevations higher than 488 feet MSL. To the south of the LCPA are lower elevation agricultural fields ranging from approximately 465 to 475 feet MSL which extend to the south to the railroad. South of the railroad, bedrock bluffs rise to an elevation of over 600 feet MSL. The western side of the surface impoundment is bounded by a forested area and Labadie Creek, which flows north to the Missouri River.

3.3 Corrective Action Background

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 29, 2019, and responses to public comments are posted on Ameren's CCR website. On August 30, 2019, Ameren published its "Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins" (Remedy Selection Report) that identified source control through installation of a low permeability cover system and use of Monitored Natural Attenuation (MNA) as its

chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two phases as follows:

- 1) Source control, stabilization, and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1×10^{-7} centimeters per second (cm/sec) versus 1×10^{-5} cm/sec required by the CCR Rule).
- 2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. Natural attenuation occurs due to naturally occurring processes within the aquifer.

As required by the CCR Rule, the following were completed within 90 days of selecting the remedy (i.e., November 27, 2019): (1) a groundwater monitoring well system was selected and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, and (3) a Groundwater Monitoring Plan (GMP) was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record. The Corrective Action Monitoring Well Network consists of 22 monitoring wells, installed within the shallow, intermediate, and deep zones of the alluvial aquifer as shown on **Figure 1**.

On September 28, 2019, Ameren commenced Phase 1 by initiating closure at the LCPA. Closure of the LCPA has been completed and the first Corrective Action sampling event associated with Phase 2 of the Corrective Measures Remedial Plan was completed in April 2021. For the most recent statistical evaluation, completed on September 22, 2023, Corrective Action statistical methods were used to determine that the following constituents were present at concentrations exceeding the site specific GWPS as follows:

- Arsenic – at well LMW-2S
- Cobalt – at well AM-1S
- Lithium – at well LMW-7S
- Molybdenum – at wells LMW-2S, LMW-4S, LMW-8S, AM-1D, TP-2D, TP-3D, TP-3M, AMW-8, MW-33D, MW-34D, MW-35D

Radium 226 + 228 at TP-1D was previously identified as an exceedance in the October 2022 corrective action statistical evaluation. It is no longer an exceedance as of May 2023 sampling event since the upper confidence limit is below the GWPS.

4.0 EVIDENCE THAT ISOLATED EXCEEDANCES OVER THE GWPS ORIGINATE FROM DIFFERENT SOURCE

Isolated exceedances of the site GWPS using corrective action statistical methods¹ exist for cobalt at monitoring well AM-1S and lithium at LMW-7S. The locations of these monitoring wells are provided in **Figure 1**. For each exceedance, there are several different lines of evidence that indicate that the statistical exceedance(s) over the GWPS at these monitoring wells are not the result of a release from the LCPA, but rather are from an alternative source. The following detail the different lines of evidence that support this ASD:

- A lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium and cobalt.
- The presence of lithium and cobalt at similar concentrations in groundwater samples collected upgradient of the LCPA.

¹ The statistical testing method used to evaluate the Corrective Action monitoring data is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the GWPS for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the Groundwater Protection Standard (GWPS) instead of the Lower Confidence Limit (LCL) [as was used during Assessment Monitoring].

- The presence of naturally occurring cobalt and lithium in sediments in background locations at the LCPA.
- Cobalt and lithium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous and metamorphic rocks within the Missouri and Mississippi River watersheds.

4.1 CCR Indicators

Several types of CCR by-products are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 1** describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

Table 1: Types of CCR and Typical Indicator Parameters

Type of CCR	Description of CCR (USEPA 2018)	Key Indicators (EPRI 2011, 2012, 2017)
Fly Ash	Fine grained, powdery material composed mostly of silica made from the burning of finely ground coal in the boiler.	<ul style="list-style-type: none"> ■ Boron ■ Molybdenum ■ Lithium ■ Sulfate
Boiler Slag / Bottom Ash	Molten bottom ash from the slag tap and cyclone type furnaces that turns into pellets that have a smooth glassy appearance after quenching with water.	<ul style="list-style-type: none"> ■ Bromide ■ Potassium ■ Sodium ■ Fluoride
Flue Gas Desulfurization Material (FGD)	A material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler that can be a wet sludge consisting of calcium sulfite or calcium sulfate or a dry powdered material that is a mixture of sulfites and sulfates.	<ul style="list-style-type: none"> ■ Sulfate ■ Fluoride ■ Calcium ■ Boron ■ Bromide ■ Chloride

Notes:

- 1) Fly ash and boiler slag/bottom ash typically have the same indicator parameters.
- 2) Definitions from USEPA website, available at <https://www.epa.gov/coalash/coal-ash-basics>.
- 3) Key indicators from EPRI 2011, 2012, and 2017.

4.2 Site Specific Key CCR Indicators

To be a key CCR Indicator parameter for a specific site, a constituent should be present in relatively high concentration in the leachate (CCR porewater) when compared to background or other sources (nearby rivers, etc.), not be a common anthropogenic contaminant, and be mostly non-reactive and mobile in the site’s hydrogeological environment (EPRI 2012). In 2012, EPRI investigated which constituents are the best indicator parameters for coal ash impacts as outlined in **Table 1**. Of the key indicators listed in **Table 1** for fly ash and boiler slag/bottom ash, boron, molybdenum, lithium, sulfate, and fluoride are regularly sampled as part of the CCR Rule. Potassium and sodium are sampled periodically for major ion analysis and testing under the CCR Rule and testing for bromide has not been completed at the site.

Table 2 provides a snapshot of the concentrations present onsite in the background wells, Missouri River, and LCPA porewater for each of the constituents sampled on the key indicator list.

Table 2 – Summary of Potential CCR Impact Indicator Parameters at the Labadie Energy Center

Constituent (Units)		Back-ground	Missouri River	LCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Boron (µg/L)	Minimum	ND (<50)	78.7	3,360	Typically present in leachate, non-reactive and mobile in common hydrogeologic environments, and not a common anthropogenic contaminant.
	Average	76.8	100.1	10,317	
	Maximum	151	123	21,700	
Sulfate (mg/L)	Minimum	12.2	172	254	Commonly analyzed and very mobile in all hydrogeologic environments. Concentration in impoundment leachate may in some cases be too low relative to background to be useful. Less useful in strongly reducing environments where sulfate can be reduced to hydrogen-sulfide gas.
	Average	43.82	192.3	275.2	
	Maximum	246	224	306	
Molybdenum (µg/L)	Minimum	ND (<0.52)	2.0	83.7	Most useful for dry-managed coal ash. May be less mobile than boron in some hydrogeologic environments. Concentrations may be too low in impoundment leachate to be useful if background groundwater has detectable concentrations.
	Average	1.626	3.165	405.3	
	Maximum	7.0	6.2	1,430	
Lithium (µg/L)	Minimum	11.5	34.2	5.5	Useful for coal ash management sites where the power plant burned bituminous coal. Leachate concentrations are typically low in coal ash derived from subbituminous and lignite coal
	Average	28.57	38.36	40.28	
	Maximum	47.4	42.8	61.4	
Potassium (µg/L)	Minimum	3,690	Not Sampled	3,540	Commonly analyzed, although may be less mobile than boron and sulfate. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields where potassium may be applied in fertilizers.
	Average	4,999		18,040	
	Maximum	7,530		42,100	
Sodium (µg/L)	Minimum	3,570	Not Sampled	50,500	Useful for coal ash management sites where the power plant injects trona or sodium bicarbonate or burned subbituminous coal. Absent dry sorbent injection, leachate concentrations are considerably lower in coal ash derived from bituminous coal, particularly at impoundments. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields, or major highways in northern climates where sodium may be applied in road salts.
	Average	9,966		66,967	
	Maximum	24,900		84,000	
Fluoride (mg/L)	Minimum	ND (<0.085)	0.125	0.088	Mobile and non-reactive in common hydrogeologic environments. Assure that leachate concentration is higher than background.
	Average	0.1746	0.4118	0.153	
	Maximum	0.38	0.57	0.20	

Notes:

- 1) Unit abbreviations - mg/L – milligrams per liter, µg/L – micrograms per liter
- 2) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Based on the results of **Table 2**, boron and molybdenum appear to be the best indicator parameters for impacts from the LCPA because they have a much higher concentration in the CCR porewater than the background concentrations and are non-reactive and highly mobile at the site. Sulfate, which is typically a good CCR indicator parameter may not be as useful at the LEC, since sulfate values within the Missouri River are close in concentration to those within the CCR Unit. Therefore, samples collected closer to the Missouri River may have higher sulfate values, caused by temporary recharge to the aquifer from the Missouri River instead of impacts from CCR. Fluoride can also be a good indicator, however, porewater concentrations are not significantly higher than background, and therefore it would be difficult to detect impacts using fluoride concentrations. Average lithium concentrations in the porewater are also not significantly elevated when compared to background

groundwater samples or the Missouri River, therefore determining the source of impacts would be difficult. Potassium and sodium are also not ideal indicators as many of the wells onsite are either near roadways or located within the many agricultural fields around the plant, which may display elevated concentrations caused from anthropogenic sources (road salt, fertilizers, etc.).

Boron and molybdenum concentrations are above background concentrations at 7 of the 9 monitoring wells used for Detection and Assessment monitoring wells adjacent to the LCPA (WSP 2023). Therefore, boron and molybdenum appear to be the best indicator parameters for CCR impacts at the LEC. However, though molybdenum appears to be a good indicator, it may not be present at the furthest extents of the plume. Boron appears to be the best indicator parameter for CCR impacts at the LEC.

5.0 EVALUATION OF STATISTICAL EXCEEDANCE FOR LITHIUM AT LMW-7S

As indicated in **Tables 1** and **2**, lithium can be a key indicator for fly ash and boiler slag/bottom ash impacts if it is present at elevated levels in the CCR porewater compared to background and is mobile at the site. However, as discussed in Section 4.2, boron and molybdenum are better indicator parameters than lithium for the LEC, as most porewater samples are not significantly higher than background or Missouri River concentrations. Four of the six CCR porewater samples collected in 2018 as a part of the LCPB ASD (available in the 2018 Annual Report for the LCPB, Golder 2019b) have lithium concentrations below the site-specific GWPS for lithium (47.4 µg/L). Additionally, lithium concentrations in the monitoring wells adjacent to the LCPA used for Assessment Monitoring (UMW-1D through UMW-9D) range from Non-Detect (ND) <10 to 39.3 µg/L, while background values range from 11.5 to 47.4 µg/L and Missouri River samples range from 34.2 to 42.8 µg/L. This further establishes that lithium is not a useful CCR impact indicator parameter for the LCPA and the LEC area.

Table 3 displays results from the May 2023 sampling event for lithium, boron, and molybdenum at LMW-7S.

