

REPORT

2023 Annual Groundwater Monitoring and Corrective Action Report

SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri, USA

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Project Number: 23009

Submitted to:



Ameren Missouri
1901 Chouteau Avenue
St. Louis, Missouri 63103

Submitted by:



Rocksmith Geoengineering, LLC
2320 Creve Coeur Mill Rd
Maryland Heights, MO 63043



EXECUTIVE SUMMARY AND STATUS OF THE SCPA 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 SCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCPA 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 SCPA 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. SSIs have been determined for each sampling event and a summary of the SSIs is provided in **Table 1**.

The Assessment Monitoring program was established at the SCPA 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 SCPA Sampling Events, Previous Year Verification, and Statistical Evaluation 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 Monitoring, October 18-19, 2022	November 10, 2022	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<p>pH: UMW-2D, UMW-3D Boron: UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D Calcium: UMW-2D, UMW-3D, UMW-4D Chloride: UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D Fluoride: UMW-2D, UMW-5D Sulfate: UMW-2D, UMW-3D, UMW-4D TDS: UMW-2D, UMW-3D, UMW-4D</p>	<p>Molybdenum: UMW-2D, UMW-3D, UMW-4D, UMW-5D</p>	February 8, 2023
	No Verification Sampling was required. No new SSIs were observed in the October 2022 sampling event.					
May 2023 Sampling Event	Detection Monitoring, May 1-8, 2023	June 19, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA Parameters	<p>pH: UMW-1D, UMW-2D, UMW-3D Boron: UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D Calcium: UMW-2D, UMW-3D, UMW-4D Chloride: UMW-2D, UMW-3D, UMW-4D, UMW-5D Sulfate: UMW-2D, UMW-3D, UMW-4D TDS: UMW-2D, UMW-3D, UMW-4D</p>	<p>Molybdenum: UMW-2D, UMW-3D, UMW-4D, UMW-5D</p>	September 15, 2023
	Verification Sampling, July 10, 2023	July 25, 2023	Detected Appendix III parameters (See Note 2)			

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November 2023 Sampling Event	Detection Monitoring, November 10-14, 2023	December 22, 2023	Appendix III, Detected Appendix IV (See Note 3), & 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 Practical Quantitation Limit (PQL) during the March/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) Testing was completed for Appendix IV analytes that were detected above the PQL during the May 2023 sampling event.
- 4) SSI – Statistically Significant Increase.
- 5) SSL - Statistically Significant Level.
- 6) TDS – Total Dissolved Solids.
- 7) 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 31, 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.

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental corrective measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective-ion exchange.

In January 2021, Ameren commenced Phase 1 of the corrective measures remedial plan by initiating closure at the SCPA. Capping and closure of the SCPA was fully completed in 2022 (closure certification on October 14, 2022). Therefore, the SCPA transitioned into the post-closure care requirements of the CCR Rule in October 2022. 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 section §257.95 (Assessment Monitoring Program).

Once the SCPA was certified closed, Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report began with the October 2022 Corrective Action Sampling event conducted October 18-21, 2022. The associated statistical analyses for this event were completed in February 2023. 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 SCPA 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
October 2022 Sampling Event	Phase 2 – Corrective Action Sampling October 18-21, 2022	November 15, 2022	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	Cobalt: LMW-6S Lithium: LMW-5S, TP-2D, TP-6S Molybdenum: LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, PZ-1S	February 13, 2023
May 2023 Sampling Event	Phase 2 – Corrective Action Sampling May 1-9, 2023	June 19, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	Cobalt: (See Note 4) LMW-6S Lithium: (See Note 4) LMW-5S, TP-2D, TP-6S Molybdenum: LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, PZ-1S	September 15, 2023
November 2023 Sampling Event	Phase 2 – Corrective Action Sampling November 10-14, 2023	December 20, 2023	Appendix III, Detected Appendix IV (See Note 2), & Major Cations and Anions	To be determined after statistical analyses are completed in 2024.	

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the March/April 2022 sampling event.
- 2) MNA – Monitored Natural Attenuation.
- 3) Testing was completed for Appendix IV analytes that were detected above the PQL during the May 2023 sampling event.
- 4) An ASD was prepared for Cobalt and Lithium exceedances that concludes these statistical exceedances are not a result of impacts from the SCPA but appear to result from natural geochemical variability within the alluvial aquifer.

While there are exceedances of the GWPS using corrective action statistical analysis methods for cobalt, lithium, and molybdenum, variability in the initial groundwater results after closure of the SCPA is expected, especially at wells near the SCPA CCR unit (e.g. LMW-2S). Concentrations of these constituents are expected to show decreases in concentration over time after stabilization occurs from closure and corrective measure remedial activities. An Alternative Source Demonstration (ASD) was completed for the cobalt and lithium exceedances, demonstrating that these exceedances are not a result of impacts from the SCPA but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. Molybdenum remains as an exceedance for the SCPA Corrective Action Network, therefore, the unit remains in Corrective Action monitoring.

Supplemental Corrective Measures

In addition to MNA as a Corrective Action Remedy at Sioux, Ameren received an Underground Injection Control Missouri State Operating Permit (UI-000044) and a pilot groundwater treatment study was completed. The results of this pilot treatment study displayed significant reductions in key CCR indicator parameters. Due to the success of the pilot treatment study, Ameren expanded this technology around the SCPA, to supplement capping and MNA at the site. The groundwater treatment system became fully operational in February 2023 and over 11.5 million gallons of water were treated in 2023.

Overall, Corrective Action taken by Ameren has reduced concentrations of key CCR constituents by means of closure of the SCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA of impacts. In monitoring wells directly adjacent to the SCPA, average boron concentrations have decreased approximately 31%, and average molybdenum concentrations have decreased approximately 49% since 2020 (final year the SCPA was active). Groundwater monitoring and evaluations of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

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1.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

There are currently two different networks used for monitoring the SCPA: the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring, see **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 SCPA.

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the SCPA 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 18-19, 2022. The statistical analysis to evaluate for SSIs for the October 2022 event was not completed until 2023 and is included in this report. No new exceedances of any Appendix III analytes were observed; therefore, no verification sampling was necessary for this event. **Table 6** summarizes the results and statistical analyses 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 SCPA.

Detection Monitoring samples were collected May 1-8, 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 analyses 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 for some Appendix III analytes triggered a verification sampling event, which was completed on July 10, 2023 and verified SSIs. **Table 7** summarizes the results and statistical analysis of the May 2023 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 10-14, 2023 and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2023 data were not completed in 2023 and the results will be provided 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 18-19, 2022, and testing was completed for Appendix IV parameters 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 statistical evaluation for this event and a table that displays the site-specific GWPSs are provided in **Appendix B** and determined there were no new SSLs. The SSLs for the SCPA continue to be:

- Molybdenum at UMW-2D, UMW-3D, UMW-4D, and UMW-5D

An Assessment Monitoring sampling event was completed from May 1-8, 2023 and testing was completed for all Appendix IV analytes, major cations and anions, and other selected MNA parameters. **Table 10** summarizes the results of the May 2023 Assessment Monitoring event. During the statistical analyses of the May 2023 sampling event, the site-specific GWPSs used to determine SSLs were updated in accordance with the Statistical Analysis

plan. The statistical evaluation for this event and a table that displays the site-specific GWPS are provided in **Appendix C** and determined that there were no new SSLs.

An Assessment Monitoring sampling event was completed November 10-14, 2023, and testing was completed for Appendix IV analytes that were detected above the PQL during the May 2023 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks as well as major cations and anions. **Table 11** summarizes the results of the November 2023 Assessment monitoring event. However, statistical analyses 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 18-21, 2022, and 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**. This was the first Corrective Action statistical evaluation completed for the SCPA. A summary of constituents displaying statistical exceedances of the GWPS using Corrective Action statistical methods¹ at corresponding wells is as follows:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

A Corrective Action sampling event was completed on May 1-9, 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 results is provided in **Table 13**. A statistical evaluation for this event was completed using updated site-specific GWPSs, as discussed in **Section 2.2**. Results of the statistical evaluation for this event are provided in **Appendix E**. Based on the statistical evaluation, as of the May 2023 sampling event, Molybdenum at LMW-1S is no longer in exceedance of the GWPS. Other exceedances remained the same as those identified following the October 2022 Corrective Action sampling 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 and lithium have not historically been identified as an SSL in Assessment Monitoring and a review of the data determined that the statistical exceedances at wells LMW-6S (cobalt) as well as LMW-5S, TP-2D, and TP-6S (lithium) are not caused by the SCPA CCR unit. Therefore, an Alternative Source Demonstration (ASD) was completed following the May 2023 sampling event and is provided in **Appendix F**. This ASD concludes the statistical exceedances for cobalt and lithium at these wells are not a result of impacts from the SCPA but appear to result from natural geochemical variability within the alluvial aquifer.

A Corrective Action sampling event was completed on November 10-14, 2023, and testing was completed for Appendix III analytes, Appendix IV analytes that were detected above the PQL during the May 2023 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 14** summarizes the results of the November 2023 Corrective Action event. 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.

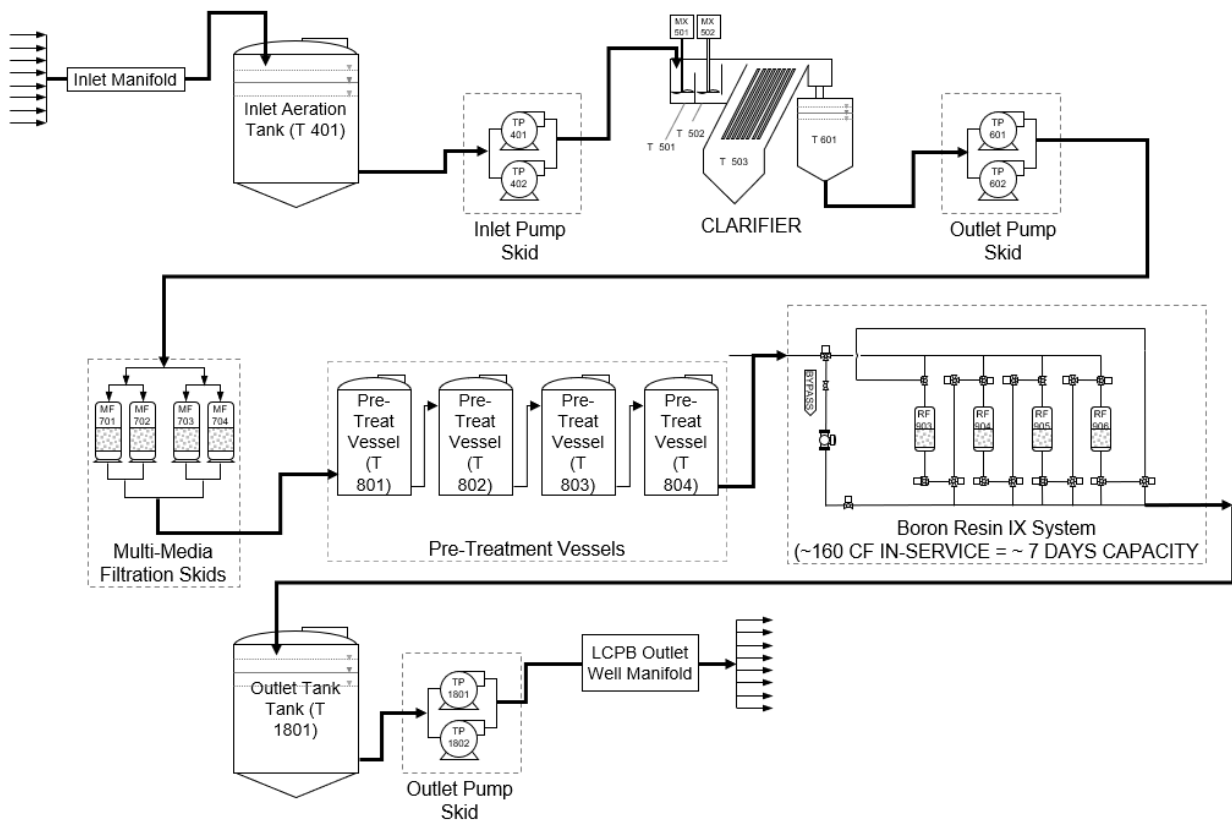
¹ The statistical testing method used to evaluate the Corrective Action monitoring results is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states 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].

2.4 Supplemental Corrective Measures

As outlined in Ameren’s Remedy Selection Report, once source control is achieved, Ameren planned to monitor natural attenuation of groundwater and complete supplemental corrective measures using groundwater treatment. In 2021, Ameren began implementing the supplemental corrective measure for CCR groundwater compliance using ex-situ treatment technologies of chemical precipitation and selective-ion exchange by completing a pilot study at the Rush Island Energy Center. The results of this groundwater treatment pilot study displayed significant reductions in key CCR indicator concentrations. Due to the success, Ameren expanded this technology to the Sioux Energy Center and operation of the treatment system began in February 2023. After a period of optimization, the system achieved target runtime and flowrate beginning in September 2023.

The groundwater treatment system was developed to successfully capture the CCR impacted groundwater from the SCPA, treat the water by removing contaminants, and return treated water to the same hydrogeologic horizon. The process used for this treatment is illustrated in **Figure 2** below.

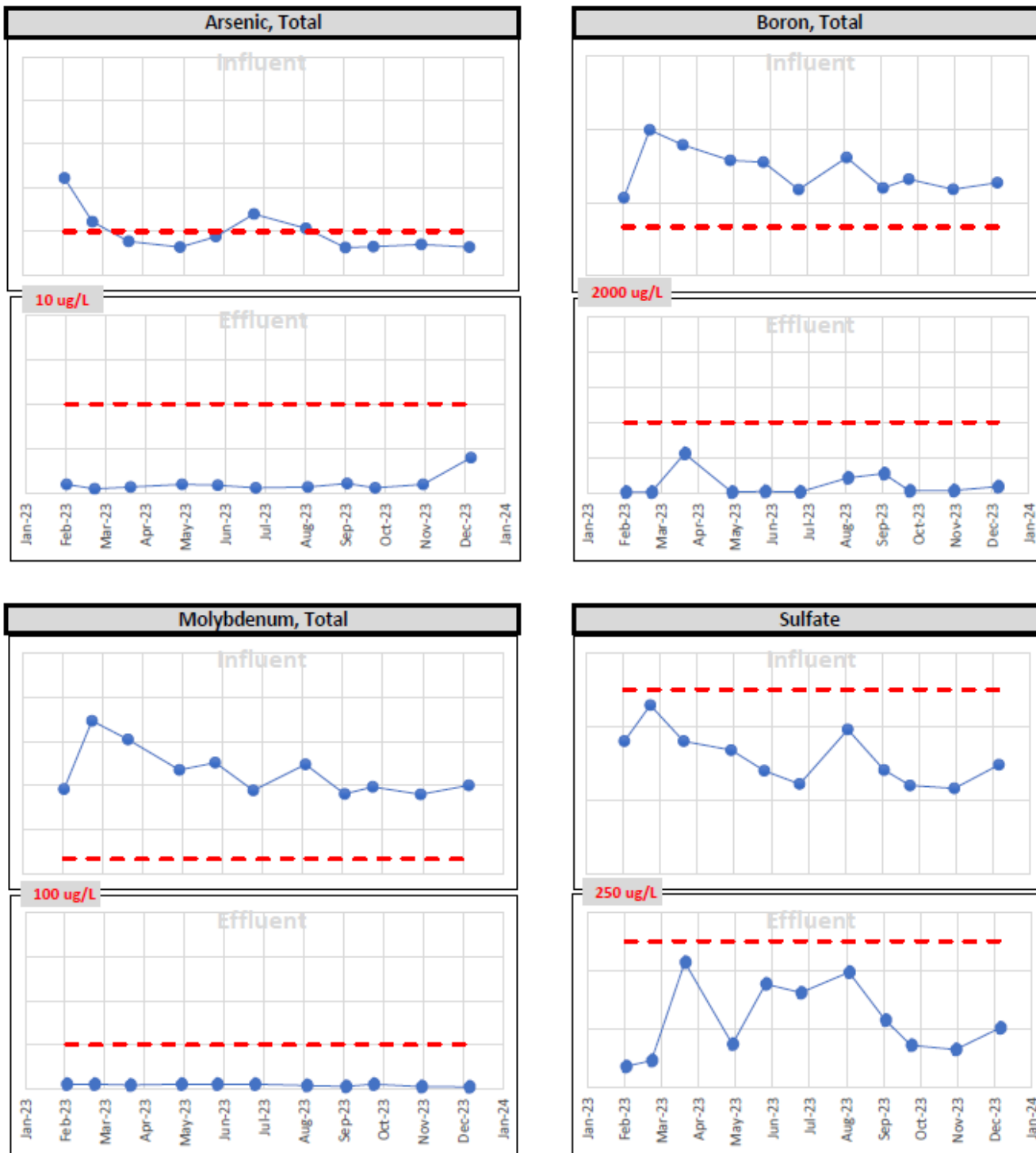
Figure 2: CCR Impacted Groundwater Treatment Process



The process is constructed to minimize waste generation and operate independently of other facilities onsite.

Figure 3 on the following page shows the influent and effluent data from the SCPA groundwater treatment collected over the period of system optimization through initial full-scale system operation. Displayed data are for key CCR constituents in groundwater downgradient of the impoundment. The figure illustrates that, after a few months of optimization, the system effluent concentrations have consistently been below the discharge standards for groundwater (indicated in red). These discharge standards meet drinking water action levels for the applicable constituents.

Figure 3: SCPA Groundwater Treatment System Influent and Effluent Concentrations – System Optimization Period and Full-Scale Operation

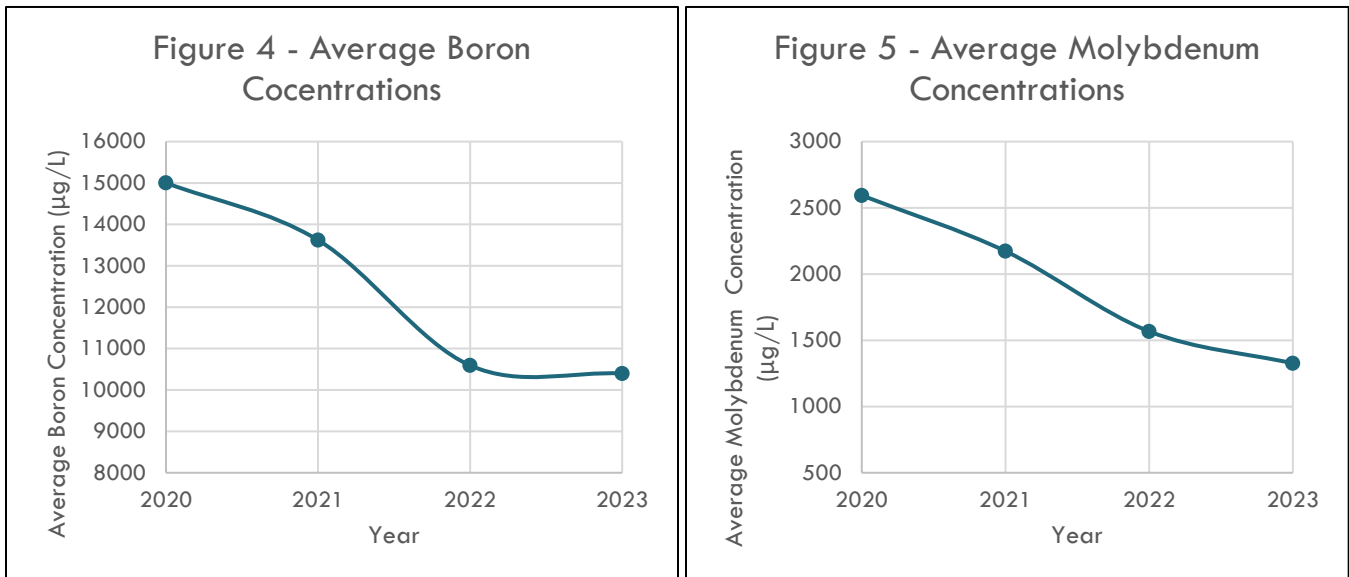


2.5 Evaluation of Corrective Measures

Ameren commenced Phase 1 of the corrective action remedial plan by initiating closure of the SCPA in January 2021. Closure was completed on October 14, 2022. The November 2023 groundwater sampling event represents the third event since closure of the SCPA was completed, and the second sampling event since the implementation of the full groundwater treatment system.

In order to document the effectiveness of the Corrective Action Remedies (corrective measures), an evaluation of the key site CCR indicators was completed. **Figures 4 and 5** (below), display the site average concentrations for boron and molybdenum in the monitoring wells directly adjacent to the SCPA. While there is variability in individual well results, the average annual concentrations of boron and molybdenum at the site are decreasing as follows:

- Boron - Average concentrations in the monitoring wells downgradient of the SCPA have decreased approximately 31% since 2020.
- Molybdenum – Average concentrations in the monitoring wells downgradient of the SCPA have decreased approximately 49% since 2020.



As displayed by these figures, corrective measures taken by Ameren, including the closure of the SCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA have been effective in reducing concentrations of these constituents. Groundwater monitoring and evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

2.6 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 G**. 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 Mississippi and Missouri Rivers, which affect water levels, gradients and flow directions in these water bodies. Groundwater in the alluvial aquifer will generally flow from the higher of the two rivers toward the lower elevation river. Water flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. At this facility, groundwater can flow north and south toward the Mississippi and Missouri Rivers, depending on river levels.

Groundwater flow direction and hydraulic gradient at the SEC were estimated for the alluvial aquifer wells using commercially available software to evaluate data since 2016. Results indicate that groundwater flow direction at the SEC is variable due to fluctuating river levels but has most often flowed from north to south. The overall net groundwater flow direction in the alluvial aquifer at the SEC was south-southeast in 2023 as a result of river levels in the Missouri and Mississippi Rivers. From 2016 through 2022, horizontal gradients have ranged from 0.00006 to 0.001 feet/foot with an estimated net annual groundwater movement of approximately four feet per year in the prevailing downgradient direction. Since July 2022, due to low Missouri River levels, there has been a more prevalent southward flow direction at a rate of approximately 35 feet per year.

2.7 Sampling Issues

No notable sampling issues were encountered at the SCPA in 2023

3.0 ACTIVITIES PLANNED FOR 2024

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

As part of Phase 2 of the Remedy Selection Report's corrective measures remedial plan, Corrective Action Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2024. Statistical analyses 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 the corrective measures will be completed in accordance with the corrective measures remedial plan discussed in the Remedy Selection Report.

Evaluation of the effectiveness of Corrective Action and Corrective Measures (groundwater treatment) 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
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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*	12/15/2015	1121321.4	879420.3	444.95	445.4	383.9	373.7	71.7
UMW-2D	12/17/2015	1120266.7	878981.6	433.86	431.7	386.6	376.4	55.4
UMW-3D	12/16/2015	1120570.4	878251.1	431.67	430.1	384.3	374.1	56.0
UMW-4D	12/16/2015	1121077.9	877859.9	423.52	421.7	380.7	370.5	51.2
UMW-5D	12/17/2015	1121815.0	877799.1	446.66	444.8	384.8	374.6	70.2
UMW-6D	12/18/2015	1122312.0	878639.5	447.02	444.9	384.1	373.9	71.0
BMW-1D	12/8/2015	1121713.6	876740.9	428.28	426.0	383.1	372.9	53.2
BMW-3D	11/8/2016	1121798.8	875798.3	426.41	424.2	381.8	371.6	52.6
CORRECTIVE ACTION MONITORING WELL NETWORK								
LMW-1S*	12/15/2015	1121320.4	879427.6	445.07	445.4	414.8	404.6	40.8
LMW-2S	12/16/2015	1120332.8	879283.7	447.16	445.2	414.7	404.5	40.8
LMW-4S	12/8/2015	1119226.6	879561.5	429.40	427.3	412.4	402.2	25.1
LMW-5S	12/14/2015	1119250.6	880348.6	447.36	445.5	410.1	399.9	45.6
LMW-6S	12/14/2015	1119782.0	880867.8	446.00	444.1	414.1	403.9	40.2
BMW-1S	12/8/2015	1121709.2	876755.6	427.77	426.0	412.0	401.8	24.2
BMW-3S	11/8/2016	1121792.9	875809.5	426.69	424.1	410.2	400.0	24.2
UMW-7S (AM-1S)	7/11/2018	1122151.7	877672.3	425.56	423.3	408.5	398.2	25.1
UMW-7D (AM-1D)	7/11/2018	1122156.7	877672.7	425.47	423.5	378.7	368.4	55.1
PZ-1S	6/17/2018	1121157.5	877799.8	423.94	422.1	402.4	391.7	30.5
PZ-9D	6/19/2018	1119526.8	881125.3	434.30	432.4	377.2	366.5	65.9
UG-3	12/16/2007	1118608.5	880519.4	429.71	427.1	410.0	399.7	27.4
TP-2D	7/9/2018	1123221.1	881698.8	429.26	426.7	347.3	342.2	84.4
TP-3D	7/9/2018	1120614.0	882877.1	434.82	432.1	356.1	351.0	81.1
TP-4D	7/8/2018	1118472.8	882589.0	428.72	426.4	349.3	344.2	82.2
TP-5D**	7/6/2018	1118812.3	879517.5	429.13	429.3	352.5	347.4	81.9
TP-6S	7/11/2018	1119284.6	876381.5	428.07	426.1	408.1	403.0	23.0
TP-6D	7/11/2018	1119284.6	876381.5	428.06	426.1	345.6	340.5	85.6
TP-8D	7/14/2018	1114533.1	881307.7	431.30	428.8	351.7	346.6	82.3

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-1D and LMW-1S were modified on 04/29/2020.
- 6) **TP-5D was modified on 3/26/2021.

Table 4
Summary of Detection and Assessment Groundwater Network Sampling Dates
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Groundwater Monitoring Wells	Date of Sample Collection			
	May 2023 Sampling Event	July 2023 Verification Sampling	November 2023 Sampling Event	Total Number of Samples
CCR Rule Compliance Monitoring Well Network				
BMW-1D	5/2/2023	-	11/10/2023	2
BMW-3D	5/2/2023	-	11/10/2023	2
UMW-1D	5/8/2023	7/10/2023	11/14/2023	3
UMW-2D	5/1/2023	-	11/10/2023	2
UMW-3D	5/1/2023	-	11/10/2023	2
UMW-4D	5/1/2023	-	11/10/2023	2
UMW-5D	5/8/2023	-	11/10/2023	2
UMW-6D	5/8/2023	-	11/10/2023	2
Assessment or Detection Monitoring	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 6-8.
- 2.) Verification Sampling results provided in Table 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
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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			
LMW-1S	5/8/2023	11/14/2023	2
LMW-2S	5/8/2023	11/14/2023	2
LMW-4S	5/5/2023	11/14/2023	2
LMW-5S	5/9/2023	11/14/2023	2
LMW-6S	5/9/2023	11/14/2023	2
AM-1S (UMW-7S)	5/2/2023	11/10/2023	2
AM-1D (UMW-7D)	5/2/2023	11/10/2023	2
PZ-1S	5/1/2023	11/10/2023	2
PZ-9D	5/5/2023	11/14/2023	2
UG-3	5/4/2023	11/13/2023	2
TP-2D	5/1/2023	11/13/2023	2
TP-3D	5/3/2023	11/10/2023	2
TP-4D	5/9/2023	11/13/2023	2
TP-5D	5/9/2023	11/13/2023	2
TP-6S	5/2/2023	11/10/2023	2
TP-6D	5/5/2023	11/10/2023	2
TP-8D	5/9/2023	11/13/2023	2
BMW-1S	5/2/2023	11/10/2023	2
BMW-3S	5/2/2023	11/10/2023	2
Event Type	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 12-14.
- 2.) NA - Not Applicable.
- 3.) "-" No sample collected.

Table 6
October 2022 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
			BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
October 2022 Detection Monitoring Event										
DATE	NA	NA	10/18/2022	10/18/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022
pH	SU	6.12-7.63	7.14	7.12	7.35	8.15	7.89	7.21	7.14	7.03
BORON, TOTAL	µg/L	240	110	52.5 J	139	21,100	27,200	24,100	7,770	577
CALCIUM, TOTAL	µg/L	146,231	128,000	106,000	58,200	157,000	239,000	176,000	90,100	78,200
CHLORIDE, TOTAL	mg/L	11.2	5.3	10.2	18.3	22.0 J	15.2	55.6	26.7	10.5
FLUORIDE, TOTAL	mg/L	0.3938	0.13 J	0.17 J	0.32	0.41 J	ND	0.35	0.47	0.31
SULFATE, TOTAL	mg/L	54.84	34.2	23.2	38.8	420	952	526	22.3	53.4
TOTAL DISSOLVED SOLIDS	mg/L	522.7	581	539	290	842	1,400	1,080	468	352

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. Prediction Limits calculated using Sanitas Software.
5. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
6. 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.
7. There were no new initial exceedances for the October 2022 event; therefore, no Verification Sampling was necessary.

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

Table 7
May 2023 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
			BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
May 2023 Detection Monitoring Event										
DATE	NA	NA	5/2/2023	5/2/2023	5/8/2023	5/1/2023	5/1/2023	5/1/2023	5/8/2023	5/8/2023
pH	SU	6.722-7.464	7.09	7.07	7.57	8.15	7.94	7.22	7.30	7.03
BORON, TOTAL	µg/L	240	132	63.5 J	340	18,500	30,300	21,800	6,150	480
CALCIUM, TOTAL	µg/L	144,073	133,000	115,000	79,900	161,000	273,000	148,000	77,200	102,000
CHLORIDE, TOTAL	mg/L	11.46	5.9	9.2	5.5	32.9	14.7	37.2	30.9	5.4 J
FLUORIDE, TOTAL	mg/L	0.44	ND	ND	ND	0.40	ND	ND	0.27 J	ND
SULFATE, TOTAL	mg/L	52.4	32.0	24.0	36.7	415	799	388	5.5	50.5
TOTAL DISSOLVED SOLIDS	mg/L	518.4	461	461	447	824	1,430	904	372	412
July 2023 Verification Sampling Event										
DATE	NA	NA			7/10/2023					
pH	SU	6.722-7.464			7.62					
BORON, TOTAL	µg/L	240			299					
CALCIUM, TOTAL	µg/L	144,073								
CHLORIDE, TOTAL	mg/L	11.46								
FLUORIDE, TOTAL	mg/L	0.44								
SULFATE, TOTAL	mg/L	52.4								
TOTAL DISSOLVED SOLIDS	mg/L	518.4								

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. Prediction Limits calculated using Sanitas Software.
5. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
6. 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.
7. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

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

Table 8
November 2023 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
November 2023 Detection Monitoring Event									
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023
pH	SU	7.23	7.06	7.36	8.46	8.29	7.42	7.51	7.10
BORON, TOTAL	µg/L	140	65.0 J	720	19,600	31,900	16,600	6,220	411
CALCIUM, TOTAL	µg/L	125,000	116,000	78,500	162,000	279,000	136,000	78,700	109,000
CHLORIDE, TOTAL	mg/L	10.0	11.4	28.8	24.9	14.9	27.3	23.8 J	4.0
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.73 J	0.23 J	0.21 J	0.15 J	ND
SULFATE, TOTAL	mg/L	19.7	28.0 J	72.1	365	758	293	1.9	30.4 J
TOTAL DISSOLVED SOLIDS	mg/L	438	437	372	789 J	1,440	753	345	421

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: GTM
Checked By: JSI
Reviewed By: MNH

Table 9
October 2022 Assessment Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	10/18/2022	10/18/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022	10/19/2022
DISSOLVED OXYGEN	mg/L	0.58	0.67	0.53	0.17	3.24	0.48	0.56	0.39
pH	SU	7.14	7.12	7.35	8.15	7.89	7.21	7.14	7.03
REDOX POTENTIAL	mV	-60.1	-60.2	-44.2	12.5	-21.7	-31.5	-117.9	-109.3
SPECIFIC CONDUCTIVITY	mS/cm	0.846	0.734	0.458	0.932	1.451	1.227	0.688	0.560
TURBIDITY	NTU	2.39	3.33	2.43	1.51	1.64	1.88	1.28	3.53
APPENDIX IV PARAMETERS									
ARSENIC, TOTAL	µg/L	0.27 J	ND	1.4	2.8	0.74 J	0.37 J	0.36 J	0.32 J
BARIUM, TOTAL	µg/L	357	644	131	60.0	68.7	56.6	306	114
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.63	1.4	2.4	0.18 J	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.13 J	0.17 J	0.32	0.41 J	ND	0.35	0.47	0.31
LITHIUM, TOTAL	µg/L	16.1	23.2	14.5	25.2	20.4	37.8	27.1	14.4
MOLYBDENUM, TOTAL	µg/L	1.5 J	ND	37.1	1,670	3,810	6,470	502	67.4
RADIUM [226 + 228]	pCi/L	ND	1.312	ND	1.876 J	1.999	2.250	1.896	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.19 J	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
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	5/2/2023	5/2/2023	5/8/2023	5/1/2023	5/1/2023	5/1/2023	5/8/2023	5/8/2023
DISSOLVED OXYGEN	mg/L	0.13	0.14	0.15	0.14	0.13	0.07	0.16	0.16
pH	SU	7.09	7.07	7.57	8.15	7.94	7.22	7.30	7.03
REDOX POTENTIAL	mV	-133.0	-119.9	-114.8	-166.0	-178.9	-133.4	-119.4	-95.6
SPECIFIC CONDUCTIVITY	mS/cm	0.853	0.772	0.618	1.073	1.719	1.187	0.607	0.671
TURBIDITY	NTU	1.19	0.64	1.75	0.56	0.47	0.58	0.98	2.48
APPENDIX IV PARAMETERS									
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.27 J	ND	1.5	2.9	0.81 J	0.30 J	0.30 J	0.41 J
BARIUM, TOTAL	µg/L	337	667	155	59.1	72.8	46.8	372	143
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	0.14 J	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.61	1.3	2.2	0.093 J	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	0.33 J	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.40	ND	ND	0.27 J	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	14.3	22.8	19.6	22.8	16.2	32.8	23.2	18.0
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	6.9 J	1.7 J	75.3	1,570	3,450	5,570	250	55.5
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	1.590	1.646	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	0.19 J	ND
THALLIUM, TOTAL	µg/L	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.

Table 11
November 2023 Assessment Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023
DISSOLVED OXYGEN	mg/L	0.21	0.27	0.49	0.31	0.29	0.24	0.40	0.36
pH	SU	7.23	7.06	7.36	8.46	8.29	7.42	7.51	7.10
REDOX POTENTIAL	mV	-27.2	181.7	112.8	-95.7	-151.8	-61.0	-113.1	-88.4
SPECIFIC CONDUCTIVITY	mS/cm	0.698	0.670	0.617	0.910	1.457	0.919	0.528	0.594
TURBIDITY	NTU	4.97	2.18	3.81	0.34	0.43	2.12	1.11	1.20
APPENDIX IV PARAMETERS									
ARSENIC, TOTAL	µg/L	0.34 J	0.18 J	1.7	3.0	1.2	0.38 J	0.35 J	0.41 J
BARIUM, TOTAL	µg/L	331	703	152	59.0	76.5	47.0	410	156
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.55	1.0	1.3	0.080 J	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.73 J	0.23 J	0.21 J	0.15 J	ND
LITHIUM, TOTAL	µg/L	13.9	22.2	17.7	28.6	21.9	34.9	21.9	17.7
MOLYBDENUM, TOTAL	µg/L	1.1 J	ND	66.4	1,700	3,070	3,990	191	37.2
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	1.370	ND
SELENIUM, TOTAL	µg/L	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.

**Table 12
October 2022 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	10/18/2022	10/18/2022	10/19/2022	10/19/2022	10/20/2022	10/18/2022	10/20/2022	10/19/2022	10/20/2022	10/21/2022	10/18/2022	10/18/2022	10/19/2022	10/20/2022	10/21/2022	10/21/2022	10/21/2022	10/19/2022	10/20/2022
DISSOLVED OXYGEN	mg/L	0.15	0.29	0.98	0.48	0.33	0.94	1.49	0.16	0.22	0.28	0.16	0.91	0.53	0.18	0.15	0.12	0.17	0.09	0.11
REDOX POTENTIAL	mV	-0.3	-2.2	137.8	56.8	158.2	100.1	120.5	35.1	-10.2	182.6	-34.6	-50.7	-44.6	3.4	-94.6	-116.1	-133.7	-111.4	-18.9
SPECIFIC CONDUCTIVITY	mS/cm	0.967	0.779	0.599	1.358	1.070	1.727	1.817	0.755	0.610	0.820	0.574	0.596	1.088	1.690	0.781	0.782	0.886	0.742	0.716
TURBIDITY	NTU	2.46	1.16	3.85	1.44	2.21	3.19	3.39	0.66	0.86	1.59	4.19	4.31	16.80	0.60	2.16	1.48	0.50	1.39	0.22
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	73.0 J	84.2 J	339	8,550	375	12,700	21,600	119	3,230	302	1,670	7,150	3,860	76.5 J	59.5 J	60.1 J	8,250	65.7 J	74.0 J
CALCIUM, TOTAL	µg/L	168,000	131,000	85,100	205,000	185,000	238,000	278,000	136,000	90,600	126,000	72,900	73,500	198,000	273,000	121,000	120,000	116,000	124,000	118,000
CHLORIDE, TOTAL	mg/L	9.2	11.7	36.2	149	3.1	22.7	2.7	7.2	24.4	39.5	27.7	32.8	11.6	80.3	9.8	10.1	37.9	23.1	26.5
pH	SU	6.84	7.01	7.26	6.80	6.55	6.90	6.55	6.88	7.11	6.94	7.30	7.36	7.04	6.86	6.64	6.97	7.10	6.86	7.08
SULFATE, TOTAL	mg/L	61.1	27.8	83.5	243	37.0	868	605	38.7	58.5	44.1	24.6	40.6	346	501	86.5	123	256	57.4	32.5
TOTAL DISSOLVED SOLIDS	mg/L	711	467	383	977	724	1,400	936	496	419	496	57.0	66.5 J	888	1,330	474	513	688	492	465 J
APPENDIX IV PARAMETERS																				
ARSENIC, TOTAL	µg/L	1.1	0.52 J	1.9	1.0	0.63 J	0.67 J	0.79 J	0.60 J	0.31 J	0.41 J	1.3	0.19 J	0.71 J	0.20 J	0.17 J	2.0	0.25 J	0.15 J	1.3
BARIUM, TOTAL	µg/L	173	110	150	130	232	50.6	47.2	287	93.9	220	129	214	114	58.7	570	571	147	420	382
CADMIUM, TOTAL	µg/L	0.11 J	ND	0.082 J	0.61	0.22 J	0.79	1.0	ND	0.24 J	0.24 J	0.071 J	0.16 J	ND	ND	ND	ND	0.23 J	ND	ND
COBALT, TOTAL	µg/L	2.3 J	ND	2.5 J	3.3 J	ND	1.2 J	8.5	ND	ND	4.6 J	1.8 J	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.20 J	0.22	0.28	ND	ND	0.51	ND	ND	0.59	ND	0.48	0.48	ND	ND	0.28	0.30	0.13 J	ND	ND
LITHIUM, TOTAL	µg/L	6.3 J	10.9	17.3	34.0	27.8	43.0	22.6	36.5	16.0	27.1	26.6	33.5	36.0	45.2	35.0	32.1	34.1	28.5	31.8
MOLYBDENUM, TOTAL	µg/L	3.0 J	1.2 J	55.7	628	1.8 J	1,220	1.4 J	3.4 J	707	2.8 J	151	461	10.3 J	ND	1.1 J	1.3 J	677	ND	1.5 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.234	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	1.7	ND	0.79 J	ND	ND	0.21 J	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	479	390	216	372	592	338	556	405	251	353	241	219	342	462	340	288	178	351	330
IRON, TOTAL	µg/L	32.9 J	20.0 J	98.9	150	17.0 J	58.1	23.8 J	178	4,960	10.9 J	899	2,640	11,700	16,000	7,630	6,200	7,610	7,820	6,210
MAGNESIUM, TOTAL	µg/L	33,400	23,900	20,900	38,100	43,600	47,500	66,400	29,200	16,800	24,000	15,500	15,600	48,400	72,700	30,300	28,800	28,600	31,500	26,100
MANGANESE, TOTAL	µg/L	1,550	210	150	625	203	1,330	509	256	739	744	1,080	340	1,240	1,280	657	411	895	523	444
POTASSIUM, TOTAL	µg/L	431 J	525	6,060	8,160	5,070	5,730	4,970	2,590	3,210	5,330	7,920	6,740	5,170	6,000	4,000	3,400	4,870	3,910	3,960
SODIUM, TOTAL	mg/L	5.0	5.5	16.6	67.6	10.8	142	99.6	5.8	20.8	27.6	17.0	22.6	19.3	25.3	6.8	9.2	40.8	5.6	6.6

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. 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.
4. 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.
5. NA - Not Applicable.