Table 3 – May 2023 Analytical Results for Key Constituents at LMW-7S

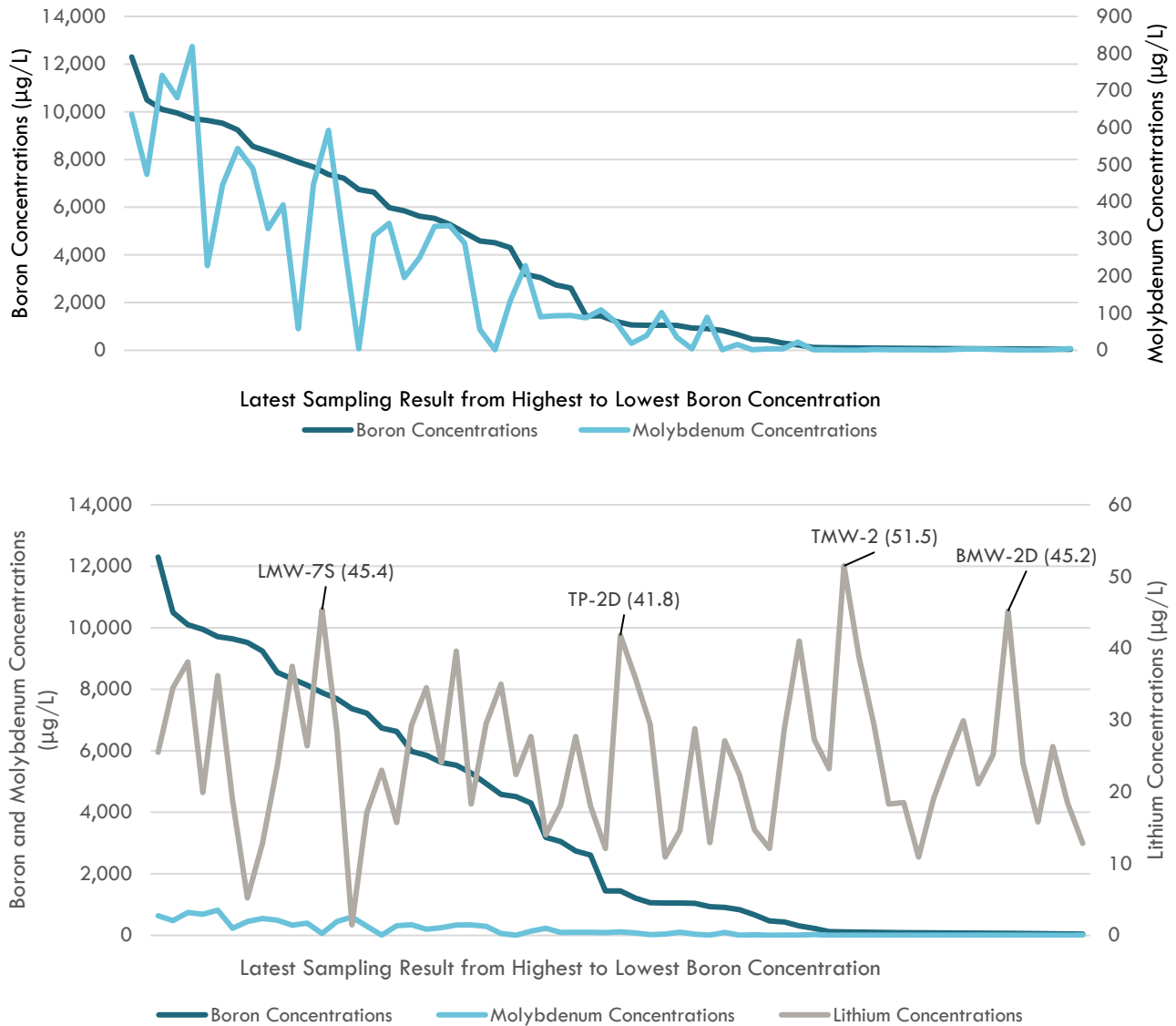
Well ID	Lithium (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-7S	45.4	7,890	58.0

Notes:

- 1) µg/L – micrograms per liter.

To evaluate the correlation between key CCR indicators and lithium concentrations onsite, a graph that displays boron, lithium and molybdenum concentrations from the most recent sampling result at each monitoring well is provided in **Figure 2** (data used for **Figure 2** provided in **Table 4**). As displayed on the graph, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Lithium concentrations do not track with either boron or molybdenum concentrations, indicating that lithium concentrations are not linked to impacts from the LCPA.

Figure 2 – Comparison of Most Recent Boron, Molybdenum, and Lithium Concentrations



Notes:

- 1) µg/L – micrograms per liter.
- 2) Values displayed in order from highest to lowest boron concentrations. Data used to prepare **Figure 2** are provided in **Table 4**.
- 3) The upper graph displays boron and molybdenum concentrations, with molybdenum concentrations on the right axis.
- 4) The lower graph displays boron, molybdenum, and lithium concentrations, with lithium concentrations on the right axis.

As displayed in **Table 4**, there are 15 monitoring wells onsite where boron and/or molybdenum concentrations are below background and 48 monitoring wells onsite where boron and/or molybdenum are above background concentrations. **Figure 3** displays the distribution of lithium concentrations for the following datasets: 1) monitoring wells where there is a corresponding molybdenum and/or boron exceedance (48 monitoring wells, 454 total results) and 2) monitoring wells where there is not a corresponding boron or molybdenum exceedance (15 monitoring wells, 184 total results). For this figure, historical datasets for each monitoring well were used to generate the distributions. The results of this box and whisker plot display a nearly identical distribution between the two datasets including lower quartile, median, average, and upper quartile values all within 4 µg/L of one another. This further demonstrates that lithium concentrations do not correlate with key CCR indicator parameters, and therefore, elevated lithium concentrations onsite are not related to CCR impacts.

Using the data identified in **Figure 3**, for those wells without a boron or molybdenum exceedance above background, a non-parametric (highest value in the dataset) upper prediction limit of 55.2 µg/L was calculated, which is higher than the current Site GWPS of 47.4 µg/L.

5.1.1 Sequential Extraction Data Confirms Presence of Naturally Occurring Lithium in Alluvial Sediments

A seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of lithium in soils (i.e., the operationally defined fraction that contains the metal) and determine potential environmental mobility, as displayed in **Figure 4**. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The seven-step SEP is defined by specific extraction steps as follows (based on a modified Tessier et al. 1979 method):

In 2021, samples were collected by Golder from three soil borings across the LEC for sequential extraction testing. The locations of the sequential extraction sample borings are provided in **Figure 1**. Results of the sequential extraction testing are displayed in **Figure 5** and indicate the presence of naturally occurring lithium in soils at the LEC in fractions 6 and 7 in each of the soil borings, regardless of if the locations were directly adjacent to the LCPA or at background locations. Lithium is reported in soils at concentrations ranging from 2.8 to 16.2 milligrams per kilogram (mg/kg, from the SEP) and is predominantly (83 to 92%) present in the residual and sulfide component of the soil, i.e., the non-environmentally available fractions. The absence of lithium in the environmentally available fractions (specifically exchangeable and carbonate fractions) indicates a general lack of lithium transport and attenuation (e.g., through sorption and/or co-precipitation).

Figure 3 – Distribution of Lithium Concentrations in Monitoring Wells With and Without Key CCR Indicators

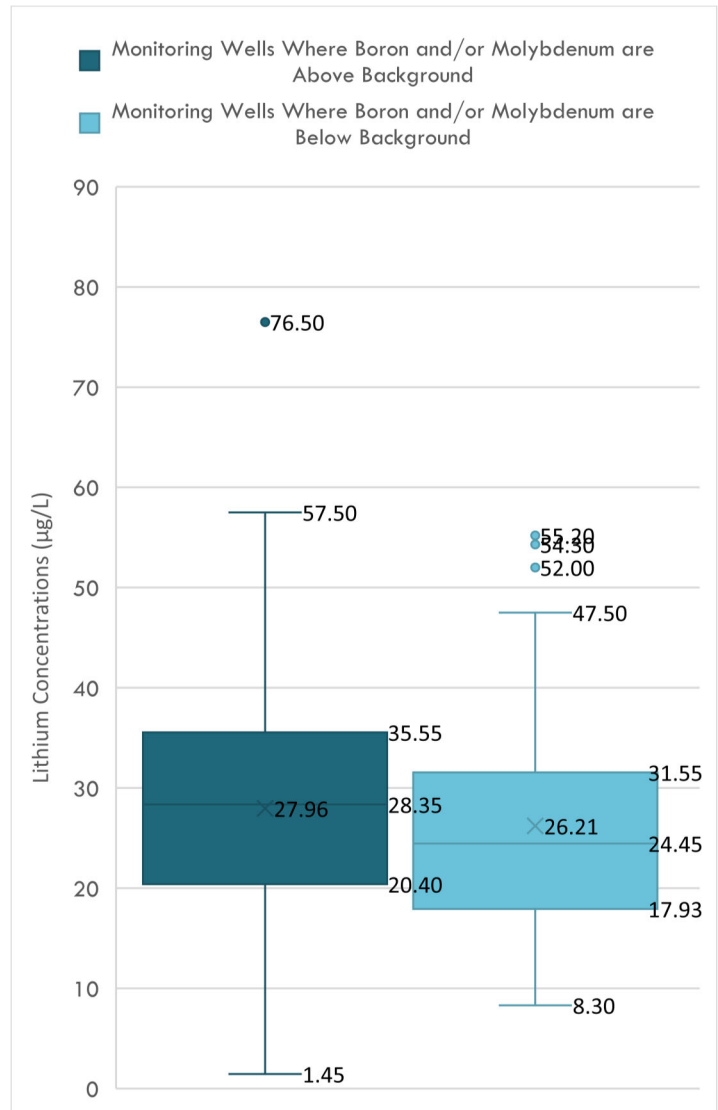
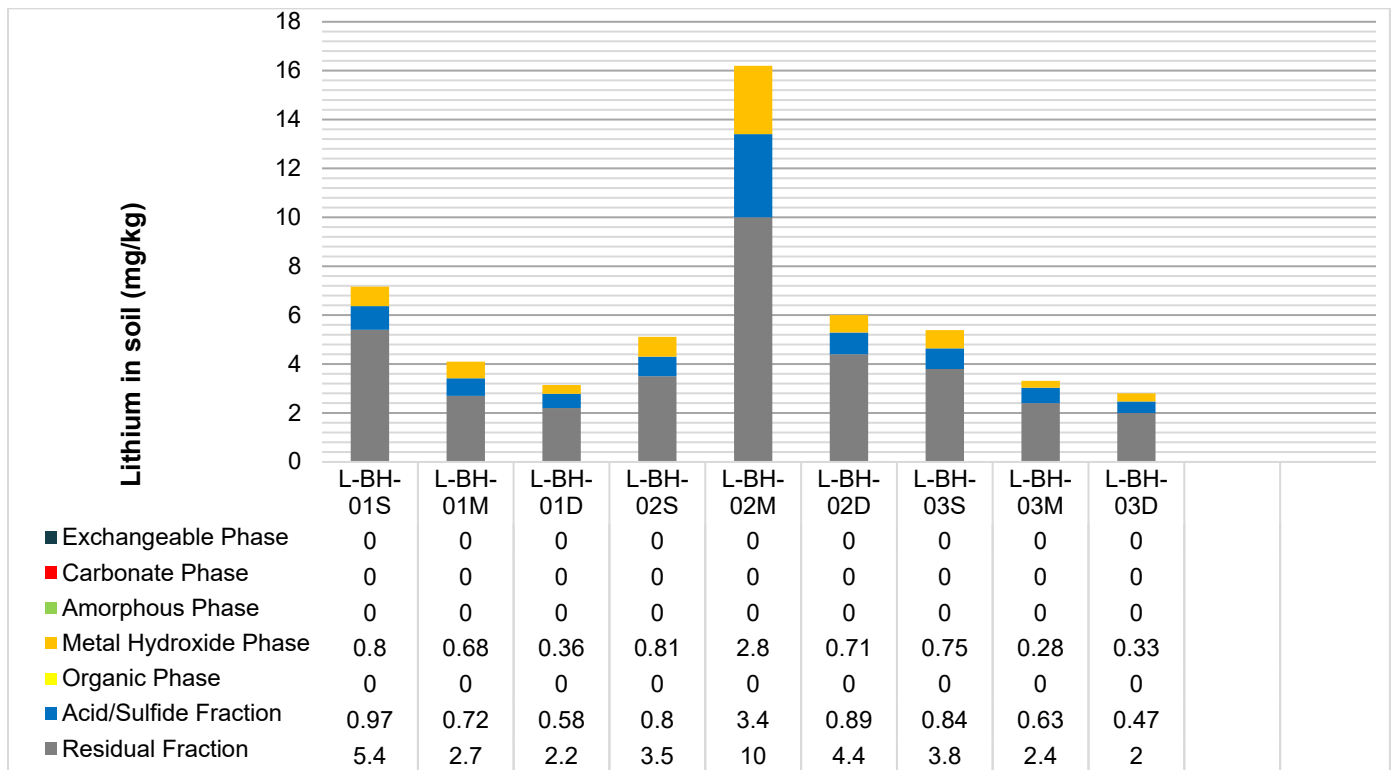