Table 13
May 2023 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	5/2/2023	5/2/2023	5/8/2023	5/8/2023	5/5/2023	5/9/2023	5/9/2023	5/2/2023	5/1/2023	5/4/2023	5/2/2023	5/2/2023	5/5/2023	5/1/2023	5/3/2023	5/9/2023	5/9/2023	5/5/2023	5/9/2023
DISSOLVED OXYGEN	mg/L	0.11	0.14	0.34	0.23	0.49	0.18	0.19	0.30	1.28	0.27	0.13	0.11	0.02	0.10	0.05	0.06	0.19	0.34	0.06
REDOX POTENTIAL	mV	18.8	12.5	35.6	64.5	93.3	111.6	95.9	33.4	-118.2	56.4	-92.1	-108.8	-134.3	-110.5	-126.1	-114.6	-124.1	-124.1	-119.7
SPECIFIC CONDUCTIVITY	mS/cm	1.106	0.833	0.670	1.283	1.125	2.074	1.834	0.846	0.646	0.890	0.712	0.599	1.146	1.676	0.811	0.802	1.083	0.819	0.768
TURBIDITY	NTU	1.60	0.44	1.81	0.78	1.17	2.91	1.63	1.74	4.71	1.44	2.85	4.75	17.6	1.80	0.63	1.19	1.01	0.66	1.40
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	64.8 J	67.1 J	659	9,800	758	16,200	18,000	101	3,460	258	708	6,340	3,550	87.8 J	ND	ND	7,900	ND	ND
CALCIUM, TOTAL	µg/L	184,000	137,000	90,500	169,000	186,000	238,000	263,000	132,000	86,200	119,000	93,400	71,900	167,000	255,000	117,000	118,000	138,000	116,000	114,000
CHLORIDE, TOTAL	mg/L	13.1	12.6	45.0	119	7.2	16.5	2.7	7.0	36.7	41.9	37.1	34.6	10.8	70.6 J	10.7	8.9	43.1 J	14.6	34.5
pH	SU	6.80	6.95	7.40	7.00	6.82	6.81	6.73	7.02	7.08	7.09	7.21	7.35	7.10	6.89	7.06	7.09	7.09	7.14	7.10
SULFATE, TOTAL	mg/L	37.7	32.4	99.4	281	60.7	757	512	38.0	69.7	48.0	43.8	36.7	279	767 J	86.1	102	249	53.9	36.4
TOTAL DISSOLVED SOLIDS	mg/L	610	495	559	908	656	2,490	418	489	561	522	424	350	770	1,210	506	510	715	460	455
APPENDIX IV PARAMETERS																				
ANTIMONY, TOTAL	µg/L	ND	ND	0.36 J	0.19 J	0.14 J	0.14 J	0.21 J	ND	ND	0.17 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	1.1	0.64 J	1.6	0.90 J	0.60 J	0.81 J	0.79 J	0.56 J	0.25 J	0.40 J	1.1	0.17 J	0.60 J	0.22 J	0.15 J	2.0	0.30 J	0.13 J	1.3
BARIUM, TOTAL	µg/L	183	107	158	108	229	45.6	44.6	268	89.8	216	161	196	99.9	53.9	551	532	175	395	377
BERYLLIUM, TOTAL	µg/L	ND	0.19 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	0.13 J	ND	0.060 J	0.55	0.14 J	0.85	0.64	0.052 J	0.26 J	0.24 J	0.050 J	0.17 J	ND	ND	ND	ND	0.22 J	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	0.33 J	ND	0.50 J	0.53 J	0.34 J	ND	ND	ND	ND	ND	1.4	ND	ND	0.34 J	0.30 J	ND	0.35 J
COBALT, TOTAL	µg/L	ND	ND	ND	2.7 J	ND	ND	6.8	ND	ND	2.2 J	3.2 J	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15 J	0.60	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
LITHIUM, TOTAL	µg/L	5.8 J	9.9 J	17.9	35.1	32.0	45.3	23.0	34.6	15.5	30.1	28.0	30.3	34.6	45.3	34.9	32.2	40.5	28.4	33.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	5.3 J	4.7 J	45.1	842	1.7 J	1,630	12.1 J	4.2 J	641	4.5 J	70.7	422	9.6 J	3.1 J	3.3 J	2.8 J	604	ND	11.5 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.412 J	1.984 J	ND
SELENIUM, TOTAL	µg/L	ND	0.28 J	0.52 J	ND	0.54 J	ND	ND	0.20 J	ND	2.6	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
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	576	419	226	296	592	328	570	416	237	376	286	232	333	474	351	316	258	369	341
IRON, FERRIC, TOTAL	mg/L	0.009 J	0.009 J	0.016 J	0.073	0.019 J	ND	0.026 J	0.14	4.9	0.003 J	1.2	1.8	10.4	15.3	7.6	6.1	9.3	7.0	6.2
IRON, FERROUS, TOTAL	mg/L	ND	ND	ND	ND	ND	0.20 J	ND	ND	0.054 J	ND	ND	ND	0.45 J	0.21 J	0.35 J	0.33 J	0.48 J	0.38 J	0.30 J
IRON, TOTAL	µg/L	ND	ND	15.6 J	73.4	18.6 J	77.2	25.6 J	143	4,940	ND	1,190	1,800	10,900	15,500	7,950	6,470	9,780	7,380	6,510
MAGNESIUM, TOTAL	µg/L	37,100	24,400	22,500	29,900	43,100	45,000	58,900	28,500	17,000	22,900	19,700	15,300	40,700	70,800	28,700	28,800	33,900	29,300	25,000
MANGANESE, TOTAL	µg/L	849	30.2	48.9	389	51.1	1,520	427	216	612	597	1,920	350	1,100	1,180	629	367	1,050	468	435
POTASSIUM, TOTAL	µg/L	427 J	426 J	5,970	8,750	4,950	4,620	4,590	2,250	2,330	4,960	8,310	6,190	4,710	5,720	3,830	3,440	5,330	3,700	3,710
SODIUM, TOTAL	mg/L	5.1	5.4	19.0	70.3	11.5	174	79.3	5.6	20.4	39.0	17.5	22.7	18.0	21.5	6.6	8.0	38.1	7.3	6.3
SULFIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.051	ND	ND	0.019 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. 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.
4. 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.
5. NA - Not Applicable.

Table 14
November 2023 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/10/2023	11/10/2023	11/13/2023	11/10/2023	11/10/2023	11/14/2023	11/13/2023	11/10/2023	11/13/2023	11/13/2023	11/10/2023	11/13/2023
DISSOLVED OXYGEN	mg/L	0.24	0.40	1.15	1.07	0.26	0.34	0.91	0.19	0.21	0.39	0.22	0.27	0.16	0.25	0.51	0.26	0.27	0.15	0.25
REDOX POTENTIAL	mV	91.8	74.2	140.3	175.5	165.1	-8.9	15.9	68.1	-59.4	69.6	10.4	-53.7	-102.5	88.7	-45.5	50.0	27.3	-85.4	-29.6
SPECIFIC CONDUCTIVITY	mS/cm	0.723	0.610	0.905	1.430	1.107	1.451	1.358	0.694	0.574	0.822	0.534	0.547	0.742	1.691	0.700	0.759	1.062	0.672	0.729
TURBIDITY	NTU	1.84	3.21	4.18	3.33	2.44	4.41	1.98	3.84	0.99	4.84	3.59	4.60	13.0	2.42	1.88	3.04	3.44	1.48	0.30
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	57.9 J	58.9 J	1,100	9,270	7,590	12,100	14,700	99.1 J	10,000	638	258	4,410	3,120	92.3 J	63.4 J	58.4 J	7,690	52.5 J	ND
CALCIUM, TOTAL	µg/L	136,000	114,000	116,000	180,000	139,000	214,000	235,000	127,000	82,600	107,000	75,800	75,800	139,000	270,000	119,000	113,000	140,000	112,000	112,000
CHLORIDE, TOTAL	mg/L	7.2	13.4	68.8 J	159 J	5.3 J	23.8 J	9.8 J	7.6	23.5	34.5 J	34.1	27.8	8.5 J	61.2 J	10.5	6.2 J	34.9 J	14.5	23.8 J
pH	SU	7.04	7.14	7.30	6.91	6.72	6.89	6.82	7.19	7.26	7.04	7.33	7.50	7.16	6.87	7.23	7.04	7.09	7.29	7.14
SULFATE, TOTAL	mg/L	46.9	12.3	103 J	221 J	51.8 J	644 J	586 J	39.6	106	65.0 J	1.3	7.2	244 J	459 J	80.6	95.1 J	256 J	60.8	33.3 J
TOTAL DISSOLVED SOLIDS	mg/L	475	398	566	962	689	1,290	1,290	433	507	504	346	369	682	1,270	488	467 J	774	470	416
APPENDIX IV PARAMETERS																				
ARSENIC, TOTAL	µg/L	0.93 J	0.45 J	2.2	0.99 J	0.79 J	0.81 J	0.83 J	0.69 J	0.27 J	0.49 J	1.6	0.16 J	0.47 J	0.34 J	0.16 J	2.2	0.38 J	0.18 J	1.3
BARIUM, TOTAL	µg/L	137	142	207	107	179	55.8	42.8	279	97.2	216	145	271	83.1	59.5	591	487	182	403	375
CADMIUM, TOTAL	µg/L	ND	0.057 J	0.096 J	0.66	0.24 J	0.57	1.2	0.055 J	0.45 J	0.32 J	ND	0.098 J	ND	ND	ND	ND	0.21 J	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	0.37 J	ND	ND	ND	0.32 J	ND	ND	ND	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	1.4 J	4.3 J	ND	2.6 J	7.9	ND	ND	7.9	3.6 J	ND	ND	1.4 J	ND	ND	1.2 J	ND	1.9 J
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	8.2 J	12.6	21.3	31.9	38.8	46.3	20.6	39.7	17.9	27.5	26.3	33.1	30.8	50.1	35.5	31.9	37.1	29.3	34.1
MOLYBDENUM, TOTAL	µg/L	2.8 J	1.0 J	96.3	869	593	903	1.7 J	3.4 J	1,350	3.6 J	37.0	263	10.7 J	ND	1.3 J	ND	607	1.4 J	1.9 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	1.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.293 J	ND	ND	1.557
SELENIUM, TOTAL	µg/L	ND	0.21 J	4.1	ND	0.19 J	ND	ND	ND	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	427	357	283	341	627	350	410	390	186	333	268	280	290	470	339	311	280	345	335
IRON, TOTAL	µg/L	57.0	58.0	60.8	44.3 J	9,420	132	98.6	174	5,350	14.8 J	829	2,900	8,610	16,700	7,820	5,980	9,620	7,130	6,210
MAGNESIUM, TOTAL	µg/L	26,600	20,700	28,100	38,800	35,000	44,300	56,900	27,700	16,700	20,800	15,900	16,300	34,000	74,000	29,600	28,000	35,500	28,600	24,800
MANGANESE, TOTAL	µg/L	489	211	80.1	530	1,120	1,170	414	262	602	1,080	1,970	367	977	1,290	676	383	1,150	490	452
POTASSIUM, TOTAL	µg/L	633	717	7,680	5,850	5,200	6,020	4,180	2,610	2,070	5,030	9,030	6,210	4,250	6,010	3,970	3,180	5,230	3,710	3,450
SODIUM, TOTAL	mg/L	6.0	6.0	30.2	73.9	36.6	132	64.3	5.7	22.9	45.8	17.7	23.5	17.3	21.8	6.9	7.4	37.9	5.6	6.4

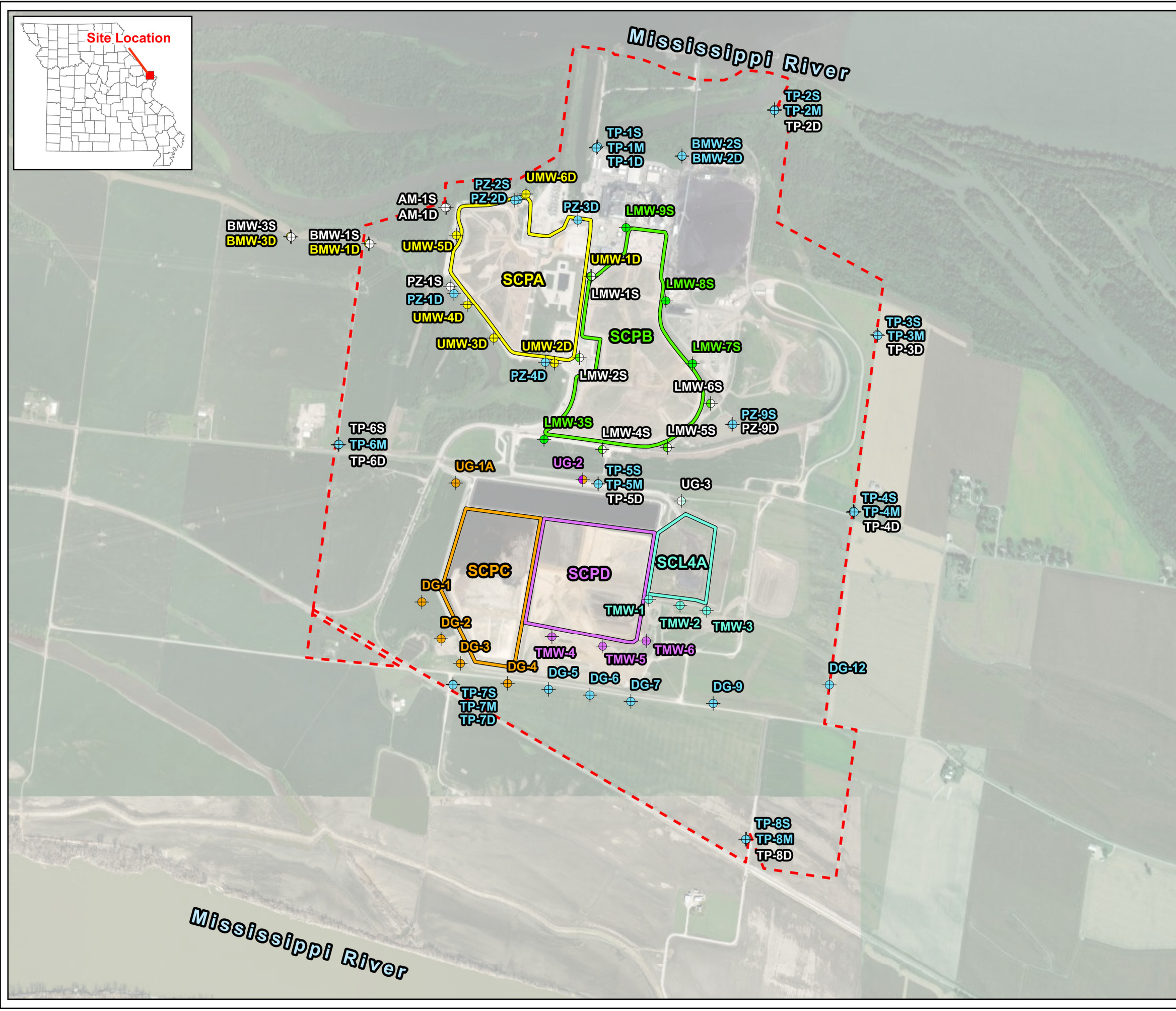
NOTES

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. 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.
4. 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.
5. NA - Not Applicable.

Figures



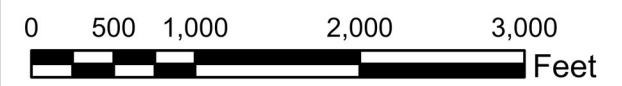
TITLE
SIoux ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP



- Legend**
- Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - Utility Waste Landfill Cells**
 - SCL4A - Dry CCR Disposal Area
 - SCPC - Inactive FGD Surface Impoundment (Closure in Progress)
 - SCPD - FGD Surface Impoundment
 - Monitoring Well Networks**
 - ⊕ Corrective Action Monitoring Well
 - ⊕ SCPA Detection and Assessment Monitoring Well
 - ⊕ SCPB and Corrective Action Monitoring Well
 - ⊕ SCPB Detection Monitoring Well
 - ⊕ SCPC Detection Monitoring Well
 - ⊕ SCPD and SCPC Detection Monitoring Well
 - ⊕ SCPD Detection Monitoring Well
 - ⊕ SCL4A and Corrective Action Monitoring Well
 - ⊕ SCL4A Detection Monitoring Well
 - ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

- NOTES**
1. All boundaries and locations are approximate.
 2. FGD - Flue Gas Desulfurization.
 3. CCR - Coal Combustion Residuals.

- REFERENCES**
1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER

	DESIGN	JSI	YYYY-MM-DD	2023-03-29
	PREPARED	JSI	PROJECT No.	23009
	REVIEW	GTM	FIGURE 1	
	APPROVED	MNH		

Path: C:\Users\Graham\OneDrive\Rocksmith Geoenvironmenting\LLC\202307 - Ameren GW - Documents\400 - Drawings - Figures\4.3-SEC\4.3.2 - Production\Other Maps\Figure 1 - SEC Well Locations.aprx

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

Appendix A

Laboratory Analytical Data

June 19, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
5233 Roanoke Drive
Saint Charles, MO 63304

RE: Project: AMEREN SCPA
Pace Project No.: 60427704

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 03, 2023 and May 10, 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

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 SCPA

Pace Project No.: 60427704

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60427704001	S-UMW-2D	Water	05/01/23 13:46	05/03/23 05:05
60427704002	S-UMW-3D	Water	05/01/23 12:31	05/03/23 05:05
60427704003	S-UMW-4D	Water	05/01/23 11:43	05/03/23 05:05
60427704004	S-BMW-1D	Water	05/02/23 09:08	05/03/23 05:05
60427704005	S-BMW-3D	Water	05/02/23 10:51	05/03/23 05:05
60427704006	S-UMW-DUP-1	Water	05/01/23 00:00	05/03/23 05:05
60427704007	S-UMW-1D	Water	05/08/23 13:25	05/10/23 05:00
60427704008	S-UMW-5D	Water	05/08/23 09:32	05/10/23 05:00
60427704009	S-UMW-6D	Water	05/08/23 10:50	05/10/23 05:00
60427704010	S-UMW-FB-1	Water	05/08/23 11:00	05/10/23 05:00
60427704011	S-UMW-MS-1	Water	05/08/23 09:32	05/10/23 05:00
60427704012	S-UMW-MSD-1	Water	05/08/23 09:32	05/10/23 05:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60427704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60427704001	S-UMW-2D	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	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	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60427704002	S-UMW-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	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	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	CRN2			3	PASI-K		
60427704003	S-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	CLM	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	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60427704004	S-BMW-1D	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		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427704005	S-BMW-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	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	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427704006	S-UMW-DUP-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	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	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427704007	S-UMW-1D	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	MLD	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60427704008	S-UMW-5D	SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	MLD	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	MLD	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		60427704009	S-UMW-6D	SM 4500-S-2 D	MLD
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	MLD			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	MLD			1	PASI-K
60427704010	S-UMW-FB-1			EPA 300.0	CRN2
		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	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		60427704011	S-UMW-MS-1	EPA 903.1	CLM

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60427704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60427704012	S-UMW-MSD-1	EPA 904.0	VAL	1	PASI-PA
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-2D Lab ID: 60427704001 Collected: 05/01/23 13:46 Received: 05/03/23 05:05 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	59.1	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:29	7440-39-3	
Beryllium	0.14J	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:29	7440-41-7	
Boron	18500	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:29	7440-42-8	
Calcium	161000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:29	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:29	7440-48-4	
Iron	196	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:29	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:29	7439-92-1	
Lithium	22.8	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:29	7439-93-2	
Magnesium	3850	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:29	7439-95-4	
Manganese	144	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:29	7439-96-5	
Molybdenum	1570	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:29	7439-98-7	
Potassium	24100	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:29	7440-09-7	
Sodium	52400	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 16:51	7440-36-0	
Arsenic	2.9	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 16:51	7440-38-2	
Cadmium	0.61	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 16:51	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 16:51	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 16:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 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	05/25/23 18:37	05/26/23 13:26	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	113	mg/L	20.0	10.5	1		05/04/23 11:38		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	824	mg/L	10.0	10.0	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.20	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:16	15438-31-0	1e,H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-2D **Lab ID: 60427704001** Collected: 05/01/23 13:46 Received: 05/03/23 05:05 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		05/05/23 14:17	18496-25-8	M1,R1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	32.9	mg/L	20.0	10.5	20		05/24/23 14:30	16887-00-6	
Fluoride	0.40	mg/L	0.20	0.12	1		05/24/23 13:52	16984-48-8	
Sulfate	415	mg/L	50.0	27.5	50		05/25/23 16:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-3D **Lab ID: 60427704002** Collected: 05/01/23 12:31 Received: 05/03/23 05:05 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	72.8	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:41	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:41	7440-41-7	
Boron	30300	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:41	7440-42-8	
Calcium	273000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:41	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:41	7440-48-4	
Iron	946	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:41	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:41	7439-92-1	
Lithium	16.2	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:41	7439-93-2	
Magnesium	8980	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:41	7439-95-4	
Manganese	535	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:41	7439-96-5	
Molybdenum	3450	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:41	7439-98-7	
Potassium	20000	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:41	7440-09-7	
Sodium	99200	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:41	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	05/04/23 12:37	05/22/23 17:00	7440-36-0	
Arsenic	0.81J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:00	7440-38-2	
Cadmium	1.3	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:00	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:00	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:00	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:00	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	05/25/23 18:37	05/26/23 13:28	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	128	mg/L	20.0	10.5	1		05/04/23 11:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1430	mg/L	13.3	13.3	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.95	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:14	15438-31-0	1e,H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-3D **Lab ID: 60427704002** Collected: 05/01/23 12:31 Received: 05/03/23 05:05 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	0.041J	mg/L	0.050	0.016	1		05/05/23 14:19	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		05/24/23 14:42	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 14:42	16984-48-8	
Sulfate	799	mg/L	200	110	200		05/25/23 16:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-4D Lab ID: 60427704003 Collected: 05/01/23 11:43 Received: 05/03/23 05:05 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	46.8	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:43	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:43	7440-41-7	
Boron	21800	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:43	7440-42-8	
Calcium	148000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:43	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:43	7440-48-4	
Iron	6160	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:43	7439-92-1	
Lithium	32.8	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:43	7439-93-2	
Magnesium	21100	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:43	7439-95-4	
Manganese	1390	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:43	7439-96-5	
Molybdenum	5570	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:43	7439-98-7	
Potassium	13000	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:43	7440-09-7	
Sodium	59100	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:43	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	05/04/23 12:37	05/22/23 17:03	7440-36-0	
Arsenic	0.30J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:03	7440-38-2	
Cadmium	2.2	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:03	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:03	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:03	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:03	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	05/25/23 18:37	05/26/23 13:31	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	198	mg/L	20.0	10.5	1		05/04/23 11:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	904	mg/L	10.0	10.0	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.1	mg/L	0.050		1		05/30/23 11:02	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.096J	mg/L	0.20	0.041	1		05/08/23 15:13	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-4D **Lab ID: 60427704003** Collected: 05/01/23 11:43 Received: 05/03/23 05:05 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		05/05/23 14:20	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	37.2	mg/L	20.0	10.5	20		05/24/23 16:11	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 15:58	16984-48-8	
Sulfate	388	mg/L	50.0	27.5	50		05/25/23 16:59	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-BMW-1D **Lab ID: 60427704004** Collected: 05/02/23 09:08 Received: 05/03/23 05:05 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	337	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:47	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:47	7440-41-7	
Boron	132	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:47	7440-42-8	
Calcium	133000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:47	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:47	7440-48-4	
Iron	9890	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:47	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:47	7439-92-1	
Lithium	14.3	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:47	7439-93-2	
Magnesium	29000	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:47	7439-95-4	
Manganese	1000	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:47	7439-96-5	
Molybdenum	6.9J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:47	7439-98-7	
Potassium	2510	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:47	7440-09-7	
Sodium	6410	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:47	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	05/04/23 12:37	05/22/23 17:12	7440-36-0	
Arsenic	0.27J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:12	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:12	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:12	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:12	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:12	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	05/25/23 18:37	05/26/23 13:33	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	427	mg/L	20.0	10.5	1		05/04/23 13:52		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	461	mg/L	10.0	10.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.8	mg/L	0.050		1		05/30/23 11:02	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.056J	mg/L	0.20	0.041	1		05/08/23 15:21	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-BMW-1D **Lab ID: 60427704004** Collected: 05/02/23 09:08 Received: 05/03/23 05:05 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		05/09/23 10:20	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		05/24/23 11:18	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 11:18	16984-48-8	
Sulfate	32.0	mg/L	20.0	11.0	20		05/24/23 11:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-BMW-3D **Lab ID: 60427704005** Collected: 05/02/23 10:51 Received: 05/03/23 05:05 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	667	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:51	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:51	7440-41-7	
Boron	63.5J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:51	7440-42-8	
Calcium	115000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:51	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:51	7440-48-4	
Iron	8070	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:51	7439-92-1	
Lithium	22.8	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:51	7439-93-2	
Magnesium	26900	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:51	7439-95-4	
Manganese	534	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:51	7439-96-5	
Molybdenum	1.7J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:51	7439-98-7	
Potassium	3420	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:51	7440-09-7	
Sodium	6210	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 17:18	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:18	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:18	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:18	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:18	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:18	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	05/25/23 18:37	05/26/23 13:35	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		05/04/23 13:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	461	mg/L	10.0	10.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	8.0	mg/L	0.050		1		05/30/23 11:02	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.094J	mg/L	0.20	0.041	1		05/08/23 15:23	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-BMW-3D **Lab ID: 60427704005** Collected: 05/02/23 10:51 Received: 05/03/23 05:05 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		05/09/23 10:21	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	9.2	mg/L	1.0	0.53	1		05/24/23 12:11	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 12:11	16984-48-8	
Sulfate	24.0	mg/L	20.0	11.0	20		05/24/23 12:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-DUP-1 Lab ID: 60427704006 Collected: 05/01/23 00:00 Received: 05/03/23 05:05 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	57.8	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:57	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:57	7440-41-7	
Boron	18400	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:57	7440-42-8	
Calcium	163000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:57	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:57	7440-48-4	
Iron	186	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:57	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:57	7439-92-1	
Lithium	22.9	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:57	7439-93-2	
Magnesium	3910	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:57	7439-95-4	
Manganese	145	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:57	7439-96-5	
Molybdenum	1570	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:57	7439-98-7	
Potassium	24100	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:57	7440-09-7	
Sodium	52400	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:57	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	05/04/23 12:37	05/22/23 17:27	7440-36-0	
Arsenic	2.9	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:27	7440-38-2	
Cadmium	0.58	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:27	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:27	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:27	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:27	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	05/25/23 18:37	05/26/23 13:37	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	115	mg/L	20.0	10.5	1		05/04/23 12:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	822	mg/L	10.0	10.0	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.18	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:11	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-DUP-1 **Lab ID: 60427704006** Collected: 05/01/23 00:00 Received: 05/03/23 05:05 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		05/05/23 14:24	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	32.7	mg/L	20.0	10.5	20		05/24/23 17:51	16887-00-6	
Fluoride	0.39	mg/L	0.20	0.12	1		05/24/23 17:13	16984-48-8	
Sulfate	411	mg/L	50.0	27.5	50		05/25/23 17:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-1D **Lab ID: 60427704007** Collected: 05/08/23 13:25 Received: 05/10/23 05:00 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	155	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:20	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:20	7440-41-7	
Boron	340	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:20	7440-42-8	
Calcium	79900	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:20	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:20	7440-48-4	
Iron	738	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:20	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:20	7439-92-1	
Lithium	19.6	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:20	7439-93-2	
Magnesium	22100	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:20	7439-95-4	
Manganese	143	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:20	7439-96-5	
Molybdenum	75.3	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:20	7439-98-7	
Potassium	4800	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:20	7440-09-7	
Sodium	17400	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:20	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	05/11/23 13:50	06/01/23 13:01	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 13:01	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 13:01	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 13:01	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 13:01	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 13:01	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	05/25/23 18:37	05/26/23 13:40	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	221	mg/L	20.0	10.5	1		05/11/23 12:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	447	mg/L	10.0	10.0	1		05/15/23 08:26		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.72	mg/L	0.050		1		05/30/23 16:52	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 09:00	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-1D **Lab ID: 60427704007** Collected: 05/08/23 13:25 Received: 05/10/23 05:00 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		05/12/23 12:27	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.5	mg/L	1.0	0.53	1		05/26/23 17:16	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 17:16	16984-48-8	
Sulfate	36.7	mg/L	20.0	11.0	20		05/26/23 17:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-5D **Lab ID: 60427704008** Collected: 05/08/23 09:32 Received: 05/10/23 05:00 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	372	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:22	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:22	7440-41-7	
Boron	6150	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:22	7440-42-8	
Calcium	77200	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:22	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:22	7440-48-4	
Iron	3270	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:22	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:22	7439-92-1	
Lithium	23.2	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:22	7439-93-2	
Magnesium	17500	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:22	7439-95-4	
Manganese	441	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:22	7439-96-5	
Molybdenum	250	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:22	7439-98-7	
Potassium	9680	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:22	7440-09-7	
Sodium	20100	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:22	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	05/11/23 13:50	06/01/23 12:51	7440-36-0	
Arsenic	0.30J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:51	7440-38-2	
Cadmium	0.093J	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:51	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:51	7440-47-3	
Selenium	0.19J	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 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	05/25/23 18:37	05/26/23 13:42	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		05/11/23 13:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	372	mg/L	5.0	5.0	1		05/15/23 08:27		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.7	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.61	mg/L	0.20	0.041	1		05/18/23 08:57	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-5D **Lab ID: 60427704008** Collected: 05/08/23 09:32 Received: 05/10/23 05:00 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	0.047J	mg/L	0.050	0.016	1		05/12/23 12:27	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	30.9	mg/L	20.0	10.5	20		05/26/23 15:35	16887-00-6	B
Fluoride	0.27	mg/L	0.20	0.12	1		05/26/23 16:54	16984-48-8	M1, R1
Sulfate	5.5	mg/L	1.0	0.55	1		05/26/23 16:54	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-6D **Lab ID: 60427704009** Collected: 05/08/23 10:50 Received: 05/10/23 05:00 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	05/11/23 13:50	05/26/23 15:28	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:28	7440-41-7	
Boron	480	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:28	7440-42-8	
Calcium	102000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:28	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:28	7440-48-4	
Iron	6680	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:28	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:28	7439-92-1	
Lithium	18.0	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:28	7439-93-2	
Magnesium	23400	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:28	7439-95-4	
Manganese	696	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:28	7439-96-5	
Molybdenum	55.5	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:28	7439-98-7	
Potassium	4550	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:28	7440-09-7	
Sodium	9440	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:28	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	05/11/23 13:50	06/01/23 13:04	7440-36-0	
Arsenic	0.41J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 13:04	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 13:04	7440-43-9	
Chromium	0.42J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 13:04	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 13:04	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 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	05/25/23 18:37	05/26/23 13:54	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	323	mg/L	20.0	10.5	1		05/11/23 13:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	412	mg/L	10.0	10.0	1		05/15/23 08:27		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.5	mg/L	0.050		1		05/30/23 16:52	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		05/18/23 08:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-6D **Lab ID: 60427704009** Collected: 05/08/23 10:50 Received: 05/10/23 05:00 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		05/12/23 12:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.4	mg/L	1.0	0.53	1		05/26/23 17:41	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 17:41	16984-48-8	
Sulfate	50.5	mg/L	20.0	11.0	20		05/26/23 17:54	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-FB-1 Lab ID: 60427704010 Collected: 05/08/23 11:00 Received: 05/10/23 05:00 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	05/11/23 13:50	05/26/23 15:31	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:31	7440-41-7	
Boron	11.4J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:31	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:31	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:31	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:31	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:31	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:31	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:31	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:31	7439-96-5	
Molybdenum	1.4J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:31	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:31	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:31	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	05/11/23 13:50	06/01/23 13:06	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 13:06	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 13:06	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 13:06	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 13:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 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	05/25/23 18:37	05/26/23 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		05/11/23 13:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	19.0	mg/L	5.0	5.0	1		05/15/23 08:27		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0081J	mg/L	0.050		1		05/30/23 16:52	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 08:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-FB-1 **Lab ID: 60427704010** Collected: 05/08/23 11:00 Received: 05/10/23 05:00 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		05/12/23 12:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.55J	mg/L	1.0	0.53	1		05/26/23 18:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 18:07	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		05/26/23 18:07	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60427704

QC Batch: 849295 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006, 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3364673 Matrix: Water
Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006, 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/26/23 13:21	

LABORATORY CONTROL SAMPLE: 3364674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364675 3364676

Parameter	Units	60427704008		3364675		3364676		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Mercury	ug/L	<0.096	5	5	5	4.4	4.4	87	88	75-125	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364677 3364678

Parameter	Units	60427703022		3364677		3364678		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Mercury	ug/L	<0.096	5	5	5	4.5	4.3	90	86	75-125	5	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 SCPA

Pace Project No.: 60427704

QC Batch:	845219	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: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK:	3349216	Matrix:	Water
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Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/23/23 09:16	
Beryllium	ug/L	<0.12	1.0	0.12	05/23/23 09:16	
Boron	ug/L	<6.4	100	6.4	05/23/23 09:16	
Calcium	ug/L	28.7J	200	26.9	05/23/23 09:16	
Cobalt	ug/L	<1.2	5.0	1.2	05/23/23 09:16	
Iron	ug/L	9.3J	50.0	9.1	05/23/23 09:16	
Lead	ug/L	<3.8	10.0	3.8	05/23/23 09:16	
Lithium	ug/L	<3.7	10.0	3.7	05/23/23 09:16	
Magnesium	ug/L	<20.1	50.0	20.1	05/23/23 09:16	
Manganese	ug/L	1.1J	5.0	0.39	05/23/23 09:16	
Molybdenum	ug/L	<1.0	20.0	1.0	05/23/23 09:16	
Potassium	ug/L	<69.7	500	69.7	05/23/23 09:16	
Sodium	ug/L	<115	500	115	05/23/23 09:16	

LABORATORY CONTROL SAMPLE: 3349217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1000	100	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	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3349218				3349219						
Parameter	Units	60427703001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	183	1000	1000	1180	1190	99	100	70-130	1	20	
Beryllium	ug/L	<0.12	1000	1000	1030	1040	103	104	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3349218 3349219												
Parameter	Units	60427703001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Boron	ug/L	64.8J	1000	1000	1000	1050	1050	98	98	70-130	0	20
Calcium	ug/L	184000	10000	10000	10000	191000	195000	73	109	70-130	2	20
Cobalt	ug/L	<1.2	1000	1000	1000	1030	1030	103	103	70-130	1	20
Iron	ug/L	<9.1	10000	10000	10000	10400	10400	104	104	70-130	0	20
Lead	ug/L	<3.8	1000	1000	1000	1030	1020	103	102	70-130	1	20
Lithium	ug/L	5.8J	1000	1000	1000	1050	1050	104	104	70-130	0	20
Magnesium	ug/L	37100	10000	10000	10000	47000	47300	99	102	70-130	1	20
Manganese	ug/L	849	1000	1000	1000	1860	1890	102	104	70-130	1	20
Molybdenum	ug/L	5.3J	1000	1000	1000	1050	1050	104	105	70-130	1	20
Potassium	ug/L	427J	10000	10000	10000	10900	10800	104	104	70-130	0	20
Sodium	ug/L	5130	10000	10000	10000	15600	15700	104	106	70-130	1	20

MATRIX SPIKE SAMPLE: 3349220							
Parameter	Units	60427703007		MS	MS	% Rec	Qualifiers
		Result	Spike	Result	% Rec	Limits	
Barium	ug/L	268	1000	1240	97	70-130	
Beryllium	ug/L	<0.12	1000	1030	103	70-130	
Boron	ug/L	101	1000	1070	97	70-130	
Calcium	ug/L	132000	10000	139000	75	70-130	
Cobalt	ug/L	<1.2	1000	993	99	70-130	
Iron	ug/L	143	10000	10200	100	70-130	
Lead	ug/L	<3.8	1000	1000	100	70-130	
Lithium	ug/L	34.6	1000	1050	101	70-130	
Magnesium	ug/L	28500	10000	37900	94	70-130	
Manganese	ug/L	216	1000	1200	99	70-130	
Molybdenum	ug/L	4.2J	1000	1000	100	70-130	
Potassium	ug/L	2250	10000	12500	102	70-130	
Sodium	ug/L	5580	10000	15800	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	846652	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: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3354626 Matrix: Water

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/26/23 15:16	
Beryllium	ug/L	<0.12	1.0	0.12	05/26/23 15:16	
Boron	ug/L	<6.4	100	6.4	05/26/23 15:16	
Calcium	ug/L	<26.9	200	26.9	05/26/23 15:16	
Cobalt	ug/L	<1.2	5.0	1.2	05/26/23 15:16	
Iron	ug/L	<9.1	50.0	9.1	05/26/23 15:16	
Lead	ug/L	<3.8	10.0	3.8	05/26/23 15:16	
Lithium	ug/L	<3.7	10.0	3.7	05/26/23 15:16	
Magnesium	ug/L	<20.1	50.0	20.1	05/26/23 15:16	
Manganese	ug/L	<0.39	5.0	0.39	05/26/23 15:16	
Molybdenum	ug/L	<1.0	20.0	1.0	05/26/23 15:16	
Potassium	ug/L	<69.7	500	69.7	05/26/23 15:16	
Sodium	ug/L	<115	500	115	05/26/23 15:16	

LABORATORY CONTROL SAMPLE: 3354627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	994	99	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	966	97	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Cobalt	ug/L	1000	1000	100	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	973	97	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	997	100	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354628 3354629

Parameter	Units	60427704008		60427704009		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Barium	ug/L	372	1000	1000	1380	1380	101	101	70-130	0	20		
Beryllium	ug/L	<0.12	1000	1000	1020	1040	102	104	70-130	2	20		

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354628 3354629												
Parameter	Units	60427704008		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Boron	ug/L	6150	1000	1000	7210	7260	106	111	70-130	1	20	
Calcium	ug/L	77200	10000	10000	87900	88700	106	114	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	984	1000	98	100	70-130	2	20	
Iron	ug/L	3270	10000	10000	14200	14000	109	107	70-130	1	20	
Lead	ug/L	<3.8	1000	1000	988	1010	99	101	70-130	2	20	
Lithium	ug/L	23.2	1000	1000	1030	1030	100	101	70-130	0	20	
Magnesium	ug/L	17500	10000	10000	27700	28000	103	106	70-130	1	20	
Manganese	ug/L	441	1000	1000	1410	1430	97	99	70-130	2	20	
Molybdenum	ug/L	250	1000	1000	1260	1290	101	104	70-130	3	20	
Potassium	ug/L	9680	10000	10000	20400	20300	107	106	70-130	0	20	
Sodium	ug/L	20100	10000	10000	30700	30900	106	107	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 845220

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: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK: 3349221

Matrix: Water

Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/22/23 16:30	
Arsenic	ug/L	<0.13	1.0	0.13	05/22/23 16:30	
Cadmium	ug/L	<0.050	0.50	0.050	05/22/23 16:30	
Chromium	ug/L	0.37J	1.0	0.30	05/22/23 16:30	
Selenium	ug/L	<0.18	1.0	0.18	05/22/23 16:30	
Thallium	ug/L	<0.14	1.0	0.14	05/22/23 16:30	

LABORATORY CONTROL SAMPLE: 3349222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.5	101	85-115	
Arsenic	ug/L	40	39.6	99	85-115	
Cadmium	ug/L	40	41.0	102	85-115	
Chromium	ug/L	40	38.7	97	85-115	
Selenium	ug/L	40	43.0	108	85-115	
Thallium	ug/L	40	43.5	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3349223 3349224

Parameter	Units	60427703002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.12	40	40	39.8	39.9	99	100	70-130	0	20		
Arsenic	ug/L	0.64J	40	40	40.0	40.0	98	98	70-130	0	20		
Cadmium	ug/L	<0.050	40	40	38.9	38.8	97	97	70-130	0	20		
Chromium	ug/L	<0.30	40	40	39.7	39.5	99	98	70-130	0	20		
Selenium	ug/L	0.28J	40	40	40.7	40.7	101	101	70-130	0	20		
Thallium	ug/L	<0.14	40	40	41.8	42.1	104	105	70-130	1	20		

MATRIX SPIKE SAMPLE: 3349225

Parameter	Units	60427704006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.6	99	70-130	
Arsenic	ug/L	2.9	40	43.6	102	70-130	
Cadmium	ug/L	0.58	40	37.3	92	70-130	
Chromium	ug/L	0.36J	40	38.9	96	70-130	
Selenium	ug/L	<0.18	40	41.4	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

MATRIX SPIKE SAMPLE:		3349225					
Parameter	Units	60427704006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	40	39.4	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	846653	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: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3354633 Matrix: Water

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/01/23 12:48	
Arsenic	ug/L	<0.13	1.0	0.13	06/01/23 12:48	
Cadmium	ug/L	<0.050	0.50	0.050	06/01/23 12:48	
Chromium	ug/L	<0.30	1.0	0.30	06/01/23 12:48	
Selenium	ug/L	<0.18	1.0	0.18	06/01/23 12:48	
Thallium	ug/L	<0.14	1.0	0.14	06/01/23 12:48	

LABORATORY CONTROL SAMPLE: 3354634

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.0	98	85-115	
Arsenic	ug/L	40	39.9	100	85-115	
Cadmium	ug/L	40	39.7	99	85-115	
Chromium	ug/L	40	40.0	100	85-115	
Selenium	ug/L	40	40.4	101	85-115	
Thallium	ug/L	40	39.2	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354635 3354636

Parameter	Units	60427704008		3354635		3354636		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Antimony	ug/L	<0.12	40	40	38.7	39.2	97	98	70-130	1	20			
Arsenic	ug/L	0.30J	40	40	39.9	40.3	99	100	70-130	1	20			
Cadmium	ug/L	0.093J	40	40	38.6	38.9	96	97	70-130	1	20			
Chromium	ug/L	0.33J	40	40	39.6	39.7	98	98	70-130	0	20			
Selenium	ug/L	0.19J	40	40	39.1	39.5	97	98	70-130	1	20			
Thallium	ug/L	<0.14	40	40	40.2	40.2	100	100	70-130	0	20			

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 845170

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704001, 60427704002

METHOD BLANK: 3349034

Matrix: Water

Associated Lab Samples: 60427704001, 60427704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<10.5	20.0	10.5	05/04/23 09:00	

LABORATORY CONTROL SAMPLE: 3349035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	499	100	90-110	

SAMPLE DUPLICATE: 3349036

Parameter	Units	60427677002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	664	664	0	10	

SAMPLE DUPLICATE: 3349037

Parameter	Units	60427603001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	359	365	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 845171

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK: 3349039

Matrix: Water

Associated Lab Samples: 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<10.5	20.0	10.5	05/04/23 11:49	

LABORATORY CONTROL SAMPLE: 3349040

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 3349041

Parameter	Units	60427704003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	198	195	2	10	

SAMPLE DUPLICATE: 3349299

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	160	163	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	846614	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3354443 Matrix: Water
Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/11/23 12:33	

LABORATORY CONTROL SAMPLE: 3354444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	506	101	90-110	

SAMPLE DUPLICATE: 3354445

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	295	295	0	10	

SAMPLE DUPLICATE: 3354446

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	422	424	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	845831	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704006

METHOD BLANK: 3351717 Matrix: Water
Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/08/23 12:49	

LABORATORY CONTROL SAMPLE: 3351718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3351719

Parameter	Units	60427607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3540	3470	2	10	

SAMPLE DUPLICATE: 3351720

Parameter	Units	60427705002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	<5.0		10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 846023	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704004, 60427704005

METHOD BLANK: 3352331 Matrix: Water

Associated Lab Samples: 60427704004, 60427704005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/09/23 10:54	

LABORATORY CONTROL SAMPLE: 3352332

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

SAMPLE DUPLICATE: 3352333

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	957	916	4	10	

SAMPLE DUPLICATE: 3352334

Parameter	Units	60427777001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	972	913	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	846949	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3355827 Matrix: Water
Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/15/23 08:24	

LABORATORY CONTROL SAMPLE: 3355828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1110	111	80-120	

SAMPLE DUPLICATE: 3355829

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	372	373	0	10	

SAMPLE DUPLICATE: 3355830

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	853	849	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 845657

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: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK: 3350979

Matrix: Water

Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 14:57	H6

LABORATORY CONTROL SAMPLE: 3350980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	103	90-110	H6

SAMPLE DUPLICATE: 3350981

Parameter	Units	60426948008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

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: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3357895 Matrix: Water
Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

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 SCPA

Pace Project No.: 60427704

QC Batch:	845610	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: 60427704001, 60427704002, 60427704003, 60427704006

METHOD BLANK: 3350823 Matrix: Water
Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/05/23 14:06	

LABORATORY CONTROL SAMPLE: 3350824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3350825 3350826

Parameter	Units	60427704001		60427704002		MS Result	MSD Result	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	0.65	0.50	126	96	75-125	26	20	M1,R1	

SAMPLE DUPLICATE: 3350827

Parameter	Units	60427704002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.041J	0.035J		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 846013

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: 60427704004, 60427704005

METHOD BLANK: 3352304

Matrix: Water

Associated Lab Samples: 60427704004, 60427704005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/09/23 10:02	

LABORATORY CONTROL SAMPLE: 3352305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3352306 3352307

Parameter	Units	60427648002		3352307		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	ND	0.5	0.5	0.51	0.52	101	102	75-125	1	20

SAMPLE DUPLICATE: 3352308

Parameter	Units	60427662001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.18	0.17	7	20	

SAMPLE DUPLICATE: 3352309

Parameter	Units	60427703007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	0.016J		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 846774 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: 60427704007, 60427704008, 60427704009, 60427704010

METHOD BLANK: 3355025 Matrix: Water
 Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/12/23 11:30	

LABORATORY CONTROL SAMPLE: 3355026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3355027 3355028

Parameter	Units	60427704008		3355027		3355028		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS Result	MSD Result				
Sulfide, Total	mg/L	0.047J	0.5	0.5	0.54	0.54	98	99	75-125	0	20

SAMPLE DUPLICATE: 3355029

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.047J	0.059		20	

SAMPLE DUPLICATE: 3355030

Parameter	Units	60427703013 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.051	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 848462 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: 60427704001, 60427704002, 60427704003, 60427704006

METHOD BLANK: 3361725 Matrix: Water
 Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/24/23 09:13	
Fluoride	mg/L	<0.12	0.20	0.12	05/24/23 09:13	
Sulfate	mg/L	<0.55	1.0	0.55	05/24/23 09:13	

LABORATORY CONTROL SAMPLE: 3361726

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361727 3361728

Parameter	Units	60428838004		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	1.6	5	5	5	6.0	6.2	88	91	80-120	3	15		
Fluoride	mg/L	0.21	2.5	2.5	2.5	2.7	2.7	98	101	80-120	3	15		
Sulfate	mg/L	193	250	250	250	450	427	103	94	80-120	5	15		

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 848463

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: 60427704004, 60427704005

METHOD BLANK: 3361729

Matrix: Water

Associated Lab Samples: 60427704004, 60427704005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/24/23 09:15	
Fluoride	mg/L	<0.12	0.20	0.12	05/24/23 09:15	
Sulfate	mg/L	<0.55	1.0	0.55	05/24/23 09:15	

LABORATORY CONTROL SAMPLE: 3361730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361731 3361732

Parameter	Units	60427703004		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	34.6	100	100	126	142	91	108	80-120	12	15			
Fluoride	mg/L	0.60	2.5	2.5	2.7	2.8	83	87	80-120	4	15			
Sulfate	mg/L	36.7	100	100	138	159	102	122	80-120	14	15	M1		

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch:	849095	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: 60427704007, 60427704009, 60427704010

METHOD BLANK: 3363884 Matrix: Water

Associated Lab Samples: 60427704007, 60427704009, 60427704010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/26/23 06:42	
Fluoride	mg/L	<0.12	0.20	0.12	05/26/23 06:42	
Sulfate	mg/L	<0.55	1.0	0.55	05/26/23 06:42	

LABORATORY CONTROL SAMPLE: 3363885

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	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363887 3363888

Parameter	Units	60429159005		3363887		3363888		% 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	5	5.4	5.1	79	73	80-120	6	15	M1
Fluoride	mg/L	2.0	2.5	2.5	2.5	4.3	4.1	89	85	80-120	2	15	
Sulfate	mg/L	648	500	500	500	1380	1250	146	120	80-120	10	15	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363889 3363890

Parameter	Units	60427703022		3363889		3363890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	43.1	100	100	100	127	166	84	123	80-120	26	15	M1, R1
Fluoride	mg/L	<0.12	2.5	2.5	2.5	1.7	1.7	68	67	80-120	1	15	M1
Sulfate	mg/L	249	100	100	100	349	397	100	149	80-120	13	15	M1

SAMPLE DUPLICATE: 3363886

Parameter	Units	60429159005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.5	1.5	0	15	
Fluoride	mg/L	2.0	2.1	3	15	
Sulfate	mg/L	648	636	2	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

SAMPLE DUPLICATE: 3363891

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	43.1	41.8	3	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	249	246	1	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 849100	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: 60427704008

METHOD BLANK: 3363902 Matrix: Water

Associated Lab Samples: 60427704008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.72J	1.0	0.53	05/26/23 14:36	
Fluoride	mg/L	<0.12	0.20	0.12	05/26/23 14:36	
Sulfate	mg/L	<0.55	1.0	0.55	05/26/23 14:36	

LABORATORY CONTROL SAMPLE: 3363903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363905 3363906

Parameter	Units	60427704008		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	30.9	100	100	144	144	113	113	80-120	0	15		
Fluoride	mg/L	0.27	2.5	2.5	2.7	3.5	98	128	80-120	24	15	M1, R1	
Sulfate	mg/L	5.5	5	5	10.5	12.1	99	131	80-120	14	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363907 3363908

Parameter	Units	60429277006		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	2.4	5	5	6.7	7.2	86	95	80-120	6	15		
Fluoride	mg/L	2.5	2.5	2.5	4.9	5.1	93	104	80-120	5	15		
Sulfate	mg/L	628	500	500	1150	1130	104	100	80-120	1	15		

SAMPLE DUPLICATE: 3363904

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	30.9	29.7	4	15	
Fluoride	mg/L	0.27	0.28	1	15	
Sulfate	mg/L	5.5	5.5	1	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60427704

SAMPLE DUPLICATE: 3363909

Parameter	Units	60429277006 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	2.4	2.4	0	15	
Fluoride	mg/L	2.5	2.5	1	15	
Sulfate	mg/L	628	610	3	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-2D **Lab ID: 60427704001** Collected: 05/01/23 13:46 Received: 05/03/23 05:05 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	0.0510 ± 0.361 (0.719) C:NA T:84%	pCi/L	05/25/23 15:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.04 ± 0.477 (0.816) C:79% T:84%	pCi/L	05/16/23 14:32	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-UMW-3D Lab ID: 60427704002 Collected: 05/01/23 12:31 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0895 ± 0.248 (0.482) C:NA T:87%	pCi/L	05/25/23 15:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.50 ± 0.535 (0.783) C:77% T:87%	pCi/L	05/16/23 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-UMW-4D Lab ID: 60427704003 Collected: 05/01/23 11:43 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.286 ± 0.242 (0.301) C:NA T:90%	pCi/L	05/25/23 15:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.36 ± 0.512 (0.777) C:74% T:90%	pCi/L	05/16/23 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-BMW-1D **Lab ID: 60427704004** Collected: 05/02/23 09:08 Received: 05/03/23 05:05 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	0.0414 ± 0.189 (0.385) C:NA T:87%	pCi/L	05/25/23 15:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.554 ± 0.439 (0.880) C:75% T:87%	pCi/L	05/16/23 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-BMW-3D Lab ID: 60427704005 Collected: 05/02/23 10:51 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.184 ± 0.337 (0.601) C:NA T:89%	pCi/L	05/25/23 15:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.05 ± 0.452 (0.741) C:81% T:89%	pCi/L	05/16/23 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-UMW-DUP-1 Lab ID: 60427704006 Collected: 05/01/23 00:00 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0633 ± 0.411 (0.892) C:NA T:71%	pCi/L	05/25/23 15:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.36 ± 0.675 (1.18) C:64% T:71%	pCi/L	05/16/23 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-1D **Lab ID: 60427704007** Collected: 05/08/23 13:25 Received: 05/10/23 05:00 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	0.169 ± 0.661 (1.27) C:NA T:91%	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.659 ± 0.393 (0.734) C:81% T:90%	pCi/L	06/07/23 15:10	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-5D **Lab ID: 60427704008** Collected: 05/08/23 09:32 Received: 05/10/23 05:00 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	0.432 ± 0.439 (0.665) C:NA T:94%	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.221 ± 0.332 (0.718) C:83% T:90%	pCi/L	06/07/23 15:11	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-6D **Lab ID: 60427704009** Collected: 05/08/23 10:50 Received: 05/10/23 05:00 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	0.294 ± 0.355 (0.541) C:NA T:89%	pCi/L	06/13/23 16:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.687 ± 0.407 (0.760) C:82% T:88%	pCi/L	06/07/23 15:11	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-FB-1 **Lab ID: 60427704010** Collected: 05/08/23 11:00 Received: 05/10/23 05:00 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 ± 0.547 (1.04) C:NA T:95%	pCi/L	06/13/23 16:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.354 ± 0.317 (0.643) C:84% T:91%	pCi/L	06/07/23 15:11	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Sample: S-UMW-MS-1 **Lab ID: 60427704011** Collected: 05/08/23 09:32 Received: 05/10/23 05:00 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	111.79 %REC ± NA (NA) C:NA T:NA	pCi/L	06/13/23 17:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	80.43 %REC ± NA (NA) C:NA T:NA	pCi/L	06/07/23 15:11	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	97.86 %REC 13.28 RPD ± NA (NA) C:NA T:NA	pCi/L	06/13/23 17:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	87.38 %REC 8.29RPD ± NA (NA) C:NA T:NA	pCi/L	06/07/23 15:11	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 586270

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: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK: 2848008

Matrix: Water

Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.418 ± 0.317 (0.613) C:75% T:89%	pCi/L	05/16/23 11:20	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 589315

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: 60427704007, 60427704008, 60427704009, 60427704010, 60427704011, 60427704012

METHOD BLANK: 2863938

Matrix: Water

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010, 60427704011, 60427704012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.225 ± 0.313 (0.523) C:NA T:89%	pCi/L	06/13/23 15:36	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 589316

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: 60427704007, 60427704008, 60427704009, 60427704010, 60427704011, 60427704012

METHOD BLANK: 2863939

Matrix: Water

Associated Lab Samples: 60427704007, 60427704008, 60427704009, 60427704010, 60427704011, 60427704012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.933 ± 0.437 (0.737) C:78% T:82%	pCi/L	06/07/23 12:02	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60427704

QC Batch: 586269

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: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

METHOD BLANK: 2848002

Matrix: Water

Associated Lab Samples: 60427704001, 60427704002, 60427704003, 60427704004, 60427704005, 60427704006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.170 ± 0.236 (0.395) C:NA T:89%	pCi/L	05/25/23 15:25	

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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QUALIFIERS

Project: AMEREN SCPA

Pace Project No.: 60427704

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.

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

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 SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427704001	S-UMW-2D	EPA 200.7	845219	EPA 200.7	845416
60427704002	S-UMW-3D	EPA 200.7	845219	EPA 200.7	845416
60427704003	S-UMW-4D	EPA 200.7	845219	EPA 200.7	845416
60427704004	S-BMW-1D	EPA 200.7	845219	EPA 200.7	845416
60427704005	S-BMW-3D	EPA 200.7	845219	EPA 200.7	845416
60427704006	S-UMW-DUP-1	EPA 200.7	845219	EPA 200.7	845416
60427704007	S-UMW-1D	EPA 200.7	846652	EPA 200.7	846730
60427704008	S-UMW-5D	EPA 200.7	846652	EPA 200.7	846730
60427704009	S-UMW-6D	EPA 200.7	846652	EPA 200.7	846730
60427704010	S-UMW-FB-1	EPA 200.7	846652	EPA 200.7	846730
60427704001	S-UMW-2D	EPA 200.8	845220	EPA 200.8	845418
60427704002	S-UMW-3D	EPA 200.8	845220	EPA 200.8	845418
60427704003	S-UMW-4D	EPA 200.8	845220	EPA 200.8	845418
60427704004	S-BMW-1D	EPA 200.8	845220	EPA 200.8	845418
60427704005	S-BMW-3D	EPA 200.8	845220	EPA 200.8	845418
60427704006	S-UMW-DUP-1	EPA 200.8	845220	EPA 200.8	845418
60427704007	S-UMW-1D	EPA 200.8	846653	EPA 200.8	846731
60427704008	S-UMW-5D	EPA 200.8	846653	EPA 200.8	846731
60427704009	S-UMW-6D	EPA 200.8	846653	EPA 200.8	846731
60427704010	S-UMW-FB-1	EPA 200.8	846653	EPA 200.8	846731
60427704001	S-UMW-2D	EPA 7470	849295	EPA 7470	849330
60427704002	S-UMW-3D	EPA 7470	849295	EPA 7470	849330
60427704003	S-UMW-4D	EPA 7470	849295	EPA 7470	849330
60427704004	S-BMW-1D	EPA 7470	849295	EPA 7470	849330
60427704005	S-BMW-3D	EPA 7470	849295	EPA 7470	849330
60427704006	S-UMW-DUP-1	EPA 7470	849295	EPA 7470	849330
60427704007	S-UMW-1D	EPA 7470	849295	EPA 7470	849330
60427704008	S-UMW-5D	EPA 7470	849295	EPA 7470	849330
60427704009	S-UMW-6D	EPA 7470	849295	EPA 7470	849330
60427704010	S-UMW-FB-1	EPA 7470	849295	EPA 7470	849330
60427704001	S-UMW-2D	EPA 903.1	586269		
60427704002	S-UMW-3D	EPA 903.1	586269		
60427704003	S-UMW-4D	EPA 903.1	586269		
60427704004	S-BMW-1D	EPA 903.1	586269		
60427704005	S-BMW-3D	EPA 903.1	586269		
60427704006	S-UMW-DUP-1	EPA 903.1	586269		
60427704007	S-UMW-1D	EPA 903.1	589315		
60427704008	S-UMW-5D	EPA 903.1	589315		
60427704009	S-UMW-6D	EPA 903.1	589315		
60427704010	S-UMW-FB-1	EPA 903.1	589315		
60427704011	S-UMW-MS-1	EPA 903.1	589315		
60427704012	S-UMW-MSD-1	EPA 903.1	589315		
60427704001	S-UMW-2D	EPA 904.0	586270		
60427704002	S-UMW-3D	EPA 904.0	586270		
60427704003	S-UMW-4D	EPA 904.0	586270		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427704004	S-BMW-1D	EPA 904.0	586270		
60427704005	S-BMW-3D	EPA 904.0	586270		
60427704006	S-UMW-DUP-1	EPA 904.0	586270		
60427704007	S-UMW-1D	EPA 904.0	589316		
60427704008	S-UMW-5D	EPA 904.0	589316		
60427704009	S-UMW-6D	EPA 904.0	589316		
60427704010	S-UMW-FB-1	EPA 904.0	589316		
60427704011	S-UMW-MS-1	EPA 904.0	589316		
60427704012	S-UMW-MSD-1	EPA 904.0	589316		
60427704001	S-UMW-2D	SM 2320B	845170		
60427704002	S-UMW-3D	SM 2320B	845170		
60427704003	S-UMW-4D	SM 2320B	845171		
60427704004	S-BMW-1D	SM 2320B	845171		
60427704005	S-BMW-3D	SM 2320B	845171		
60427704006	S-UMW-DUP-1	SM 2320B	845171		
60427704007	S-UMW-1D	SM 2320B	846614		
60427704008	S-UMW-5D	SM 2320B	846614		
60427704009	S-UMW-6D	SM 2320B	846614		
60427704010	S-UMW-FB-1	SM 2320B	846614		
60427704001	S-UMW-2D	SM 2540C	845831		
60427704002	S-UMW-3D	SM 2540C	845831		
60427704003	S-UMW-4D	SM 2540C	845831		
60427704004	S-BMW-1D	SM 2540C	846023		
60427704005	S-BMW-3D	SM 2540C	846023		
60427704006	S-UMW-DUP-1	SM 2540C	845831		
60427704007	S-UMW-1D	SM 2540C	846949		
60427704008	S-UMW-5D	SM 2540C	846949		
60427704009	S-UMW-6D	SM 2540C	846949		
60427704010	S-UMW-FB-1	SM 2540C	846949		
60427704001	S-UMW-2D	SM 3500-Fe B#4	849691		
60427704002	S-UMW-3D	SM 3500-Fe B#4	849691		
60427704003	S-UMW-4D	SM 3500-Fe B#4	849691		
60427704004	S-BMW-1D	SM 3500-Fe B#4	849691		
60427704005	S-BMW-3D	SM 3500-Fe B#4	849691		
60427704006	S-UMW-DUP-1	SM 3500-Fe B#4	849691		
60427704007	S-UMW-1D	SM 3500-Fe B#4	849850		
60427704008	S-UMW-5D	SM 3500-Fe B#4	849850		
60427704009	S-UMW-6D	SM 3500-Fe B#4	849850		
60427704010	S-UMW-FB-1	SM 3500-Fe B#4	849850		
60427704001	S-UMW-2D	SM 3500-Fe B#4	845657		
60427704002	S-UMW-3D	SM 3500-Fe B#4	845657		
60427704003	S-UMW-4D	SM 3500-Fe B#4	845657		
60427704004	S-BMW-1D	SM 3500-Fe B#4	845657		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60427704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427704005	S-BMW-3D	SM 3500-Fe B#4	845657		
60427704006	S-UMW-DUP-1	SM 3500-Fe B#4	845657		
60427704007	S-UMW-1D	SM 3500-Fe B#4	847452		
60427704008	S-UMW-5D	SM 3500-Fe B#4	847452		
60427704009	S-UMW-6D	SM 3500-Fe B#4	847452		
60427704010	S-UMW-FB-1	SM 3500-Fe B#4	847452		
60427704001	S-UMW-2D	SM 4500-S-2 D	845610		
60427704002	S-UMW-3D	SM 4500-S-2 D	845610		
60427704003	S-UMW-4D	SM 4500-S-2 D	845610		
60427704004	S-BMW-1D	SM 4500-S-2 D	846013		
60427704005	S-BMW-3D	SM 4500-S-2 D	846013		
60427704006	S-UMW-DUP-1	SM 4500-S-2 D	845610		
60427704007	S-UMW-1D	SM 4500-S-2 D	846774		
60427704008	S-UMW-5D	SM 4500-S-2 D	846774		
60427704009	S-UMW-6D	SM 4500-S-2 D	846774		
60427704010	S-UMW-FB-1	SM 4500-S-2 D	846774		
60427704001	S-UMW-2D	EPA 300.0	848462		
60427704002	S-UMW-3D	EPA 300.0	848462		
60427704003	S-UMW-4D	EPA 300.0	848462		
60427704004	S-BMW-1D	EPA 300.0	848463		
60427704005	S-BMW-3D	EPA 300.0	848463		
60427704006	S-UMW-DUP-1	EPA 300.0	848462		
60427704007	S-UMW-1D	EPA 300.0	849095		
60427704008	S-UMW-5D	EPA 300.0	849100		
60427704009	S-UMW-6D	EPA 300.0	849095		
60427704010	S-UMW-FB-1	EPA 300.0	849095		

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WO#: 60427704



	DC#_ Title: ENV-FRM-LENE-0009_Sample		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Locksmith

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 0.7/0.3/1.6 Corr. Factor +0.2 Corrected 0.9/0.5/1.8
Temperature should be above freezing to 6°C 11.9/14.0 12.1/14.2

Date and initials of person examining contents: <u>pu 5/3/23</u>

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)	<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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Rocksmith Geoenigneers, LLC.	Report To:	Mark Haddock	Attention:	
Address:	5233 Roanoke Drive	Copy To:	Jeffrey Ingram	Company Name:	Rocksmith
	SI, Charles, MO 63304	Purchase Order No.:		Address:	
Email To:	mark.haddock@rocksmithgeo.com	Project Name:	AMEREN SCPA	Site Location	MO
Phone:	314-974-8578	Project Number:	COC #7	STATE:	
Requested Due Date/TAT:	Standard			NPDES	GROUND WATER
				UST	DRINKING WATER
				RCRA	OTHER

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW WASTEWATER WWT LIQUID LQ SOLID SOL OIL OL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	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 Residual Chlorine (Y/N)	Requested Analysis Filtered (Y/N)
				COMPOSITE START	COMPOSITE END/GAUS					
1	S-UMWW-1D	WT G	G	DATE	TIME					
2	S-UMWW-2D	WT G	G	5-1-23	1346		6	2	3	1
3	S-UMWW-3D	WT G	G	5-1-23	1131		6	2	3	1
4	S-UMWW-4D	WT G	G	5-1-23	1143		6	2	3	1
5	S-UMWW-5D	WT G	G							
6	S-UMWW-6D	WT G	G							
7	S-BMW-1D	WT G	G	5-2-23	0929		6	2	3	1
8	S-BMW-3D	WT G	G	5-2-23	1051		6	2	3	1
9	S-UMWW-DUP-1	WT G	G	5-1-23	-		6	2	3	1
10	S-UMWW-FB-1	WT G	G							
11	S-UMWW-MS-1	WT G	G							
12	S-UMWW-MSD-1	WT G	G							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS										
	<i>LG My / WSP</i>	5-2-23	1600	<i>Janasz</i>	5/3	0505	0.9 Y 0.5 N 1-8 N 12.1 N 14.2 N										
<table border="1"> <tr> <td>Temp In</td> <td>Received on</td> <td>Ice (Y/N)</td> <td>Custom Sealed Cooler (Y/N)</td> <td>Samples Intact (Y/N)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								Temp In	Received on	Ice (Y/N)	Custom Sealed Cooler (Y/N)	Samples Intact (Y/N)					
Temp In	Received on	Ice (Y/N)	Custom Sealed Cooler (Y/N)	Samples Intact (Y/N)													
SAMPLER NAME AND SIGNATURE																	
PRINT Name of SAMPLER: <i>Grant Morn</i>				DATE Signed (MM/DD/YYYY): <i>05/02/23</i>													
SIGNATURE of SAMPLER: <i>Grant Morn</i>																	

*BRW BPIN = ST-38RAP
 ST-38RAP02*

Client: Rocksmitth Geoeng

Profile #

15856-1

Site:

Notes 109 all test for s-umw-90.

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	2	1		1			1				
2	WT																		1	2	1		1			1				
3	WT																		1	2	1		1			1				
4	WT																		1	2	1		1			1				
5																														
6																														
7	WT																		1	2	1		1			1				
8	WT																		1	2	1		1			1				
9	WT																		1	2	1		1			1				
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 Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	1L unreserved 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 unreserved	500mL HNO3 plastic	U Summa Can
VG9U	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 unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCl Clear glass	250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	250mL unreserved plastic	SL Solid
WGDU	16oz clear soil jar	250mL H2SO4 plastic	NAL Non-aqueous Liquid
		250mL unreserved plastic	OL Oil
		250mL NaOH, Zn Acetate	WP Wipe
		125mL unreserved plastic	DW Drinking Water
		125mL HNO3 plastic	
		16oz unreserved plastic	

Work Order Number:

6042704

WO#: 60427704



DC#_ Title: ENV-FRM-LENE-0009_Sample C

Revision: 2

Effective Date: 01/12/2022

Issued By: [Redacted]

Client Name: Rocksmith

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 1.5/0.9/0.9 Corr. Factor +0.2 Corrected 1.7/1.1/0.9

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 14.7/15.3

14.9/15.5 PV 5/10/23

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 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: _____



Memorandum

June 27, 2023

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPA – Data Package 60427704**

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 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 SCPA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 6/27/2023

Laboratory: Pace Analytical

SDG #: 60427704

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 S-UMW-2D, S-UMW-3D, S-UMW-4D, S-BMW-1D, S-BMW-3D, S-UMW-DUP-1, S-UMW-1D, S-UMW-5D, S-UMW-6D, S-UMW-FB-1, S-UMW-MS-1, S-UMW-MSD-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>5/1/2023 - 5/8/2023</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 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 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"/>	S-UMW-DUP-1 collected @ S-UMW-2D
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"/>	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 type="checkbox"/>	<input checked="" 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:

3349216: Calcium (28.7J), Iron (9.3J), and Manganese (1.1J). Associated with samples -001 through -006.

Sample results > RL and 10x blank: no qualification.

3349221: Chromium (0.37J). Associated with samples -001 through -006. Sample results that are < RL, report at RL and qualify as non-detect.

3363902: Chloride (0.72J). Associated with sample -008. Sample result > RL and 10x blank, no qualification.

2863939: Radium-228 (0.933±0.437). Associated with samples -007 through -012. All results non-detects, no qualification necessary.

Field Blanks:

S-UMW-FB-1 @ S-UMW-6D: Boron (11.4J), Molybdenum (1.4J), Chromium (0.36J), TDS (19.0), Ferric Iron (0.0081J), Chloride (0.55J). Most results > RL and 10x blank, no qualification necessary. Chromium qualified as non-detect, Chloride qualified as estimate.

Duplicates:

S-UMW-DUP-1 @ S-UMW-2D: DUP RPD exceeds limit (20%) for Chromium (22%) and Radium-228 (27%), results qualified as estimates. Beryllium detected in original sample, not detected in duplicate: results qualified as estimates.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3350825/3350826: MS recovery high for Sulfide and RPD outside of control limits for Sulfide. Associated with sample -001. Result is a non-detect, no further qualification necessary.

3361731/3361732: MSD recovery high for Sulfate; only 1 QC indicator out, no qualification necessary.

3363887/3363888: MS/MSD recovery low for Chloride, MS recovery high for Sulfate. Associated with unrelated sample, no qualification necessary.

3363889/3363890: MSD recovery high and RPD exceeds limits for Chloride, MS/MSD recovery low for Fluoride, MSD recovery high for Sulfate. Associated with unrelated sample, no qualification necessary.

3363905/3363906: Associated with sample -008. MSD recovery high and RPD exceeds control limits for Fluoride, result qualified as estimate. MSD recovery high for Sulfate, only 1 QC indicator out, no qualification necessary.

June 19, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
5233 Roanoke Drive
Saint Charles, MO 63304

RE: Project: AMEREN SCPA-CA
Pace Project No.: 60427703

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 03, 2023 and May 10, 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

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 SCPA-CA

Pace Project No.: 60427703

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60427703001	S-BMW-1S	Water	05/02/23 09:51	05/03/23 05:05
60427703002	S-BMW-3S	Water	05/02/23 11:32	05/03/23 05:05
60427703003	S-AM-1S	Water	05/02/23 12:49	05/03/23 05:05
60427703004	S-AM-1D	Water	05/02/23 13:38	05/03/23 05:05
60427703005	S-PZ-1S	Water	05/01/23 10:53	05/03/23 05:05
60427703006	S-TP-2D	Water	05/01/23 15:37	05/03/23 05:05
60427703007	S-TP-6S	Water	05/02/23 14:50	05/03/23 05:05
60427703008	S-CA-DUP-1	Water	05/01/23 00:00	05/03/23 05:05
60427703009	S-TP-3D	Water	05/03/23 15:59	05/05/23 05:10
60427703010	S-UG-3	Water	05/04/23 14:37	05/05/23 05:10
60427703011	S-CA-FB-1	Water	05/03/23 16:14	05/05/23 05:10
60427703012	S-LMW-4S	Water	05/05/23 13:35	05/08/23 04:42
60427703013	S-PZ-9D	Water	05/05/23 11:15	05/08/23 04:42
60427703014	S-TP-6D	Water	05/05/23 14:36	05/08/23 04:42
60427703015	S-CA-DUP-2	Water	05/05/23 00:00	05/08/23 04:42
60427703016	S-CA-FB-2	Water	05/05/23 10:40	05/08/23 04:42
60427703017	S-LMW-1S	Water	05/08/23 12:28	05/10/23 05:00
60427703018	S-LMW-2S	Water	05/08/23 15:49	05/10/23 05:00
60427703019	S-LMW-5S	Water	05/09/23 09:27	05/10/23 05:00
60427703020	S-LMW-6S	Water	05/09/23 10:15	05/10/23 05:00
60427703021	S-TP-4D	Water	05/09/23 12:44	05/10/23 05:00
60427703022	S-TP-5D	Water	05/09/23 13:54	05/10/23 05:00
60427703023	S-TP-8D	Water	05/09/23 11:25	05/10/23 05:00
60427703024	S-CA-MS-1	Water	05/09/23 13:54	05/10/23 05:00
60427703025	S-CA-MSD-1	Water	05/09/23 13:54	05/10/23 05:00

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60427703001	S-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	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	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60427703002	S-BMW-3S	EPA 200.7	JXD	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	JS2			1	PASI-K		
SM 2540C	CRN2			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	CRN2			3	PASI-K		
60427703003	S-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	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	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60427703004	S-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	JLJ			1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703005	S-PZ-1S	EPA 200.7	JXD	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	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703006	S-TP-2D	EPA 200.7	JXD	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	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703007	S-TP-6S	EPA 200.7	JXD	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	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 SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60427703008	S-CA-DUP-1	SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	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	MRV	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	MLD	1	PASI-K		
		60427703009	S-TP-3D	SM 4500-S-2 D	MLD	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	MRV			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	MLD			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	MLD			1	PASI-K		
60427703010	S-UG-3			EPA 300.0	CRN2	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	JLJ	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	MLD	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	MLD	1	PASI-K		
		60427703011	S-CA-FB-1	EPA 300.0	CRN2	3	PASI-K
				EPA 200.7	JXD	13	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703012	S-LMW-4S	EPA 200.7	JXD	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	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703013	S-PZ-9D	EPA 200.7	JXD	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	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703014	S-TP-6D	EPA 200.7	JXD	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	VAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60427703015	S-CA-DUP-2	SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	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	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	1	PASI-K		
60427703016	S-CA-FB-2	EPA 300.0	CRN2	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	JLJ	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	MLD	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	MRV	1	PASI-K
EPA 903.1	CLM	1	PASI-PA		
EPA 904.0	VAL	1	PASI-PA		
60427703017	S-LMW-1S	SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	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	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	JS2	1	PASI-K
		SM 2540C	MLD	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 SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60427703018	S-LMW-2S	SM 4500-S-2 D	MLD	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	MRV	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	MLD	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60427703019	S-LMW-5S	SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	MLD	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	MRV	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	MLD	1	PASI-K
60427703020	S-LMW-6S	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	BDH1	1	PASI-K
		SM 4500-S-2 D	MLD	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	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
60427703021	S-TP-4D	SM 2540C	MLD	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	MLD	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 SCPA-CA
Pace Project No.: 60427703