Figure 4 – Sequential Extraction Procedure

SEQUENTIAL EXTRACTION PROCEDURE			
ENVIRONMENTALLY AVAILABLE ↑ Increasing Availability	Step 1	Exchangeable Fraction:	This extraction includes trace elements that are electrostatically adsorbed to overburden minerals
	Step 2	Carbonate Fraction:	This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals
	Step 3	Non-Crystalline Materials Fraction:	This extraction targets trace elements that are complexed by amorphous minerals
	Step 4	Metal Hydroxide Fraction:	This extraction targets trace elements bound to hydroxides of iron, manganese, and/or aluminum
	Step 5	Organic Fraction:	This extraction targets trace elements strongly bound via chemisorption to organic material
NON-ENVIRONMENTALLY AVAILABLE ↓ Increasing Extraction Strength	Step 6	Acid/Sulfide Fraction:	The extraction is used to identify trace elements precipitated as sulfide minerals
	Step 7	Residual Fraction:	Trace elements remaining in the overburden after the previous extractions will be distributed between silicates, phosphates, and refractory oxide

Figure 5 - Sequential Extraction of Lithium Results



Notes:

- 1) Detection with JB flags for the organic phase were not used for this evaluation, as these results were detected in the blank, are estimated, and are therefore not considered accurate for this evaluation.
- 2) Mg/kg – milligrams per kilogram.
- 3) Sample locations provided in **Figure 1**. BH-01 is near the background wells, BH-02 is just south of the LCPA CCR Unit and BH-03 is located near AM-1S and the Missouri River.

5.1.2 Lithium at LMW-7S

LMW-7S is located approximately 1,300 feet to the northeast of the LCPA, near the eastern perimeter of the LCPB. Boron and molybdenum concentrations have historically been elevated at LMW-7S. LMW-7S was installed in 2016 to monitor the LCPB, and since that time lithium concentrations have ranged from 25.6 to 49.0 µg/L. During the statistical evaluation of the May 2023 sampling event (which only uses data collected since April 2020), a LCL of 40.74 µg/L and UCL of 47.46 µg/L were calculated for lithium. Therefore, the UCL is only 0.06 µg/L above the Site GWPS. This UCL is below the calculated limit using monitoring wells with no boron and/or molybdenum impacts of 55.2 µg/L. The lack of elevated lithium when compared with non-impacted wells, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts, indicates that the elevated lithium at LMW-7S is not from the LCPA, but rather is naturally occurring in the alluvial aquifer at this location.

5.1.3 Naturally Occurring Lithium Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

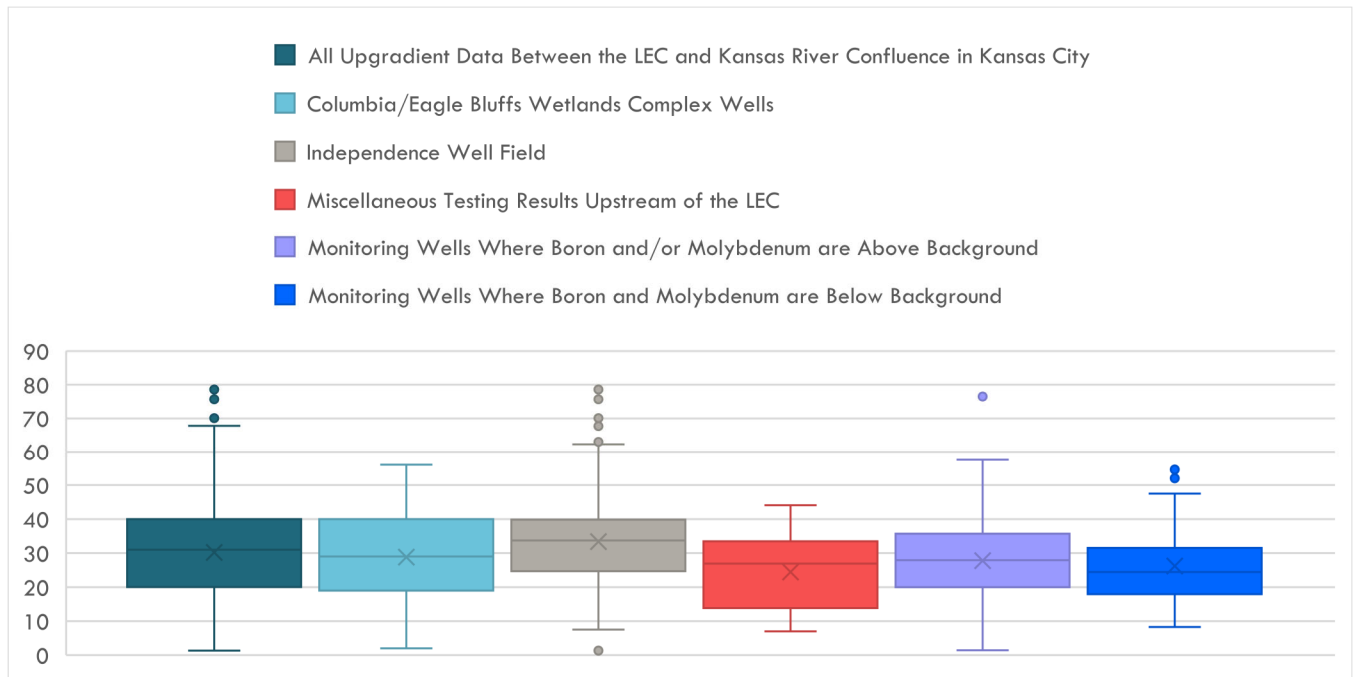
Naturally occurring lithium is present in groundwater across the United States (US), can be found in nearly all rock and soil types, and is most commonly found to be associated with silicate minerals (Tomazscak 2015). The weathering of silicate minerals is known to cause the release of naturally occurring lithium into groundwater (Tomazscak 2015). Site-specific test results (i.e., SEP results) confirm this finding for the LEC.

The National Water Quality Monitoring Council's (NWQMC) Water Quality Portal (available at <https://www.waterqualitydata.us/>) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of lithium results from within the Missouri Alluvial Aquifer from the NWQMC database includes lithium results from a total of 1,325 groundwater sample results for wells located upgradient of the LEC within the Missouri River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of lithium, the database results were divided different groups as follows:

- Independence Well Field near Independence, Missouri (Kelly 2010) – Total of 433 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 851 results.
- Miscellaneous testing results upstream of the LEC – Total of 41 results

Figure 6 displays a box and whisker plot that compares the publicly available groundwater lithium concentration data in the upgradient alluvial aquifers to lithium concentrations at LEC as displayed in **Figure 9**.

Figure 6 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and LEC Results



Notes:

1) µg/L – micrograms per liter

Overall, the results display a very similar distribution of lithium results across the state within the Missouri River Alluvium. In fact, lithium concentrations appear to be lower, on average, than those in Independence, Columbia/Eagle Bluffs, as well as other miscellaneous upstream locations. This consistency with upgradient alluvial aquifer samples demonstrates that the lithium concentrations onsite are not from the LCPA, but rather are naturally occurring within the alluvial aquifer.

6.0 STATISTICAL EXCEEDANCE FOR COBALT AT AM-1S

Cobalt is present at AM-1S at a level that is statistically above the Site Specific GWPS of 6 µg/L using corrective action statistical methods. AM-1S is located approximately 3,000 feet north of the LCPA, adjacent to the Missouri River. As displayed in **Table 5**, boron and molybdenum are present at AM-1S at concentrations slightly above background.

Table 5 – May 2023 Analytical Results of Key Constituents at AM-1S

Well ID	Cobalt (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
AM-1S	2.2 J	305	3.8 J
BMW-1S	1.4 J	88.2 J	2.3 J
BMW-1D	ND (<1.2)	72.4 J	1.5 J
BMW-2S	ND (<1.2)	45.3 J	2.2 J
BMW-2D	ND (<1.2)	61.5 J	1.8 J

Notes:

1) µg/L – micrograms per liter.