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	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703022	S-TP-5D	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	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703023	S-TP-8D	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	MLD	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	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703024	S-CA-MS-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60427703025	S-CA-MSD-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-BMW-1S **Lab ID: 60427703001** Collected: 05/02/23 09:51 Received: 05/03/23 05:05 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	05/04/23 12:37	05/23/23 09:21	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:21	7440-41-7	
Boron	64.8J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:21	7440-42-8	
Calcium	184000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:21	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:21	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:21	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:21	7439-92-1	
Lithium	5.8J	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:21	7439-93-2	
Magnesium	37100	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:21	7439-95-4	
Manganese	849	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:21	7439-96-5	
Molybdenum	5.3J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:21	7439-98-7	
Potassium	427J	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:21	7440-09-7	
Sodium	5130	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:21	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	05/04/23 12:37	05/22/23 16:36	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 16:36	7440-38-2	
Cadmium	0.13J	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 16:36	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 16:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 16:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 16:36	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	05/25/23 13:54	05/26/23 14:39	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	576	mg/L	20.0	10.5	1		05/04/23 13:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	610	mg/L	10.0	10.0	1		05/08/23 12:51		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0085J	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:21	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-BMW-1S **Lab ID: 60427703001** Collected: 05/02/23 09:51 Received: 05/03/23 05:05 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		05/09/23 10:13	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.1	mg/L	1.0	0.53	1		05/24/23 18:29	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 18:29	16984-48-8	
Sulfate	37.7	mg/L	20.0	11.0	20		05/24/23 18:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-BMW-3S **Lab ID: 60427703002** Collected: 05/02/23 11:32 Received: 05/03/23 05:05 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	107	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:27	7440-39-3	
Beryllium	0.19J	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:27	7440-41-7	
Boron	67.1J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:27	7440-42-8	
Calcium	137000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:27	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:27	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:27	7439-92-1	
Lithium	9.9J	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:27	7439-93-2	
Magnesium	24400	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:27	7439-95-4	
Manganese	30.2	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:27	7439-96-5	
Molybdenum	4.7J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:27	7439-98-7	
Potassium	426J	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:27	7440-09-7	
Sodium	5360	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 16:39	7440-36-0	
Arsenic	0.64J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 16:39	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 16:39	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 16:39	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 16:39	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 16:39	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	05/25/23 13:54	05/26/23 14:42	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	419	mg/L	20.0	10.5	1		05/04/23 13:20		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	495	mg/L	10.0	10.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0089J	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:28	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-BMW-3S **Lab ID: 60427703002** Collected: 05/02/23 11:32 Received: 05/03/23 05:05 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		05/09/23 10:14	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	12.6	mg/L	1.0	0.53	1		05/24/23 18:54	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 18:54	16984-48-8	
Sulfate	32.4	mg/L	20.0	11.0	20		05/24/23 19:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1S Lab ID: 60427703003 Collected: 05/02/23 12:49 Received: 05/03/23 05:05 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	161	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:31	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:31	7440-41-7	
Boron	708	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:31	7440-42-8	
Calcium	93400	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:31	7440-70-2	
Cobalt	3.2J	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:31	7440-48-4	
Iron	1190	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:31	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:31	7439-92-1	
Lithium	28.0	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:31	7439-93-2	
Magnesium	19700	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:31	7439-95-4	
Manganese	1920	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:31	7439-96-5	
Molybdenum	70.7	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:31	7439-98-7	
Potassium	8310	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:31	7440-09-7	
Sodium	17500	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 16:54	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 16:54	7440-38-2	
Cadmium	0.050J	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 16:54	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 16:54	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 16:54	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 16:54	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	05/25/23 13:54	05/26/23 14:49	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		05/04/23 13:28		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	424	mg/L	5.0	5.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	1.2	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:47	15438-31-0	1e,H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1S **Lab ID: 60427703003** Collected: 05/02/23 12:49 Received: 05/03/23 05:05 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		05/09/23 10:15	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	37.1	mg/L	20.0	10.5	20		05/24/23 19:32	16887-00-6	
Fluoride	0.15J	mg/L	0.20	0.12	1		05/24/23 19:19	16984-48-8	
Sulfate	43.8	mg/L	20.0	11.0	20		05/24/23 19:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1D **Lab ID: 60427703004** Collected: 05/02/23 13:38 Received: 05/03/23 05:05 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	196	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:33	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:33	7440-41-7	
Boron	6340	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:33	7440-42-8	
Calcium	71900	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:33	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:33	7440-48-4	
Iron	1800	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:33	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:33	7439-92-1	
Lithium	30.3	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:33	7439-93-2	
Magnesium	15300	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:33	7439-95-4	
Manganese	350	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:33	7439-96-5	
Molybdenum	422	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:33	7439-98-7	
Potassium	6190	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:33	7440-09-7	
Sodium	22700	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 16:57	7440-36-0	
Arsenic	0.17J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 16:57	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 16:57	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 16:57	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 16:57	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 16:57	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	05/25/23 13:54	05/26/23 14:51	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	232	mg/L	20.0	10.5	1		05/04/23 13:34		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	350	mg/L	5.0	5.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.8	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:49	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1D **Lab ID: 60427703004** Collected: 05/02/23 13:38 Received: 05/03/23 05:05 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		05/09/23 10:16	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	34.6	mg/L	20.0	10.5	20		05/24/23 10:38	16887-00-6	
Fluoride	0.60	mg/L	0.20	0.12	1		05/24/23 09:58	16984-48-8	
Sulfate	36.7	mg/L	20.0	11.0	20		05/24/23 10:38	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-1S **Lab ID: 60427703005** Collected: 05/01/23 10:53 Received: 05/03/23 05:05 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	89.8	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:45	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:45	7440-41-7	
Boron	3460	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:45	7440-42-8	
Calcium	86200	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:45	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:45	7440-48-4	
Iron	4940	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:45	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:45	7439-92-1	
Lithium	15.5	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:45	7439-93-2	
Magnesium	17000	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:45	7439-95-4	
Manganese	612	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:45	7439-96-5	
Molybdenum	641	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:45	7439-98-7	
Potassium	2330	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:45	7440-09-7	
Sodium	20400	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:45	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	05/04/23 12:37	05/22/23 17:09	7440-36-0	
Arsenic	0.25J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:09	7440-38-2	
Cadmium	0.26J	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:09	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:09	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	05/25/23 13:54	05/26/23 14:53	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	237	mg/L	20.0	10.5	1		05/04/23 12:11		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	561	mg/L	10.0	10.0	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	4.9	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:12	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-1S **Lab ID: 60427703005** Collected: 05/01/23 10:53 Received: 05/03/23 05:05 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		05/05/23 14:21	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	36.7	mg/L	20.0	10.5	20		05/24/23 16:36	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 16:23	16984-48-8	
Sulfate	69.7	mg/L	20.0	11.0	20		05/24/23 16:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-2D Lab ID: 60427703006 Collected: 05/01/23 15:37 Received: 05/03/23 05:05 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	53.9	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:49	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:49	7440-41-7	
Boron	87.8J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:49	7440-42-8	
Calcium	255000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:49	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:49	7440-48-4	
Iron	15500	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:49	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:49	7439-92-1	
Lithium	45.3	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:49	7439-93-2	
Magnesium	70800	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:49	7439-95-4	
Manganese	1180	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:49	7439-96-5	
Molybdenum	3.1J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:49	7439-98-7	
Potassium	5720	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:49	7440-09-7	
Sodium	21500	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:49	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	05/04/23 12:37	05/22/23 17:15	7440-36-0	
Arsenic	0.22J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:15	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:15	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:15	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:15	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:15	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	05/25/23 13:54	05/26/23 14:55	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		05/04/23 12:17		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1210	mg/L	13.3	13.3	1		05/08/23 12:50		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	15.3	mg/L	0.050		1		05/30/23 11:02	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.21	mg/L	0.20	0.041	1		05/08/23 15:20	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-2D **Lab ID: 60427703006** Collected: 05/01/23 15:37 Received: 05/03/23 05:05 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		05/05/23 14:22	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	70.6	mg/L	20.0	10.5	20		05/24/23 17:01	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 16:49	16984-48-8	
Sulfate	767	mg/L	50.0	27.5	50		05/25/23 17:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6S **Lab ID: 60427703007** Collected: 05/02/23 14:50 Received: 05/03/23 05:05 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	268	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 09:53	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 09:53	7440-41-7	
Boron	101	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:53	7440-42-8	
Calcium	132000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:53	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 09:53	7440-48-4	
Iron	143	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:53	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 09:53	7439-92-1	
Lithium	34.6	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 09:53	7439-93-2	
Magnesium	28500	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:53	7439-95-4	
Manganese	216	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:53	7439-96-5	
Molybdenum	4.2J	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 09:53	7439-98-7	
Potassium	2250	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:53	7440-09-7	
Sodium	5580	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:53	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	05/04/23 12:37	05/22/23 17:24	7440-36-0	
Arsenic	0.56J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:24	7440-38-2	
Cadmium	0.052J	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:24	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:24	7440-47-3	B
Selenium	0.20J	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:24	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:24	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	05/25/23 13:54	05/26/23 15:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	416	mg/L	20.0	10.5	1		05/04/23 14:06		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	489	mg/L	10.0	10.0	1		05/09/23 10:54		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.14	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:50	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6S **Lab ID: 60427703007** Collected: 05/02/23 14:50 Received: 05/03/23 05:05 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		05/09/23 10:21	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	7.0	mg/L	1.0	0.53	1		05/24/23 12:38	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 12:38	16984-48-8	
Sulfate	38.0	mg/L	20.0	11.0	20		05/24/23 12:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-1 **Lab ID: 60427703008** Collected: 05/01/23 00:00 Received: 05/03/23 05:05 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	54.2	ug/L	5.0	0.64	1	05/04/23 12:37	05/23/23 10:05	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/04/23 12:37	05/23/23 10:05	7440-41-7	
Boron	83.8J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 10:05	7440-42-8	
Calcium	256000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 10:05	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/04/23 12:37	05/23/23 10:05	7440-48-4	
Iron	15700	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 10:05	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/04/23 12:37	05/23/23 10:05	7439-92-1	
Lithium	44.7	ug/L	10.0	3.7	1	05/04/23 12:37	05/23/23 10:05	7439-93-2	
Magnesium	70300	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 10:05	7439-95-4	
Manganese	1190	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 10:05	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/04/23 12:37	05/23/23 10:05	7439-98-7	
Potassium	5720	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 10:05	7440-09-7	
Sodium	21600	ug/L	500	115	1	05/04/23 12:37	05/23/23 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	05/04/23 12:37	05/22/23 17:33	7440-36-0	
Arsenic	0.24J	ug/L	1.0	0.13	1	05/04/23 12:37	05/22/23 17:33	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/04/23 12:37	05/22/23 17:33	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.30	1	05/04/23 12:37	05/22/23 17:33	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/23 12:37	05/22/23 17:33	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/04/23 12:37	05/22/23 17:33	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	05/25/23 13:54	05/26/23 15:05	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	470	mg/L	20.0	10.5	1		05/04/23 12:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1190	mg/L	13.3	13.3	1		05/08/23 12:51		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	15.5	mg/L	0.050		1		05/30/23 11:02	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		05/08/23 15:11	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-1 **Lab ID: 60427703008** Collected: 05/01/23 00:00 Received: 05/03/23 05:05 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		05/05/23 14:24	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	90.2	mg/L	20.0	10.5	20		05/24/23 18:16	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 18:04	16984-48-8	
Sulfate	415	mg/L	50.0	27.5	50		05/25/23 18:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-3D **Lab ID: 60427703009** Collected: 05/03/23 15:59 Received: 05/05/23 05:10 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	05/11/23 13:50	05/26/23 15:43	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:43	7440-41-7	
Boron	60.0J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:43	7440-42-8	B
Calcium	117000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:43	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:43	7440-48-4	
Iron	7950	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:43	7439-92-1	
Lithium	34.9	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:43	7439-93-2	
Magnesium	28700	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:43	7439-95-4	
Manganese	629	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:43	7439-96-5	
Molybdenum	3.3J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:43	7439-98-7	
Potassium	3830	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:43	7440-09-7	
Sodium	6560	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:43	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	05/11/23 13:50	06/01/23 11:52	7440-36-0	
Arsenic	0.15J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 11:52	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 11:52	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 11:52	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 11:52	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 11:52	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	05/25/23 13:54	05/26/23 15:07	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	351	mg/L	20.0	10.5	1		05/09/23 11:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	506	mg/L	10.0	10.0	1		05/10/23 09:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.6	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.35	mg/L	0.20	0.041	1		05/18/23 08:49	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-3D **Lab ID: 60427703009** Collected: 05/03/23 15:59 Received: 05/05/23 05:10 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		05/10/23 10:52	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	10.7	mg/L	1.0	0.53	1		05/25/23 11:27	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 11:27	16984-48-8	
Sulfate	86.1	mg/L	20.0	11.0	20		05/25/23 11:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-UG-3 **Lab ID: 60427703010** Collected: 05/04/23 14:37 Received: 05/05/23 05:10 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	216	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:46	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:46	7440-41-7	
Boron	258	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:46	7440-42-8	
Calcium	119000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:46	7440-70-2	
Cobalt	2.2J	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:46	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:46	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:46	7439-92-1	
Lithium	30.1	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:46	7439-93-2	
Magnesium	22900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:46	7439-95-4	
Manganese	597	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:46	7439-96-5	
Molybdenum	4.5J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:46	7439-98-7	
Potassium	4960	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:46	7440-09-7	
Sodium	39000	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:46	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.17J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 11:54	7440-36-0	
Arsenic	0.40J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 11:54	7440-38-2	
Cadmium	0.24J	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 11:54	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 11:54	7440-47-3	
Selenium	2.6	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 11:54	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 11:54	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	05/25/23 13:54	05/26/23 15:09	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	376	mg/L	20.0	10.5	1		05/09/23 11:23		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	522	mg/L	10.0	10.0	1		05/10/23 09:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0031J	mg/L	0.050		1		05/30/23 16:52	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 08:52	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-UG-3 **Lab ID: 60427703010** Collected: 05/04/23 14:37 Received: 05/05/23 05:10 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		05/10/23 10:53	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	41.9	mg/L	20.0	10.5	20		05/25/23 12:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 11:52	16984-48-8	
Sulfate	48.0	mg/L	20.0	11.0	20		05/25/23 12:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-1 **Lab ID: 60427703011** Collected: 05/03/23 16:14 Received: 05/05/23 05:10 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	05/11/23 13:50	05/26/23 15:48	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:48	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:48	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:48	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:48	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:48	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:48	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:48	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:48	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:48	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:48	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:48	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:48	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	05/11/23 13:50	06/01/23 11:56	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 11:56	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 11:56	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 11:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 11:56	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 11:56	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	05/25/23 13:54	05/26/23 15:11	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		05/09/23 11:29		
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		05/10/23 09:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/30/23 16:52	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 08:51	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-1 **Lab ID: 60427703011** Collected: 05/03/23 16:14 Received: 05/05/23 05:10 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	0.018J	mg/L	0.050	0.016	1		05/10/23 10:54	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	0.54J	mg/L	1.0	0.53	1		05/25/23 12:17	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 12:17	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		05/25/23 12:17	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-4S **Lab ID: 60427703012** Collected: 05/05/23 13:35 Received: 05/08/23 04:42 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	229	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:07	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:07	7440-41-7	
Boron	758	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:07	7440-42-8	
Calcium	186000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:07	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:07	7440-48-4	
Iron	18.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:07	7439-92-1	
Lithium	32.0	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:07	7439-93-2	
Magnesium	43100	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:07	7439-95-4	
Manganese	51.1	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:07	7439-96-5	
Molybdenum	1.7J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:07	7439-98-7	
Potassium	4950	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:07	7440-09-7	
Sodium	11500	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:07	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 12:01	7440-36-0	
Arsenic	0.60J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:01	7440-38-2	
Cadmium	0.14J	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:01	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:01	7440-47-3	
Selenium	0.54J	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:01	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:01	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	05/25/23 13:54	05/26/23 15:14	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	592	mg/L	20.0	10.5	1		05/09/23 14:24		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	656	mg/L	13.3	13.3	1		05/12/23 08:27		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.019J	mg/L	0.050		1		05/30/23 16:52	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 08:55	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-4S **Lab ID: 60427703012** Collected: 05/05/23 13:35 Received: 05/08/23 04:42 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		05/12/23 12:16	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	7.2	mg/L	1.0	0.53	1		05/25/23 14:23	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 14:23	16984-48-8	
Sulfate	60.7	mg/L	20.0	11.0	20		05/25/23 14:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-9D **Lab ID: 60427703013** Collected: 05/05/23 11:15 Received: 05/08/23 04:42 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	99.9	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:50	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:50	7440-41-7	
Boron	3550	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:50	7440-42-8	
Calcium	167000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:50	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:50	7440-48-4	
Iron	10900	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:50	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:50	7439-92-1	
Lithium	34.6	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:50	7439-93-2	
Magnesium	40700	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:50	7439-95-4	
Manganese	1100	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:50	7439-96-5	
Molybdenum	9.6J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:50	7439-98-7	
Potassium	4710	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:50	7440-09-7	
Sodium	18000	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:50	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	05/11/23 13:50	06/01/23 12:04	7440-36-0	
Arsenic	0.60J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:04	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:04	7440-43-9	
Chromium	1.4	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:04	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:04	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:04	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	05/25/23 13:54	05/26/23 15:16	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	333	mg/L	20.0	10.5	1		05/09/23 14:32		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	770	mg/L	10.0	10.0	1		05/12/23 08:27		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	10.4	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.45	mg/L	0.20	0.041	1		05/18/23 08:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-9D **Lab ID: 60427703013** Collected: 05/05/23 11:15 Received: 05/08/23 04:42 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	0.051	mg/L	0.050	0.016	1		05/12/23 12:16	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	10.8	mg/L	1.0	0.53	1		05/25/23 14:48	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 14:48	16984-48-8	
Sulfate	279	mg/L	20.0	11.0	20		05/25/23 15:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6D **Lab ID: 60427703014** Collected: 05/05/23 14:36 Received: 05/08/23 04:42 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	395	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:52	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:52	7440-41-7	
Boron	62.9J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:52	7440-42-8	B
Calcium	116000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:52	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:52	7440-48-4	
Iron	7380	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:52	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:52	7439-92-1	
Lithium	28.4	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:52	7439-93-2	
Magnesium	29300	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:52	7439-95-4	
Manganese	468	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:52	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:52	7439-98-7	
Potassium	3700	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:52	7440-09-7	
Sodium	7280	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:52	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	05/11/23 13:50	06/01/23 12:06	7440-36-0	
Arsenic	0.13J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:06	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:06	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:06	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:06	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	05/25/23 13:54	05/26/23 15:18	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	369	mg/L	20.0	10.5	1		05/09/23 14:38		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	460	mg/L	10.0	10.0	1		05/12/23 08:27		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.0	mg/L	0.050		1		05/30/23 16:52	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 08:56	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6D **Lab ID: 60427703014** Collected: 05/05/23 14:36 Received: 05/08/23 04:42 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		05/12/23 12:17	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		05/25/23 15:14	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 15:14	16984-48-8	
Sulfate	53.9	mg/L	20.0	11.0	20		05/25/23 15:26	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-2 Lab ID: 60427703015 Collected: 05/05/23 00:00 Received: 05/08/23 04:42 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	393	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 15:56	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 15:56	7440-41-7	
Boron	61.0J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 15:56	7440-42-8	B
Calcium	114000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 15:56	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 15:56	7440-48-4	
Iron	7370	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 15:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 15:56	7439-92-1	
Lithium	30.1	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 15:56	7439-93-2	
Magnesium	28800	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 15:56	7439-95-4	
Manganese	466	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 15:56	7439-96-5	
Molybdenum	2.9J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 15:56	7439-98-7	
Potassium	3660	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 15:56	7440-09-7	
Sodium	7090	ug/L	500	115	1	05/11/23 13:50	05/26/23 15:56	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	05/11/23 13:50	06/01/23 12:09	7440-36-0	
Arsenic	0.14J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:09	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:09	7440-43-9	
Chromium	0.43J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:09	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	05/25/23 13:54	05/26/23 15:21	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	362	mg/L	20.0	10.5	1		05/09/23 14:45		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	458	mg/L	10.0	10.0	1		05/12/23 08:27		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.1	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.31	mg/L	0.20	0.041	1		05/18/23 08:52	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-2 **Lab ID: 60427703015** Collected: 05/05/23 00:00 Received: 05/08/23 04:42 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		05/12/23 12:17	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		05/25/23 16:04	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 16:04	16984-48-8	
Sulfate	55.0	mg/L	20.0	11.0	20		05/25/23 16:17	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-2 **Lab ID: 60427703016** Collected: 05/05/23 10:40 Received: 05/08/23 04:42 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	05/11/23 13:50	05/26/23 16:05	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:05	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:05	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:05	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:05	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:05	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:05	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:05	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:05	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:05	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:05	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:05	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:05	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	05/11/23 13:50	06/01/23 12:14	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:14	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:14	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:14	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	05/25/23 13:54	05/26/23 15:23	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		05/09/23 14:52		
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		05/12/23 08:27		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0035J	mg/L	0.050		1		05/30/23 16:52	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 08:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-2 **Lab ID: 60427703016** Collected: 05/05/23 10:40 Received: 05/08/23 04:42 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		05/12/23 12:18	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		05/25/23 16:29	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 16:29	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		05/25/23 16:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-1S **Lab ID: 60427703017** Collected: 05/08/23 12:28 Received: 05/10/23 05:00 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	05/11/23 13:50	05/26/23 16:09	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:09	7440-41-7	
Boron	659	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:09	7440-42-8	
Calcium	90500	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:09	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:09	7440-48-4	
Iron	15.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:09	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:09	7439-92-1	
Lithium	17.9	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:09	7439-93-2	
Magnesium	22500	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:09	7439-95-4	
Manganese	48.9	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:09	7439-96-5	
Molybdenum	45.1	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:09	7439-98-7	
Potassium	5970	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:09	7440-09-7	
Sodium	19000	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:09	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.36J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 12:18	7440-36-0	
Arsenic	1.6	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:18	7440-38-2	
Cadmium	0.060J	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:18	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:18	7440-47-3	
Selenium	0.52J	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:18	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:18	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	05/25/23 13:54	05/26/23 15:30	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	226	mg/L	20.0	10.5	1		05/11/23 12:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	559	mg/L	10.0	10.0	1		05/15/23 08:26		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.016J	mg/L	0.050		1		05/30/23 16:52	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 08:59	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-1S **Lab ID: 60427703017** Collected: 05/08/23 12:28 Received: 05/10/23 05:00 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		05/12/23 12:25	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	45.0	mg/L	20.0	10.5	20		05/25/23 17:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 16:54	16984-48-8	
Sulfate	99.4	mg/L	20.0	11.0	20		05/25/23 17:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-2S **Lab ID: 60427703018** Collected: 05/08/23 15:49 Received: 05/10/23 05:00 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	108	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:11	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:11	7440-41-7	
Boron	9800	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:11	7440-42-8	
Calcium	169000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:11	7440-70-2	
Cobalt	2.7J	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:11	7440-48-4	
Iron	73.4	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:11	7439-92-1	
Lithium	35.1	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:11	7439-93-2	
Magnesium	29900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:11	7439-95-4	
Manganese	389	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:11	7439-96-5	
Molybdenum	842	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:11	7439-98-7	
Potassium	8750	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:11	7440-09-7	
Sodium	70300	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:11	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.19J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 12:21	7440-36-0	
Arsenic	0.90J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:21	7440-38-2	
Cadmium	0.55	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:21	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:21	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:21	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 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	05/25/23 13:54	05/26/23 15:32	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		05/11/23 12:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	908	mg/L	13.3	13.3	1		05/15/23 08:26		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.073	mg/L	0.050		1		05/30/23 16:52	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 09:00	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-2S **Lab ID: 60427703018** Collected: 05/08/23 15:49 Received: 05/10/23 05:00 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		05/12/23 12:25	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	119	mg/L	20.0	10.5	20		05/25/23 17:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 17:19	16984-48-8	
Sulfate	281	mg/L	20.0	11.0	20		05/25/23 17:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-5S **Lab ID: 60427703019** Collected: 05/09/23 09:27 Received: 05/10/23 05:00 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	45.6	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:13	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:13	7440-41-7	
Boron	16200	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:13	7440-42-8	
Calcium	238000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:13	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:13	7440-48-4	
Iron	77.2	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:13	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:13	7439-92-1	
Lithium	45.3	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:13	7439-93-2	
Magnesium	45000	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:13	7439-95-4	
Manganese	1520	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:13	7439-96-5	
Molybdenum	1630	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:13	7439-98-7	
Potassium	4620	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:13	7440-09-7	
Sodium	174000	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:13	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 12:26	7440-36-0	
Arsenic	0.81J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:26	7440-38-2	
Cadmium	0.85	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:26	7440-43-9	
Chromium	0.53J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:26	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:26	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:26	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	05/25/23 13:54	05/26/23 15:34	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	328	mg/L	20.0	10.5	1		05/11/23 15:17		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	2490	mg/L	20.0	20.0	1		05/16/23 13:57		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.20J	mg/L	0.20	0.041	1		05/18/23 09:01	15438-31-0	1e,H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-5S **Lab ID: 60427703019** Collected: 05/09/23 09:27 Received: 05/10/23 05:00 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		05/16/23 11:49	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	16.5	mg/L	1.0	0.53	1		05/26/23 13:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 13:05	16984-48-8	
Sulfate	757	mg/L	100	55.0	100		05/30/23 20:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-6S **Lab ID: 60427703020** Collected: 05/09/23 10:15 Received: 05/10/23 05:00 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	44.6	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:15	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:15	7440-41-7	
Boron	18000	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:15	7440-42-8	
Calcium	263000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:15	7440-70-2	
Cobalt	6.8	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:15	7440-48-4	
Iron	25.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:15	7439-92-1	
Lithium	23.0	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:15	7439-93-2	
Magnesium	58900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:15	7439-95-4	
Manganese	427	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:15	7439-96-5	
Molybdenum	12.1J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:15	7439-98-7	
Potassium	4590	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:15	7440-09-7	
Sodium	79300	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.21J	ug/L	1.0	0.12	1	05/11/23 13:50	06/01/23 12:28	7440-36-0	
Arsenic	0.79J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:28	7440-38-2	
Cadmium	0.64	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:28	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:28	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:28	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:28	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	05/25/23 13:54	05/26/23 15:37	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	570	mg/L	20.0	10.5	1		05/15/23 09:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	418	mg/L	20.0	20.0	1		05/16/23 13:57		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.026J	mg/L	0.050		1		05/30/23 16:52	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 09:02	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-6S **Lab ID: 60427703020** Collected: 05/09/23 10:15 Received: 05/10/23 05:00 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		05/16/23 11:50	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.7	mg/L	1.0	0.53	1		05/26/23 13:30	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 13:30	16984-48-8	
Sulfate	512	mg/L	50.0	27.5	50		05/30/23 21:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-4D Lab ID: 60427703021 Collected: 05/09/23 12:44 Received: 05/10/23 05:00 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	532	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:18	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:18	7440-41-7	
Boron	98.7J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:18	7440-42-8	
Calcium	118000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:18	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:18	7440-48-4	
Iron	6470	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:18	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:18	7439-92-1	
Lithium	32.2	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:18	7439-93-2	
Magnesium	28800	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:18	7439-95-4	
Manganese	367	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:18	7439-96-5	
Molybdenum	2.8J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:18	7439-98-7	
Potassium	3440	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:18	7440-09-7	
Sodium	8030	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:18	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	05/11/23 13:50	06/01/23 12:31	7440-36-0	
Arsenic	2.0	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:31	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:31	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:31	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:31	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	05/25/23 18:37	05/26/23 13:58	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		05/15/23 09:56		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	510	mg/L	10.0	10.0	1		05/16/23 13:57		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	6.1	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.33	mg/L	0.20	0.041	1		05/18/23 09:04	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-4D **Lab ID: 60427703021** Collected: 05/09/23 12:44 Received: 05/10/23 05:00 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	0.019J	mg/L	0.050	0.016	1		05/16/23 11:50	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.9	mg/L	1.0	0.53	1		05/26/23 14:21	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 14:21	16984-48-8	
Sulfate	102	mg/L	20.0	11.0	20		05/26/23 14:34	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-5D **Lab ID: 60427703022** Collected: 05/09/23 13:54 Received: 05/10/23 05:00 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	05/11/23 13:50	05/26/23 16:20	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:20	7440-41-7	
Boron	7900	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:20	7440-42-8	
Calcium	138000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:20	7440-70-2	M1
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:20	7440-48-4	
Iron	9780	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:20	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:20	7439-92-1	
Lithium	40.5	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:20	7439-93-2	
Magnesium	33900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:20	7439-95-4	
Manganese	1050	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:20	7439-96-5	
Molybdenum	604	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:20	7439-98-7	
Potassium	5330	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:20	7440-09-7	
Sodium	38100	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:20	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	05/11/23 13:50	06/01/23 12:36	7440-36-0	
Arsenic	0.30J	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:36	7440-38-2	
Cadmium	0.22J	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:36	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 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	05/25/23 18:37	05/26/23 14:00	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	258	mg/L	20.0	10.5	1		05/15/23 10:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	715	mg/L	10.0	10.0	1		05/16/23 13:57		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.3	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.48	mg/L	0.20	0.041	1		05/18/23 09:04	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-5D **Lab ID: 60427703022** Collected: 05/09/23 13:54 Received: 05/10/23 05:00 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		05/16/23 11:51	18496-25-8	M1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	43.1	mg/L	20.0	10.5	20		05/26/23 15:49	16887-00-6	M1, R1
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 14:46	16984-48-8	M1
Sulfate	249	mg/L	20.0	11.0	20		05/26/23 15:49	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-8D **Lab ID: 60427703023** Collected: 05/09/23 11:25 Received: 05/10/23 05:00 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	377	ug/L	5.0	0.64	1	05/11/23 13:50	05/26/23 16:33	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/11/23 13:50	05/26/23 16:33	7440-41-7	
Boron	85.5J	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:33	7440-42-8	
Calcium	114000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:33	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/11/23 13:50	05/26/23 16:33	7440-48-4	
Iron	6510	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:33	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/11/23 13:50	05/26/23 16:33	7439-92-1	
Lithium	33.9	ug/L	10.0	3.7	1	05/11/23 13:50	05/26/23 16:33	7439-93-2	
Magnesium	25000	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:33	7439-95-4	
Manganese	435	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:33	7439-96-5	
Molybdenum	11.5J	ug/L	20.0	1.0	1	05/11/23 13:50	05/26/23 16:33	7439-98-7	
Potassium	3710	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:33	7440-09-7	
Sodium	6300	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:33	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	05/11/23 13:50	06/01/23 12:43	7440-36-0	
Arsenic	1.3	ug/L	1.0	0.13	1	05/11/23 13:50	06/01/23 12:43	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/11/23 13:50	06/01/23 12:43	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.30	1	05/11/23 13:50	06/01/23 12:43	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/11/23 13:50	06/01/23 12:43	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/11/23 13:50	06/01/23 12:43	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	05/25/23 18:37	05/26/23 14:07	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	341	mg/L	20.0	10.5	1		05/15/23 10:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	455	mg/L	10.0	10.0	1		05/16/23 13:58		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.2	mg/L	0.050		1		05/30/23 16:52	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.30	mg/L	0.20	0.041	1		05/18/23 09:03	15438-31-0	H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-8D **Lab ID: 60427703023** Collected: 05/09/23 11:25 Received: 05/10/23 05:00 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		05/16/23 11:57	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	34.5	mg/L	20.0	10.5	20		05/26/23 17:04	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 16:51	16984-48-8	
Sulfate	36.4	mg/L	20.0	11.0	20		05/26/23 17:04	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	849155	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008, 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020		

METHOD BLANK:	3364194	Matrix:	Water
Associated Lab Samples:	60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008, 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/26/23 14:35	

LABORATORY CONTROL SAMPLE:	3364195					
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:	3364196			3364197								
Parameter	Units	60427703002 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	4.6	4.5	91	90	75-125	2	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60427703

QC Batch: 849295 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703021, 60427703022, 60427703023

METHOD BLANK: 3364673 Matrix: Water

Associated Lab Samples: 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/26/23 13:21	

LABORATORY CONTROL SAMPLE: 3364674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364675 3364676

Parameter	Units	60427704008		3364675		3364676		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Mercury	ug/L	<0.096	5	5	4.4	4.4	87	88	75-125	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3364677 3364678

Parameter	Units	60427703022		3364677		3364678		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Mercury	ug/L	<0.096	5	5	4.5	4.3	90	86	75-125	5	20

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	845219	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: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

METHOD BLANK:	3349216	Matrix:	Water
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Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/23/23 09:16	
Beryllium	ug/L	<0.12	1.0	0.12	05/23/23 09:16	
Boron	ug/L	<6.4	100	6.4	05/23/23 09:16	
Calcium	ug/L	28.7J	200	26.9	05/23/23 09:16	
Cobalt	ug/L	<1.2	5.0	1.2	05/23/23 09:16	
Iron	ug/L	9.3J	50.0	9.1	05/23/23 09:16	
Lead	ug/L	<3.8	10.0	3.8	05/23/23 09:16	
Lithium	ug/L	<3.7	10.0	3.7	05/23/23 09:16	
Magnesium	ug/L	<20.1	50.0	20.1	05/23/23 09:16	
Manganese	ug/L	1.1J	5.0	0.39	05/23/23 09:16	
Molybdenum	ug/L	<1.0	20.0	1.0	05/23/23 09:16	
Potassium	ug/L	<69.7	500	69.7	05/23/23 09:16	
Sodium	ug/L	<115	500	115	05/23/23 09:16	

LABORATORY CONTROL SAMPLE: 3349217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10500	105	85-115	
Lead	ug/L	1000	1000	100	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	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3349218 3349219

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	MS Result	MSD Result						
Barium	ug/L	183	1000	1000	1180	1190	99	100	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3349218 3349219												
Parameter	Units	60427703001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Beryllium	ug/L	<0.12	1000	1000	1000	1030	1040	103	104	70-130	0	20
Boron	ug/L	64.8J	1000	1000	1000	1050	1050	98	98	70-130	0	20
Calcium	ug/L	184000	10000	10000	10000	191000	195000	73	109	70-130	2	20
Cobalt	ug/L	<1.2	1000	1000	1000	1030	1030	103	103	70-130	1	20
Iron	ug/L	<9.1	10000	10000	10000	10400	10400	104	104	70-130	0	20
Lead	ug/L	<3.8	1000	1000	1000	1030	1020	103	102	70-130	1	20
Lithium	ug/L	5.8J	1000	1000	1000	1050	1050	104	104	70-130	0	20
Magnesium	ug/L	37100	10000	10000	10000	47000	47300	99	102	70-130	1	20
Manganese	ug/L	849	1000	1000	1000	1860	1890	102	104	70-130	1	20
Molybdenum	ug/L	5.3J	1000	1000	1000	1050	1050	104	105	70-130	1	20
Potassium	ug/L	427J	10000	10000	10000	10900	10800	104	104	70-130	0	20
Sodium	ug/L	5130	10000	10000	10000	15600	15700	104	106	70-130	1	20

MATRIX SPIKE SAMPLE: 3349220							
Parameter	Units	60427703007	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	268	1000	1240	97	70-130	
Beryllium	ug/L	<0.12	1000	1030	103	70-130	
Boron	ug/L	101	1000	1070	97	70-130	
Calcium	ug/L	132000	10000	139000	75	70-130	
Cobalt	ug/L	<1.2	1000	993	99	70-130	
Iron	ug/L	143	10000	10200	100	70-130	
Lead	ug/L	<3.8	1000	1000	100	70-130	
Lithium	ug/L	34.6	1000	1050	101	70-130	
Magnesium	ug/L	28500	10000	37900	94	70-130	
Manganese	ug/L	216	1000	1200	99	70-130	
Molybdenum	ug/L	4.2J	1000	1000	100	70-130	
Potassium	ug/L	2250	10000	12500	102	70-130	
Sodium	ug/L	5580	10000	15800	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	846649	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: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3354610 Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/26/23 15:39	
Beryllium	ug/L	<0.12	1.0	0.12	05/26/23 15:39	
Boron	ug/L	7.1J	100	6.4	05/26/23 15:39	
Calcium	ug/L	<26.9	200	26.9	05/26/23 15:39	
Cobalt	ug/L	<1.2	5.0	1.2	05/26/23 15:39	
Iron	ug/L	<9.1	50.0	9.1	05/26/23 15:39	
Lead	ug/L	<3.8	10.0	3.8	05/26/23 15:39	
Lithium	ug/L	<3.7	10.0	3.7	05/26/23 15:39	
Magnesium	ug/L	<20.1	50.0	20.1	05/26/23 15:39	
Manganese	ug/L	<0.39	5.0	0.39	05/26/23 15:39	
Molybdenum	ug/L	<1.0	20.0	1.0	05/26/23 15:39	
Potassium	ug/L	<69.7	500	69.7	05/26/23 15:39	
Sodium	ug/L	<115	500	115	05/26/23 15:39	

LABORATORY CONTROL SAMPLE: 3354611

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	1010	101	85-115	
Calcium	ug/L	10000	10700	107	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Iron	ug/L	10000	10600	106	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	10600	106	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10500	105	85-115	
Sodium	ug/L	10000	10600	106	85-115	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

MATRIX SPIKE SAMPLE:		3354612		60427703014		Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Result	% Rec	Limits	Qualifiers	
Barium	ug/L	395	1000	1420	102	70-130				
Beryllium	ug/L	<0.12	1000	1030	103	70-130				
Boron	ug/L	62.9J	1000	1060	100	70-130				
Calcium	ug/L	116000	10000	125000	93	70-130				
Cobalt	ug/L	<1.2	1000	991	99	70-130				
Iron	ug/L	7380	10000	18400	110	70-130				
Lead	ug/L	<3.8	1000	1010	101	70-130				
Lithium	ug/L	28.4	1000	1050	102	70-130				
Magnesium	ug/L	29300	10000	39300	100	70-130				
Manganese	ug/L	468	1000	1460	99	70-130				
Molybdenum	ug/L	<1.0	1000	1020	102	70-130				
Potassium	ug/L	3700	10000	14400	107	70-130				
Sodium	ug/L	7280	10000	17800	105	70-130				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3354613		3354614		60427703022		MS	MSD	MS	MSD	% Rec	Max
Parameter	Units	Result	Conc.	Spike	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium	ug/L	175	1000	1000	1000	1200	1180	102	100	70-130	2	20	
Beryllium	ug/L	<0.12	1000	1000	1000	1040	1020	104	102	70-130	2	20	
Boron	ug/L	7900	1000	1000	1000	8860	8640	96	74	70-130	3	20	
Calcium	ug/L	138000	10000	10000	10000	148000	144000	102	62	70-130	3	20	M1
Cobalt	ug/L	<1.2	1000	1000	1000	1010	983	101	98	70-130	3	20	
Iron	ug/L	9780	10000	10000	10000	20300	19900	105	101	70-130	2	20	
Lead	ug/L	<3.8	1000	1000	1000	992	1000	99	100	70-130	1	20	
Lithium	ug/L	40.5	1000	1000	1000	1050	1030	101	99	70-130	2	20	
Magnesium	ug/L	33900	10000	10000	10000	44200	43000	102	91	70-130	3	20	
Manganese	ug/L	1050	1000	1000	1000	2060	2000	101	95	70-130	3	20	
Molybdenum	ug/L	604	1000	1000	1000	1680	1630	108	102	70-130	3	20	
Potassium	ug/L	5330	10000	10000	10000	15800	15500	105	102	70-130	2	20	
Sodium	ug/L	38100	10000	10000	10000	48400	47000	103	89	70-130	3	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	845220	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: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

METHOD BLANK:	3349221	Matrix:	Water
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Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/22/23 16:30	
Arsenic	ug/L	<0.13	1.0	0.13	05/22/23 16:30	
Cadmium	ug/L	<0.050	0.50	0.050	05/22/23 16:30	
Chromium	ug/L	0.37J	1.0	0.30	05/22/23 16:30	
Selenium	ug/L	<0.18	1.0	0.18	05/22/23 16:30	
Thallium	ug/L	<0.14	1.0	0.14	05/22/23 16:30	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.5	101	85-115	
Arsenic	ug/L	40	39.6	99	85-115	
Cadmium	ug/L	40	41.0	102	85-115	
Chromium	ug/L	40	38.7	97	85-115	
Selenium	ug/L	40	43.0	108	85-115	
Thallium	ug/L	40	43.5	109	85-115	

Parameter	Units	60427703002		60427704006		MS Result	MSD Result	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	39.8	39.9	99	100	70-130	0	20		
Arsenic	ug/L	0.64J	40	40	40.0	40.0	98	98	70-130	0	20		
Cadmium	ug/L	<0.050	40	40	38.9	38.8	97	97	70-130	0	20		
Chromium	ug/L	<0.30	40	40	39.7	39.5	99	98	70-130	0	20		
Selenium	ug/L	0.28J	40	40	40.7	40.7	101	101	70-130	0	20		
Thallium	ug/L	<0.14	40	40	41.8	42.1	104	105	70-130	1	20		

Parameter	Units	60427704006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.6	99	70-130	
Arsenic	ug/L	2.9	40	43.6	102	70-130	
Cadmium	ug/L	0.58	40	37.3	92	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

MATRIX SPIKE SAMPLE:		3349225					
Parameter	Units	60427704006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.36J	40	38.9	96	70-130	
Selenium	ug/L	<0.18	40	41.4	103	70-130	
Thallium	ug/L	<0.14	40	39.4	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60427703

QC Batch: 846651 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: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3354618 Matrix: Water
Associated Lab Samples: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/01/23 11:48	
Arsenic	ug/L	<0.13	1.0	0.13	06/01/23 11:48	
Cadmium	ug/L	<0.050	0.50	0.050	06/01/23 11:48	
Chromium	ug/L	<0.30	1.0	0.30	06/01/23 11:48	
Selenium	ug/L	<0.18	1.0	0.18	06/01/23 11:48	
Thallium	ug/L	<0.14	1.0	0.14	06/01/23 11:48	

LABORATORY CONTROL SAMPLE: 3354619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.8	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	39.0	98	85-115	
Selenium	ug/L	40	40.3	101	85-115	
Thallium	ug/L	40	38.4	96	85-115	

MATRIX SPIKE SAMPLE: 3354620

Parameter	Units	60427703016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	38.8	97	70-130	
Arsenic	ug/L	<0.13	40	39.4	98	70-130	
Cadmium	ug/L	<0.050	40	39.3	98	70-130	
Chromium	ug/L	<0.30	40	39.3	98	70-130	
Selenium	ug/L	<0.18	40	39.5	99	70-130	
Thallium	ug/L	<0.14	40	38.6	96	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354621 3354622

Parameter	Units	60427703022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	38.9	38.6	97	96	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354621 3354622												
Parameter	Units	60427703022		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Arsenic	ug/L	0.30J	40	40	40	40.2	40.1	100	100	70-130	0	20
Cadmium	ug/L	0.22J	40	40	40	38.3	38.1	95	95	70-130	1	20
Chromium	ug/L	0.30J	40	40	40	39.2	39.1	97	97	70-130	0	20
Selenium	ug/L	<0.18	40	40	40	38.4	38.3	96	96	70-130	0	20
Thallium	ug/L	<0.14	40	40	40	40.2	40.1	100	100	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 845171

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

METHOD BLANK: 3349039

Matrix: Water

Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/04/23 11:49	

LABORATORY CONTROL SAMPLE: 3349040

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 3349041

Parameter	Units	60427704003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	198	195	2	10	

SAMPLE DUPLICATE: 3349299

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	160	163	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 846049

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703009, 60427703010, 60427703011

METHOD BLANK: 3352393

Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/09/23 09:16	

LABORATORY CONTROL SAMPLE: 3352394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	504	101	90-110	

SAMPLE DUPLICATE: 3352395

Parameter	Units	60428021005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	480	476	1	10	

SAMPLE DUPLICATE: 3352396

Parameter	Units	60428015002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	451	454	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	846050	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

METHOD BLANK: 3352397 Matrix: Water
Associated Lab Samples: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/09/23 12:18	

LABORATORY CONTROL SAMPLE: 3352398

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

SAMPLE DUPLICATE: 3352399

Parameter	Units	60428019003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	411	411	0	10	

SAMPLE DUPLICATE: 3352400

Parameter	Units	60428109001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	559	568	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60427703

QC Batch: 846614 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703017, 60427703018, 60427703019

METHOD BLANK: 3354443 Matrix: Water
Associated Lab Samples: 60427703017, 60427703018, 60427703019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<10.5	20.0	10.5	05/11/23 12:33	

LABORATORY CONTROL SAMPLE: 3354444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	506	101	90-110	

SAMPLE DUPLICATE: 3354445

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	295	295	0	10	

SAMPLE DUPLICATE: 3354446

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	422	424	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	847027	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3356266 Matrix: Water
Associated Lab Samples: 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/15/23 09:32	

LABORATORY CONTROL SAMPLE: 3356267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	496	99	90-110	

SAMPLE DUPLICATE: 3356268

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	258	258	0	10	

SAMPLE DUPLICATE: 3356269

Parameter	Units	60428449001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	110	107	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 845831

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001, 60427703005, 60427703006, 60427703008

METHOD BLANK: 3351717

Matrix: Water

Associated Lab Samples: 60427703001, 60427703005, 60427703006, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/08/23 12:49	

LABORATORY CONTROL SAMPLE: 3351718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3351719

Parameter	Units	60427607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3540	3470	2	10	

SAMPLE DUPLICATE: 3351720

Parameter	Units	60427705002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	<5.0		10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 846023

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703002, 60427703003, 60427703004, 60427703007

METHOD BLANK: 3352331

Matrix: Water

Associated Lab Samples: 60427703002, 60427703003, 60427703004, 60427703007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/09/23 10:54	

LABORATORY CONTROL SAMPLE: 3352332

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

SAMPLE DUPLICATE: 3352333

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	957	916	4	10	

SAMPLE DUPLICATE: 3352334

Parameter	Units	60427777001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	972	913	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 846264

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703009, 60427703010, 60427703011

METHOD BLANK: 3353161

Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/10/23 09:23	

LABORATORY CONTROL SAMPLE: 3353162

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

SAMPLE DUPLICATE: 3353163

Parameter	Units	60428021005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	640	646	1	10	D6

SAMPLE DUPLICATE: 3353164

Parameter	Units	60428144001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	426	463	8	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	846772	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

METHOD BLANK: 3355017 Matrix: Water
Associated Lab Samples: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/12/23 08:26	

LABORATORY CONTROL SAMPLE: 3355018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	993	99	80-120	

SAMPLE DUPLICATE: 3355019

Parameter	Units	60427374001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2820	2980	6	10	H1

SAMPLE DUPLICATE: 3355020

Parameter	Units	60428270003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4600	4610	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 846949

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703017, 60427703018

METHOD BLANK: 3355827

Matrix: Water

Associated Lab Samples: 60427703017, 60427703018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/15/23 08:24	

LABORATORY CONTROL SAMPLE: 3355828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1110	111	80-120	

SAMPLE DUPLICATE: 3355829

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	372	373	0	10	

SAMPLE DUPLICATE: 3355830

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	853	849	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	847232	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3356877 Matrix: Water
Associated Lab Samples: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/16/23 13:56	

LABORATORY CONTROL SAMPLE: 3356878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3356879

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	715	709	1	10	

SAMPLE DUPLICATE: 3356880

Parameter	Units	60428656011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	136	649	131	10	D6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	845657	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: 60427703001, 60427703002, 60427703005, 60427703006, 60427703008

METHOD BLANK: 3350979 Matrix: Water
Associated Lab Samples: 60427703001, 60427703002, 60427703005, 60427703006, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 14:57	H6

LABORATORY CONTROL SAMPLE: 3350980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	103	90-110	H6

SAMPLE DUPLICATE: 3350981

Parameter	Units	60426948008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	845658	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: 60427703003, 60427703004, 60427703007

METHOD BLANK: 3350987 Matrix: Water

Associated Lab Samples: 60427703003, 60427703004, 60427703007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 15:46	H6

LABORATORY CONTROL SAMPLE: 3350988

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	104	90-110	H6

SAMPLE DUPLICATE: 3350989

Parameter	Units	60427703003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

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: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3357895 Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	845610	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: 60427703005, 60427703006, 60427703008

METHOD BLANK: 3350823 Matrix: Water

Associated Lab Samples: 60427703005, 60427703006, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/05/23 14:06	

LABORATORY CONTROL SAMPLE: 3350824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3350825 3350826

Parameter	Units	60427704001		60427704002		MS Result	MSD Result	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	0.65	0.50	126	96	75-125	26	20	M1,R1	

SAMPLE DUPLICATE: 3350827

Parameter	Units	60427704002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.041J	0.035J		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 846013 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: 60427703001, 60427703002, 60427703003, 60427703004, 60427703007

METHOD BLANK: 3352304 Matrix: Water
 Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/09/23 10:02	

LABORATORY CONTROL SAMPLE: 3352305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3352306 3352307

Parameter	Units	60427648002		3352306		3352307		% 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	ND	0.5	0.5	0.51	0.52	101	102	75-125	1	20

SAMPLE DUPLICATE: 3352308

Parameter	Units	60427662001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.18	0.17	7	20	

SAMPLE DUPLICATE: 3352309

Parameter	Units	60427703007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	0.016J		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	846256	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:	60427703009, 60427703010, 60427703011		

METHOD BLANK: 3353135 Matrix: Water
Associated Lab Samples: 60427703009, 60427703010, 60427703011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/10/23 10:40	

LABORATORY CONTROL SAMPLE: 3353136

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: 3353138 3353139

Parameter	Units	60427860002 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	0.025J	0.5	0.5	0.42	0.41	79	76	75-125	3	20	

SAMPLE DUPLICATE: 3353137

Parameter	Units	60427795001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.24	0.24	0	20	

SAMPLE DUPLICATE: 3353140

Parameter	Units	60427860002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.025J	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	846774	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: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018

METHOD BLANK: 3355025 Matrix: Water
Associated Lab Samples: 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/12/23 11:30	

LABORATORY CONTROL SAMPLE: 3355026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3355027 3355028

Parameter	Units	60427704008 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	0.047J	0.5	0.5	0.54	0.54	98	99	75-125	0	20	

SAMPLE DUPLICATE: 3355029

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.047J	0.059		20	

SAMPLE DUPLICATE: 3355030

Parameter	Units	60427703013 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.051	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 847229

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: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3356853

Matrix: Water

Associated Lab Samples: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/16/23 11:04	

LABORATORY CONTROL SAMPLE: 3356854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.46	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3356855 3356856

Parameter	Units	60427703022		3356856		% 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	<0.016	<0.016	2	2	75-125	20	M1

SAMPLE DUPLICATE: 3356857

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

SAMPLE DUPLICATE: 3356858

Parameter	Units	60428273001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	10.8	0.033J		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	848462	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: 60427703001, 60427703002, 60427703003, 60427703005, 60427703006, 60427703008

METHOD BLANK: 3361725 Matrix: Water
Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703005, 60427703006, 60427703008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/24/23 09:13	
Fluoride	mg/L	<0.12	0.20	0.12	05/24/23 09:13	
Sulfate	mg/L	<0.55	1.0	0.55	05/24/23 09:13	

LABORATORY CONTROL SAMPLE: 3361726

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361727 3361728

Parameter	Units	60428838004		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1.6	5	5	6.0	6.2	88	91	80-120	3	15		
Fluoride	mg/L	0.21	2.5	2.5	2.7	2.7	98	101	80-120	3	15		
Sulfate	mg/L	193	250	250	450	427	103	94	80-120	5	15		

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 848463

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: 60427703004, 60427703007

METHOD BLANK: 3361729

Matrix: Water

Associated Lab Samples: 60427703004, 60427703007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/24/23 09:15	
Fluoride	mg/L	<0.12	0.20	0.12	05/24/23 09:15	
Sulfate	mg/L	<0.55	1.0	0.55	05/24/23 09:15	

LABORATORY CONTROL SAMPLE: 3361730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361731 3361732

Parameter	Units	60427703004		3361731		3361732		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Chloride	mg/L	34.6	100	100	126	142	91	108	80-120	12	15		
Fluoride	mg/L	0.60	2.5	2.5	2.7	2.8	83	87	80-120	4	15		
Sulfate	mg/L	36.7	100	100	138	159	102	122	80-120	14	15	M1	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	849094	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:	60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018		

METHOD BLANK:	3363879	Matrix:	Water
Associated Lab Samples:	60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016, 60427703017, 60427703018		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/25/23 09:21	
Fluoride	mg/L	<0.12	0.20	0.12	05/25/23 09:21	
Sulfate	mg/L	<0.55	1.0	0.55	05/25/23 09:21	

LABORATORY CONTROL SAMPLE: 3363880						
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	2.6	103	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363881												3363882	
Parameter	Units	60429025007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chloride	mg/L	19.0	10	10	28.5	28.8	95	98	80-120	1	15		
Fluoride	mg/L	ND	5	5	4.4	4.5	87	90	80-120	3	15		
Sulfate	mg/L	67.5	10	10	78.6	79.3	112	118	80-120	1	15		

SAMPLE DUPLICATE: 3363883											
Parameter	Units	60429025007 Result	Dup Result	RPD	Max RPD	Qualifiers					
Chloride	mg/L	19.0	19.5	3	15						
Fluoride	mg/L	ND	<0.25		15						
Sulfate	mg/L	67.5	69.2	2	15						

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 849095

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: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

METHOD BLANK: 3363884

Matrix: Water

Associated Lab Samples: 60427703019, 60427703020, 60427703021, 60427703022, 60427703023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/26/23 06:42	
Fluoride	mg/L	<0.12	0.20	0.12	05/26/23 06:42	
Sulfate	mg/L	<0.55	1.0	0.55	05/26/23 06:42	

LABORATORY CONTROL SAMPLE: 3363885

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	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363887 3363888

Parameter	Units	60429159005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	1.5	5	5	5.4	5.1	79	73	80-120	6	15	M1	
Fluoride	mg/L	2.0	2.5	2.5	4.3	4.1	89	85	80-120	2	15		
Sulfate	mg/L	648	500	500	1380	1250	146	120	80-120	10	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363889 3363890

Parameter	Units	60427703022		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	43.1	100	100	127	166	84	123	80-120	26	15	M1, R1	
Fluoride	mg/L	<0.12	2.5	2.5	1.7	1.7	68	67	80-120	1	15	M1	
Sulfate	mg/L	249	100	100	349	397	100	149	80-120	13	15	M1	

SAMPLE DUPLICATE: 3363886

Parameter	Units	60429159005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.5	1.5	0	15	
Fluoride	mg/L	2.0	2.1	3	15	
Sulfate	mg/L	648	636	2	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

SAMPLE DUPLICATE: 3363891

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	43.1	41.8	3	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	249	246	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-BMW-1S Lab ID: 60427703001 Collected: 05/02/23 09:51 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.155 ± 0.366 (0.822) C:NA T:90%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.128 ± 0.392 (0.949) C:80% T:66%	pCi/L	05/22/23 15:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: S-BMW-3S Lab ID: 60427703002 Collected: 05/02/23 11:32 Received: 05/03/23 05:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.174 ± 0.376 (0.868) C:NA T:92%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.252 ± 0.291 (0.609) C:82% T:95%	pCi/L	05/22/23 15:21	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1S **Lab ID: 60427703003** Collected: 05/02/23 12:49 Received: 05/03/23 05:05 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	0.706 ± 0.571 (0.830) C:NA T:91%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.155 ± 0.323 (0.714) C:80% T:86%	pCi/L	05/22/23 15:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-AM-1D **Lab ID: 60427703004** Collected: 05/02/23 13:38 Received: 05/03/23 05:05 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	0.108 ± 0.396 (0.761) C:NA T:91%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.680 ± 0.396 (0.721) C:83% T:83%	pCi/L	05/22/23 15:22	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-1S **Lab ID: 60427703005** Collected: 05/01/23 10:53 Received: 05/03/23 05:05 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	-0.294 ± 0.431 (0.955) C:NA T:93%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.123 ± 0.346 (0.778) C:81% T:83%	pCi/L	05/22/23 15:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-2D **Lab ID: 60427703006** Collected: 05/01/23 15:37 Received: 05/03/23 05:05 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 ± 0.550 (0.996) C:NA T:95%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.826 ± 0.503 (0.929) C:82% T:64%	pCi/L	05/22/23 15:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6S **Lab ID: 60427703007** Collected: 05/02/23 14:50 Received: 05/03/23 05:05 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	0.314 ± 0.503 (0.871) C:NA T:95%	pCi/L	06/01/23 15:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.191 ± 0.286 (0.616) C:80% T:103%	pCi/L	05/22/23 15:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-1 **Lab ID: 60427703008** Collected: 05/01/23 00:00 Received: 05/03/23 05:05 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	-0.170 ± 0.335 (0.801) C:NA T:93%	pCi/L	06/01/23 15:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.440 ± 0.330 (0.639) C:80% T:90%	pCi/L	05/22/23 15:23	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-3D **Lab ID: 60427703009** Collected: 05/03/23 15:59 Received: 05/05/23 05:10 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	-0.0515 ± 0.525 (1.04) C:NA T:87%	pCi/L	05/30/23 14:45	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.720 ± 0.625 (1.25) C:78% T:87%	pCi/L	05/22/23 20:28	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-UG-3 **Lab ID: 60427703010** Collected: 05/04/23 14:37 Received: 05/05/23 05:10 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	-0.393 ± 0.288 (0.761) C:NA T:85%	pCi/L	05/30/23 14:45	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.961 ± 0.843 (1.72) C:72% T:85%	pCi/L	05/22/23 20:28	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-1 **Lab ID: 60427703011** Collected: 05/03/23 16:14 Received: 05/05/23 05:10 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	0.211 ± 0.299 (0.506) C:NA T:89%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.832 ± 0.457 (0.844) C:79% T:89%	pCi/L	05/22/23 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-4S **Lab ID: 60427703012** Collected: 05/05/23 13:35 Received: 05/08/23 04:42 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	0.121 ± 0.307 (0.570) C:NA T:88%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.665 ± 0.410 (0.776) C:80% T:88%	pCi/L	05/22/23 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-PZ-9D **Lab ID: 60427703013** Collected: 05/05/23 11:15 Received: 05/08/23 04:42 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 ± 0.410 (0.814) C:NA T:85%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.39 ± 0.521 (0.794) C:80% T:85%	pCi/L	05/22/23 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-6D **Lab ID: 60427703014** Collected: 05/05/23 14:36 Received: 05/08/23 04:42 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	0.774 ± 0.439 (0.516) C:NA T:83%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.21 ± 0.535 (0.906) C:76% T:83%	pCi/L	05/22/23 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-DUP-2 **Lab ID: 60427703015** Collected: 05/05/23 00:00 Received: 05/08/23 04:42 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	0.380 ± 0.477 (0.792) C:NA T:87%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.384 ± 0.490 (1.04) C:80% T:87%	pCi/L	05/22/23 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-FB-2 **Lab ID: 60427703016** Collected: 05/05/23 10:40 Received: 05/08/23 04:42 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	-0.0443 ± 0.260 (0.580) C:NA T:90%	pCi/L	05/30/23 14:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.0202 ± 0.482 (1.12) C:83% T:90%	pCi/L	05/22/23 16:03	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-1S **Lab ID: 60427703017** Collected: 05/08/23 12:28 Received: 05/10/23 05:00 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 ± 0.379 (0.821) C:NA T:89%	pCi/L	06/13/23 15:58	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.466 ± 0.338 (0.663) C:84% T:91%	pCi/L	06/07/23 12:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-2S **Lab ID: 60427703018** Collected: 05/08/23 15:49 Received: 05/10/23 05:00 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	0.314 ± 0.360 (0.213) C:NA T:91%	pCi/L	06/13/23 15:58	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.574 ± 0.387 (0.743) C:81% T:82%	pCi/L	06/07/23 12:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-5S **Lab ID: 60427703019** Collected: 05/09/23 09:27 Received: 05/10/23 05:00 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	0.693 ± 0.507 (0.567) C:NA T:91%	pCi/L	06/13/23 15:58	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.458 ± 0.373 (0.749) C:78% T:93%	pCi/L	06/07/23 12:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-LMW-6S **Lab ID: 60427703020** Collected: 05/09/23 10:15 Received: 05/10/23 05:00 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	0.566 ± 0.729 (1.21) C:NA T:84%	pCi/L	06/13/23 15:58	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.779 ± 0.431 (0.787) C:79% T:85%	pCi/L	06/07/23 12:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-4D **Lab ID: 60427703021** Collected: 05/09/23 12:44 Received: 05/10/23 05:00 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	0.525 ± 0.609 (0.983) C:NA T:90%	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.648 ± 0.435 (0.835) C:80% T:84%	pCi/L	06/07/23 12:04	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-5D **Lab ID: 60427703022** Collected: 05/09/23 13:54 Received: 05/10/23 05:00 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	0.192 ± 0.333 (0.595) C:NA T:90%	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.22 ± 0.498 (0.794) C:78% T:84%	pCi/L	06/07/23 15:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-TP-8D **Lab ID: 60427703023** Collected: 05/09/23 11:25 Received: 05/10/23 05:00 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	0.228 ± 0.649 (1.20) C:NA T:91%	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.523 ± 0.426 (0.861) C:83% T:86%	pCi/L	06/07/23 15:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Sample: S-CA-MS-1 **Lab ID: 60427703024** Collected: 05/09/23 13:54 Received: 05/10/23 05:00 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	112.29 %REC ± NA (NA) C:NA T:NA	pCi/L	06/13/23 16:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	67.62 %REC ± NA (NA) C:NA T:NA	pCi/L	06/07/23 15:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	132.48 %REC 16.49 RPD ± NA (NA) C:NA T:NA	pCi/L	06/13/23 16:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	61.09 %REC 10.15RPD ± NA (NA) C:NA T:NA	pCi/L	06/07/23 15:10	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	588441	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: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

METHOD BLANK: 2859364 Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.564 ± 0.377 (0.713) C:76% T:86%	pCi/L	05/22/23 12:59	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 589315

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: 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023, 60427703024, 60427703025

METHOD BLANK: 2863938

Matrix: Water

Associated Lab Samples: 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023, 60427703024, 60427703025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.225 ± 0.313 (0.523) C:NA T:89%	pCi/L	06/13/23 15:36	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 589316

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: 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023, 60427703024, 60427703025

METHOD BLANK: 2863939

Matrix: Water

Associated Lab Samples: 60427703017, 60427703018, 60427703019, 60427703020, 60427703021, 60427703022, 60427703023, 60427703024, 60427703025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.933 ± 0.437 (0.737) C:78% T:82%	pCi/L	06/07/23 12:02	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 586497

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: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

METHOD BLANK: 2849183

Matrix: Water

Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.137 ± 0.270 (0.493) C:NA T:83%	pCi/L	06/01/23 15:11	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch: 588440

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: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

METHOD BLANK: 2859362

Matrix: Water

Associated Lab Samples: 60427703009, 60427703010, 60427703011, 60427703012, 60427703013, 60427703014, 60427703015, 60427703016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.331 ± 0.336 (0.509) C:NA T:86%	pCi/L	05/30/23 14:31	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

QC Batch:	586499	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: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

METHOD BLANK: 2849185 Matrix: Water

Associated Lab Samples: 60427703001, 60427703002, 60427703003, 60427703004, 60427703005, 60427703006, 60427703007, 60427703008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.110 ± 0.290 (0.649) C:84% T:90%	pCi/L	05/22/23 15:22	

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

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.

H1 Analysis conducted outside the EPA method holding time.

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

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 SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703001	S-BMW-1S	EPA 200.7	845219	EPA 200.7	845416
60427703002	S-BMW-3S	EPA 200.7	845219	EPA 200.7	845416
60427703003	S-AM-1S	EPA 200.7	845219	EPA 200.7	845416
60427703004	S-AM-1D	EPA 200.7	845219	EPA 200.7	845416
60427703005	S-PZ-1S	EPA 200.7	845219	EPA 200.7	845416
60427703006	S-TP-2D	EPA 200.7	845219	EPA 200.7	845416
60427703007	S-TP-6S	EPA 200.7	845219	EPA 200.7	845416
60427703008	S-CA-DUP-1	EPA 200.7	845219	EPA 200.7	845416
60427703009	S-TP-3D	EPA 200.7	846649	EPA 200.7	846727
60427703010	S-UG-3	EPA 200.7	846649	EPA 200.7	846727
60427703011	S-CA-FB-1	EPA 200.7	846649	EPA 200.7	846727
60427703012	S-LMW-4S	EPA 200.7	846649	EPA 200.7	846727
60427703013	S-PZ-9D	EPA 200.7	846649	EPA 200.7	846727
60427703014	S-TP-6D	EPA 200.7	846649	EPA 200.7	846727
60427703015	S-CA-DUP-2	EPA 200.7	846649	EPA 200.7	846727
60427703016	S-CA-FB-2	EPA 200.7	846649	EPA 200.7	846727
60427703017	S-LMW-1S	EPA 200.7	846649	EPA 200.7	846727
60427703018	S-LMW-2S	EPA 200.7	846649	EPA 200.7	846727
60427703019	S-LMW-5S	EPA 200.7	846649	EPA 200.7	846727
60427703020	S-LMW-6S	EPA 200.7	846649	EPA 200.7	846727
60427703021	S-TP-4D	EPA 200.7	846649	EPA 200.7	846727
60427703022	S-TP-5D	EPA 200.7	846649	EPA 200.7	846727
60427703023	S-TP-8D	EPA 200.7	846649	EPA 200.7	846727
60427703001	S-BMW-1S	EPA 200.8	845220	EPA 200.8	845418
60427703002	S-BMW-3S	EPA 200.8	845220	EPA 200.8	845418
60427703003	S-AM-1S	EPA 200.8	845220	EPA 200.8	845418
60427703004	S-AM-1D	EPA 200.8	845220	EPA 200.8	845418
60427703005	S-PZ-1S	EPA 200.8	845220	EPA 200.8	845418
60427703006	S-TP-2D	EPA 200.8	845220	EPA 200.8	845418
60427703007	S-TP-6S	EPA 200.8	845220	EPA 200.8	845418
60427703008	S-CA-DUP-1	EPA 200.8	845220	EPA 200.8	845418
60427703009	S-TP-3D	EPA 200.8	846651	EPA 200.8	846729
60427703010	S-UG-3	EPA 200.8	846651	EPA 200.8	846729
60427703011	S-CA-FB-1	EPA 200.8	846651	EPA 200.8	846729
60427703012	S-LMW-4S	EPA 200.8	846651	EPA 200.8	846729
60427703013	S-PZ-9D	EPA 200.8	846651	EPA 200.8	846729
60427703014	S-TP-6D	EPA 200.8	846651	EPA 200.8	846729
60427703015	S-CA-DUP-2	EPA 200.8	846651	EPA 200.8	846729
60427703016	S-CA-FB-2	EPA 200.8	846651	EPA 200.8	846729
60427703017	S-LMW-1S	EPA 200.8	846651	EPA 200.8	846729
60427703018	S-LMW-2S	EPA 200.8	846651	EPA 200.8	846729
60427703019	S-LMW-5S	EPA 200.8	846651	EPA 200.8	846729
60427703020	S-LMW-6S	EPA 200.8	846651	EPA 200.8	846729
60427703021	S-TP-4D	EPA 200.8	846651	EPA 200.8	846729
60427703022	S-TP-5D	EPA 200.8	846651	EPA 200.8	846729
60427703023	S-TP-8D	EPA 200.8	846651	EPA 200.8	846729
60427703001	S-BMW-1S	EPA 7470	849155	EPA 7470	849333

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703002	S-BMW-3S	EPA 7470	849155	EPA 7470	849333
60427703003	S-AM-1S	EPA 7470	849155	EPA 7470	849333
60427703004	S-AM-1D	EPA 7470	849155	EPA 7470	849333
60427703005	S-PZ-1S	EPA 7470	849155	EPA 7470	849333
60427703006	S-TP-2D	EPA 7470	849155	EPA 7470	849333
60427703007	S-TP-6S	EPA 7470	849155	EPA 7470	849333
60427703008	S-CA-DUP-1	EPA 7470	849155	EPA 7470	849333
60427703009	S-TP-3D	EPA 7470	849155	EPA 7470	849333
60427703010	S-UG-3	EPA 7470	849155	EPA 7470	849333
60427703011	S-CA-FB-1	EPA 7470	849155	EPA 7470	849333
60427703012	S-LMW-4S	EPA 7470	849155	EPA 7470	849333
60427703013	S-PZ-9D	EPA 7470	849155	EPA 7470	849333
60427703014	S-TP-6D	EPA 7470	849155	EPA 7470	849333
60427703015	S-CA-DUP-2	EPA 7470	849155	EPA 7470	849333
60427703016	S-CA-FB-2	EPA 7470	849155	EPA 7470	849333
60427703017	S-LMW-1S	EPA 7470	849155	EPA 7470	849333
60427703018	S-LMW-2S	EPA 7470	849155	EPA 7470	849333
60427703019	S-LMW-5S	EPA 7470	849155	EPA 7470	849333
60427703020	S-LMW-6S	EPA 7470	849155	EPA 7470	849333
60427703021	S-TP-4D	EPA 7470	849295	EPA 7470	849330
60427703022	S-TP-5D	EPA 7470	849295	EPA 7470	849330
60427703023	S-TP-8D	EPA 7470	849295	EPA 7470	849330
60427703001	S-BMW-1S	EPA 903.1	586497		
60427703002	S-BMW-3S	EPA 903.1	586497		
60427703003	S-AM-1S	EPA 903.1	586497		
60427703004	S-AM-1D	EPA 903.1	586497		
60427703005	S-PZ-1S	EPA 903.1	586497		
60427703006	S-TP-2D	EPA 903.1	586497		
60427703007	S-TP-6S	EPA 903.1	586497		
60427703008	S-CA-DUP-1	EPA 903.1	586497		
60427703009	S-TP-3D	EPA 903.1	588440		
60427703010	S-UG-3	EPA 903.1	588440		
60427703011	S-CA-FB-1	EPA 903.1	588440		
60427703012	S-LMW-4S	EPA 903.1	588440		
60427703013	S-PZ-9D	EPA 903.1	588440		
60427703014	S-TP-6D	EPA 903.1	588440		
60427703015	S-CA-DUP-2	EPA 903.1	588440		
60427703016	S-CA-FB-2	EPA 903.1	588440		
60427703017	S-LMW-1S	EPA 903.1	589315		
60427703018	S-LMW-2S	EPA 903.1	589315		
60427703019	S-LMW-5S	EPA 903.1	589315		
60427703020	S-LMW-6S	EPA 903.1	589315		
60427703021	S-TP-4D	EPA 903.1	589315		
60427703022	S-TP-5D	EPA 903.1	589315		
60427703023	S-TP-8D	EPA 903.1	589315		
60427703024	S-CA-MS-1	EPA 903.1	589315		
60427703025	S-CA-MSD-1	EPA 903.1	589315		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703001	S-BMW-1S	EPA 904.0	586499		
60427703002	S-BMW-3S	EPA 904.0	586499		
60427703003	S-AM-1S	EPA 904.0	586499		
60427703004	S-AM-1D	EPA 904.0	586499		
60427703005	S-PZ-1S	EPA 904.0	586499		
60427703006	S-TP-2D	EPA 904.0	586499		
60427703007	S-TP-6S	EPA 904.0	586499		
60427703008	S-CA-DUP-1	EPA 904.0	586499		
60427703009	S-TP-3D	EPA 904.0	588441		
60427703010	S-UG-3	EPA 904.0	588441		
60427703011	S-CA-FB-1	EPA 904.0	588441		
60427703012	S-LMW-4S	EPA 904.0	588441		
60427703013	S-PZ-9D	EPA 904.0	588441		
60427703014	S-TP-6D	EPA 904.0	588441		
60427703015	S-CA-DUP-2	EPA 904.0	588441		
60427703016	S-CA-FB-2	EPA 904.0	588441		
60427703017	S-LMW-1S	EPA 904.0	589316		
60427703018	S-LMW-2S	EPA 904.0	589316		
60427703019	S-LMW-5S	EPA 904.0	589316		
60427703020	S-LMW-6S	EPA 904.0	589316		
60427703021	S-TP-4D	EPA 904.0	589316		
60427703022	S-TP-5D	EPA 904.0	589316		
60427703023	S-TP-8D	EPA 904.0	589316		
60427703024	S-CA-MS-1	EPA 904.0	589316		
60427703025	S-CA-MSD-1	EPA 904.0	589316		
60427703001	S-BMW-1S	SM 2320B	845171		
60427703002	S-BMW-3S	SM 2320B	845171		
60427703003	S-AM-1S	SM 2320B	845171		
60427703004	S-AM-1D	SM 2320B	845171		
60427703005	S-PZ-1S	SM 2320B	845171		
60427703006	S-TP-2D	SM 2320B	845171		
60427703007	S-TP-6S	SM 2320B	845171		
60427703008	S-CA-DUP-1	SM 2320B	845171		
60427703009	S-TP-3D	SM 2320B	846049		
60427703010	S-UG-3	SM 2320B	846049		
60427703011	S-CA-FB-1	SM 2320B	846049		
60427703012	S-LMW-4S	SM 2320B	846050		
60427703013	S-PZ-9D	SM 2320B	846050		
60427703014	S-TP-6D	SM 2320B	846050		
60427703015	S-CA-DUP-2	SM 2320B	846050		
60427703016	S-CA-FB-2	SM 2320B	846050		
60427703017	S-LMW-1S	SM 2320B	846614		
60427703018	S-LMW-2S	SM 2320B	846614		
60427703019	S-LMW-5S	SM 2320B	846614		
60427703020	S-LMW-6S	SM 2320B	847027		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703021	S-TP-4D	SM 2320B	847027		
60427703022	S-TP-5D	SM 2320B	847027		
60427703023	S-TP-8D	SM 2320B	847027		
60427703001	S-BMW-1S	SM 2540C	845831		
60427703002	S-BMW-3S	SM 2540C	846023		
60427703003	S-AM-1S	SM 2540C	846023		
60427703004	S-AM-1D	SM 2540C	846023		
60427703005	S-PZ-1S	SM 2540C	845831		
60427703006	S-TP-2D	SM 2540C	845831		
60427703007	S-TP-6S	SM 2540C	846023		
60427703008	S-CA-DUP-1	SM 2540C	845831		
60427703009	S-TP-3D	SM 2540C	846264		
60427703010	S-UG-3	SM 2540C	846264		
60427703011	S-CA-FB-1	SM 2540C	846264		
60427703012	S-LMW-4S	SM 2540C	846772		
60427703013	S-PZ-9D	SM 2540C	846772		
60427703014	S-TP-6D	SM 2540C	846772		
60427703015	S-CA-DUP-2	SM 2540C	846772		
60427703016	S-CA-FB-2	SM 2540C	846772		
60427703017	S-LMW-1S	SM 2540C	846949		
60427703018	S-LMW-2S	SM 2540C	846949		
60427703019	S-LMW-5S	SM 2540C	847232		
60427703020	S-LMW-6S	SM 2540C	847232		
60427703021	S-TP-4D	SM 2540C	847232		
60427703022	S-TP-5D	SM 2540C	847232		
60427703023	S-TP-8D	SM 2540C	847232		
60427703001	S-BMW-1S	SM 3500-Fe B#4	849691		
60427703002	S-BMW-3S	SM 3500-Fe B#4	849691		
60427703003	S-AM-1S	SM 3500-Fe B#4	849691		
60427703004	S-AM-1D	SM 3500-Fe B#4	849691		
60427703005	S-PZ-1S	SM 3500-Fe B#4	849691		
60427703006	S-TP-2D	SM 3500-Fe B#4	849691		
60427703007	S-TP-6S	SM 3500-Fe B#4	849691		
60427703008	S-CA-DUP-1	SM 3500-Fe B#4	849691		
60427703009	S-TP-3D	SM 3500-Fe B#4	849850		
60427703010	S-UG-3	SM 3500-Fe B#4	849850		
60427703011	S-CA-FB-1	SM 3500-Fe B#4	849850		
60427703012	S-LMW-4S	SM 3500-Fe B#4	849850		
60427703013	S-PZ-9D	SM 3500-Fe B#4	849850		
60427703014	S-TP-6D	SM 3500-Fe B#4	849850		
60427703015	S-CA-DUP-2	SM 3500-Fe B#4	849850		
60427703016	S-CA-FB-2	SM 3500-Fe B#4	849850		
60427703017	S-LMW-1S	SM 3500-Fe B#4	849850		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703018	S-LMW-2S	SM 3500-Fe B#4	849850		
60427703019	S-LMW-5S	SM 3500-Fe B#4	849850		
60427703020	S-LMW-6S	SM 3500-Fe B#4	849850		
60427703021	S-TP-4D	SM 3500-Fe B#4	849850		
60427703022	S-TP-5D	SM 3500-Fe B#4	849850		
60427703023	S-TP-8D	SM 3500-Fe B#4	849850		
60427703001	S-BMW-1S	SM 3500-Fe B#4	845657		
60427703002	S-BMW-3S	SM 3500-Fe B#4	845657		
60427703003	S-AM-1S	SM 3500-Fe B#4	845658		
60427703004	S-AM-1D	SM 3500-Fe B#4	845658		
60427703005	S-PZ-1S	SM 3500-Fe B#4	845657		
60427703006	S-TP-2D	SM 3500-Fe B#4	845657		
60427703007	S-TP-6S	SM 3500-Fe B#4	845658		
60427703008	S-CA-DUP-1	SM 3500-Fe B#4	845657		
60427703009	S-TP-3D	SM 3500-Fe B#4	847452		
60427703010	S-UG-3	SM 3500-Fe B#4	847452		
60427703011	S-CA-FB-1	SM 3500-Fe B#4	847452		
60427703012	S-LMW-4S	SM 3500-Fe B#4	847452		
60427703013	S-PZ-9D	SM 3500-Fe B#4	847452		
60427703014	S-TP-6D	SM 3500-Fe B#4	847452		
60427703015	S-CA-DUP-2	SM 3500-Fe B#4	847452		
60427703016	S-CA-FB-2	SM 3500-Fe B#4	847452		
60427703017	S-LMW-1S	SM 3500-Fe B#4	847452		
60427703018	S-LMW-2S	SM 3500-Fe B#4	847452		
60427703019	S-LMW-5S	SM 3500-Fe B#4	847452		
60427703020	S-LMW-6S	SM 3500-Fe B#4	847452		
60427703021	S-TP-4D	SM 3500-Fe B#4	847452		
60427703022	S-TP-5D	SM 3500-Fe B#4	847452		
60427703023	S-TP-8D	SM 3500-Fe B#4	847452		
60427703001	S-BMW-1S	SM 4500-S-2 D	846013		
60427703002	S-BMW-3S	SM 4500-S-2 D	846013		
60427703003	S-AM-1S	SM 4500-S-2 D	846013		
60427703004	S-AM-1D	SM 4500-S-2 D	846013		
60427703005	S-PZ-1S	SM 4500-S-2 D	845610		
60427703006	S-TP-2D	SM 4500-S-2 D	845610		
60427703007	S-TP-6S	SM 4500-S-2 D	846013		
60427703008	S-CA-DUP-1	SM 4500-S-2 D	845610		
60427703009	S-TP-3D	SM 4500-S-2 D	846256		
60427703010	S-UG-3	SM 4500-S-2 D	846256		
60427703011	S-CA-FB-1	SM 4500-S-2 D	846256		
60427703012	S-LMW-4S	SM 4500-S-2 D	846774		
60427703013	S-PZ-9D	SM 4500-S-2 D	846774		
60427703014	S-TP-6D	SM 4500-S-2 D	846774		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60427703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703015	S-CA-DUP-2	SM 4500-S-2 D	846774		
60427703016	S-CA-FB-2	SM 4500-S-2 D	846774		
60427703017	S-LMW-1S	SM 4500-S-2 D	846774		
60427703018	S-LMW-2S	SM 4500-S-2 D	846774		
60427703019	S-LMW-5S	SM 4500-S-2 D	847229		
60427703020	S-LMW-6S	SM 4500-S-2 D	847229		
60427703021	S-TP-4D	SM 4500-S-2 D	847229		
60427703022	S-TP-5D	SM 4500-S-2 D	847229		
60427703023	S-TP-8D	SM 4500-S-2 D	847229		
60427703001	S-BMW-1S	EPA 300.0	848462		
60427703002	S-BMW-3S	EPA 300.0	848462		
60427703003	S-AM-1S	EPA 300.0	848462		
60427703004	S-AM-1D	EPA 300.0	848463		
60427703005	S-PZ-1S	EPA 300.0	848462		
60427703006	S-TP-2D	EPA 300.0	848462		
60427703007	S-TP-6S	EPA 300.0	848463		
60427703008	S-CA-DUP-1	EPA 300.0	848462		
60427703009	S-TP-3D	EPA 300.0	849094		
60427703010	S-UG-3	EPA 300.0	849094		
60427703011	S-CA-FB-1	EPA 300.0	849094		
60427703012	S-LMW-4S	EPA 300.0	849094		
60427703013	S-PZ-9D	EPA 300.0	849094		
60427703014	S-TP-6D	EPA 300.0	849094		
60427703015	S-CA-DUP-2	EPA 300.0	849094		
60427703016	S-CA-FB-2	EPA 300.0	849094		
60427703017	S-LMW-1S	EPA 300.0	849094		
60427703018	S-LMW-2S	EPA 300.0	849094		
60427703019	S-LMW-5S	EPA 300.0	849095		
60427703020	S-LMW-6S	EPA 300.0	849095		
60427703021	S-TP-4D	EPA 300.0	849095		
60427703022	S-TP-5D	EPA 300.0	849095		
60427703023	S-TP-8D	EPA 300.0	849095		

REPORT OF LABORATORY ANALYSIS

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WO# : 60427703



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

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Georg

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 0.1/0.3/1.6 Corr. Factor +0.2 Corrected 0.9/0.5/1.8

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12-11-9/14.6 12-11-14.2

PV 5/3/23

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)	<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#: 67182/62071

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



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

Revision: 2

Effective Date: 01/12/

WO#: 60427703



60427703

Client Name: RocksMith

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: T209 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.7 Corr. Factor 40.2 Corrected 16.9
Temperature should be above freezing to 6°C 2.3 2.5

Date and initials of person examining contents: BC 5/5

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>BC 5/5</u>
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)	<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) Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No <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: _____



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

WO#: 60427703



Revision: 2

Effective Date: 01/12/2022

Issued by: _____

Client Name: Rocksmith Geoenr

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: 7299 Type of Ice: W Blue None

Cooler Temperature (°C): As-read 0.0/10.2 Corr. Factor 10.2 Corrected 0.2/10.4

Date and initials of person examining contents:

5/18/23

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>67187/62011</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: _____

WO#: 60427703



	DC#_Title: ENV-FRM-LENE-0009_Sample		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmitz 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: Water Blue None

Cooler Temperature (°C): As-read 1.5/0.9/0.2 Corr. Factor +0.2 Corrected 1.7/1.1/0.9

Temperature should be above freezing to 6°C 14.7/15.3

Date and initials of person examining contents:

5/10/23

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)	<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#: 67181/62071

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

1/3

Client: Rocksmith Geoen

Profile #

Notes: Append to 6042703

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																															
3	WT																						1								
4	WT																						2								
5																							1								
6	WT																						2								
7	WT																						2								
8																							1								
9																							1								
10																							1								
11																							1								
12																							1								

Container Codes

Container Code	Description	Matrix	Material	Volume	Notes
DG9B	40mL bisulfate clear vial		Glass		
DG9H	40mL HCl amber vial		Glass		
DG9M	40mL MeOH clear vial		Glass		
DG9Q	40mL TSP amber vial		Glass		
DG9S	40mL H2SO4 amber vial		Glass		
DG9T	40mL Na Thio amber vial		Glass		
DG9U	40mL amber unpreserved		Glass		
VG9H	40mL HCl clear vial		Glass		
VG9T	40mL Na Thio. clear vial		Glass		
VG9U	40mL unpreserved clear vial		Glass		
BG1S	1liter H2SO4 clear glass		Glass		
BG1U	1liter unpres glass		Glass		
BG3H	250mL HCL Clear glass		Glass		
BG3U	250mL Unpres Clear glass		Glass		
WGDU	16oz clear soil jar		Glass		
WGKU	8oz clear soil jar		Glass		
WGFU	4oz clear soil jar		Glass		
WG2U	2oz clear soil jar		Glass		
JGFU	4oz unpreserved amber wide		Glass		
AG0U	100mL unores amber glass		Glass		
AG1H	1L HCl amber glass		Glass		
AG1S	1L H2SO4 amber glass		Glass		
AG1T	1L Na Thiosulfate clear/amber glass		Glass		
AG1U	1liter unpres amber glass		Glass		
AG2N	500mL HNO3 amber glass		Glass		
AG2S	500mL H2SO4 amber glass		Glass		
AG3S	250mL H2SO4 amber glass		Glass		
AG2U	500mL unpres amber glass		Glass		
AG3U	250mL unpres amber glass		Glass		
AG4U	125mL unpres amber glass		Glass		
AG5U	100mL unpres amber glass		Glass		
BP1C	1L NaOH plastic		Plastic		
BP1N	1L HNO3 plastic		Plastic		
BP1S	1L H2SO4 plastic		Plastic		
BP1U	1L unpreserved plastic		Plastic		
BP1Z	1L NaOH, Zn Acetate		Plastic		
BP2C	500mL NaOH plastic		Plastic		
BP2N	500mL HNO3 plastic		Plastic		
BP2S	500mL H2SO4 plastic		Plastic		
BP2U	500mL unpreserved plastic		Plastic		
BP2Z	500mL NaOH, Zn Acetate		Plastic		
BP3C	250mL NaOH plastic		Plastic		
BP3F	250mL HNO3 plastic - field filtered		Plastic		
BP3N	250mL HNO3 plastic		Plastic		
BP3U	250mL unpreserved plastic		Plastic		
BP3S	250mL H2SO4 plastic		Plastic		
BP3Z	250mL NaOH, Zn Acetate		Plastic		
BP4U	125mL unpreserved plastic		Plastic		
BP4N	125mL HNO3 plastic		Plastic		
BP4S	125mL H2SO4 plastic		Plastic		
WPDU	16oz unpreserved plastic		Plastic		
I	Wipe/Swab		Misc.		
SP5T	120mL Coliform Na Thiosulfate		Misc.		
ZPLC	Ziploc Bag		Misc.		
AF	Air Filter		Misc.		
C	Air Cassettes		Misc.		
R	Terracore Kit		Misc.		
U	Summa Can		Misc.		
WT	Water		Matrix		
SL	Solid		Matrix		
NAL	Non-aqueous Liquid		Matrix		
OL	Oil		Matrix		
WP	Wipe		Matrix		
DW	Drinking Water		Matrix		

Work Order Number:

6042703

2/3

Rocksmith Geoen

Client:

Profile #

Notes: Append to 60427703

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			2	1				1			
3	WT																		3			2	3				3			ms/msd
4																														
5																														
6	WT																		1			2	1				1			
7																														
8																														
9																														
10																														
11																														
12	WT																					2								only 409 Radium

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	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 unres 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 unreserved 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 unreserved plastic	WP Wipe
		BP4N 125mL HNO3 plastic	DW Drinking Water
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unreserved plastic	

Work Order Number:

60427703

3/3

Rocksmith Geoen

Client:

Profile #

Site:

Notes

Append to 60427703

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	WFDU	ZPLC	Other
1	WT																					2								
2																						2								
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

2 ONLY 109 Radium

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 Collform 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	Surrima 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	WIP	Wipe
		BP4N	125mL HNO3 plastic	DW	Drinking Water
		BP4S	125mL H2SO4 plastic		
		WPDU	16oz unpreserved plastic		

Work Order Number: 60427703



Memorandum

June 28, 2023

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPA-CA – Data Package 60427703**

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 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 SCPA-CA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 6/28/2023

Laboratory: Pace Analytical SDG #: 60427703

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 S-BMW-1S, S-BMW-3S, S-AM-1S, S-AM-1D, S-PZ-1S, S-TP-2D, S-TP-6S, S-CA-DUP-1, S-TP-3D, S-UG-3, S-CA-FB-1, S-LMW-4S, S-PZ-9D, S-TP-6D, S-CA-DUP-2, S-CA-FB-2, S-LMW-1S, S-LMW-2S, S-LMW-5S, S-LMW-6S, S-TP-4D, S-TP-5D, S-TP-8D, S-CA-MS-1, S-CA-MSD-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>5/1/2023 - 5/9/2023</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 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 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"/>	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 type="checkbox"/>	<input checked="" 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:

3349216: Calcium (28.7J), Iron (9.3J), and Manganese (1.1J). Associated with samples -001 through -008.