- 2) J – Result is an estimated value as it is detected above the MDL but below the PQL.
- 3) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

As displayed on **Table 1**, cobalt is not typically considered a key CCR indicator parameter because it is usually present at a low concentration in CCR leachate relative to typical background, has low mobility, and has a higher potential for reactivity (EPRI 2017). Since AM-1S well installation in 2018, cobalt concentrations have ranged between 0.96 J µg/L to 5.80 µg/L at AM-1S, with all results being below the Site GWPS of 6 µg/L. Based on the results of the May 2023 Corrective Action Statistical Evaluation, cobalt was present at a level statistically above the GWPS with a LCL of 1.542 µg/L and an UCL of 6.058 µg/L. This evaluation only uses results since commencement of Corrective Action Program sampling in April 2020, and since then, only five sampling results have been collected at AM-1S. If all results (eight total) from AM-1S are used to calculate the upper and lower confidence limits, then AM-1S would be in compliance with the GWPS with a LCL of 2.009 µg/L and an UCL of 5.506 µg/L. However, as prescribed in the Corrective Action Statistical Analysis Plan, only results since the start of Corrective Action monitoring are used for the evaluation, therefore, although no single result has been above the site specific GWPS of 6 µg/L, the UCL is still above the GWPS which is a statistical exceedance using Corrective Action statistical methods.

Provided in **Table 6** is a summary of cobalt minimum, average, and maximum concentrations in the different potential source areas including background groundwater, porewater, and Missouri River. As displayed on **Table 6**, concentrations in AM-1S are above those present in background, river, and LCPA porewater.

Table 6 – Summary of Cobalt Concentrations

Constituent (Units)		AM-1S	Background	Assessment Monitoring Wells Adjacent to LCPA (UMW 1D-9D)	Missouri River	LCPA Porewater	LCPB Porewater
Cobalt (µg/L)	Minimum	0.96 J	ND (<0.72)	ND (<0.72)	ND (<1.0)	ND (<0.73)	ND (<0.87)
	Average	3.758	0.5921	0.4355	1.762	NA	ND (<0.87)
	Maximum	5.8	1.9 J	2.7 J* (0.79 J)	4.4 J	ND (<0.83)	ND (<0.87)

Notes:

- 1) µg/L – micrograms per liter.
- 2) Not applicable.
- 3) J – Result is an estimated value as it is detected above the MDL but below the PQL.
- 4) ND – Non-Detect.
- 5) * 2.7 J at UMW-1D is considered an outlier. 0.79 J is the second highest result.

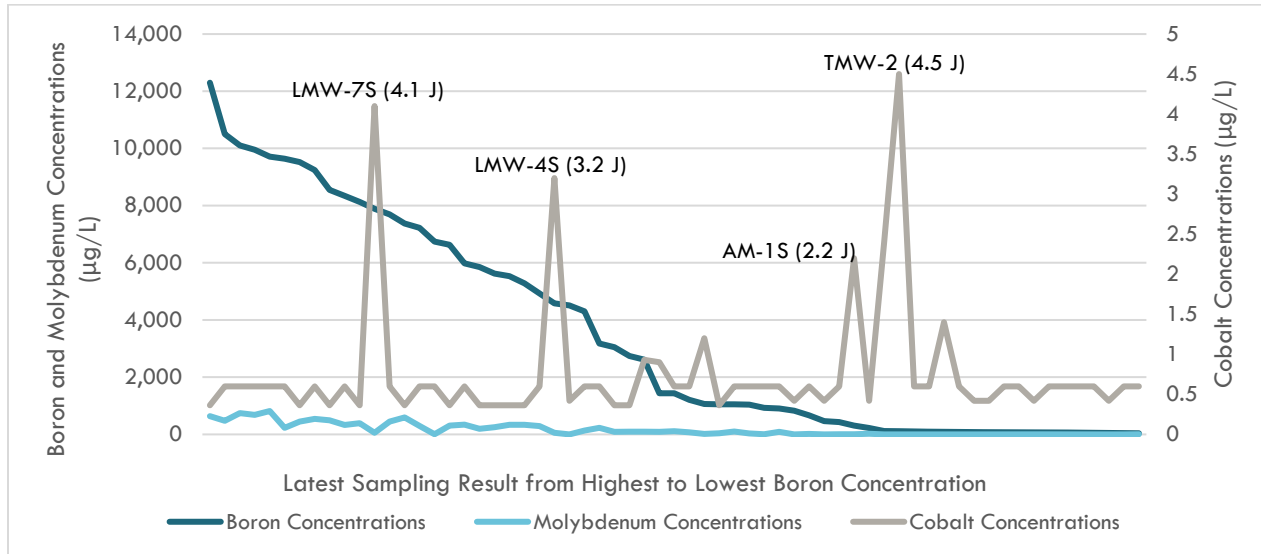
In January 2018, as part of the initial LCPB ASD, porewater was sampled in the LCPA and LCPB CCR units. All nine results from this analysis were at a non-detect level (<0.73 to <0.87 µg/L). This lack of cobalt in the CCR materials has been confirmed in other studies as well, including the current NPDES permit (#MO-0004812) where cobalt is not listed as a Pollutant of Concern (POC), since the test result collected from the LCPA outfall is non-detect (<1 µg/L). Lack of cobalt within the pore-water of the LCPA, coupled with the lack of cobalt at a statistically significant level above the GWPS in any other monitoring well onsite, indicates that cobalt concentrations in AM-1S are not derived from the LCPA, but rather an alternative source such as the Missouri River or naturally occurring in the alluvial aquifer at this location.

Further evidence that the LCPA is not a source of elevated cobalt concentrations is the lack of cobalt in the groundwater monitoring wells directly adjacent to the CCR Unit used for Detection and Assessment Monitoring. These wells (UMW-1D through UMW-9D, as displayed in **Figure 1**) show elevated key CCR indicator parameter concentrations for boron and molybdenum but do not have elevated cobalt concentrations. Of the 136 testing

results for these 9 monitoring wells, only 2 results have a value over the method detection limit (MDL) at 2.7 J² and 0.79 J µg/L (still below the PQL). Therefore, 98.5% of all cobalt results in monitoring wells located directly adjacent to the LCPA are present at a non-detect level.

Concentrations of cobalt do not closely track with key indicator parameters of boron or molybdenum. **Figure 7** is a graph that displays boron, cobalt, and molybdenum concentrations from the most recent sampling result at each monitoring well (data used to generate this graph is available in **Table 4**). Molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells (displayed previously in **Figure 2**). Cobalt concentrations do not track closely with either boron or molybdenum concentrations and range from non-detect (<0.73 µg/L) to 4.5 J µg/L for the most recent sampling result at each well.

Figure 7 – Comparison of Boron, Molybdenum, and Cobalt Concentrations



Notes:

- 1) µg/L – micrograms per liter.
- 2) J – Result is an estimated value as it is detected above the MDL but below the PQL.
- 3) Values displayed in order from highest to lowest boron concentrations. Data used to prepare **Figure 7** is provided in **Table 4**.
- 4) Cobalt concentrations displayed on secondary axis, with values on the right side of the graph.

² The 2.7 J result from 4/11/22 at UMW-1D is considered an outlier using the methods outlined in the sites Statistical Analysis Plan.

As displayed in **Table 4**, there are 15 monitoring wells onsite where boron and molybdenum concentrations are below background and 48 monitoring wells onsite where boron or molybdenum are above background concentrations. **Figure 8** displays the distribution of cobalt concentrations between these two datasets (with and without boron or molybdenum exceedances). For this figure, historical data for each of the wells identified above were used to generate the distribution (420 and 176 total results, respectively). The results of this box and whisker plot display a nearly identical distribution between the two datasets. This further demonstrates that cobalt concentrations do not correlate with key CCR indicator parameters, and therefore, elevated cobalt concentrations onsite are naturally occurring and not related to CCR impacts.

6.1.1 Sequential Extraction Data Confirms Presence of Naturally Occurring Cobalt in Sediments

As with lithium, a seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of cobalt in soils (i.e. the operationally-defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The locations of the sequential extraction sample locations are provided in **Figure 1**.

Results of the sequential extraction testing indicate naturally occurring cobalt is present in soils at the LEC in fractions 6 and 7 of each of the soil borings, regardless of if the location is directly adjacent to the LCPA or at background locations. Cobalt is reported at concentrations ranging from 1.8 to 5.9 milligrams per kilogram (mg/kg, from the SEP) and is present in the residual and sulfide component of the soil (28 to 45%), i.e., the non-environmentally available fractions. Background soil samples, outside of the impacts from the LCPA, display similar results as those soil samples collected adjacent to the CCR unit, indicating that cobalt is not from impacts from the CCR Unit, but rather is naturally occurring in the alluvial aquifer.

Figure 8 – Distribution of Cobalt Concentrations in Monitoring Wells With and Without Key CCR Indicators