Sample results > RL and 10x blank: no qualification.

3354610: Boron (7.1J). Associated with samples -009 through -023. Boron results that are < RL are qualified as non-detects at the RL.

3349221: Chromium (0.37J). Associated with samples -001 through -008. Chromium results that are < RL are qualified as non-detects at the RL.

2863939: Radium-228 (0.933±0.437). Associated with samples -017 through -025. Sample -022 qualified as estimate.

Other results non-detects, no qualification necessary.

Field Blanks:

S-CA-FB-1 @ S-TP-3D: Sulfide (0.018J) and Chloride (0.54J). Sulfide result is a non-detect and Chloride result > RL and 10 blank, no qualification necessary.

S-CA-FB-2 @ S-PZ-9D: Ferric Iron (0.0035J). Result > RL and 10x blank, no qualification necessary.

Duplicates:

S-CA-DUP-1 @ S-TP-2D: RPD exceeds control limits for Chloride (24%) and Sulfate (60%); results qualified as estimates. Molybdenum detected in original sample but not in duplicate, results qualified as estimates

S-CA-DUP-2 @ S-TP-6D: RPD exceeds control limits for Ferrous Iron (20%), results qualified as estimates.

Chromium and Molybdenum detected in duplicate but not original sample, results qualified as estimates.

Radium-226 and Radium-228 results detected in original sample but not in duplicate, results qualified as estimates.

3356880: TDS lab duplicate RPD (131%) exceeds control limit, associated with unrelated sample, no qualification necessary.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3354613/3354614: MSD recovery low for Calcium, MS recovery and RPD within control limits. No qualification necessary.

3350825/3350826: MS recovery high and RPD outside control limits for Sulfide, associated with unrelated sample, no qualification necessary.

3363887/3363888: MS/MSD recovery low for Chloride, MS recovery high for Sulfate. Associated with unrelated sample, no qualification necessary.

3356855/3356856: MS/MSD recoveries low for Sulfide (2%). Because spike recovery is below 10% and original result was a non-detect, this result is rejected (R).

3361731/3361732: MSD recovery high for Sulfate, MS recovery and RPD within control limits

3363887/3363888: MS/MSD recovery low for Chloride, MS recovery high for Sulfate, associated with unrelated sample, no qualification necessary.

3363889/3363890: Associated with sample -022. MSD recovery high and RPD out of control limits for Chloride, result qualified as estimate. MS/MSD recovery low for Fluoride, result qualified as estimate. MSD recovery high for Sulfate, MS recovery and RPD within control limits, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-BMW-1S	Ferrous Iron	0.041	UJ	Analyzed outside of hold time requirement
S-BMW-3S	"	0.041	UJ	"
S-AM-1S	"	0.041	UJ	"
S-AM-1D	"	0.041	UJ	"
S-PZ-1S	"	0.054	J	"
S-TP-2D	"	0.21	J	"
S-TP-6S	"	0.041	UJ	"
S-CA-DUP-1	"	0.18	J	"
S-TP-3D	"	0.35	J	"
S-UG-3	"	0.041	UJ	"
S-CA-FB-1	"	0.041	UJ	"
S-LMW-4S	"	0.041	UJ	"
S-PZ-9D	"	0.45	J	"
S-TP-6D	"	0.38	J	"
S-CA-DUP-2	"	0.31	J	"
S-CA-FB-2	"	0.041	UJ	"
S-LMW-1S	"	0.041	UJ	"
S-LMW-2S	"	0.041	UJ	"
S-LMW-5S	"	0.20	J	"
S-LMW-6S	"	0.041	UJ	"
S-TP-4D	"	0.33	J	"
S-TP-5D	"	0.48	J	"
S-TP-8D	"	0.30	J	"
S-TP-3D	Boron	100	U	Detected in method blank, result < RL
S-TP-6D	"	100	U	"
S-CA-DUP-2	"	100	U	"
S-TP-4D	"	100	U	"
S-TP-8D	"	100	U	"
S-TP-2D	Chromium	1.0	U	"
S-TP-6S	"	1.0	U	"
S-CA-DUP-1	"	1.0	U	"
S-TP-5D	Radium-228	1.22	J	Detected in method blank, result > RL and < 10x blank
S-TP-2D	Chloride	70.6	J	Field DUP RPD exceeds control limits
S-CA-DUP-1	"	90.2	J	"



July 25, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
5233 Roanoke Drive
Saint Charles, MO 63304

RE: Project: AMEREN-VERIFICATION, SCPA
Pace Project No.: 60432860

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 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

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, SCPA

Pace Project No.: 60432860

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

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SAMPLE SUMMARY

Project: AMEREN-VERIFICATION, SCPA
Pace Project No.: 60432860

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60432860001	S-UMW-1D	Water	07/10/23 14:44	07/12/23 04:58
60432860002	S-UMW-DUP-1	Water	07/10/23 00:00	07/12/23 04:58
60432860003	S-UMW-FB-1	Water	07/10/23 14:59	07/12/23 04:58

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SAMPLE ANALYTE COUNT

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60432860001	S-UMW-1D	EPA 200.7	MA1	1	PASI-K
60432860002	S-UMW-DUP-1	EPA 200.7	MA1	1	PASI-K
60432860003	S-UMW-FB-1	EPA 200.7	MA1	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

Sample: S-UMW-1D Lab ID: 60432860001 Collected: 07/10/23 14:44 Received: 07/12/23 04:58 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									
Boron	299	ug/L	100	6.4	1	07/18/23 13:01	07/24/23 15:27	7440-42-8	

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

Sample: S-UMW-DUP-1 Lab ID: 60432860002 Collected: 07/10/23 00:00 Received: 07/12/23 04:58 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									
Boron	301	ug/L	100	6.4	1	07/18/23 13:01	07/24/23 15:34	7440-42-8	

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ANALYTICAL RESULTS

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

Sample: S-UMW-FB-1 Lab ID: 60432860003 Collected: 07/10/23 14:59 Received: 07/12/23 04:58 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									
Boron	<6.4	ug/L	100	6.4	1	07/18/23 13:01	07/24/23 15:36	7440-42-8	

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QUALITY CONTROL DATA

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

QC Batch:	856954	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: 60432860001, 60432860002, 60432860003

METHOD BLANK: 3393503 Matrix: Water
 Associated Lab Samples: 60432860001, 60432860002, 60432860003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	07/24/23 15:20	

LABORATORY CONTROL SAMPLE: 3393504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	957	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3393505 3393506

Parameter	Units	60432860001		3393506		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Boron	ug/L	299	1000	1290	1000	99	98	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3393507 3393508

Parameter	Units	60432876001		3393508		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Boron	ug/L	291	1000	1250	1000	96	95	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3393509 3393510

Parameter	Units	60432876002		3393510		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Boron	ug/L	82.5J	1000	1040	1000	96	98	70-130	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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN-VERIFICATION, SCPA

Pace Project No.: 60432860

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60432860001	S-UMW-1D	EPA 200.7	856954	EPA 200.7	856964
60432860002	S-UMW-DUP-1	EPA 200.7	856954	EPA 200.7	856964
60432860003	S-UMW-FB-1	EPA 200.7	856954	EPA 200.7	856964

REPORT OF LABORATORY ANALYSIS

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

Revision: 2

Effective Date: 01/12/2022

WO#: 60432860



Client Name: Rocksmith

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 CPIC

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.5 Corr. Factor 10.2 Corrected 1.7

Date and initials of person examining contents: 07-12-2023

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)	<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:	
Company:	Rocksmith Geoeengineering, LLC	Report To:	Mark Haddock	Attention:	
Address:	5233 Roanoke Drive St. Charles, MO 63304	Copy To:	Jeffery Ingram, Grant Morey	Company Name:	Rocksmith
Email To:	mark.haddock@rocksmithgeo.com	Purchase Order No.:	COC #1	Address:	
Phone:	314-974-5678	Project Name:	Ameren - Verification Sampling SCPA	Pace Quote Reference:	
Requested Due Date/TAT:	Standard	Pace Project Manager:	Jamie Church	Site Location:	MO
		Project Number:	COC#1	Pace Profile #:	15856, line 1

Section D Required Client Information		Section E Requested Analysis Filtered (Y/N)	
Valid Matrix Codes	DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WP WP AR AR OT OT TS TS	Requested Analysis Filtered (Y/N)	
SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE			

ITEM #	Valid Matrix Codes	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		COMPOSITE START	COMPOSITE END/GRAB									
1	S-UMW-ID			G	WT	S&H / Rocksmith	7-10-08	1444				Y
2	S-UMW-DUP-1			G	WT							
3	S-UMW-FB-1			G	WT		1459					
4	S-UMW-MS-1			G	WT		1444					
5	S-UMW-MSD-1			G	WT		1444					
6				G	WT							
7				G	WT							
8				G	WT							
9				G	WT							
10				G	WT							
11				G	WT							
12				G	WT							

ADDITIONAL COMMENTS			RELINQUISHED BY / AFFILIATION			DATE			TIME			ACCEPTED BY / AFFILIATION			DATE			TIME			SAMPLE CONDITIONS														
S&H / Rocksmith			S&H / Rocksmith			7/10/08			1330			N2			7-12-23			6458			1:7			Y			Y			Y					
SAMPLER NAME AND SIGNATURE																																			
PRINT Name of SAMPLER: <u>Jeff Taylor</u>												DATE Signed (MM/DD/YYYY): <u>7/11/23</u>																							
SIGNATURE of SAMPLER: <u>[Signature]</u>												TEMP IN °C																							
RECEIVED ON												SEALED COOLER												SAMPLES INTACT											

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Client:

Roch Smith

Profile #

Site:

Amarin - Verification Sampling SCA

Notes

COC Line Item	Matrix	WG9H	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					ROS																								
2	WT																													
3	WT																													
4	WT																													
5	WT																													
6	WT																													
7	WT																													
8	WT																													
9	WT																													
10	WT																													
11	WT																													
12	WT																													

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 unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	
BG3U	250mL Unpres Clear glass	250mL unreserved plastic	
WGDU	16oz clear soil jar	250mL H2SO4 plastic	WT
		250mL NaOH, Zn Acetate	SL
		125mL unreserved plastic	NAL
		125mL unreserved plastic	OL
		125mL unreserved plastic	WP
		16oz unreserved plastic	DW
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unreserved plastic	

Work Order Number:

60452860



Memorandum

August 10, 2023

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPA Verification – Data Package 60432860**

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

- None.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren SCPA Verification
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 8/10/2023

Laboratory: Pace Analytical
 Analytical Method (type and no.): EPA 200.7 (Boron)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names S-UMW-1D

SDG #: 60432860

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>7/10/2023</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></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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S-UMW-FB-1 collected @ S-UMW-1D
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"/>	S-UMW-DUP-1 collected @ S-UMW-1D
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RPD = 0.67%
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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 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 type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:



December 22, 2023

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

RE: Project: AMEREN SCPA
Pace Project No.: 60441898

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 11, 2023 and November 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 Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

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 SCPA

Pace Project No.: 60441898

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 SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60441898001	S-UMW-2D	Water	11/10/23 11:40	11/11/23 04:50
60441898002	S-UMW-3D	Water	11/10/23 10:44	11/11/23 04:50
60441898003	S-UMW-4D	Water	11/10/23 09:51	11/11/23 04:50
60441898004	S-UMW-5D	Water	11/10/23 13:08	11/11/23 04:50
60441898005	S-UMW-6D	Water	11/10/23 14:29	11/11/23 04:50
60441898006	S-BMW-1D	Water	11/10/23 10:38	11/11/23 04:50
60441898007	S-BMW-3D	Water	11/10/23 08:47	11/11/23 04:50
60441898008	S-UMW-DUP-1	Water	11/10/23 08:00	11/11/23 04:50
60441898009	S-UMW-MS-1	Water	11/10/23 13:08	11/11/23 04:50
60441898010	S-UMW-MSD-1	Water	11/10/23 13:08	11/11/23 04:50
60441898011	S-UMW-1D	Water	11/14/23 12:30	11/15/23 05:11
60441898012	S-UMW-FB-1	Water	11/14/23 12:27	11/15/23 05:11

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441898001	S-UMW-2D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441898002	S-UMW-3D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441898003	S-UMW-4D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441898004	S-UMW-5D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441898005	S-UMW-6D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441898006	S-BMW-1D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441898007	S-BMW-3D	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
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441898008	S-UMW-DUP-1	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
		EPA 903.1	CLM	1	PASI-PA
60441898009	S-UMW-MS-1	EPA 904.0	VAL	1	PASI-PA
		EPA 903.1	CLM	1	PASI-PA
60441898010	S-UMW-MSD-1	EPA 904.0	VAL	1	PASI-PA
		EPA 200.7	JXD	11	PASI-K
60441898011	S-UMW-1D	EPA 200.8	JGP	4	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
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60441898012	S-UMW-FB-1	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
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PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-2D Lab ID: 60441898001 Collected: 11/10/23 11:40 Received: 11/11/23 04:50 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	59.0	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:25	7440-39-3	
Boron	19600	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:25	7440-42-8	
Calcium	162000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:25	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:25	7440-48-4	
Iron	255	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:25	7439-89-6	
Lithium	28.6	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:25	7439-93-2	
Magnesium	3740	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:25	7439-95-4	
Manganese	155	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:25	7439-96-5	
Molybdenum	1700	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:25	7439-98-7	
Potassium	24900	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:25	7440-09-7	
Sodium	50000	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	3.0	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:02	7440-38-2	
Cadmium	0.55	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:02	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:02	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:02	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	144	mg/L	20.0	10.5	1		11/22/23 14:06		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	789	mg/L	13.3	13.3	1		11/17/23 14:44		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	24.9	mg/L	5.0	2.6	5		12/08/23 23:04	16887-00-6	
Fluoride	0.73	mg/L	0.20	0.12	1		12/07/23 16:50	16984-48-8	L1
Sulfate	365	mg/L	20.0	11.0	20		12/07/23 17:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-3D Lab ID: 60441898002 Collected: 11/10/23 10:44 Received: 11/11/23 04:50 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	76.5	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:27	7440-39-3	
Boron	31900	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:27	7440-42-8	
Calcium	279000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:27	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:27	7440-48-4	
Iron	875	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:27	7439-89-6	
Lithium	21.9	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:27	7439-93-2	
Magnesium	9920	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:27	7439-95-4	
Manganese	508	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:27	7439-96-5	
Molybdenum	3070	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:27	7439-98-7	
Potassium	21200	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:27	7440-09-7	
Sodium	106000	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:27	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.2	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:05	7440-38-2	
Cadmium	1.0	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:05	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:05	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:05	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	179	mg/L	20.0	10.5	1		11/22/23 14:11		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1440	mg/L	20.0	20.0	1		11/17/23 14:45		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.9	mg/L	1.0	0.53	1		12/07/23 17:47	16887-00-6	
Fluoride	0.23	mg/L	0.20	0.12	1		12/07/23 17:47	16984-48-8	L1
Sulfate	758	mg/L	200	110	200		12/07/23 17:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-4D Lab ID: 60441898003 Collected: 11/10/23 09:51 Received: 11/11/23 04:50 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	47.0	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:30	7440-39-3	
Boron	16600	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:30	7440-42-8	
Calcium	136000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:30	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:30	7440-48-4	
Iron	5790	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:30	7439-89-6	
Lithium	34.9	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:30	7439-93-2	
Magnesium	19200	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:30	7439-95-4	
Manganese	1400	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:30	7439-96-5	
Molybdenum	3990	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:30	7439-98-7	
Potassium	12900	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:30	7440-09-7	
Sodium	50700	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:30	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.38J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:07	7440-38-2	
Cadmium	1.3	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:07	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:07	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:07	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	200	mg/L	20.0	10.5	1		11/22/23 14:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	753	mg/L	13.3	13.3	1		11/17/23 14:45		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	27.3	mg/L	5.0	2.6	5		12/08/23 23:16	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.12	1		12/07/23 18:09	16984-48-8	L1
Sulfate	293	mg/L	20.0	11.0	20		12/07/23 18:21	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-5D Lab ID: 60441898004 Collected: 11/10/23 13:08 Received: 11/11/23 04:50 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	410	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:32	7440-39-3	
Boron	6220	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:32	7440-42-8	
Calcium	78700	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:32	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:32	7440-48-4	
Iron	3440	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:32	7439-89-6	
Lithium	21.9	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:32	7439-93-2	
Magnesium	17600	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:32	7439-95-4	
Manganese	487	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:32	7439-96-5	
Molybdenum	191	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:32	7439-98-7	
Potassium	9950	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:32	7440-09-7	
Sodium	20700	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:32	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.35J	ug/L	1.0	0.13	1	11/16/23 11:05	11/27/23 14:56	7440-38-2	
Cadmium	0.080J	ug/L	0.50	0.050	1	11/16/23 11:05	11/27/23 14:56	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	11/27/23 14:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	11/27/23 14:56	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	287	mg/L	20.0	10.5	1		11/22/23 14:22		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	345	mg/L	10.0	10.0	1		11/17/23 14:45		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.8	mg/L	5.0	2.6	5		12/08/23 23:51	16887-00-6	H1
Fluoride	0.15J	mg/L	0.20	0.12	1		12/07/23 18:44	16984-48-8	L1,M1
Sulfate	1.9	mg/L	1.0	0.55	1		12/07/23 18:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-6D Lab ID: 60441898005 Collected: 11/10/23 14:29 Received: 11/11/23 04:50 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	156	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:38	7440-39-3	
Boron	411	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:38	7440-42-8	
Calcium	109000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:38	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:38	7440-48-4	
Iron	7230	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:38	7439-89-6	
Lithium	17.7	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:38	7439-93-2	
Magnesium	25200	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:38	7439-95-4	
Manganese	775	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:38	7439-96-5	
Molybdenum	37.2	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:38	7439-98-7	
Potassium	4530	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:38	7440-09-7	
Sodium	9060	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:38	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.41J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:11	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:11	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:11	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:11	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	362	mg/L	20.0	10.5	1		11/22/23 14:34		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	421	mg/L	10.0	10.0	1		11/17/23 14:45		
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		12/07/23 20:37	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 20:37	16984-48-8	L1
Sulfate	30.4	mg/L	5.0	2.8	5		12/09/23 00:37	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-BMW-1D Lab ID: 60441898006 Collected: 11/10/23 10:38 Received: 11/11/23 04:50 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	331	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:40	7440-39-3	
Boron	140	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:40	7440-42-8	
Calcium	125000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:40	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:40	7440-48-4	
Iron	9490	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:40	7439-89-6	
Lithium	13.9	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:40	7439-93-2	
Magnesium	27100	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:40	7439-95-4	
Manganese	1010	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:40	7439-96-5	
Molybdenum	1.1J	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:40	7439-98-7	
Potassium	2430	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:40	7440-09-7	
Sodium	6700	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:40	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.34J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:14	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:14	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	399	mg/L	20.0	10.5	1		11/22/23 14:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	438	mg/L	10.0	10.0	1		11/17/23 14:45		
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 21:00	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 21:00	16984-48-8	L1
Sulfate	19.7	mg/L	1.0	0.55	1		12/07/23 21:00	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-BMW-3D Lab ID: 60441898007 Collected: 11/10/23 08:47 Received: 11/11/23 04:50 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	703	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:48	7440-39-3	
Boron	65.0J	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:48	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:48	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:48	7440-48-4	
Iron	8440	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:48	7439-89-6	
Lithium	22.2	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:48	7439-93-2	
Magnesium	27000	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:48	7439-95-4	
Manganese	594	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:48	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:48	7439-98-7	
Potassium	3460	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:48	7440-09-7	
Sodium	6290	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.18J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:16	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:16	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:16	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:16	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	382	mg/L	20.0	10.5	1		11/22/23 14:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	437	mg/L	10.0	10.0	1		11/17/23 14:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	11.4	mg/L	1.0	0.53	1		12/07/23 21:23	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 21:23	16984-48-8	L1
Sulfate	28.0	mg/L	5.0	2.8	5		12/09/23 00:49	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-DUP-1 Lab ID: 60441898008 Collected: 11/10/23 08:00 Received: 11/11/23 04:50 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	59.2	ug/L	5.0	0.64	1	11/20/23 14:15	11/22/23 10:50	7440-39-3	
Boron	19700	ug/L	100	6.4	1	11/20/23 14:15	11/22/23 10:50	7440-42-8	
Calcium	163000	ug/L	200	26.9	1	11/20/23 14:15	11/22/23 10:50	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/20/23 14:15	11/22/23 10:50	7440-48-4	
Iron	256	ug/L	50.0	9.1	1	11/20/23 14:15	11/22/23 10:50	7439-89-6	
Lithium	26.2	ug/L	10.0	3.7	1	11/20/23 14:15	11/22/23 10:50	7439-93-2	
Magnesium	3780	ug/L	50.0	20.1	1	11/20/23 14:15	11/22/23 10:50	7439-95-4	
Manganese	155	ug/L	5.0	0.39	1	11/20/23 14:15	11/22/23 10:50	7439-96-5	
Molybdenum	1710	ug/L	20.0	1.0	1	11/20/23 14:15	11/22/23 10:50	7439-98-7	
Potassium	25000	ug/L	500	69.7	1	11/20/23 14:15	11/22/23 10:50	7440-09-7	
Sodium	50500	ug/L	500	115	1	11/20/23 14:15	11/22/23 10:50	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	2.9	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:18	7440-38-2	
Cadmium	0.53	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:18	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:18	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:18	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	144	mg/L	20.0	10.5	1		11/22/23 15:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1050	mg/L	13.3	13.3	1		11/17/23 14:46		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	25.0	mg/L	5.0	2.6	5		12/09/23 01:00	16887-00-6	H1
Fluoride	0.73	mg/L	0.20	0.12	1		12/07/23 22:08	16984-48-8	L1
Sulfate	369	mg/L	20.0	11.0	20		12/07/23 22:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-1D Lab ID: 60441898011 Collected: 11/14/23 12:30 Received: 11/15/23 05:11 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	152	ug/L	5.0	0.64	1	11/29/23 12:57	12/01/23 13:55	7440-39-3	
Boron	720	ug/L	100	6.4	1	11/29/23 12:57	12/01/23 13:55	7440-42-8	
Calcium	78500	ug/L	200	26.9	1	11/29/23 12:57	12/01/23 13:55	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/29/23 12:57	12/01/23 13:55	7440-48-4	
Iron	711	ug/L	50.0	9.1	1	11/29/23 12:57	12/01/23 13:55	7439-89-6	
Lithium	17.7	ug/L	10.0	3.7	1	11/29/23 12:57	12/01/23 13:55	7439-93-2	
Magnesium	22400	ug/L	50.0	20.1	1	11/29/23 12:57	12/01/23 13:55	7439-95-4	
Manganese	135	ug/L	5.0	0.39	1	11/29/23 12:57	12/01/23 13:55	7439-96-5	
Molybdenum	66.4	ug/L	20.0	1.0	1	11/29/23 12:57	12/01/23 13:55	7439-98-7	
Potassium	5170	ug/L	500	69.7	1	11/29/23 12:57	12/01/23 13:55	7440-09-7	
Sodium	16000	ug/L	500	115	1	11/29/23 12:57	12/01/23 13:55	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.7	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:26	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:26	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:26	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:26	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	220	mg/L	20.0	10.5	1		11/23/23 12:49		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	372	mg/L	10.0	10.0	1		11/21/23 15:02		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.8	mg/L	5.0	2.6	5		12/09/23 01:24	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 23:16	16984-48-8	L1
Sulfate	72.1	mg/L	5.0	2.8	5		12/09/23 01:24	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-FB-1 Lab ID: 60441898012 Collected: 11/14/23 12:27 Received: 11/15/23 05:11 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 12:31	12/05/23 10:35	7440-39-3	
Boron	<6.4	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:35	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:35	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:35	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:35	7439-89-6	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:35	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:35	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:35	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:35	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:35	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:35	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	<0.13	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:19	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:19	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:19	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/24/23 12:13		
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		11/21/23 09:51		
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		12/15/23 00:14	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/15/23 00:14	16984-48-8	H1,L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/15/23 00:14	14808-79-8	H1

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	874196	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:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008		

METHOD BLANK:	3462512	Matrix:	Water
Associated Lab Samples:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/22/23 09:46	
Boron	ug/L	<6.4	100	6.4	11/22/23 09:46	
Calcium	ug/L	<26.9	200	26.9	11/22/23 09:46	
Cobalt	ug/L	<1.2	5.0	1.2	11/22/23 09:46	
Iron	ug/L	<9.1	50.0	9.1	11/22/23 09:46	
Lithium	ug/L	<3.7	10.0	3.7	11/22/23 09:46	
Magnesium	ug/L	<20.1	50.0	20.1	11/22/23 09:46	
Manganese	ug/L	<0.39	5.0	0.39	11/22/23 09:46	
Molybdenum	ug/L	<1.0	20.0	1.0	11/22/23 09:46	
Potassium	ug/L	<69.7	500	69.7	11/22/23 09:46	
Sodium	ug/L	<115	500	115	11/22/23 09:46	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	987	99	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10200	102	85-115	

Parameter	Units	3462514		3462515		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60441898004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Barium	ug/L	410	1000	1000	1410	1410	100	100	70-130	0	20	
Boron	ug/L	6220	1000	1000	7190	7100	97	88	70-130	1	20	
Calcium	ug/L	78700	10000	10000	88700	87700	101	90	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1030	1030	103	103	70-130	0	20	
Iron	ug/L	3440	10000	10000	13500	13500	101	101	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3462514 3462515												
Parameter	Units	60441898004		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Lithium	ug/L	21.9	1000	1000	1000	1050	1040	103	102	70-130	1	20
Magnesium	ug/L	17600	10000	10000	10000	27800	27400	102	97	70-130	2	20
Manganese	ug/L	487	1000	1000	1000	1500	1500	101	101	70-130	0	20
Molybdenum	ug/L	191	1000	1000	1000	1220	1210	103	102	70-130	0	20
Potassium	ug/L	9950	10000	10000	10000	20100	19900	102	99	70-130	1	20
Sodium	ug/L	20700	10000	10000	10000	30700	30300	101	97	70-130	1	20

MATRIX SPIKE SAMPLE: 3462516								
Parameter	Units	60441904002		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.		Result	% Rec	Limits	
Barium	ug/L		20.3	1000	1020		100	70-130
Boron	ug/L		330	1000	1270		94	70-130
Calcium	ug/L		21200	10000	30800		96	70-130
Cobalt	ug/L		ND	1000	1030		103	70-130
Iron	ug/L		196	10000	10400		102	70-130
Lithium	ug/L		ND	1000	1030		102	70-130
Magnesium	ug/L		4450	10000	14100		96	70-130
Manganese	ug/L		17.6	1000	1050		103	70-130
Molybdenum	ug/L		ND	1000	1020		102	70-130
Potassium	ug/L		6520	10000	16600		100	70-130
Sodium	ug/L		139000	10000	150000		109	70-130

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 875077

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: 60441898011

METHOD BLANK: 3465717

Matrix: Water

Associated Lab Samples: 60441898011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/30/23 14:27	
Boron	ug/L	<6.4	100	6.4	11/30/23 14:27	
Calcium	ug/L	<26.9	200	26.9	11/30/23 14:27	
Cobalt	ug/L	<1.2	5.0	1.2	11/30/23 14:27	
Iron	ug/L	<9.1	50.0	9.1	11/30/23 14:27	
Lithium	ug/L	<3.7	10.0	3.7	11/30/23 14:27	
Magnesium	ug/L	<20.1	50.0	20.1	11/30/23 14:27	
Manganese	ug/L	<0.39	5.0	0.39	11/30/23 14:27	
Molybdenum	ug/L	<1.0	20.0	1.0	11/30/23 14:27	
Potassium	ug/L	<69.7	500	69.7	11/30/23 14:27	
Sodium	ug/L	<115	500	115	11/30/23 14:27	

LABORATORY CONTROL SAMPLE: 3465718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	962	96	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Cobalt	ug/L	1000	1090	109	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	9950	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9900	99	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465719 3465720

Parameter	Units	60442607001		MS		MSD		% Rec		Max		Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Barium	ug/L	0.064 mg/L	1000	1000	1110	1120	105	106	70-130	1	20	
Boron	ug/L	ND	1000	1000	1010	1030	97	98	70-130	1	20	
Calcium	ug/L	38.3 mg/L	10000	10000	48200	48200	100	100	70-130	0	20	
Cobalt	ug/L	ND	1000	1000	1070	1080	107	108	70-130	1	20	
Iron	ug/L	2.5 mg/L	10000	10000	12900	13000	104	105	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465719 3465720												
Parameter	Units	60442607001		MS	MSD	MS	MSD	% Rec	% Rec	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Lithium	ug/L	ND	1000	1000	1000	1060	1080	105	107	70-130	2	20
Magnesium	ug/L	7.5 mg/L	10000	10000	10000	17300	17500	99	100	70-130	1	20
Manganese	ug/L	0.032 mg/L	1000	1000	1000	1080	1090	105	106	70-130	1	20
Molybdenum	ug/L	ND	1000	1000	1000	1050	1060	105	106	70-130	1	20
Potassium	ug/L	5.6 mg/L	10000	10000	10000	15900	16100	103	104	70-130	1	20
Sodium	ug/L	70.4 mg/L	10000	10000	10000	81000	81000	106	106	70-130	0	20

MATRIX SPIKE SAMPLE: 3465721							
Parameter	Units	60442668002		Spike	MS	MS	% Rec
		Result	Conc.		Result	% Rec	Limits
Barium	ug/L	0.14 mg/L	1000	1000	1130	100	70-130
Boron	ug/L	0.47 mg/L	1000	1000	1430	97	70-130
Calcium	ug/L	293 mg/L	10000	10000	309000	163	70-130
Cobalt	ug/L	0.017 mg/L	1000	1000	1020	101	70-130
Iron	ug/L	24.5 mg/L	10000	10000	36900	124	70-130
Lithium	ug/L	76.3	1000	1000	1070	100	70-130
Magnesium	ug/L	53.5 mg/L	10000	10000	65500	120	70-130
Manganese	ug/L	1.1 mg/L	1000	1000	2110	102	70-130
Molybdenum	ug/L	<20.0	1000	1000	1010	100	70-130
Potassium	ug/L	25.5 mg/L	10000	10000	38400	128	70-130
Sodium	ug/L	249 mg/L	10000	10000	265000	161	70-130

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 875648

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: 60441898012

METHOD BLANK: 3467866

Matrix: Water

Associated Lab Samples: 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/05/23 09:47	
Boron	ug/L	<6.4	100	6.4	12/05/23 09:47	
Calcium	ug/L	<26.9	200	26.9	12/05/23 09:47	
Cobalt	ug/L	<1.2	5.0	1.2	12/05/23 09:47	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 09:47	
Lithium	ug/L	<3.7	10.0	3.7	12/05/23 09:47	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 09:47	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 09:47	
Molybdenum	ug/L	<1.0	20.0	1.0	12/05/23 09:47	
Potassium	ug/L	<69.7	500	69.7	12/05/23 09:47	
Sodium	ug/L	<115	500	115	12/05/23 09:47	

LABORATORY CONTROL SAMPLE: 3467867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1080	108	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	9940	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9710	97	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467868 3467869

Parameter	Units	60441897015		3467868		3467869		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result						
Barium	ug/L	59.5	1000	1070	1000	1080	101	102	70-130	1	20		
Boron	ug/L	92.3J	1000	1080	1000	1080	98	99	70-130	1	20		
Calcium	ug/L	270000	10000	280000	10000	284000	105	139	70-130	1	20 M1		
Cobalt	ug/L	1.4J	1000	1030	1000	1050	103	105	70-130	2	20		
Iron	ug/L	16700	10000	26700	10000	27000	100	103	70-130	1	20		
Lithium	ug/L	50.1	1000	1120	1000	1140	107	109	70-130	2	20		

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467868 3467869											
Parameter	Units	60441897015		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Magnesium	ug/L	74000	10000	10000	84500	85700	105	117	70-130	1	20
Manganese	ug/L	1290	1000	1000	2310	2330	102	104	70-130	1	20
Molybdenum	ug/L	<1.0	1000	1000	1050	1050	105	105	70-130	1	20
Potassium	ug/L	6010	10000	10000	16300	16600	103	106	70-130	2	20
Sodium	ug/L	21800	10000	10000	32600	33100	108	113	70-130	2	20

MATRIX SPIKE SAMPLE: 3467870							
Parameter	Units	60441897020		MS	MS	% Rec	Qualifiers
		Result	Spike	Result	% Rec	Limits	
Barium	ug/L	497	1000	1510	101	70-130	
Boron	ug/L	58.8J	1000	1040	98	70-130	
Calcium	ug/L	115000	10000	125000	100	70-130	
Cobalt	ug/L	1.5J	1000	1050	105	70-130	
Iron	ug/L	6050	10000	16400	104	70-130	
Lithium	ug/L	32.3	1000	1070	104	70-130	
Magnesium	ug/L	28400	10000	38800	103	70-130	
Manganese	ug/L	394	1000	1440	104	70-130	
Molybdenum	ug/L	1.4J	1000	1050	105	70-130	
Potassium	ug/L	3250	10000	13400	101	70-130	
Sodium	ug/L	7600	10000	18200	106	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	873702	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:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008		

METHOD BLANK:	3460414	Matrix:	Water
Associated Lab Samples:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	11/27/23 14:50	
Cadmium	ug/L	<0.050	0.50	0.050	11/27/23 14:50	
Chromium	ug/L	<0.30	1.0	0.30	11/27/23 14:50	
Selenium	ug/L	<0.18	1.0	0.18	11/27/23 14:50	

LABORATORY CONTROL SAMPLE: 3460415						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	42.5	106	85-115	
Cadmium	ug/L	40	42.6	107	85-115	
Chromium	ug/L	40	41.9	105	85-115	
Selenium	ug/L	40	43.1	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3460416 3460417												
Parameter	Units	60441898004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.35J	40	40	43.3	43.3	107	107	70-130	0	20	
Cadmium	ug/L	0.080J	40	40	42.0	42.0	105	105	70-130	0	20	
Chromium	ug/L	<0.30	40	40	42.6	42.8	106	107	70-130	0	20	
Selenium	ug/L	<0.18	40	40	42.0	42.2	105	105	70-130	1	20	

MATRIX SPIKE SAMPLE: 3460418							
Parameter	Units	60441941001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	6.7	40	49.7	108	70-130	
Cadmium	ug/L	<0.50	40	40.9	102	70-130	
Chromium	ug/L	<1.0	40	41.0	102	70-130	
Selenium	ug/L	1.0	40	42.3	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	874827	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: 60441898011, 60441898012

METHOD BLANK: 3464895 Matrix: Water

Associated Lab Samples: 60441898011, 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/05/23 20:23	
Cadmium	ug/L	<0.050	0.50	0.050	12/05/23 20:23	
Chromium	ug/L	<0.30	1.0	0.30	12/05/23 20:23	
Selenium	ug/L	<0.18	1.0	0.18	12/05/23 20:23	

LABORATORY CONTROL SAMPLE: 3464896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	41.5	104	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.9	107	85-115	
Selenium	ug/L	40	41.4	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3464897 3464898

Parameter	Units	60441897015		60441897018		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Arsenic	ug/L	0.34J	40	40	40.4	38.5	100	95	70-130	5	20	
Cadmium	ug/L	<0.050	40	40	38.1	36.1	95	90	70-130	5	20	
Chromium	ug/L	<0.30	40	40	39.8	38.9	99	97	70-130	2	20	
Selenium	ug/L	<0.18	40	40	38.5	37.0	96	93	70-130	4	20	

MATRIX SPIKE SAMPLE: 3464899

Parameter	Units	60441897018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.3	40	42.4	103	70-130	
Cadmium	ug/L	<0.050	40	39.7	99	70-130	
Chromium	ug/L	<0.30	40	42.2	105	70-130	
Selenium	ug/L	<0.18	40	39.3	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	874405	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008

METHOD BLANK: 3463378 Matrix: Water

Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/22/23 13:54	

LABORATORY CONTROL SAMPLE: 3463379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	477	95	90-110	

SAMPLE DUPLICATE: 3463380

Parameter	Units	60441898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	287	286	0	10	

SAMPLE DUPLICATE: 3463381

Parameter	Units	60441996004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	418	419	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 874578

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898011

METHOD BLANK: 3464006

Matrix: Water

Associated Lab Samples: 60441898011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/23/23 10:53	

LABORATORY CONTROL SAMPLE: 3464007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464008

Parameter	Units	60441897019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	333	340	2	10	

SAMPLE DUPLICATE: 3464009

Parameter	Units	60442041008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	183	186	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 874655	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898012

METHOD BLANK: 3464241 Matrix: Water

Associated Lab Samples: 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/24/23 10:52	

LABORATORY CONTROL SAMPLE: 3464242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464243

Parameter	Units	60442101006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	364	365	0	10	

SAMPLE DUPLICATE: 3464244

Parameter	Units	60442270017 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	305	308	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 873904

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008

METHOD BLANK: 3461231

Matrix: Water

Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/23 14:43	

LABORATORY CONTROL SAMPLE: 3461232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 3461233

Parameter	Units	60441897001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	462	3	10	

SAMPLE DUPLICATE: 3461753

Parameter	Units	60441898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	345	366	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 874253

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898011

METHOD BLANK: 3462669

Matrix: Water

Associated Lab Samples: 60441898011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/21/23 15:00	

LABORATORY CONTROL SAMPLE: 3462670

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

SAMPLE DUPLICATE: 3462671

Parameter	Units	60442041008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1520	1500	1	10	

SAMPLE DUPLICATE: 3462672

Parameter	Units	60442041011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	29.0	38.0	27	10	D6

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch: 874254	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441898012

METHOD BLANK: 3462673 Matrix: Water

Associated Lab Samples: 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/21/23 09:49	1e

LABORATORY CONTROL SAMPLE: 3462674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	1e

SAMPLE DUPLICATE: 3462675

Parameter	Units	60441897009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	566	552	3	10	1e

SAMPLE DUPLICATE: 3462676

Parameter	Units	60442430001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	473	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	875885	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:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898011		

METHOD BLANK:	3469019	Matrix:	Water
Associated Lab Samples:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/07/23 13:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/07/23 13:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/07/23 13:03	

METHOD BLANK:	3471852	Matrix:	Water
Associated Lab Samples:	60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/08/23 21:31	
Fluoride	mg/L	<0.12	0.20	0.12	12/08/23 21:31	
Sulfate	mg/L	<0.55	1.0	0.55	12/08/23 21:31	

LABORATORY CONTROL SAMPLE:	3469020					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	4.5	91	90-110	

LABORATORY CONTROL SAMPLE:	3471853					
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	2.8	113	90-110 L1	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3469021			3469022									
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	23.8	25	25	25	48.4	48.2	99	98	80-120	0	15	H1
Fluoride	mg/L	0.15J	2.5	2.5	2.5	3.1	3.2	119	122	80-120	2	15	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3469021												3469022	
Parameter	Units	60441898004 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Sulfate	mg/L	1.9	5	5	6.9	7.2	100	106	80-120	4	15		

SAMPLE DUPLICATE: 3469023

Parameter	Units	60441898004	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Chloride	mg/L	23.8	23.0	3	15 H1	
Fluoride	mg/L	0.15J	0.15J		15	
Sulfate	mg/L	1.9	1.7	9	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	877073	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: 60441898012

METHOD BLANK: 3473823 Matrix: Water

Associated Lab Samples: 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 15:15	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 15:15	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 15:15	

METHOD BLANK: 3475663 Matrix: Water

Associated Lab Samples: 60441898012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/15/23 10:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/15/23 10:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/15/23 10:03	

LABORATORY CONTROL SAMPLE: 3473824

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	2.9	115	90-110 L1	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3475664

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3473825 3473826

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442101002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	24.4	50	50	76.5	74.2	104	100	80-120	3	15	H1	
Fluoride	mg/L	<0.12	2.5	2.5	2.3	2.3	93	93	80-120	0	15	H1	
Sulfate	mg/L	416	250	250	686	681	108	106	80-120	1	15	H1	

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QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60441898

MATRIX SPIKE SAMPLE:		3473827		60441897011		Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5.3	5	10.1	96			80-120	H1	
Fluoride	mg/L	<0.12	2.5	2.3	92			80-120	H1	
Sulfate	mg/L	51.8	50	96.7	90			80-120	H1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-2D **Lab ID: 60441898001** Collected: 11/10/23 11:40 Received: 11/11/23 04:50 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 ± 0.503 (0.952) C:NA T:90%	pCi/L	12/18/23 14:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.379 ± 0.344 (0.693) C:81% T:81%	pCi/L	12/12/23 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.167 ± 0.547 (1.01) C:NA T:91%	pCi/L	12/18/23 14:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.811 ± 0.411 (0.712) C:82% T:85%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.415 ± 0.410 (0.623) C:NA T:86%	pCi/L	12/18/23 14:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.103 ± 0.327 (0.739) C:77% T:86%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-5D **Lab ID: 60441898004** Collected: 11/10/23 13:08 Received: 11/11/23 04:50 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	0.170 ± 0.312 (0.556) C:NA T:89%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.20 ± 0.463 (0.667) C:78% T:85%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.362 ± 0.444 (0.730) C:NA T:86%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.632 ± 0.404 (0.736) C:79% T:83%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.104 ± 0.250 (0.483) C:NA T:87%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.953 ± 0.462 (0.783) C:79% T:81%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-BMW-3D **Lab ID: 60441898007** Collected: 11/10/23 08:47 Received: 11/11/23 04:50 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	0.0998 ± 0.479 (0.905) C:NA T:89%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0229 ± 0.307 (0.714) C:82% T:83%	pCi/L	12/12/23 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-DUP-1 **Lab ID: 60441898008** Collected: 11/10/23 08:00 Received: 11/11/23 04:50 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	0.220 ± 0.592 (1.07) C:NA T:83%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.458 ± 0.409 (0.825) C:79% T:76%	pCi/L	12/12/23 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	117.71 %REC ± NA (NA) C:NA T:NA	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	97.32 %REC ± NA (NA) C:NA T:NA	pCi/L	12/12/23 14:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-MSD-1	Lab ID: 60441898010	Collected: 11/10/23 13:08	Received: 11/11/23 04:50	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	130.50 %REC 10.30RPD ± NA (NA) C:NA T:NA	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	71.87 %REC 30.08RPD ± NA (NA) C:NA T:NA	pCi/L	12/12/23 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Sample: S-UMW-1D **Lab ID: 60441898011** Collected: 11/14/23 12:30 Received: 11/15/23 05:11 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	0.170 ± 0.484 (0.898) C:NA T:93%	pCi/L	12/18/23 14:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.251 ± 0.385 (0.833) C:77% T:86%	pCi/L	12/12/23 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.124 ± 0.282 (0.665) C:NA T:88%	pCi/L	12/18/23 14:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.324 ± 0.386 (0.814) C:77% T:87%	pCi/L	12/12/23 14:39	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	633501	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: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898009, 60441898010, 60441898011, 60441898012

METHOD BLANK:	3088434	Matrix:	Water
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Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898009, 60441898010, 60441898011, 60441898012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.167 ± 0.201 (0.307) C:NA T:85%	pCi/L	12/18/23 14:06	

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 - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60441898

QC Batch:	633505	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: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898009, 60441898010, 60441898011, 60441898012

METHOD BLANK: 3088440 Matrix: Water

Associated Lab Samples: 60441898001, 60441898002, 60441898003, 60441898004, 60441898005, 60441898006, 60441898007, 60441898008, 60441898009, 60441898010, 60441898011, 60441898012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.547 ± 0.364 (0.686) C:87% T:77%	pCi/L	12/12/23 14:36	

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN SCPA

Pace Project No.: 60441898

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441898001	S-UMW-2D	EPA 200.7	874196	EPA 200.7	874210
60441898002	S-UMW-3D	EPA 200.7	874196	EPA 200.7	874210
60441898003	S-UMW-4D	EPA 200.7	874196	EPA 200.7	874210
60441898004	S-UMW-5D	EPA 200.7	874196	EPA 200.7	874210
60441898005	S-UMW-6D	EPA 200.7	874196	EPA 200.7	874210
60441898006	S-BMW-1D	EPA 200.7	874196	EPA 200.7	874210
60441898007	S-BMW-3D	EPA 200.7	874196	EPA 200.7	874210
60441898008	S-UMW-DUP-1	EPA 200.7	874196	EPA 200.7	874210
60441898011	S-UMW-1D	EPA 200.7	875077	EPA 200.7	875230
60441898012	S-UMW-FB-1	EPA 200.7	875648	EPA 200.7	875705
60441898001	S-UMW-2D	EPA 200.8	873702	EPA 200.8	873784
60441898002	S-UMW-3D	EPA 200.8	873702	EPA 200.8	873784
60441898003	S-UMW-4D	EPA 200.8	873702	EPA 200.8	873784
60441898004	S-UMW-5D	EPA 200.8	873702	EPA 200.8	873784
60441898005	S-UMW-6D	EPA 200.8	873702	EPA 200.8	873784
60441898006	S-BMW-1D	EPA 200.8	873702	EPA 200.8	873784
60441898007	S-BMW-3D	EPA 200.8	873702	EPA 200.8	873784
60441898008	S-UMW-DUP-1	EPA 200.8	873702	EPA 200.8	873784
60441898011	S-UMW-1D	EPA 200.8	874827	EPA 200.8	874949
60441898012	S-UMW-FB-1	EPA 200.8	874827	EPA 200.8	874949
60441898001	S-UMW-2D	EPA 903.1	633501		
60441898002	S-UMW-3D	EPA 903.1	633501		
60441898003	S-UMW-4D	EPA 903.1	633501		
60441898004	S-UMW-5D	EPA 903.1	633501		
60441898005	S-UMW-6D	EPA 903.1	633501		
60441898006	S-BMW-1D	EPA 903.1	633501		
60441898007	S-BMW-3D	EPA 903.1	633501		
60441898008	S-UMW-DUP-1	EPA 903.1	633501		
60441898009	S-UMW-MS-1	EPA 903.1	633501		
60441898010	S-UMW-MSD-1	EPA 903.1	633501		
60441898011	S-UMW-1D	EPA 903.1	633501		
60441898012	S-UMW-FB-1	EPA 903.1	633501		
60441898001	S-UMW-2D	EPA 904.0	633505		
60441898002	S-UMW-3D	EPA 904.0	633505		
60441898003	S-UMW-4D	EPA 904.0	633505		
60441898004	S-UMW-5D	EPA 904.0	633505		
60441898005	S-UMW-6D	EPA 904.0	633505		
60441898006	S-BMW-1D	EPA 904.0	633505		
60441898007	S-BMW-3D	EPA 904.0	633505		
60441898008	S-UMW-DUP-1	EPA 904.0	633505		
60441898009	S-UMW-MS-1	EPA 904.0	633505		
60441898010	S-UMW-MSD-1	EPA 904.0	633505		
60441898011	S-UMW-1D	EPA 904.0	633505		
60441898012	S-UMW-FB-1	EPA 904.0	633505		
60441898001	S-UMW-2D	SM 2320B	874405		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60441898

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441898002	S-UMW-3D	SM 2320B	874405		
60441898003	S-UMW-4D	SM 2320B	874405		
60441898004	S-UMW-5D	SM 2320B	874405		
60441898005	S-UMW-6D	SM 2320B	874405		
60441898006	S-BMW-1D	SM 2320B	874405		
60441898007	S-BMW-3D	SM 2320B	874405		
60441898008	S-UMW-DUP-1	SM 2320B	874405		
60441898011	S-UMW-1D	SM 2320B	874578		
60441898012	S-UMW-FB-1	SM 2320B	874655		
60441898001	S-UMW-2D	SM 2540C	873904		
60441898002	S-UMW-3D	SM 2540C	873904		
60441898003	S-UMW-4D	SM 2540C	873904		
60441898004	S-UMW-5D	SM 2540C	873904		
60441898005	S-UMW-6D	SM 2540C	873904		
60441898006	S-BMW-1D	SM 2540C	873904		
60441898007	S-BMW-3D	SM 2540C	873904		
60441898008	S-UMW-DUP-1	SM 2540C	873904		
60441898011	S-UMW-1D	SM 2540C	874253		
60441898012	S-UMW-FB-1	SM 2540C	874254		
60441898001	S-UMW-2D	EPA 300.0	875885		
60441898002	S-UMW-3D	EPA 300.0	875885		
60441898003	S-UMW-4D	EPA 300.0	875885		
60441898004	S-UMW-5D	EPA 300.0	875885		
60441898005	S-UMW-6D	EPA 300.0	875885		
60441898006	S-BMW-1D	EPA 300.0	875885		
60441898007	S-BMW-3D	EPA 300.0	875885		
60441898008	S-UMW-DUP-1	EPA 300.0	875885		
60441898011	S-UMW-1D	EPA 300.0	875885		
60441898012	S-UMW-FB-1	EPA 300.0	877073		

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WO#: 60441898



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

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Recksmith Geom

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 0.6/1.0 Corr. Factor -0.3 Corrected 0.3/1.0

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 17.4/15.4 17.1/15.1

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 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>62107</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 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 SCPA
Project Name: AMEREN SCPA

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

Regulatory Program (DW, RCRA, etc.) as applicable:

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

Analytic:

*** 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 (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Collected (or Composite Start)		Composite End		Res. CLZ	Number & Type of Containers	
		Date	Time	Date	Time		Plastic	Glass
S-UMW-1D	WT							
S-UMW-2D	WT	G	11-10-23 1140				4	
S-UMW-3D	WT	G	11-10-23 1044				4	
S-UMW-4D	WT	G	11-10-23 0951				4	
S-UMW-5D	WT	G	11-10-23 1308				4	
S-UMW-6D	WT	G	11-10-23 1424				4	
S-BMW-1D	WT	G	11-10-23 1038				4	
S-BMW-3D	WT	G	11-10-23 0847				4	
S-UMW-DUP-1	WT	G	11-10-23				4	
S-UMW-FB-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, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se, Cd

Collected By: Grant May
Printed Name: Grant May
Signature: *Grant May*

Received by/Company (Signature): *Jeff Ingram*
Received by/Company (Signature): *Mark Haddock*

Date/Time: 11-10-23 / 1550
Date/Time:

Date/Time:
Date/Time:

Additional Instructions from Pace*:

Coolers: 4
Thermometer ID: T278
Correction Factor (°C): -0.3
Obs. Temp. (°C): 0.6 / 1.3
Corrected Temp. (°C): 0.3 / 1.0

Tracking Number: 77-4/154 17-1/151
Date/Time: 11/11/23 0450

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 1 of 2



Scan QR Code for instructions

60441898

****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

Specify Container Size **

Identify Container Preservative Type ***

Analysis Requested

Proj. Mgr: Jamie Church
Acct/Num / Client ID:
Table #:
Profile / Template: 15856, Line 1
Prelag / Bottle Ord. ID: EZ 3011900

Lab Use Only

Sample Comment

Preservation non-conformance identified for sample:

1/2

Client: Rocksmita Goeng

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																		1			2	1							
3																			1			2	1							
4																			3			2	1							
5																			3			2	3							
6																			1			2	1							
7																			1			2	1							
8																			1			2	1							
9																			1			2	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 Colliform 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 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: 60041898

WO#: 60441898



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



Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz 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: T296 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0/1.7/1.2 Corr. Factor -0.3 Corrected 1.7/1.4/1.3

Date and initials of person examining contents:

Temperature should be above freezing to 6°C

1/11/23

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 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>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#: 67101

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

DC#_ Title: ENV-FRM-GBUR-0088 v06_Sample Condition Upon Receipt-
 Pittsburgh

Effective Date: 09/20/2023



WO# : 30643063

PM: MAR Due Date: 12/15/23
 CLIENT: PACE_60_LEKS

Client Name: Pace - KS

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking Number: 6432 1395 1607

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# <u>PS 100032A 11/30/23</u>	D.P.D. Residual Chlorine Lot # _____
				1. <u>1000831</u>	2.
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:	/				
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)			/		
624.1: Headspace in VOA Vials (0mm)			/		
Trip Blank Present:			/		Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	X			Initial when completed <u>LB</u>	Date: <u>11/22/23</u> Survey Meter SN: <u>2501380</u>

Comments:
* Received without COC. 11/22/23 9:05 - Received via PM on 11/30/23

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 22, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPA – Data Package 60441898**

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 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 (LCS) 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 SCPA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 1/22/2024

Laboratory: Pace Analytical SDG #: 60441898
 Analytical Method (type and no.): EPA 200.7/200.8 (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 S-UMW-2D, S-UMW-3D, S-UMW-4D, S-UMW-5D, S-UMW-6D, S-BMW-1D, S-BMW-3D, S-UMW-DUP-1,
S-UMW-MS-1, S-UMW-MSD-1, S-UMW-1D, S-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>11/10/2023 - 11/14/2023</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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S-UMW-FB-1 @ S-UMW-1D
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"/>	S-UMW-DUP-1 collected @ S-UMW-2D
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 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"/>	_____
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"/>	_____

Comments/Notes:

General:

Chloride, fluoride, and or sulfate analyzed outside of hold time controls in several samples, 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:

Laboratory Control Samples:

3471853: LCS recovery high for fluoride, associated with samples -001 through -008 and -011. Detected results qualified as estimates, non-detect results not qualified.

3473824: LCS recovery high for fluoride, associated with sample -012. Result is a non-detect, no qualification necessary.

S-UMW-DUP-1 @ S-UMW-2D: Field duplicate RPD exceeds control limit for TDS (28%), results qualified as estimates.

3462672: Laboratory duplicate RPD exceeds control limit for TDS, associated with unrelated sample, no qualification necessary.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate

MS/MSD:

3467868/3467869: MSD recovery high for calcium, MS recovery and RPD within control limits, no qualification necessary.

3469021/3469022: MSD recovery high for fluoride, MS recovery and RPD within control limits, no qualification necessary.



December 20, 2023

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

RE: Project: AMEREN SCPA-CA
Pace Project No.: 60441897

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 11, 2023 and November 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 Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

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 SCPA-CA

Pace Project No.: 60441897

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 SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60441897001	S-BMW-1S	Water	11/10/23 09:57	11/11/23 04:50
60441897002	S-BMW-3S	Water	11/10/23 09:18	11/11/23 04:50
60441897003	S-AM-1S	Water	11/10/23 11:23	11/11/23 04:50
60441897004	S-AM-1D	Water	11/10/23 11:54	11/11/23 04:50
60441897005	S-PZ-1S	Water	11/10/23 09:02	11/11/23 04:50
60441897006	S-TP-3D	Water	11/10/23 14:40	11/11/23 04:50
60441897007	S-TP-6S	Water	11/10/23 12:50	11/11/23 04:50
60441897008	S-TP-6D	Water	11/10/23 13:53	11/11/23 04:50
60441897009	S-LMW-1S	Water	11/14/23 11:53	11/15/23 05:11
60441897010	S-LMW-2S	Water	11/14/23 09:06	11/15/23 05:11
60441897011	S-LMW-4S	Water	11/14/23 08:30	11/15/23 05:11
60441897012	S-LMW-5S	Water	11/14/23 11:29	11/15/23 05:11
60441897013	S-LMW-6S	Water	11/14/23 12:18	11/15/23 05:11
60441897014	S-PZ-9D	Water	11/14/23 10:35	11/15/23 05:11
60441897015	S-TP-2D	Water	11/13/23 08:45	11/15/23 05:11
60441897016	S-TP-4D	Water	11/13/23 09:55	11/15/23 05:11
60441897017	S-TP-5D	Water	11/13/23 11:26	11/15/23 05:11
60441897018	S-TP-8D	Water	11/13/23 08:44	11/15/23 05:11
60441897019	S-UG-3	Water	11/13/23 12:20	11/15/23 05:11
60441897020	S-CA-DUP-1	Water	11/13/23 00:00	11/15/23 05:11
60441897021	S-CA-DUP-2	Water	11/13/23 00:00	11/15/23 05:11
60441897022	S-CA-FB-1	Water	11/13/23 08:59	11/15/23 05:11
60441897023	S-CA-FB-2	Water	11/14/23 09:01	11/15/23 05:11
60441897024	S-CA-MS-1	Water	11/13/23 08:45	11/15/23 05:11
60441897025	S-CA-MSD-1	Water	11/13/23 08:45	11/15/23 05:11

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441897001	S-BMW-1S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897002	S-BMW-3S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897003	S-AM-1S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897004	S-AM-1D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897005	S-PZ-1S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897006	S-TP-3D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441897007	S-TP-6S	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
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441897008	S-TP-6D	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
		EPA 200.7	JXD	11	PASI-K
60441897009	S-LMW-1S	EPA 200.8	JGP	4	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
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60441897010	S-LMW-2S	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897011	S-LMW-4S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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 SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441897012	S-LMW-5S	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441897013	S-LMW-6S	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897014	S-PZ-9D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897015	S-TP-2D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
		EPA 200.7	JXD	11	PASI-K
60441897016	S-TP-4D	EPA 200.8	JGP	4	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
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441897017	S-TP-5D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897018	S-TP-8D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897019	S-UG-3	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897020	S-CA-DUP-1	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897021	S-CA-DUP-2	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897022	S-CA-FB-1	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	4	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
60441897023	S-CA-FB-2	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	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
60441897024	S-CA-MS-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60441897025	S-CA-MSD-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-BMW-1S Lab ID: 60441897001 Collected: 11/10/23 09:57 Received: 11/11/23 04:50 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	11/28/23 12:31	11/29/23 10:15	7440-39-3	
Boron	57.9J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:15	7440-42-8	
Calcium	136000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:15	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:15	7440-48-4	
Iron	57.0	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:15	7439-89-6	
Lithium	8.2J	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:15	7439-93-2	
Magnesium	26600	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:15	7439-95-4	
Manganese	489	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:15	7439-96-5	
Molybdenum	2.8J	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:15	7439-98-7	
Potassium	633	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:15	7440-09-7	
Sodium	5970	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.93J	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:03	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:03	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:03	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:03	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	427	mg/L	20.0	10.5	1		11/21/23 20:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	475	mg/L	10.0	10.0	1		11/17/23 14:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	7.2	mg/L	1.0	0.53	1		12/07/23 13:26	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 13:26	16984-48-8	L1
Sulfate	46.9	mg/L	5.0	2.8	5		12/08/23 21:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-BMW-3S Lab ID: 60441897002 Collected: 11/10/23 09:18 Received: 11/11/23 04:50 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	142	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:17	7440-39-3	
Boron	58.9J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:17	7440-42-8	
Calcium	114000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:17	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:17	7440-48-4	
Iron	58.0	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:17	7439-89-6	
Lithium	12.6	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:17	7439-93-2	
Magnesium	20700	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:17	7439-95-4	
Manganese	211	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:17	7439-96-5	
Molybdenum	1.0J	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:17	7439-98-7	
Potassium	717	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:17	7440-09-7	
Sodium	5960	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:17	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.45J	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:10	7440-38-2	
Cadmium	0.057J	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:10	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:10	7440-47-3	
Selenium	0.21J	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:10	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	357	mg/L	20.0	10.5	1		11/21/23 20:55		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	398	mg/L	10.0	10.0	1		11/17/23 14:43		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.4	mg/L	1.0	0.53	1		12/07/23 13:49	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 13:49	16984-48-8	L1
Sulfate	12.3	mg/L	1.0	0.55	1		12/07/23 13:49	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-AM-1S **Lab ID: 60441897003** Collected: 11/10/23 11:23 Received: 11/11/23 04:50 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	11/28/23 12:31	11/29/23 10:19	7440-39-3	
Boron	258	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:19	7440-42-8	
Calcium	75800	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:19	7440-70-2	
Cobalt	3.6J	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:19	7440-48-4	
Iron	829	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:19	7439-89-6	
Lithium	26.3	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:19	7439-93-2	
Magnesium	15900	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:19	7439-95-4	
Manganese	1970	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:19	7439-96-5	
Molybdenum	37.0	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:19	7439-98-7	
Potassium	9030	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:19	7440-09-7	
Sodium	17700	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:19	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.6	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:13	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:13	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:13	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:13	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	268	mg/L	20.0	10.5	1		11/21/23 21:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	346	mg/L	10.0	10.0	1		11/17/23 14:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	34.1	mg/L	5.0	2.6	5		12/08/23 22:06	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 14:11	16984-48-8	L1
Sulfate	1.3	mg/L	1.0	0.55	1		12/07/23 14:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-AM-1D Lab ID: 60441897004 Collected: 11/10/23 11:54 Received: 11/11/23 04:50 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	271	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:21	7440-39-3	
Boron	4410	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:21	7440-42-8	
Calcium	75800	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:21	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:21	7440-48-4	
Iron	2900	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:21	7439-89-6	
Lithium	33.1	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:21	7439-93-2	
Magnesium	16300	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:21	7439-95-4	
Manganese	367	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:21	7439-96-5	
Molybdenum	263	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:21	7439-98-7	
Potassium	6210	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:21	7440-09-7	
Sodium	23500	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:21	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.16J	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:19	7440-38-2	
Cadmium	0.098J	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:19	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	280	mg/L	20.0	10.5	1		11/21/23 21:08		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	369	mg/L	10.0	10.0	1		11/17/23 14:44		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	27.8	mg/L	5.0	2.6	5		12/08/23 22:18	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 14:34	16984-48-8	L1
Sulfate	7.2	mg/L	1.0	0.55	1		12/07/23 14:34	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-PZ-1S Lab ID: 60441897005 Collected: 11/10/23 09:02 Received: 11/11/23 04:50 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	97.2	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:30	7440-39-3	
Boron	10000	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:30	7440-42-8	
Calcium	82600	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:30	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:30	7440-48-4	
Iron	5350	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:30	7439-89-6	
Lithium	17.9	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:30	7439-93-2	
Magnesium	16700	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:30	7439-95-4	
Manganese	602	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:30	7439-96-5	
Molybdenum	1350	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:30	7439-98-7	
Potassium	2070	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:30	7440-09-7	
Sodium	22900	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:30	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.27J	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:22	7440-38-2	
Cadmium	0.45J	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:22	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:22	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:22	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	186	mg/L	20.0	10.5	1		11/21/23 21:14		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	507	mg/L	10.0	10.0	1		11/17/23 14:44		1e
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		12/08/23 22:29	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 15:20	16984-48-8	L1
Sulfate	106	mg/L	20.0	11.0	20		12/07/23 15:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-3D Lab ID: 60441897006 Collected: 11/10/23 14:40 Received: 11/11/23 04:50 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	591	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:32	7440-39-3	
Boron	63.4J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:32	7440-42-8	
Calcium	119000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:32	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:32	7440-48-4	
Iron	7820	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:32	7439-89-6	
Lithium	35.5	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:32	7439-93-2	
Magnesium	29600	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:32	7439-95-4	
Manganese	676	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:32	7439-96-5	
Molybdenum	1.3J	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:32	7439-98-7	
Potassium	3970	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:32	7440-09-7	
Sodium	6920	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:32	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.16J	ug/L	1.0	0.13	1	11/16/23 09:51	11/21/23 13:25	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 09:51	11/21/23 13:25	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 09:51	11/21/23 13:25	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 09:51	11/21/23 13:25	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	339	mg/L	20.0	10.5	1		11/21/23 21:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	488	mg/L	10.0	10.0	1		11/17/23 14:44		
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		12/07/23 15:42	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 15:42	16984-48-8	L1
Sulfate	80.6	mg/L	20.0	11.0	20		12/07/23 15:54	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-6S Lab ID: 60441897007 Collected: 11/10/23 12:50 Received: 11/11/23 04:50 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	279	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:34	7440-39-3	
Boron	99.1J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:34	7440-42-8	
Calcium	127000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:34	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:34	7440-48-4	
Iron	174	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:34	7439-89-6	
Lithium	39.7	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:34	7439-93-2	
Magnesium	27700	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:34	7439-95-4	
Manganese	262	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:34	7439-96-5	
Molybdenum	3.4J	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:34	7439-98-7	
Potassium	2610	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:34	7440-09-7	
Sodium	5660	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:34	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.69J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 19:58	7440-38-2	
Cadmium	0.055J	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 19:58	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 19:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 19:58	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	390	mg/L	20.0	10.5	1		11/21/23 21:36		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	433	mg/L	10.0	10.0	1		11/17/23 14:44		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	7.6	mg/L	1.0	0.53	1		12/07/23 16:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 16:05	16984-48-8	L1
Sulfate	39.6	mg/L	5.0	2.8	5		12/08/23 22:41	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-6D Lab ID: 60441897008 Collected: 11/10/23 13:53 Received: 11/11/23 04:50 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	403	ug/L	5.0	0.64	1	11/28/23 12:31	11/29/23 10:36	7440-39-3	
Boron	52.5J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:36	7440-42-8	
Calcium	112000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:36	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	11/28/23 12:31	11/29/23 10:36	7440-48-4	
Iron	7130	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:36	7439-89-6	
Lithium	29.3	ug/L	10.0	3.7	1	11/28/23 12:31	11/29/23 10:36	7439-93-2	
Magnesium	28600	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:36	7439-95-4	
Manganese	490	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:36	7439-96-5	
Molybdenum	1.4J	ug/L	20.0	1.0	1	11/28/23 12:31	11/29/23 10:36	7439-98-7	
Potassium	3710	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:36	7440-09-7	
Sodium	5630	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:36	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.18J	ug/L	1.0	0.13	1	11/16/23 11:05	12/05/23 20:00	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/16/23 11:05	12/05/23 20:00	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/16/23 11:05	12/05/23 20:00	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/23 11:05	12/05/23 20:00	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	345	mg/L	20.0	10.5	1		11/21/23 21:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	470	mg/L	10.0	10.0	1		11/17/23 14:44		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.5	mg/L	1.0	0.53	1		12/07/23 16:27	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 16:27	16984-48-8	L1
Sulfate	60.8	mg/L	5.0	2.8	5		12/08/23 22:53	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-1S Lab ID: 60441897009 Collected: 11/14/23 11:53 Received: 11/15/23 05:11 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	207	ug/L	5.0	0.64	1	12/04/23 11:18	12/06/23 09:43	7440-39-3	
Boron	1100	ug/L	100	6.4	1	12/04/23 11:18	12/06/23 09:43	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	12/04/23 11:18	12/06/23 09:43	7440-70-2	
Cobalt	1.4J	ug/L	5.0	1.2	1	12/04/23 11:18	12/06/23 09:43	7440-48-4	
Iron	60.8	ug/L	50.0	9.1	1	12/04/23 11:18	12/06/23 09:43	7439-89-6	
Lithium	21.3	ug/L	10.0	3.7	1	12/04/23 11:18	12/06/23 09:43	7439-93-2	
Magnesium	28100	ug/L	50.0	20.1	1	12/04/23 11:18	12/06/23 09:43	7439-95-4	
Manganese	80.1	ug/L	5.0	0.39	1	12/04/23 11:18	12/06/23 09:43	7439-96-5	
Molybdenum	96.3	ug/L	20.0	1.0	1	12/04/23 11:18	12/06/23 09:43	7439-98-7	
Potassium	7680	ug/L	500	69.7	1	12/04/23 11:18	12/06/23 09:43	7440-09-7	
Sodium	30200	ug/L	500	115	1	12/04/23 11:18	12/06/23 09:43	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	2.2	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:28	7440-38-2	
Cadmium	0.096J	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:28	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:28	7440-47-3	
Selenium	4.1	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:28	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	283	mg/L	20.0	10.5	1		11/24/23 11:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	566	mg/L	10.0	10.0	1		11/21/23 09:50		1e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	68.8	mg/L	20.0	10.5	20		12/14/23 21:03	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 20:51	16984-48-8	H1,L1
Sulfate	103	mg/L	20.0	11.0	20		12/14/23 21:03	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-2S Lab ID: 60441897010 Collected: 11/14/23 09:06 Received: 11/15/23 05:11 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	107	ug/L	5.0	0.64	1	12/04/23 11:18	12/06/23 09:44	7440-39-3	
Boron	9270	ug/L	100	6.4	1	12/04/23 11:18	12/06/23 09:44	7440-42-8	
Calcium	180000	ug/L	200	26.9	1	12/04/23 11:18	12/06/23 09:44	7440-70-2	
Cobalt	4.3J	ug/L	5.0	1.2	1	12/04/23 11:18	12/06/23 09:44	7440-48-4	
Iron	44.3J	ug/L	50.0	9.1	1	12/04/23 11:18	12/06/23 09:44	7439-89-6	
Lithium	31.9	ug/L	10.0	3.7	1	12/04/23 11:18	12/06/23 09:44	7439-93-2	
Magnesium	38800	ug/L	50.0	20.1	1	12/04/23 11:18	12/06/23 09:44	7439-95-4	
Manganese	530	ug/L	5.0	0.39	1	12/04/23 11:18	12/06/23 09:44	7439-96-5	
Molybdenum	869	ug/L	20.0	1.0	1	12/04/23 11:18	12/06/23 09:44	7439-98-7	
Potassium	5850	ug/L	500	69.7	1	12/04/23 11:18	12/06/23 09:44	7440-09-7	
Sodium	73900	ug/L	500	115	1	12/04/23 11:18	12/06/23 09:44	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.99J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:31	7440-38-2	
Cadmium	0.66	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:31	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:31	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	341	mg/L	20.0	10.5	1		11/24/23 11:27		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	962	mg/L	5.0	5.0	1		11/21/23 09:50		1e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	159	mg/L	20.0	10.5	20		12/14/23 21:26	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 21:14	16984-48-8	H1,L1
Sulfate	221	mg/L	20.0	11.0	20		12/14/23 21:26	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-4S Lab ID: 60441897011 Collected: 11/14/23 08:30 Received: 11/15/23 05:11 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	179	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 09:51	7440-39-3	
Boron	7590	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:51	7440-42-8	
Calcium	139000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:51	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 09:51	7440-48-4	
Iron	9420	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:51	7439-89-6	
Lithium	38.8	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 09:51	7439-93-2	
Magnesium	35000	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:51	7439-95-4	
Manganese	1120	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:51	7439-96-5	
Molybdenum	593	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 09:51	7439-98-7	
Potassium	5200	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:51	7440-09-7	
Sodium	36600	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.79J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:35	7440-38-2	
Cadmium	0.24J	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:35	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:35	7440-47-3	
Selenium	0.19J	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:35	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	627	mg/L	20.0	10.5	1		11/24/23 11:33		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	689	mg/L	13.3	13.3	1		11/21/23 09:50		
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		12/14/23 21:38	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 21:38	16984-48-8	H1,L1
Sulfate	51.8	mg/L	10.0	5.5	10		12/15/23 11:11	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-5S Lab ID: 60441897012 Collected: 11/14/23 11:29 Received: 11/15/23 05:11 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	55.8	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 09:53	7440-39-3	
Boron	12100	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:53	7440-42-8	
Calcium	214000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:53	7440-70-2	
Cobalt	2.6J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 09:53	7440-48-4	
Iron	132	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:53	7439-89-6	
Lithium	46.3	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 09:53	7439-93-2	
Magnesium	44300	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:53	7439-95-4	
Manganese	1170	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:53	7439-96-5	
Molybdenum	903	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 09:53	7439-98-7	
Potassium	6020	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:53	7440-09-7	
Sodium	132000	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:53	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.81J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:38	7440-38-2	
Cadmium	0.57	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:38	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:38	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	350	mg/L	20.0	10.5	1		11/24/23 11:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1290	mg/L	20.0	20.0	1		11/21/23 09:50		3e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	23.8	mg/L	10.0	5.3	10		12/15/23 11:33	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 22:27	16984-48-8	H1,L1
Sulfate	644	mg/L	100	55.0	100		12/14/23 23:05	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-6S Lab ID: 60441897013 Collected: 11/14/23 12:18 Received: 11/15/23 05:11 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	42.8	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 09:55	7440-39-3	
Boron	14700	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:55	7440-42-8	
Calcium	235000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:55	7440-70-2	
Cobalt	7.9	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 09:55	7440-48-4	
Iron	98.6	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:55	7439-89-6	
Lithium	20.6	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 09:55	7439-93-2	
Magnesium	56900	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:55	7439-95-4	
Manganese	414	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:55	7439-96-5	
Molybdenum	1.7J	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 09:55	7439-98-7	
Potassium	4180	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:55	7440-09-7	
Sodium	64300	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:55	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.83J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:40	7440-38-2	
Cadmium	1.2	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:40	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:40	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	410	mg/L	20.0	10.5	1		11/24/23 11:58		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1290	mg/L	20.0	20.0	1		11/21/23 09:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	9.8	mg/L	1.0	0.53	1		12/14/23 23:16	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 23:16	16984-48-8	H1,L1
Sulfate	586	mg/L	50.0	27.5	50		12/14/23 23:28	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-PZ-9D Lab ID: 60441897014 Collected: 11/14/23 10:35 Received: 11/15/23 05:11 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	83.1	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 09:57	7440-39-3	
Boron	3120	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:57	7440-42-8	
Calcium	139000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:57	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 09:57	7440-48-4	
Iron	8610	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:57	7439-89-6	
Lithium	30.8	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 09:57	7439-93-2	
Magnesium	34000	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:57	7439-95-4	
Manganese	977	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:57	7439-96-5	
Molybdenum	10.7J	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 09:57	7439-98-7	
Potassium	4250	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:57	7440-09-7	
Sodium	17300	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:57	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.47J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:42	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:42	7440-43-9	
Chromium	0.59J	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:42	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:42	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	290	mg/L	20.0	10.5	1		11/24/23 12:04		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	682	mg/L	10.0	10.0	1		11/21/23 09:50		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	8.5	mg/L	1.0	0.53	1		12/14/23 23:40	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 23:40	16984-48-8	H1,L1
Sulfate	244	mg/L	20.0	11.0	20		12/14/23 23:51	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-2D Lab ID: 60441897015 Collected: 11/13/23 08:45 Received: 11/15/23 05:11 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	59.5	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 09:59	7440-39-3	
Boron	92.3J	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:59	7440-42-8	
Calcium	270000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:59	7440-70-2	M1
Cobalt	1.4J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 09:59	7440-48-4	
Iron	16700	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:59	7439-89-6	
Lithium	50.1	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 09:59	7439-93-2	
Magnesium	74000	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:59	7439-95-4	
Manganese	1290	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:59	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 09:59	7439-98-7	
Potassium	6010	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:59	7440-09-7	
Sodium	21800	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.34J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:47	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:47	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:47	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:47	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	470	mg/L	20.0	10.5	1		11/22/23 22:10		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1270	mg/L	20.0	20.0	1		11/20/23 15:49		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	61.2	mg/L	10.0	5.3	10		12/13/23 16:48	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/12/23 22:32	16984-48-8	H1,L1
Sulfate	459	mg/L	50.0	27.5	50		12/13/23 00:25	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-4D Lab ID: 60441897016 Collected: 11/13/23 09:55 Received: 11/15/23 05:11 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	487	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:11	7440-39-3	
Boron	58.4J	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:11	7440-42-8	
Calcium	113000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:11	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:11	7440-48-4	
Iron	5980	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:11	7439-89-6	
Lithium	31.9	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:11	7439-93-2	
Magnesium	28000	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:11	7439-95-4	
Manganese	383	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:11	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:11	7439-98-7	
Potassium	3180	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:11	7440-09-7	
Sodium	7420	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:11	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	2.2	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:54	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:54	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:54	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:54	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	311	mg/L	20.0	10.5	1		11/22/23 22:24		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	467	mg/L	10.0	10.0	1		11/20/23 15:49		
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		12/13/23 01:11	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 01:11	16984-48-8	H1,L1
Sulfate	95.1	mg/L	20.0	11.0	20		12/13/23 01:22	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-5D **Lab ID: 60441897017** Collected: 11/13/23 11:26 Received: 11/15/23 05:11 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	182	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:13	7440-39-3	
Boron	7690	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:13	7440-42-8	
Calcium	140000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:13	7440-70-2	
Cobalt	1.2J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:13	7440-48-4	
Iron	9620	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:13	7439-89-6	
Lithium	37.1	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:13	7439-93-2	
Magnesium	35500	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:13	7439-95-4	
Manganese	1150	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:13	7439-96-5	
Molybdenum	607	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:13	7439-98-7	
Potassium	5230	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:13	7440-09-7	
Sodium	37900	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:13	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.38J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 20:58	7440-38-2	
Cadmium	0.21J	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 20:58	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 20:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 20:58	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	280	mg/L	20.0	10.5	1		11/22/23 22:30		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	774	mg/L	10.0	10.0	1		11/20/23 15:49		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	34.9	mg/L	10.0	5.3	10		12/13/23 17:35	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 01:33	16984-48-8	H1,L1
Sulfate	256	mg/L	20.0	11.0	20		12/13/23 01:45	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-8D Lab ID: 60441897018 Collected: 11/13/23 08:44 Received: 11/15/23 05:11 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	375	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:15	7440-39-3	
Boron	76.0J	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:15	7440-42-8	
Calcium	112000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:15	7440-70-2	
Cobalt	1.9J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:15	7440-48-4	
Iron	6210	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:15	7439-89-6	
Lithium	34.1	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:15	7439-93-2	
Magnesium	24800	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:15	7439-95-4	
Manganese	452	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:15	7439-96-5	
Molybdenum	1.9J	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:15	7439-98-7	
Potassium	3450	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:15	7440-09-7	
Sodium	6430	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.3	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:01	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:01	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:01	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:01	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	335	mg/L	20.0	10.5	1		11/22/23 22:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	416	mg/L	10.0	10.0	1		11/20/23 15:49		1e
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.8	mg/L	5.0	2.6	5		12/14/23 16:23	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 01:56	16984-48-8	H1,L1
Sulfate	33.3	mg/L	5.0	2.8	5		12/14/23 16:23	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-UG-3 Lab ID: 60441897019 Collected: 11/13/23 12:20 Received: 11/15/23 05:11 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	216	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:17	7440-39-3	
Boron	638	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:17	7440-42-8	
Calcium	107000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:17	7440-70-2	
Cobalt	7.9	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:17	7440-48-4	
Iron	14.8J	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:17	7439-89-6	
Lithium	27.5	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:17	7439-93-2	
Magnesium	20800	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:17	7439-95-4	
Manganese	1080	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:17	7439-96-5	
Molybdenum	3.6J	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:17	7439-98-7	
Potassium	5030	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:17	7440-09-7	
Sodium	45800	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:17	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.49J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:05	7440-38-2	
Cadmium	0.32J	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:05	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:05	7440-47-3	
Selenium	2.4	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:05	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO ₃	333	mg/L	20.0	10.5	1		11/23/23 11:04		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	504	mg/L	10.0	10.0	1		11/20/23 15:49		2e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	34.5	mg/L	5.0	2.6	5		12/14/23 16:34	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 17:58	16984-48-8	H1,L1
Sulfate	65.0	mg/L	5.0	2.8	5		12/14/23 16:34	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-DUP-1 Lab ID: 60441897020 Collected: 11/13/23 00:00 Received: 11/15/23 05:11 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	497	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:19	7440-39-3	
Boron	58.8J	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:19	7440-42-8	
Calcium	115000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:19	7440-70-2	
Cobalt	1.5J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:19	7440-48-4	
Iron	6050	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:19	7439-89-6	
Lithium	32.3	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:19	7439-93-2	
Magnesium	28400	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:19	7439-95-4	
Manganese	394	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:19	7439-96-5	
Molybdenum	1.4J	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:19	7439-98-7	
Potassium	3250	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:19	7440-09-7	
Sodium	7600	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:19	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	2.3	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:07	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:07	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:07	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:07	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	310	mg/L	20.0	10.5	1		11/23/23 11:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	596	mg/L	10.0	10.0	1		11/20/23 15:49		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.4	mg/L	1.0	0.53	1		12/13/23 18:21	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 18:21	16984-48-8	H1,L1
Sulfate	9.4	mg/L	1.0	0.55	1		12/13/23 18:21	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-DUP-2 Lab ID: 60441897021 Collected: 11/13/23 00:00 Received: 11/15/23 05:11 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	177	ug/L	5.0	0.64	1	12/04/23 12:31	12/05/23 10:23	7440-39-3	
Boron	7550	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:23	7440-42-8	
Calcium	137000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:23	7440-70-2	
Cobalt	2.0J	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:23	7440-48-4	
Iron	9360	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:23	7439-89-6	
Lithium	37.9	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:23	7439-93-2	
Magnesium	34700	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:23	7439-95-4	
Manganese	1130	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:23	7439-96-5	
Molybdenum	589	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:23	7439-98-7	
Potassium	5190	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:23	7440-09-7	
Sodium	37500	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:23	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	0.36J	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:12	7440-38-2	
Cadmium	0.20J	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:12	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:12	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:12	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	279	mg/L	20.0	10.5	1		11/23/23 11:22		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	774	mg/L	10.0	10.0	1		11/20/23 15:49		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	39.5	mg/L	5.0	2.6	5		12/14/23 16:46	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 19:19	16984-48-8	H1,L1
Sulfate	280	mg/L	20.0	11.0	20		12/13/23 19:30	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-FB-1 Lab ID: 60441897022 Collected: 11/13/23 08:59 Received: 11/15/23 05:11 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 12:31	12/05/23 10:25	7440-39-3	
Boron	8.3J	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:25	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:25	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:25	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:25	7439-89-6	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:25	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:25	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:25	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:25	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:25	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.13	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:14	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:14	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:14	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/23/23 11:28		
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		11/20/23 15:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.64J	mg/L	1.0	0.53	1		12/13/23 19:42	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/13/23 19:42	16984-48-8	H1,L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/13/23 19:42	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-FB-2 Lab ID: 60441897023 Collected: 11/14/23 09:01 Received: 11/15/23 05:11 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 12:31	12/05/23 10:27	7440-39-3	
Boron	<6.4	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 10:27	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 10:27	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	12/04/23 12:31	12/05/23 10:27	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 10:27	7439-89-6	
Lithium	<3.7	ug/L	10.0	3.7	1	12/04/23 12:31	12/05/23 10:27	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 10:27	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 10:27	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	12/04/23 12:31	12/05/23 10:27	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 10:27	7440-09-7	
Sodium	<115	ug/L	500	115	1	12/04/23 12:31	12/05/23 10:27	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	<0.13	ug/L	1.0	0.13	1	11/28/23 12:31	12/05/23 21:16	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	11/28/23 12:31	12/05/23 21:16	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	11/28/23 12:31	12/05/23 21:16	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/28/23 12:31	12/05/23 21:16	7782-49-2	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/24/23 12:10		
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		11/21/23 09:51		
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		12/15/23 00:03	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/15/23 00:03	16984-48-8	H1,L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/15/23 00:03	14808-79-8	H1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874935	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: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