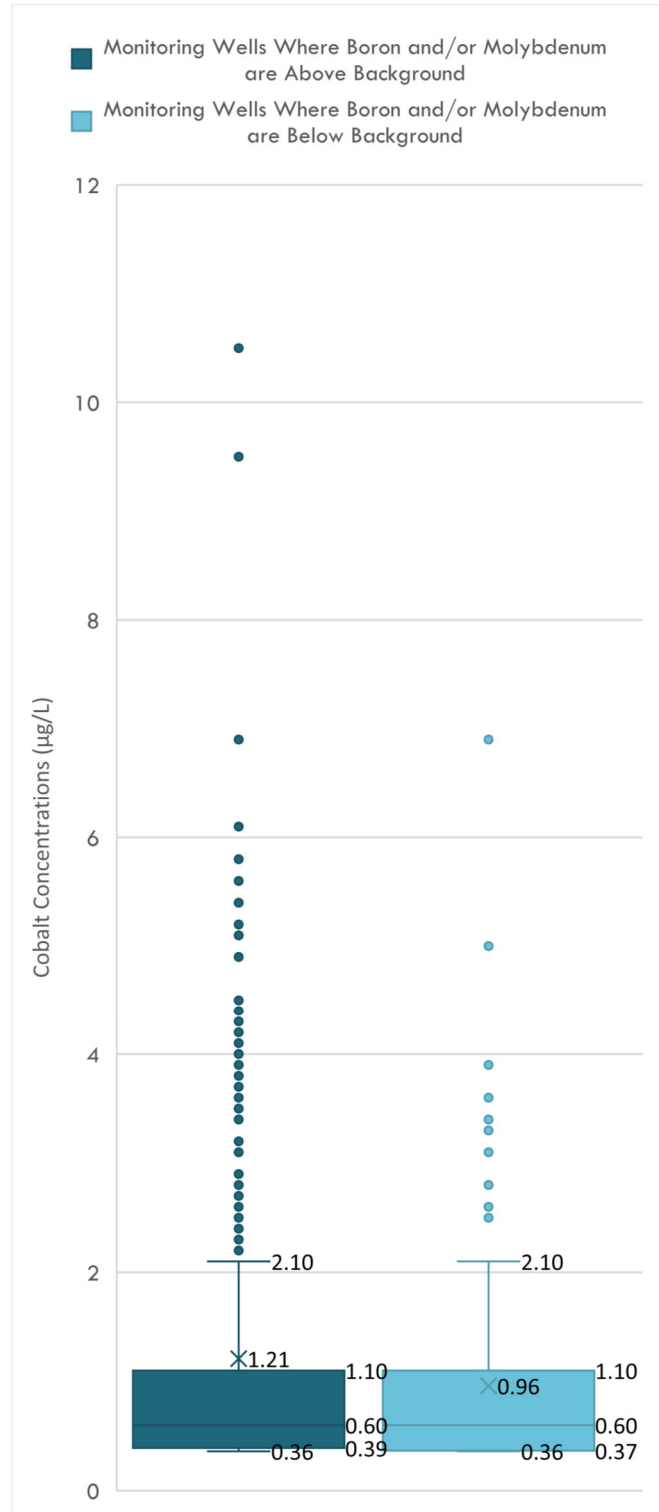
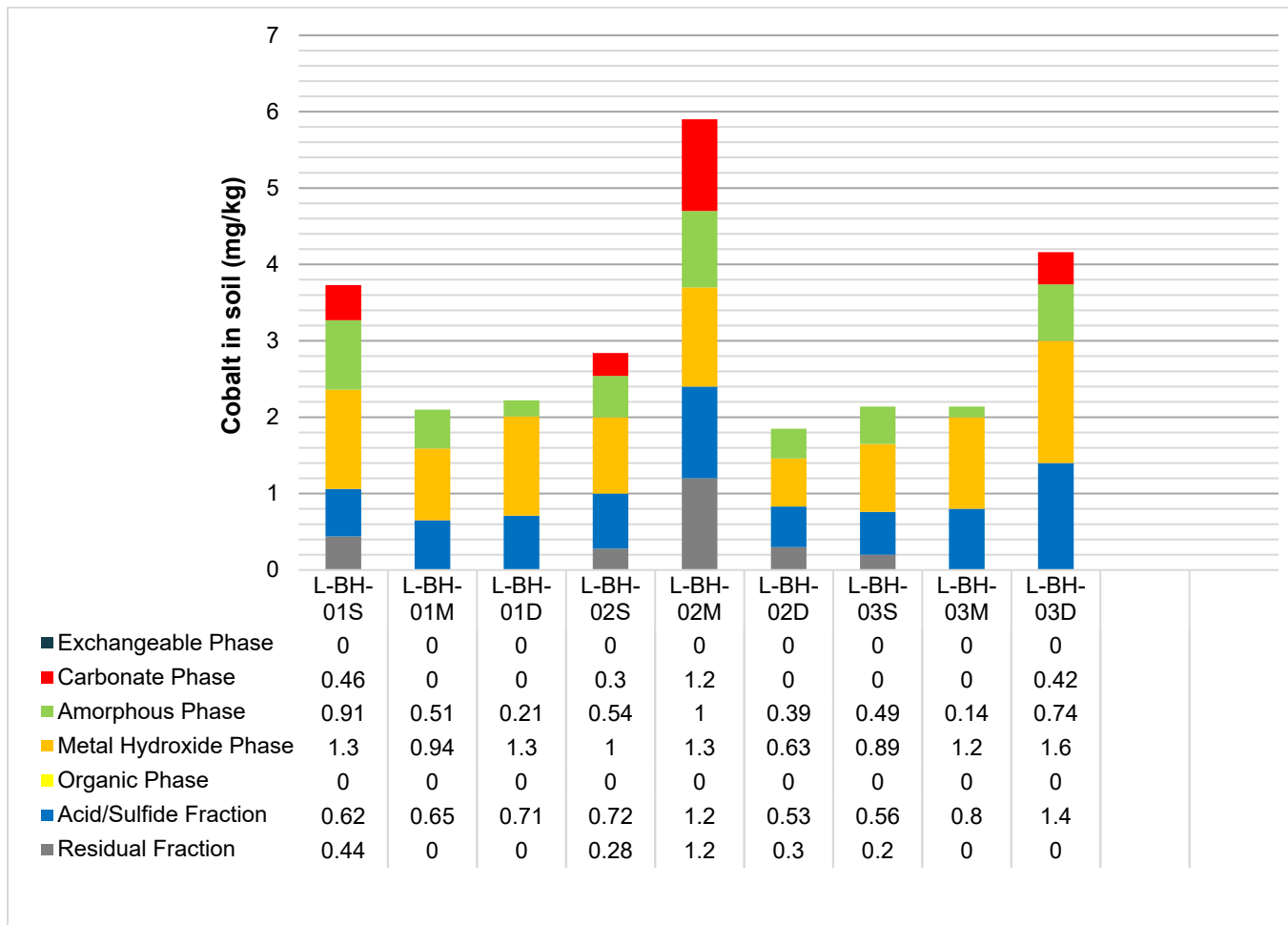


Figure 9 - Sequential Extraction of Cobalt Results



Notes:

1) Mg/kg – milligrams per kilogram.

2) Sample locations provided in **Figure 1**. BH-01 is near the background wells, BH-02 is just south of the LCPA CCR Unit and BH-03 is located near AM-1S and the Missouri River.

6.1.2 Naturally Occurring Cobalt Values at the LEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

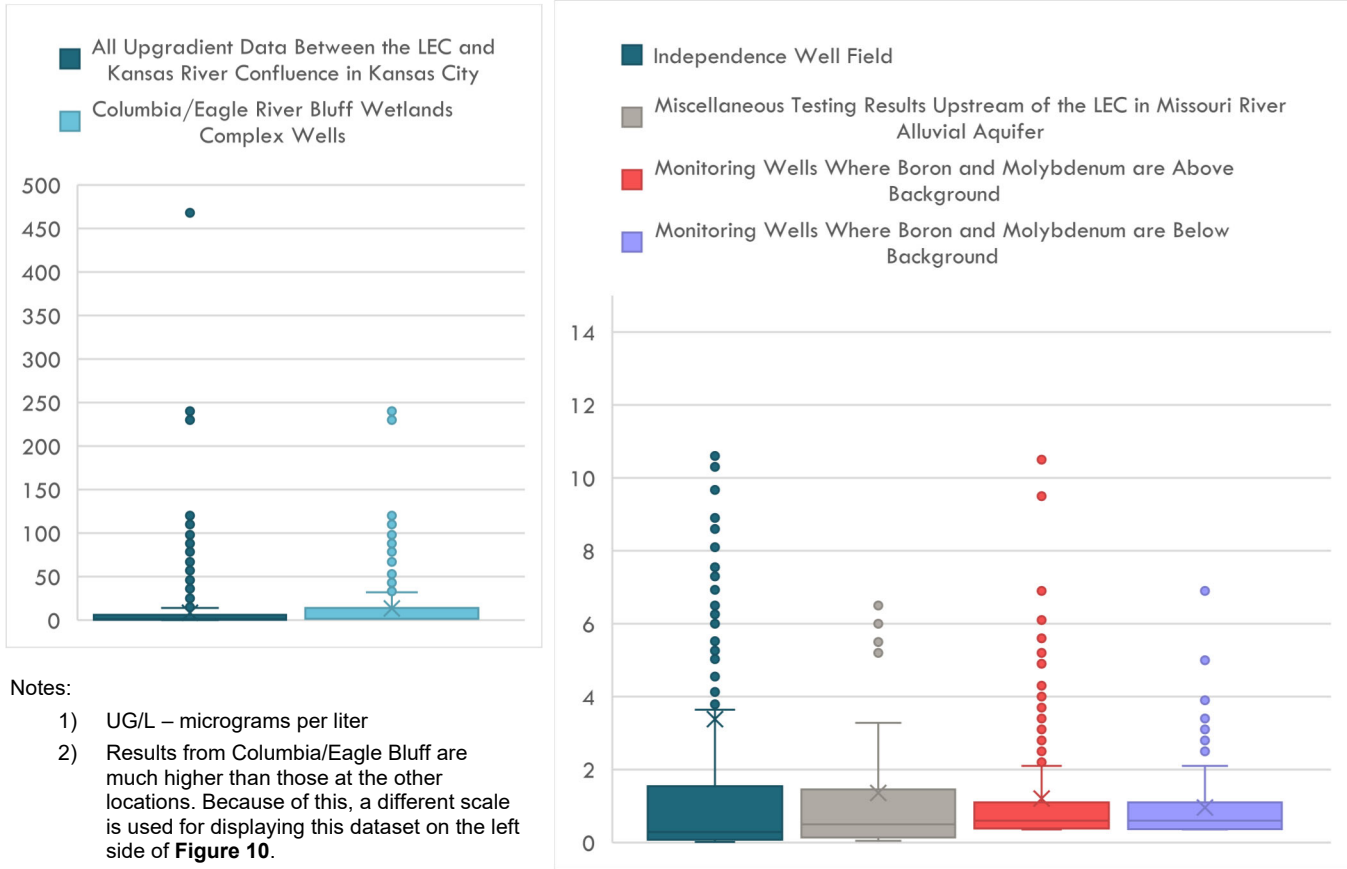
Cobalt may be present in mineral form as a constituent in arsenides, carbonates, sulfides, and oxides (Hem, 1989; Smith and Carson, 1981). During weathering of these minerals (i.e., dissolution and/or oxidation), any cobalt is typically released and redistributed to iron or manganese (hydr)oxides (Butt et al., 2000) or other sorbent (e.g., clays, organic matter). The National Water Quality Monitoring Council’s (NWQMC) Water Quality Portal (available at <https://www.waterqualitydata.us/>) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of Cobalt results from within the Missouri River Alluvial Aquifer from the NWQMC database includes Cobalt results from a total of 917 groundwater sample results for wells located upgradient of the LEC within the Missouri River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of cobalt, the database results were divided different groups as follows:

- Independence Well Field near Independence, Missouri (Kelly 2010) – Total of 406 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 470 results.

- Miscellaneous testing results upstream of the LEC – Total of 41 results.

Figure 10 displays a box and whisker plot that compares the publicly available groundwater cobalt data in the upgradient alluvial aquifers to those completed onsite as displayed in Figure 13.

Figure 10 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and LEC Results



The cobalt concentrations from the Columbia/Eagle Bluffs Wetlands complex are much higher than those at the LEC and those further upgradient at the Independence Well Field. It is unknown why these results are at such elevated concentrations, therefore, they are not used for this evaluation. Excluding the data from Columbia/Eagle Bluffs Wetlands complex, the results display that the majority of cobalt concentrations across the Missouri River alluvial aquifer are below 4 µg/L with some outliers above 6 µg/L at each site. This is likely caused by the heterogeneous nature of the Missouri River Basin alluvial aquifer deposits, which are derived from a vast area of the United States including parts of Missouri, Iowa, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, and Colorado. The sediments in the Missouri River Alluvial Aquifer at the site are made up of a mixture of sediments from all reaches of the Missouri River Basin. Cobalt deposits and many metamorphic and igneous rocks containing cobalt occur at numerous locations within the Missouri River Basin. Therefore, the alluvial aquifer sediments in the vicinity of AM-1S (as well as other various locations within the Missouri River Alluvium) likely include localized zones/particles of increased cobalt concentrations and most likely the cause of the elevated concentrations observed at the LEC.