METHOD BLANK: 3465241 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/29/23 10:04	
Boron	ug/L	<6.4	100	6.4	11/29/23 10:04	
Calcium	ug/L	<26.9	200	26.9	11/29/23 10:04	
Cobalt	ug/L	<1.2	5.0	1.2	11/29/23 10:04	
Iron	ug/L	<9.1	50.0	9.1	11/29/23 10:04	
Lithium	ug/L	<3.7	10.0	3.7	11/29/23 10:04	
Magnesium	ug/L	<20.1	50.0	20.1	11/29/23 10:04	
Manganese	ug/L	<0.39	5.0	0.39	11/29/23 10:04	
Molybdenum	ug/L	<1.0	20.0	1.0	11/29/23 10:04	
Potassium	ug/L	<69.7	500	69.7	11/29/23 10:04	
Sodium	ug/L	<115	500	115	11/29/23 10:04	

LABORATORY CONTROL SAMPLE: 3465242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	995	99	85-115	
Boron	ug/L	1000	935	94	85-115	
Calcium	ug/L	10000	9590	96	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Iron	ug/L	10000	9850	98	85-115	
Lithium	ug/L	1000	989	99	85-115	
Magnesium	ug/L	10000	9550	95	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	997	100	85-115	
Potassium	ug/L	10000	9440	94	85-115	
Sodium	ug/L	10000	9780	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465243 3465244

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60442540001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Barium	ug/L	15.0	1000	1000	1020	984	101	97	70-130	4	20	
Boron	ug/L	420	1000	1000	1370	1320	95	90	70-130	4	20	
Calcium	ug/L	33500	10000	10000	43100	41500	96	79	70-130	4	20	
Cobalt	ug/L	ND	1000	1000	978	943	98	94	70-130	4	20	
Iron	ug/L	992	10000	10000	10800	10400	98	94	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465243 3465244												
Parameter	Units	60442540001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Lithium	ug/L	56.7	1000	1000	1230	1190	117	113	70-130	3	20	
Magnesium	ug/L	10500	10000	10000	20000	19300	95	88	70-130	4	20	
Manganese	ug/L	395	1000	1000	1360	1310	96	92	70-130	3	20	
Molybdenum	ug/L	36.4	1000	1000	1030	992	99	96	70-130	4	20	
Potassium	ug/L	18900	10000	10000	30300	29400	115	105	70-130	3	20	
Sodium	ug/L	1780000	10000	10000	1810000	1730000	259	-572	70-130	5	20	E,M1

MATRIX SPIKE SAMPLE: 3465245								
Parameter	Units	60442296002		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Spike Conc.					
Barium	ug/L		252	1000	1250	100	70-130	
Boron	ug/L		290	1000	1240	95	70-130	
Calcium	ug/L		104000	10000	112000	83	70-130	
Cobalt	ug/L		ND	1000	1020	102	70-130	
Iron	ug/L		270	10000	10100	98	70-130	
Lithium	ug/L		76.1	1000	1140	106	70-130	
Magnesium	ug/L		52900	10000	62400	95	70-130	
Manganese	ug/L		73.5	1000	1070	100	70-130	
Molybdenum	ug/L		78.9	1000	1090	101	70-130	
Potassium	ug/L		86000	10000	94800	88	70-130	
Sodium	ug/L		212000	10000	219000	67	70-130	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch: 875578

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: 60441897009, 60441897010

METHOD BLANK: 3467639

Matrix: Water

Associated Lab Samples: 60441897009, 60441897010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/06/23 09:29	
Boron	ug/L	<6.4	100	6.4	12/06/23 09:29	
Calcium	ug/L	<26.9	200	26.9	12/06/23 09:29	
Cobalt	ug/L	<1.2	5.0	1.2	12/06/23 09:29	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 09:29	
Lithium	ug/L	<3.7	10.0	3.7	12/06/23 09:29	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 09:29	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 09:29	
Molybdenum	ug/L	<1.0	20.0	1.0	12/06/23 09:29	
Potassium	ug/L	<69.7	500	69.7	12/06/23 09:29	
Sodium	ug/L	<115	500	115	12/06/23 09:29	

LABORATORY CONTROL SAMPLE: 3467640

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	988	99	85-115	
Boron	ug/L	1000	971	97	85-115	
Calcium	ug/L	10000	9990	100	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lithium	ug/L	1000	983	98	85-115	
Magnesium	ug/L	10000	9890	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	9470	95	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467641 3467642

Parameter	Units	60442112007		3467641		3467642		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Barium	ug/L	263	1000	1000	1260	1220	100	96	70-130	3	20			
Boron	ug/L	75.9J	1000	1000	1060	1030	99	96	70-130	3	20			
Calcium	ug/L	120000	10000	10000	163000	155000	431	353	70-130	5	20	M1		
Cobalt	ug/L	2.7J	1000	1000	1000	978	100	98	70-130	3	20			
Iron	ug/L	243	10000	10000	9930	9640	97	94	70-130	3	20			
Lithium	ug/L	31.4	1000	1000	1050	1030	102	100	70-130	2	20			

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467641 3467642												
Parameter	Units	60442112007		MS	MSD	3467642		% Rec	% Rec	% Rec	Max	Qual
		Result	Conc.	Spike	Conc.	MS	MSD					
Magnesium	ug/L	25100	10000	10000	57800	55200	327	302	70-130	5	20	M1
Manganese	ug/L	433	1000	1000	2070	2000	163	157	70-130	3	20	M1
Molybdenum	ug/L	1.3J	1000	1000	1020	986	102	98	70-130	3	20	
Potassium	ug/L	6150	10000	10000	16500	16000	103	99	70-130	3	20	
Sodium	ug/L	3840	10000	10000	19000	18400	151	146	70-130	3	20	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	875648	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:	60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023		

METHOD BLANK:	3467866	Matrix:	Water
Associated Lab Samples:	60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/05/23 09:47	
Boron	ug/L	<6.4	100	6.4	12/05/23 09:47	
Calcium	ug/L	<26.9	200	26.9	12/05/23 09:47	
Cobalt	ug/L	<1.2	5.0	1.2	12/05/23 09:47	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 09:47	
Lithium	ug/L	<3.7	10.0	3.7	12/05/23 09:47	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 09:47	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 09:47	
Molybdenum	ug/L	<1.0	20.0	1.0	12/05/23 09:47	
Potassium	ug/L	<69.7	500	69.7	12/05/23 09:47	
Sodium	ug/L	<115	500	115	12/05/23 09:47	

LABORATORY CONTROL SAMPLE: 3467867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1080	108	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	9940	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9710	97	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467868 3467869

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60441897015 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Barium	ug/L	59.5	1000	1000	1070	1080	101	102	70-130	1	20	
Boron	ug/L	92.3J	1000	1000	1080	1080	98	99	70-130	1	20	
Calcium	ug/L	270000	10000	10000	280000	284000	105	139	70-130	1	20	M1
Cobalt	ug/L	1.4J	1000	1000	1030	1050	103	105	70-130	2	20	
Iron	ug/L	16700	10000	10000	26700	27000	100	103	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467868 3467869												
Parameter	Units	60441897015		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Lithium	ug/L	50.1	1000	1000	1000	1120	1140	107	109	70-130	2	20
Magnesium	ug/L	74000	10000	10000	10000	84500	85700	105	117	70-130	1	20
Manganese	ug/L	1290	1000	1000	1000	2310	2330	102	104	70-130	1	20
Molybdenum	ug/L	<1.0	1000	1000	1000	1050	1050	105	105	70-130	1	20
Potassium	ug/L	6010	10000	10000	10000	16300	16600	103	106	70-130	2	20
Sodium	ug/L	21800	10000	10000	10000	32600	33100	108	113	70-130	2	20

MATRIX SPIKE SAMPLE: 3467870								
Parameter	Units	60441897020		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.		Result	% Rec		
Barium	ug/L	497	1000	1000	1510	101	70-130	
Boron	ug/L	58.8J	1000	1000	1040	98	70-130	
Calcium	ug/L	115000	10000	10000	125000	100	70-130	
Cobalt	ug/L	1.5J	1000	1000	1050	105	70-130	
Iron	ug/L	6050	10000	10000	16400	104	70-130	
Lithium	ug/L	32.3	1000	1000	1070	104	70-130	
Magnesium	ug/L	28400	10000	10000	38800	103	70-130	
Manganese	ug/L	394	1000	1000	1440	104	70-130	
Molybdenum	ug/L	1.4J	1000	1000	1050	105	70-130	
Potassium	ug/L	3250	10000	10000	13400	101	70-130	
Sodium	ug/L	7600	10000	10000	18200	106	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	873670	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: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006

METHOD BLANK: 3460294 Matrix: Water
 Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	11/21/23 11:48	
Cadmium	ug/L	<0.050	0.50	0.050	11/21/23 11:48	
Chromium	ug/L	<0.30	1.0	0.30	11/21/23 11:48	
Selenium	ug/L	<0.18	1.0	0.18	11/21/23 11:48	

LABORATORY CONTROL SAMPLE: 3460295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	40.4	101	85-115	
Cadmium	ug/L	40	39.8	99	85-115	
Chromium	ug/L	40	39.5	99	85-115	
Selenium	ug/L	40	41.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3460296 3460297

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441701002 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	ug/L	ND	40	40	40.9	41.8	100	103	70-130	2	20
Cadmium	ug/L	ND	40	40	37.4	36.9	94	92	70-130	1	20
Chromium	ug/L	ND	40	40	38.5	39.5	96	98	70-130	3	20
Selenium	ug/L	ND	40	40	39.5	40.1	97	99	70-130	2	20

MATRIX SPIKE SAMPLE: 3460298

Parameter	Units	60441897001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L		0.93J	40	41.7	102	70-130
Cadmium	ug/L		<0.050	40	40.0	100	70-130
Chromium	ug/L		<0.30	40	42.0	105	70-130
Selenium	ug/L		<0.18	40	41.0	102	70-130

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	873702	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: 60441897007, 60441897008

METHOD BLANK: 3460414 Matrix: Water

Associated Lab Samples: 60441897007, 60441897008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	11/27/23 14:50	
Cadmium	ug/L	<0.050	0.50	0.050	11/27/23 14:50	
Chromium	ug/L	<0.30	1.0	0.30	11/27/23 14:50	
Selenium	ug/L	<0.18	1.0	0.18	11/27/23 14:50	

LABORATORY CONTROL SAMPLE: 3460415

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	42.5	106	85-115	
Cadmium	ug/L	40	42.6	107	85-115	
Chromium	ug/L	40	41.9	105	85-115	
Selenium	ug/L	40	43.1	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3460416 3460417

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441898004	Spike Conc.	Spike Conc.	Result						
Arsenic	ug/L	0.35J	40	40	43.3	43.3	107	107	70-130	0	20
Cadmium	ug/L	0.080J	40	40	42.0	42.0	105	105	70-130	0	20
Chromium	ug/L	<0.30	40	40	42.6	42.8	106	107	70-130	0	20
Selenium	ug/L	<0.18	40	40	42.0	42.2	105	105	70-130	1	20

MATRIX SPIKE SAMPLE: 3460418

Parameter	Units	60441941001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L		6.7	40	49.7	108	70-130
Cadmium	ug/L		<0.50	40	40.9	102	70-130
Chromium	ug/L		<1.0	40	41.0	102	70-130
Selenium	ug/L		1.0	40	42.3	103	70-130

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874827	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:	60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023		

METHOD BLANK:	3464895	Matrix:	Water
Associated Lab Samples:	60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/05/23 20:23	
Cadmium	ug/L	<0.050	0.50	0.050	12/05/23 20:23	
Chromium	ug/L	<0.30	1.0	0.30	12/05/23 20:23	
Selenium	ug/L	<0.18	1.0	0.18	12/05/23 20:23	

LABORATORY CONTROL SAMPLE:	3464896					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	41.5	104	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.9	107	85-115	
Selenium	ug/L	40	41.4	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3464897											
		MS	MSD									
Parameter	Units	60441897015 Result	Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.34J	40	40	40.4	38.5	100	95	70-130	5	20	
Cadmium	ug/L	<0.050	40	40	38.1	36.1	95	90	70-130	5	20	
Chromium	ug/L	<0.30	40	40	39.8	38.9	99	97	70-130	2	20	
Selenium	ug/L	<0.18	40	40	38.5	37.0	96	93	70-130	4	20	

MATRIX SPIKE SAMPLE:	3464899									
Parameter	Units	60441897018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers			
Arsenic	ug/L	1.3	40	42.4	103	70-130				
Cadmium	ug/L	<0.050	40	39.7	99	70-130				
Chromium	ug/L	<0.30	40	42.2	105	70-130				
Selenium	ug/L	<0.18	40	39.3	98	70-130				

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874278	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

METHOD BLANK: 3462786 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 19:16	

LABORATORY CONTROL SAMPLE: 3462787

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	481	96	90-110	

SAMPLE DUPLICATE: 3462788

Parameter	Units	60441589019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	475	483	2	10	

SAMPLE DUPLICATE: 3462789

Parameter	Units	60441862007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	232	240	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch: 874537

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897015, 60441897016, 60441897017, 60441897018

METHOD BLANK: 3463835

Matrix: Water

Associated Lab Samples: 60441897015, 60441897016, 60441897017, 60441897018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/22/23 19:52	

LABORATORY CONTROL SAMPLE: 3463836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3463837

Parameter	Units	60442101001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	576	573	0	10	

SAMPLE DUPLICATE: 3463838

Parameter	Units	60442105001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	363	363	0	10	

SAMPLE DUPLICATE: 3463839

Parameter	Units	60442112001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	432	1	10	

SAMPLE DUPLICATE: 3463840

Parameter	Units	60441897015 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	470	471	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874578	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441897019, 60441897020, 60441897021, 60441897022		

METHOD BLANK: 3464006 Matrix: Water
 Associated Lab Samples: 60441897019, 60441897020, 60441897021, 60441897022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/23/23 10:53	

LABORATORY CONTROL SAMPLE: 3464007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464008

Parameter	Units	60441897019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	333	340	2	10	

SAMPLE DUPLICATE: 3464009

Parameter	Units	60442041008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	183	186	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874655	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

METHOD BLANK: 3464241 Matrix: Water

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/24/23 10:52	

LABORATORY CONTROL SAMPLE: 3464242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464243

Parameter	Units	60442101006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	364	365	0	10	

SAMPLE DUPLICATE: 3464244

Parameter	Units	60442270017 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	305	308	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	873904	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

METHOD BLANK: 3461231 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/23 14:43	

LABORATORY CONTROL SAMPLE: 3461232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 3461233

Parameter	Units	60441897001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	462	3	10	

SAMPLE DUPLICATE: 3461753

Parameter	Units	60441898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	345	366	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874170	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022		

METHOD BLANK:	3462407	Matrix:	Water
Associated Lab Samples:	60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/20/23 15:48	

LABORATORY CONTROL SAMPLE: 3462408						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	934	93	80-120	

SAMPLE DUPLICATE: 3462071						
Parameter	Units	60441897022 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<5.0	13.0		10	1e

SAMPLE DUPLICATE: 3462409						
Parameter	Units	60441897015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1270	1260	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	874254	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

METHOD BLANK: 3462673 Matrix: Water

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/21/23 09:49	1e

LABORATORY CONTROL SAMPLE: 3462674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	1e

SAMPLE DUPLICATE: 3462675

Parameter	Units	60441897009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	566	552	3	10	1e

SAMPLE DUPLICATE: 3462676

Parameter	Units	60442430001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	473	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	875885	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:	60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008		

METHOD BLANK:	3469019	Matrix:	Water
Associated Lab Samples:	60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/07/23 13:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/07/23 13:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/07/23 13:03	

METHOD BLANK:	3471852	Matrix:	Water
Associated Lab Samples:	60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/08/23 21:31	
Fluoride	mg/L	<0.12	0.20	0.12	12/08/23 21:31	
Sulfate	mg/L	<0.55	1.0	0.55	12/08/23 21:31	

LABORATORY CONTROL SAMPLE:	3469020					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	4.5	91	90-110	

LABORATORY CONTROL SAMPLE:	3471853					
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	2.8	113	90-110 L1	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3469021			3469022									
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	23.8	25	25	25	48.4	48.2	99	98	80-120	0	15	H1
Fluoride	mg/L	0.15J	2.5	2.5	2.5	3.1	3.2	119	122	80-120	2	15	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3469021												3469022	
Parameter	Units	60441898004 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Sulfate	mg/L	1.9	5	5	6.9	7.2	100	106	80-120	4	15		

SAMPLE DUPLICATE: 3469023

Parameter	Units	60441898004	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Chloride	mg/L	23.8	23.0	3	15 H1	
Fluoride	mg/L	0.15J	0.15J		15	
Sulfate	mg/L	1.9	1.7	9	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch: 876640 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: 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022

METHOD BLANK: 3472119 Matrix: Water
 Associated Lab Samples: 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/12/23 20:15	
Fluoride	mg/L	<0.12	0.20	0.12	12/12/23 20:15	
Sulfate	mg/L	<0.55	1.0	0.55	12/12/23 20:15	

METHOD BLANK: 3474158 Matrix: Water
 Associated Lab Samples: 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/13/23 15:16	
Fluoride	mg/L	<0.12	0.20	0.12	12/13/23 15:16	
Sulfate	mg/L	<0.55	1.0	0.55	12/13/23 15:16	

METHOD BLANK: 3475195 Matrix: Water
 Associated Lab Samples: 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 15:37	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 15:37	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 15:37	

LABORATORY CONTROL SAMPLE: 3472120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	3.0	122	90-110	L1
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3474159

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	113	90-110	L1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

LABORATORY CONTROL SAMPLE: 3474159

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3475196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.4	107	90-110	
Fluoride	mg/L	2.5	3.5	138	90-110 L1	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472121 3472122

Parameter	Units	60442101001		3472121		3472122		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.					MSD Result
Chloride	mg/L	62.6	100	100	100	149	147	86	84	80-120	1	15 H1
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.6	2.6	102	103	80-120	1	15 H1
Sulfate	mg/L	37.0	25	25	25	63.3	64.2	105	109	80-120	1	15 H1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472124 3472125

Parameter	Units	60441897015		3472124		3472125		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.					MSD Result
Chloride	mg/L	61.2	50	50	50	117	116	112	109	80-120	1	15 H1
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.7	2.8	109	112	80-120	3	15 H1
Sulfate	mg/L	459	250	250	250	733	732	110	109	80-120	0	15 H1

SAMPLE DUPLICATE: 3472123

Parameter	Units	60442101001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	62.6	60.2	4	15	H1
Fluoride	mg/L	<0.12	<0.12		15	H1
Sulfate	mg/L	37.0	43.9	17	15	D6,H1

SAMPLE DUPLICATE: 3472126

Parameter	Units	60441897015 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	61.2	60.7	1	15	H1
Fluoride	mg/L	<0.12	<0.12		15	H1
Sulfate	mg/L	459	453	1	15	H1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch: 877073 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: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

METHOD BLANK: 3473823 Matrix: Water
 Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 15:15	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 15:15	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 15:15	

METHOD BLANK: 3475663 Matrix: Water
 Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/15/23 10:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/15/23 10:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/15/23 10:03	

LABORATORY CONTROL SAMPLE: 3473824

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	2.9	115	90-110 L1	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3475664

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3473825 3473826

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60442101002 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	24.4	50	50	76.5	74.2	104	100	80-120	3	15 H1
Fluoride	mg/L	<0.12	2.5	2.5	2.3	2.3	93	93	80-120	0	15 H1
Sulfate	mg/L	416	250	250	686	681	108	106	80-120	1	15 H1

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 SCPA-CA

Pace Project No.: 60441897

MATRIX SPIKE SAMPLE:		3473827		60441897011		Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5.3	5	10.1	96			80-120	H1	
Fluoride	mg/L	<0.12	2.5	2.3	92			80-120	H1	
Sulfate	mg/L	51.8	50	96.7	90			80-120	H1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.362 ± 0.551 (1.26) C:NA T:86%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.341 ± 0.322 (0.651) C:82% T:82%	pCi/L	12/05/23 15:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.360 ± 0.470 (0.776) C:NA T:87%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.233 ± 0.302 (0.641) C:86% T:82%	pCi/L	12/05/23 15:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.135 ± 0.494 (1.07) C:NA T:93%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.751 ± 0.409 (0.725) C:79% T:86%	pCi/L	12/05/23 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-AM-1D **Lab ID: 60441897004** Collected: 11/10/23 11:54 Received: 11/11/23 04:50 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	0.0857 ± 0.806 (1.55) C:NA T:88%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.46 ± 0.915 (1.71) C:77% T:38%	pCi/L	12/05/23 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-PZ-1S **Lab ID: 60441897005** Collected: 11/10/23 09:02 Received: 11/11/23 04:50 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	0.481 ± 0.500 (0.744) C:NA T:85%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.364 ± 0.382 (0.793) C:84% T:79%	pCi/L	12/05/23 15:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.387 ± 0.505 (0.834) C:NA T:82%	pCi/L	12/06/23 14:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.579 ± 0.381 (0.717) C:85% T:81%	pCi/L	12/05/23 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-6S **Lab ID: 60441897007** Collected: 11/10/23 12:50 Received: 11/11/23 04:50 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	-0.343 ± 0.752 (1.61) C:NA T:82%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.383 ± 0.342 (0.688) C:79% T:84%	pCi/L	12/05/23 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-6D **Lab ID: 60441897008** Collected: 11/10/23 13:53 Received: 11/11/23 04:50 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	0.758 ± 0.863 (1.40) C:NA T:87%	pCi/L	12/06/23 14:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.977 ± 0.444 (0.730) C:79% T:82%	pCi/L	12/05/23 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.424 ± 0.492 (0.793) C:NA T:85%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.637 ± 0.404 (0.754) C:88% T:70%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.116 ± 0.264 (0.157) C:NA T:88%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.02 ± 0.509 (0.902) C:86% T:75%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-LMW-4S **Lab ID: 60441897011** Collected: 11/14/23 08:30 Received: 11/15/23 05:11 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	0.224 ± 0.580 (1.05) C:NA T:87%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.477 ± 0.326 (0.617) C:84% T:86%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.178 ± 0.271 (0.161) C:NA T:83%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.153 ± 0.308 (0.679) C:87% T:87%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.183 ± 0.464 (0.860) C:NA T:84%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0864 ± 0.308 (0.699) C:85% T:82%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-PZ-9D **Lab ID: 60441897014** Collected: 11/14/23 10:35 Received: 11/15/23 05:11 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	0.0584 ± 0.413 (0.824) C:NA T:90%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.473 ± 0.317 (0.594) C:87% T:81%	pCi/L	12/12/23 11:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.252 ± 0.287 (0.452) C:NA T:82%	pCi/L	12/18/23 13:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.462 ± 0.336 (0.645) C:84% T:79%	pCi/L	12/12/23 11:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.482 ± 0.413 (0.560) C:NA T:86%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.811 ± 0.366 (0.586) C:85% T:85%	pCi/L	12/12/23 11:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-5D **Lab ID: 60441897017** Collected: 11/13/23 11:26 Received: 11/15/23 05:11 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	0.429 ± 0.401 (0.569) C:NA T:82%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.305 ± 0.359 (0.754) C:77% T:82%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-TP-8D **Lab ID: 60441897018** Collected: 11/13/23 08:44 Received: 11/15/23 05:11 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	0.670 ± 0.466 (0.628) C:NA T:93%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.887 ± 0.491 (0.868) C:71% T:81%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-UG-3 **Lab ID: 60441897019** Collected: 11/13/23 12:20 Received: 11/15/23 05:11 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	0.687 ± 0.481 (0.635) C:NA T:83%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.694 ± 0.424 (0.772) C:82% T:72%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	1.15 ± 0.629 (0.785) C:NA T:82%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.552 ± 0.358 (0.674) C:87% T:85%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.274 ± 0.418 (0.956) C:NA T:83%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.557 ± 0.370 (0.696) C:85% T:79%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-FB-1 **Lab ID: 60441897022** Collected: 11/13/23 08:59 Received: 11/15/23 05:11 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	-0.414 ± 0.480 (1.11) C:NA T:93%	pCi/L	12/18/23 13:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.0161 ± 0.345 (0.800) C:83% T:82%	pCi/L	12/12/23 14:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-FB-2 **Lab ID: 60441897023** Collected: 11/14/23 09:01 Received: 11/15/23 05:11 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 ± 0.484 (0.787) C:NA T:87%	pCi/L	12/18/23 13:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.117 ± 0.417 (0.945) C:75% T:72%	pCi/L	12/12/23 14:42	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-MS-1 **Lab ID: 60441897024** Collected: 11/13/23 08:45 Received: 11/15/23 05:11 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	117.20 %REC ± NA (NA) C:NA T:NA	pCi/L	12/18/23 13:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	87.54 %REC ± NA (NA) C:NA T:NA	pCi/L	12/12/23 14:42	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Sample: S-CA-MSD-1 **Lab ID: 60441897025** Collected: 11/13/23 08:45 Received: 11/15/23 05:11 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	133.65 %REC 13.11RPD ± NA (NA) C:NA T:NA	pCi/L	12/18/23 13:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	86.49 %REC 1.20RPD ± NA (NA) C:NA T:NA	pCi/L	12/12/23 14:42	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	632711	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: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023, 60441897024, 60441897025

METHOD BLANK:	3084373	Matrix:	Water
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Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023, 60441897024, 60441897025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0466 ± 0.213 (0.343) C:NA T:86%	pCi/L	12/18/23 13:24	

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	632697	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: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

METHOD BLANK:	3084324	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0813 ± 0.311 (0.747) C:82% T:82%	pCi/L	12/05/23 15:29	

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 - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	632712	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: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023, 60441897024, 60441897025

METHOD BLANK:	3084375	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60441897014, 60441897015, 60441897016, 60441897017, 60441897018, 60441897019, 60441897020, 60441897021, 60441897022, 60441897023, 60441897024, 60441897025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.213 ± 0.292 (0.623) C:85% T:82%	pCi/L	12/12/23 11:09	

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 - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

QC Batch:	632696	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: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

METHOD BLANK:	3084322	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441897001, 60441897002, 60441897003, 60441897004, 60441897005, 60441897006, 60441897007, 60441897008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.396 ± 0.321 (0.179) C:NA T:89%	pCi/L	12/06/23 14:20	

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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QUALIFIERS

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

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 Achieving a constant weight was not met for this sample. .

3e Achieving a constant weight was not met for this sample..

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.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Table with 6 columns: Lab ID, Sample ID, QC Batch Method, QC Batch, Analytical Method, Analytical Batch. It lists various sample IDs and their corresponding QC and analytical data across multiple batches.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441897001	S-BMW-1S	EPA 903.1	632696		
60441897002	S-BMW-3S	EPA 903.1	632696		
60441897003	S-AM-1S	EPA 903.1	632696		
60441897004	S-AM-1D	EPA 903.1	632696		
60441897005	S-PZ-1S	EPA 903.1	632696		
60441897006	S-TP-3D	EPA 903.1	632696		
60441897007	S-TP-6S	EPA 903.1	632696		
60441897008	S-TP-6D	EPA 903.1	632696		
60441897009	S-LMW-1S	EPA 903.1	632711		
60441897010	S-LMW-2S	EPA 903.1	632711		
60441897011	S-LMW-4S	EPA 903.1	632711		
60441897012	S-LMW-5S	EPA 903.1	632711		
60441897013	S-LMW-6S	EPA 903.1	632711		
60441897014	S-PZ-9D	EPA 903.1	632711		
60441897015	S-TP-2D	EPA 903.1	632711		
60441897016	S-TP-4D	EPA 903.1	632711		
60441897017	S-TP-5D	EPA 903.1	632711		
60441897018	S-TP-8D	EPA 903.1	632711		
60441897019	S-UG-3	EPA 903.1	632711		
60441897020	S-CA-DUP-1	EPA 903.1	632711		
60441897021	S-CA-DUP-2	EPA 903.1	632711		
60441897022	S-CA-FB-1	EPA 903.1	632711		
60441897023	S-CA-FB-2	EPA 903.1	632711		
60441897024	S-CA-MS-1	EPA 903.1	632711		
60441897025	S-CA-MSD-1	EPA 903.1	632711		
60441897001	S-BMW-1S	EPA 904.0	632697		
60441897002	S-BMW-3S	EPA 904.0	632697		
60441897003	S-AM-1S	EPA 904.0	632697		
60441897004	S-AM-1D	EPA 904.0	632697		
60441897005	S-PZ-1S	EPA 904.0	632697		
60441897006	S-TP-3D	EPA 904.0	632697		
60441897007	S-TP-6S	EPA 904.0	632697		
60441897008	S-TP-6D	EPA 904.0	632697		
60441897009	S-LMW-1S	EPA 904.0	632712		
60441897010	S-LMW-2S	EPA 904.0	632712		
60441897011	S-LMW-4S	EPA 904.0	632712		
60441897012	S-LMW-5S	EPA 904.0	632712		
60441897013	S-LMW-6S	EPA 904.0	632712		
60441897014	S-PZ-9D	EPA 904.0	632712		
60441897015	S-TP-2D	EPA 904.0	632712		
60441897016	S-TP-4D	EPA 904.0	632712		
60441897017	S-TP-5D	EPA 904.0	632712		
60441897018	S-TP-8D	EPA 904.0	632712		
60441897019	S-UG-3	EPA 904.0	632712		
60441897020	S-CA-DUP-1	EPA 904.0	632712		
60441897021	S-CA-DUP-2	EPA 904.0	632712		
60441897022	S-CA-FB-1	EPA 904.0	632712		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441897023	S-CA-FB-2	EPA 904.0	632712		
60441897024	S-CA-MS-1	EPA 904.0	632712		
60441897025	S-CA-MSD-1	EPA 904.0	632712		
60441897001	S-BMW-1S	SM 2320B	874278		
60441897002	S-BMW-3S	SM 2320B	874278		
60441897003	S-AM-1S	SM 2320B	874278		
60441897004	S-AM-1D	SM 2320B	874278		
60441897005	S-PZ-1S	SM 2320B	874278		
60441897006	S-TP-3D	SM 2320B	874278		
60441897007	S-TP-6S	SM 2320B	874278		
60441897008	S-TP-6D	SM 2320B	874278		
60441897009	S-LMW-1S	SM 2320B	874655		
60441897010	S-LMW-2S	SM 2320B	874655		
60441897011	S-LMW-4S	SM 2320B	874655		
60441897012	S-LMW-5S	SM 2320B	874655		
60441897013	S-LMW-6S	SM 2320B	874655		
60441897014	S-PZ-9D	SM 2320B	874655		
60441897015	S-TP-2D	SM 2320B	874537		
60441897016	S-TP-4D	SM 2320B	874537		
60441897017	S-TP-5D	SM 2320B	874537		
60441897018	S-TP-8D	SM 2320B	874537		
60441897019	S-UG-3	SM 2320B	874578		
60441897020	S-CA-DUP-1	SM 2320B	874578		
60441897021	S-CA-DUP-2	SM 2320B	874578		
60441897022	S-CA-FB-1	SM 2320B	874578		
60441897023	S-CA-FB-2	SM 2320B	874655		
60441897001	S-BMW-1S	SM 2540C	873904		
60441897002	S-BMW-3S	SM 2540C	873904		
60441897003	S-AM-1S	SM 2540C	873904		
60441897004	S-AM-1D	SM 2540C	873904		
60441897005	S-PZ-1S	SM 2540C	873904		
60441897006	S-TP-3D	SM 2540C	873904		
60441897007	S-TP-6S	SM 2540C	873904		
60441897008	S-TP-6D	SM 2540C	873904		
60441897009	S-LMW-1S	SM 2540C	874254		
60441897010	S-LMW-2S	SM 2540C	874254		
60441897011	S-LMW-4S	SM 2540C	874254		
60441897012	S-LMW-5S	SM 2540C	874254		
60441897013	S-LMW-6S	SM 2540C	874254		
60441897014	S-PZ-9D	SM 2540C	874254		
60441897015	S-TP-2D	SM 2540C	874170		
60441897016	S-TP-4D	SM 2540C	874170		
60441897017	S-TP-5D	SM 2540C	874170		
60441897018	S-TP-8D	SM 2540C	874170		
60441897019	S-UG-3	SM 2540C	874170		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60441897

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441897020	S-CA-DUP-1	SM 2540C	874170		
60441897021	S-CA-DUP-2	SM 2540C	874170		
60441897022	S-CA-FB-1	SM 2540C	874170		
60441897023	S-CA-FB-2	SM 2540C	874254		
60441897001	S-BMW-1S	EPA 300.0	875885		
60441897002	S-BMW-3S	EPA 300.0	875885		
60441897003	S-AM-1S	EPA 300.0	875885		
60441897004	S-AM-1D	EPA 300.0	875885		
60441897005	S-PZ-1S	EPA 300.0	875885		
60441897006	S-TP-3D	EPA 300.0	875885		
60441897007	S-TP-6S	EPA 300.0	875885		
60441897008	S-TP-6D	EPA 300.0	875885		
60441897009	S-LMW-1S	EPA 300.0	877073		
60441897010	S-LMW-2S	EPA 300.0	877073		
60441897011	S-LMW-4S	EPA 300.0	877073		
60441897012	S-LMW-5S	EPA 300.0	877073		
60441897013	S-LMW-6S	EPA 300.0	877073		
60441897014	S-PZ-9D	EPA 300.0	877073		
60441897015	S-TP-2D	EPA 300.0	876640		
60441897016	S-TP-4D	EPA 300.0	876640		
60441897017	S-TP-5D	EPA 300.0	876640		
60441897018	S-TP-8D	EPA 300.0	876640		
60441897019	S-UG-3	EPA 300.0	876640		
60441897020	S-CA-DUP-1	EPA 300.0	876640		
60441897021	S-CA-DUP-2	EPA 300.0	876640		
60441897022	S-CA-FB-1	EPA 300.0	876640		
60441897023	S-CA-FB-2	EPA 300.0	877073		

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WO#: 60441897



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



Revision: 2

Effective Date: 01/12/2022

Client Name: Rocksmitz George

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: Ice Blue None

Cooler Temperature (°C): As-read 0.6/1.3 Corr. Factor -0.3 Corrected 0.3/1.0

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 17.4/15.4 17.1/15.1

W 11/13/23

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: Pace Analytical Kansas
 9608 Loiret Blvd., Lenexa, KS 66219

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 SCPA-CA

Street Address: Rocksmith GeosEngineering, LLC.
 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Customer Name: AMEREN SCPA-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):
 DW PWSID # or WW Permit # as applicable: _____
 Field Filtered (if applicable): [] Yes [] No