This inconsistency with upgradient alluvial aquifer samples indicates that the cobalt concentrations onsite are not from the LCPA, but rather are naturally occurring levels that can vary over time within the aquifer groundwater.

7.0 SUMMARY

Based on the information presented in in this ASD, the statistical exceedances for lithium and cobalt in isolated wells at LEC using Corrective Action statistical methods are not the result of impacts from the LCPA, but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. The natural geochemical source for lithium and cobalt exceedances is supported by several factors including: (1) a lack of correlation between key CCR indicators (boron and molybdenum) and isolated exceedances, (2) the presence of lithium and cobalt at similar levels in alluvial aquifer samples upgradient of the site, and (3) cobalt, and lithium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous rocks within the Missouri River watershed.

8.0 REFERENCES

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Tables

Table 4
Summary of Latest CCR Rule Groundwater Sampling Results for Constituents of Concern
LCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Background Limit	Boron Concentrations		Molybdenum Concentrations		Lithium Concentrations		Cobalt Concentrations	
	DQR (100 µg/L)		DQR (20 µg/L)		47.4 µg/L		DQR (5 µg/L)	
Groundwater Monitoring Wells	Date	µg/L	Date	µg/L	Date	µg/L	Date	µg/L
L-ASD-5M	2/15/2018	12,300	2/15/2018	636	2/15/2018	25.5	2/15/2018	ND
L-TP-3D	5/25/2023	10,500	5/25/2023	474	5/25/2023	34.5	5/25/2023	ND
L-MW-34[D]	5/24/2023	10,100	5/24/2023	741	5/24/2023	38.1	5/24/2023	ND
L-UMW-5D	5/19/2023	9,950	5/19/2023	681	5/19/2023	19.9	5/19/2023	ND
L-MW-33[D]	5/24/2023	9,710	5/24/2023	819	5/24/2023	36.2	5/24/2023	ND
L-UMW-3D	5/23/2023	9,640	5/23/2023	228	5/23/2023	18.8	5/23/2023	ND
L-ASD-2S	2/20/2018	9,520	2/20/2018	445	2/20/2018	5.2 J	2/20/2018	ND
L-UMW-6D	5/19/2023	9,240	5/19/2023	544	5/19/2023	12.8	5/19/2023	ND
L-ASD-2M	2/20/2018	8,550	2/20/2018	490	2/20/2018	23.6	2/20/2018	ND
L-AM-1D	5/22/2023	8,340	5/22/2023	328	5/22/2023	37.5	5/22/2023	ND
L-ASD-2D	2/20/2018	8,130	2/20/2018	392	2/20/2018	26.4	2/20/2018	ND
L-LMW-7S	5/18/2023	7,890	5/18/2023	58.0	5/18/2023	45.4	5/18/2023	4.1 J
L-MW-35[D]	5/18/2023	7,690	5/18/2023	447	5/18/2023	28.5	5/18/2023	ND
L-ASD-1S	2/22/2018	7,370	2/22/2018	593	2/22/2018	ND	2/22/2018	ND
L-AMW-8	5/24/2023	7,220	5/24/2023	296	5/24/2023	17.1	5/24/2023	ND
L-TP-4D	5/24/2023	6,740	5/24/2023	4.1 J	5/24/2023	23.0	5/24/2023	ND
L-ASD-4M	2/16/2018	6,630	2/16/2018	309	2/16/2018	15.7	2/16/2018	ND
L-TP-3M	5/25/2023	5,980	5/25/2023	342	5/25/2023	29.3	5/25/2023	ND
L-ASD-3D	2/17/2018	5,850	2/17/2018	196	2/17/2018	34.5	2/17/2018	ND
L-ASD-4D	2/16/2018	5,620	2/16/2018	249	2/16/2018	24.1	2/16/2018	ND
L-ASD-1M	2/22/2018	5,530	2/22/2018	334	2/22/2018	39.6	2/22/2018	ND
L-ASD-1D	2/22/2018	5,280	2/22/2018	336	2/22/2018	18.3	2/22/2018	ND
L-UMW-4D	5/19/2023	4,930	5/19/2023	288	5/19/2023	29.5	5/19/2023	ND
L-LMW-4S	5/24/2023	4,580	5/24/2023	55.5	5/24/2023	35.0	5/24/2023	3.2 J
L-TP-5D	5/9/2019	4,510	5/9/2019	ND	5/9/2019	22.4	5/9/2019	ND
L-LMW-3S	5/23/2023	4,300	5/23/2023	133	5/23/2023	27.7	5/23/2023	ND
L-LMW-2S	5/19/2023	3,180	5/19/2023	228	5/19/2023	14.0	5/19/2023	ND
L-ASD-3M	2/18/2018	3,050	2/18/2018	90.3	2/18/2018	18.1	2/18/2018	ND
L-ASD-5D	2/15/2018	2,740	2/15/2018	93.1	2/15/2018	27.7	2/15/2018	ND
L-ASD-3S	2/18/2018	2,610	2/18/2018	93.7	2/18/2018	18.0	2/18/2018	0.93 J
L-ASD-5S	2/15/2018	1,440	2/15/2018	87.4	2/15/2018	12.1	2/15/2018	0.90 J
L-TP-2D	5/22/2023	1,440	5/22/2023	109	5/22/2023	41.8	5/22/2023	ND
L-TP-2M	5/22/2023	1,210	5/22/2023	74.8	5/22/2023	35.9	5/22/2023	ND
L-LMW-6S	5/18/2023	1,060	5/18/2023	18.7 J	5/18/2023	29.4	5/18/2023	1.2 J
L-ASD-4S	2/16/2018	1,050	2/16/2018	39.3	2/16/2018	10.9	2/16/2018	ND
L-LMW-8S	5/18/2023	1,050	5/18/2023	102	5/18/2023	14.6	5/18/2023	ND
L-UMW-2D	5/11/2023	1,040	5/11/2023	35.1	5/11/2023	28.8	5/11/2023	ND
L-LMW-1S	5/12/2023	930	5/12/2023	3.7 J	5/12/2023	12.9	5/12/2023	ND
L-UMW-7D	5/12/2023	906	5/12/2023	88.9	5/12/2023	27.1	5/12/2023	ND
L-TP-5M	5/9/2019	828	5/9/2019	ND	5/9/2019	22.3	5/9/2019	ND
L-UMW-8D	5/12/2023	665	5/12/2023	15.7 J	5/12/2023	14.7	5/12/2023	ND
L-TP-4M	8/20/2019	463	8/20/2019	ND	8/20/2019	12.1	8/20/2019	ND
L-UMW-1D	5/22/2023	431	5/22/2023	3.8 J	5/22/2023	28.8	5/22/2023	ND
L-AM-1S	5/22/2023	305	5/22/2023	3.8 J	5/22/2023	41.0	5/22/2023	2.2 J
L-TP-2S	8/20/2019	221	8/20/2019	22.4	8/20/2019	27.3	8/20/2019	ND
L-TP-5S	5/9/2019	119	5/9/2019	ND	5/9/2019	23.2	5/9/2019	2.4 J
L-TMW-2	5/16/2023	109	5/16/2023	1.3 J	5/16/2023	51.5	5/16/2023	4.5 J
L-TMW-1	5/16/2023	103	5/16/2023	ND	5/16/2023	38.8	5/16/2023	ND
L-TMW-3	5/16/2023	94.3 J	5/16/2023	ND	5/16/2023	29.4	5/16/2023	ND
L-BMW-1S	5/11/2023	88.2 J	5/11/2023	2.3 J	5/11/2023	18.3	5/11/2023	1.4 J
L-UMW-9D	5/12/2023	85.7 J	5/12/2023	1.4 J	5/12/2023	18.5	5/12/2023	ND
L-TP-4S	8/20/2019	83.5 J	8/20/2019	ND	8/20/2019	10.9	8/20/2019	ND
L-TP-1S	5/8/2019	77.4 J	5/8/2019	ND	5/8/2019	19.0	5/8/2019	ND
L-S-1	5/16/2023	75.5 J	5/16/2023	ND	5/16/2023	24.7	5/16/2023	ND
L-BMW-1D	5/11/2023	72.4 J	5/11/2023	1.5 J	5/11/2023	29.9	5/11/2023	ND
L-TP-3S	5/9/2019	67.2 J	5/9/2019	3.3 J	5/9/2019	21.1	5/9/2019	ND
L-TP-1D	5/16/2023	63.5 J	5/16/2023	3.5 J	5/16/2023	25.2	5/16/2023	ND
L-BMW-2D	5/11/2023	61.5 J	5/11/2023	1.8 J	5/11/2023	45.2	5/11/2023	ND
L-TP-1M	5/8/2019	60.6 J	5/8/2019	ND	5/8/2019	24.0	5/8/2019	ND
L-MW-24	5/18/2023	52.3 J	5/18/2023	ND	5/18/2023	15.8	5/18/2023	ND
L-MW-26	5/18/2023	45.6 J	5/18/2023	ND	5/18/2023	26.3	5/18/2023	ND
L-BMW-2S	5/11/2023	45.3 J	5/11/2023	2.2 J	5/11/2023	18.4	5/11/2023	ND
L-LMW-5S	5/23/2023	40.6 J	5/23/2023	4.5 J	5/23/2023	12.8	5/23/2023	ND

- Notes
- 1) µg/L - micrograms per liter
 - 2.) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
 - 3.) J - Result is an estimated value.
 - 4.) Date corresponds with most recent result for each analyte.
 - 5.) Well ID's highlighted in light red have values above the background limit for boron and/or molybdenum. These values are used in the "concentrations with a boron and/or molybdenum value over background" for the box and whisker plots. Well ID's in blue do not have a molybdenum or boron value above background, and these well are used in the "concentrations without a boron or molybdenum value over background" column for the box and whisker plots.
 - 6.) If all background values are less than the PQL, then the Double Quantification Rule (DQR) is used. In cases were DQR is the background value, the latest PQL is used for the background limit.



Figures

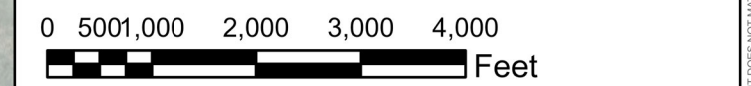


TITLE
LABADIE ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND MONITORING WELL LOCATION MAP

- Legend**
- Approximate Property Boundary
 - Labadie Energy Center CCR Units**
 - LCPA - Bottom Ash Surface Impoundment
 - LCPB - Fly Ash Surface Impoundment
 - LCL1 - Utility Waste Landfill Cell 1
 - Monitoring Well Network**
 - Corrective Action Monitoring Well
 - LCPA Monitoring Well
 - LCPB Monitoring Well
 - LCPB and Corrective Action Monitoring Well
 - LCL1 Monitoring Well
 - LCL1 and Corrective Action Monitoring Well
 - Background Well Used for LCPA, Corrective Action, LCPB, and LCL1 Monitoring
 - Monitoring Well Used for Water Level Elevation Measurements Only
 - Soil Sample Borehole Location

NOTES
 1. All locations and boundaries are approximate.

- REFERENCES**
1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
 2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER

	DESIGN	JSI	YYYY-MM-DD	2023-03-14
	PREPARED	JSI	PROJECT No.	23007
	REVIEW	MNH	FIGURE 1	
	APPROVED	MNH		

Service Layer Credits: World Imagery:
 Earthstar Geographics

Path: C:\Users\jrodriguez\OneDrive\Documents\Rocksmith Geoenvironmenting\LLC\23007 - Ameren CCR - Document\100 - Drawings - Figures\1.1.EC04-1.2 - Production\ASDU\230314_LCPACL_ASD.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

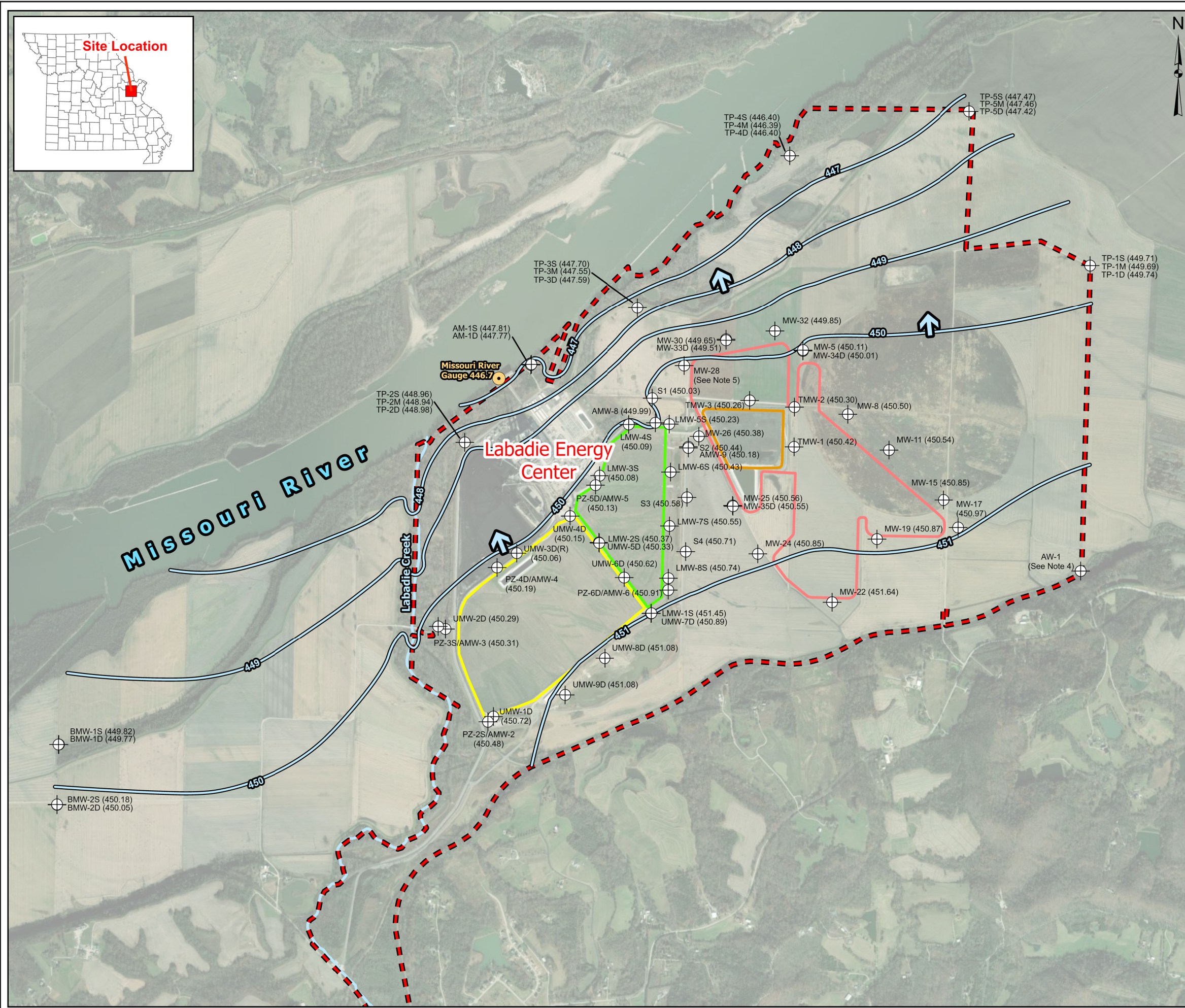
Appendix H

2023 Potentiometric Surface Maps

TITLE
JANUARY 4, 2023 POTENTIOMETRIC SURFACE MAP

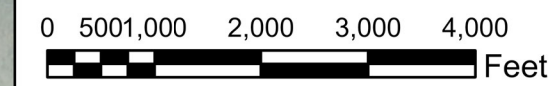


- Legend**
- Labadie Energy Center Property Boundary
 - CCR Units**
 - LCPA - Closed Bottom Ash Surface Impoundment
 - LCPB - Closed Fly Ash Surface Impoundment
 - LCL1 - Utility Waste Landfill Cell 1
 - Proposed Final UWL Fence Perimeter
 - Monitoring Well or Piezometer**
 - Monitoring Well or Piezometer
 - Surface Water Elevation Measurement Location**
 - Missouri River Gauge
 - Groundwater Elevation Contours**
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
 - Groundwater Flow Direction



- NOTES**
1. All locations and boundaries are approximate.
 2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
 3. Missouri River level obtained from USGS Labadie gauge 06935550.
 4. AW-1 was not used in potentiometric surface contouring due to localized conditions causing an artificially high potentiometric elevation.
 5. MW-28 was not used in potentiometric surface contouring due to measurement error.

- REFERENCES**
1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
 2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER



DESIGN	JSI	YYYY-MM-DD	2023-03-09
PREPARED	JSI	PROJECT No.	23007
REVIEW	GTM	FIGURE H1	
APPROVED	MNH		

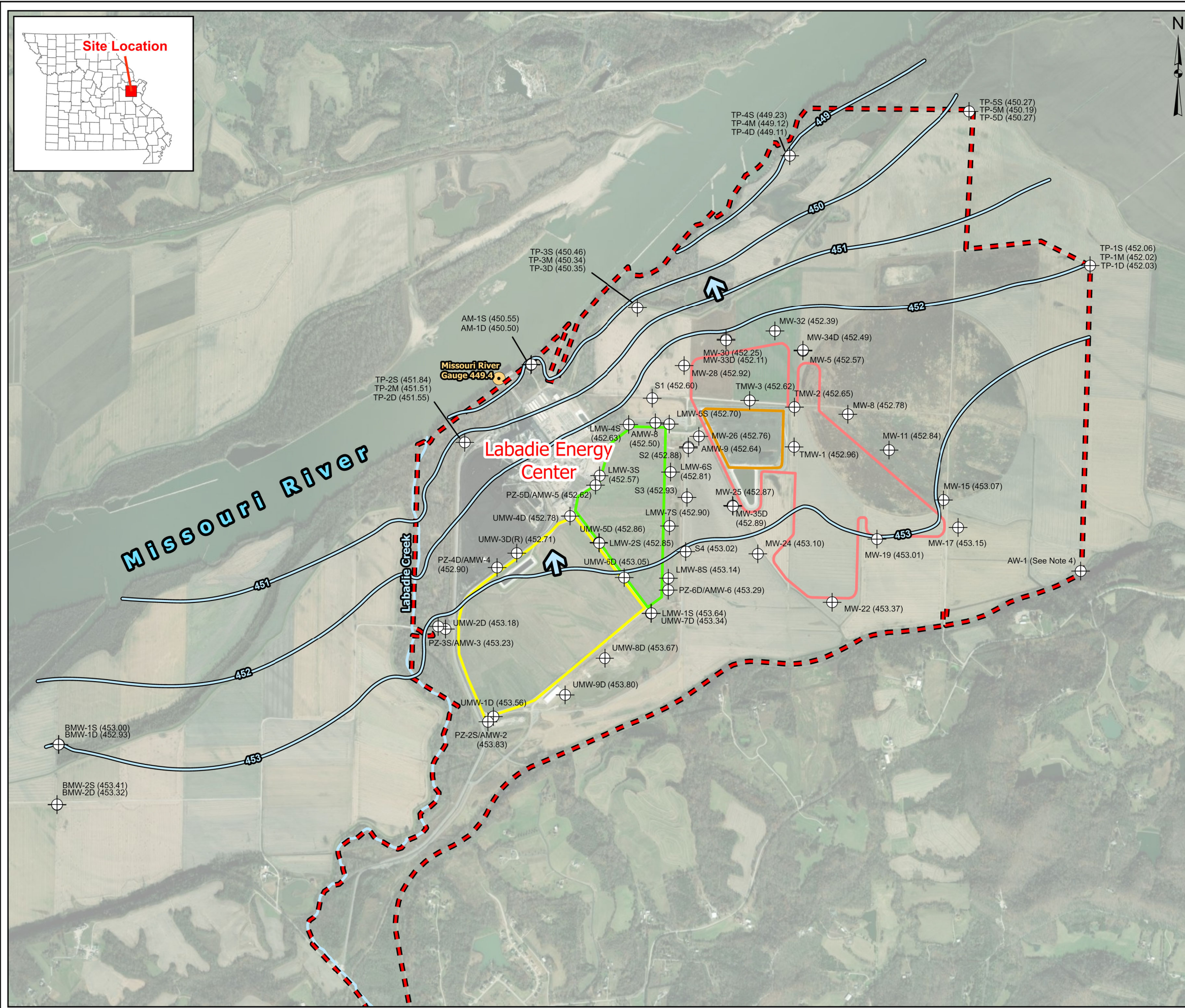
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TITLE
MAY 10, 2023 POTENTIOMETRIC SURFACE MAP

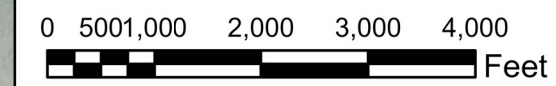


- Legend**
- Labadie Energy Center Property Boundary
 - CCR Units**
 - LCPA - Closed Bottom Ash Surface Impoundment
 - LCPB - Closed Fly Ash Surface Impoundment
 - LCL1 - Utility Waste Landfill Cell 1
 - Proposed Final UWL Fence Perimeter
 - Monitoring Well or Piezometer**
 - Monitoring Well or Piezometer
 - Surface Water Elevation Measurement Location**
 - Missouri River Gauge
 - Groundwater Elevation Contours**
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
 - Groundwater Flow Direction



- NOTES**
1. All locations and boundaries are approximate.
 2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
 3. Missouri River Level obtained from USGS Labadie gauge 06935550.
 4. AW-1 was not used in potentiometric surface contouring due to localized conditions causing an artificially high potentiometric elevation.

- REFERENCES**
1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
 2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER



DESIGN	JSI	YYYY-MM-DD	2023-08-16
PREPARED	GTM	PROJECT No.	23007
REVIEW	JSI		
APPROVED	MNH		

FIGURE H2

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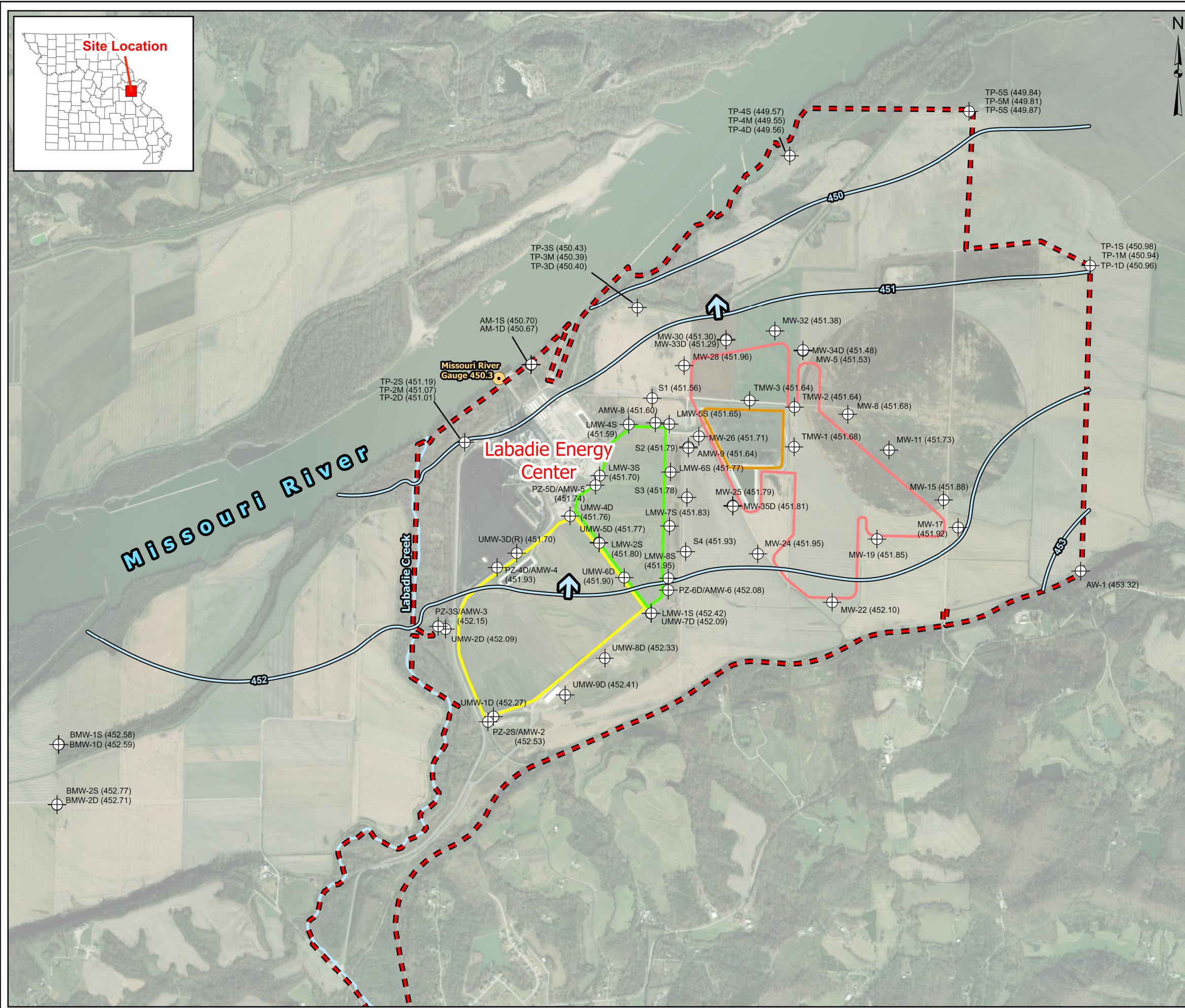
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TITLE
JULY 12, 2023 POTENTIOMETRIC SURFACE MAP



Legend

- Labadie Energy Center Property Boundary
- CCR Units**
- LCPA - Closed Bottom Ash Surface Impoundment
- LCPB - Closed Fly Ash Surface Impoundment
- LCL1 - Utility Waste Landfill Cell 1
- Proposed Final UWL Fence Perimeter
- Monitoring Well or Piezometer**
- Monitoring Well or Piezometer
- Surface Water Elevation Measurement Location**
- Missouri River Gauge
- Groundwater Elevation Contours**
- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction

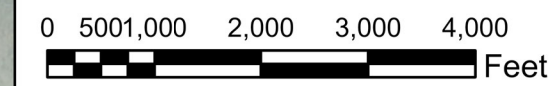


NOTES

1. All locations and boundaries are approximate.
2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
3. Missouri River Level obtained from USGS Labadie gauge 06935550.

REFERENCES

1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 LABADIE ENERGY CENTER



DESIGN	JSI	YYYY-MM-DD	2023-08-18
PREPARED	GTM	PROJECT No.	23007
REVIEW	JSI	FIGURE H3	
APPROVED	MNH		

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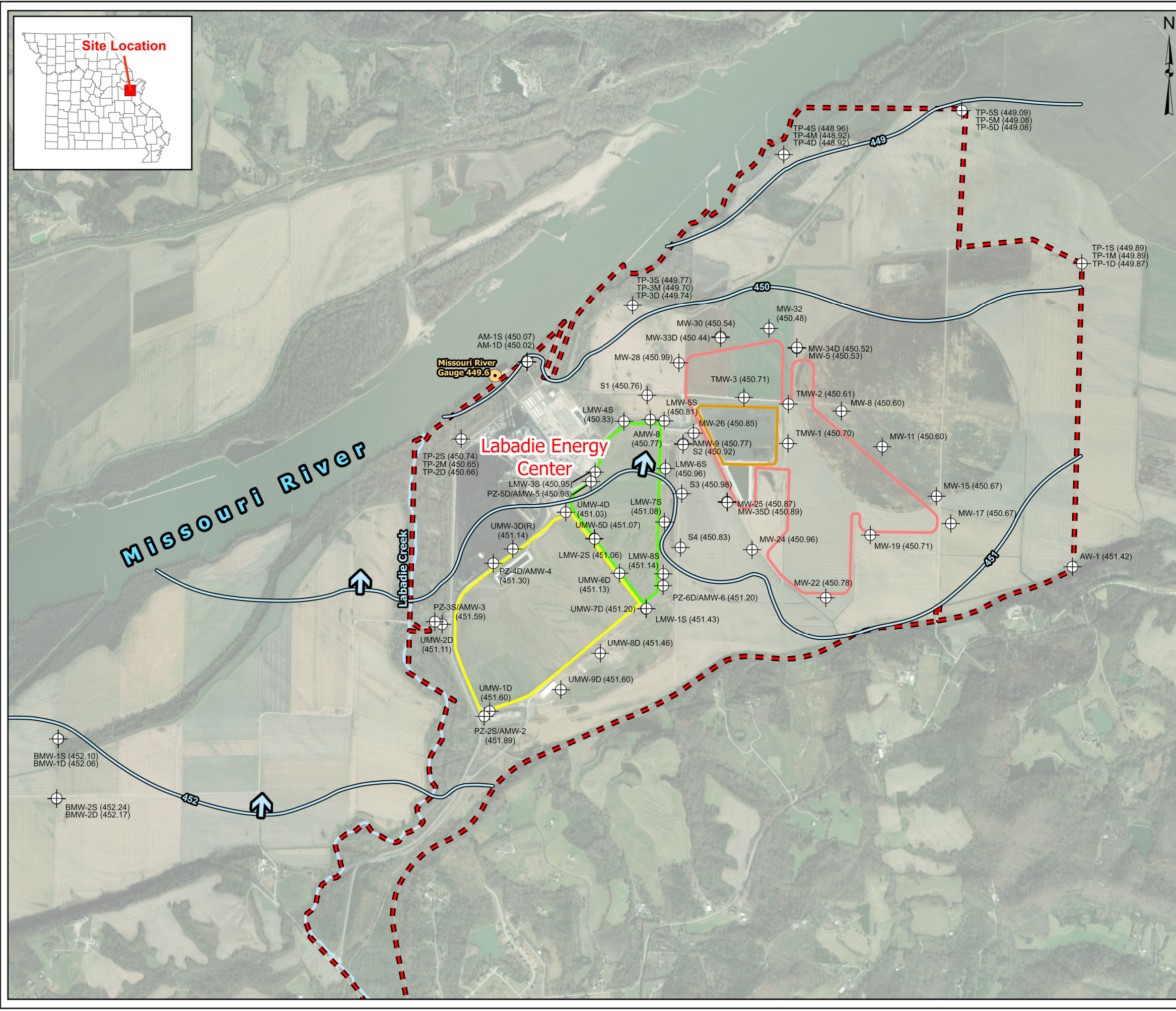
1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

TITLE
NOVEMBER 15, 2023 POTENTIOMETRIC SURFACE MAP



Legend

- Labadie Energy Center Property Boundary
- CCR Units**
- LCPA - Closed Bottom Ash Surface Impoundment
- LCPB - Closed Fly Ash Surface Impoundment
- LCL1 - Utility Waste Landfill Cell 1
- Proposed Final UWL Fence Perimeter
- Monitoring Well or Piezometer**
- Monitoring Well or Piezometer
- Surface Water Elevation Measurement Location**
- Missouri River Gauge
- Groundwater Elevation Contours**
- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction



NOTES

1. All locations and boundaries are approximate.
2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
3. Missouri River Level obtained from USGS Labadie gauge 06935550.

REFERENCES

1. Zahner and Associates, Inc. 2016. Lot Consolidation Plat of "Labadie Energy Center" - Prepared for Ameren Missouri. Revised June 15, 2016.
2. USGS (United States Geological Survey), National Water Information System, USGS Gauge 06935550 Missouri River near Labadie, MO.



PROJECT
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
**AMEREN MISSOURI
 LABADIE ENERGY CENTER**



DESIGN	JSI	YYYY-MM-DD	2023-12-29
PREPARED	GTM	PROJECT No.	23007
REVIEW	JSI	FIGURE H4	
APPROVED	MNH		

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1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: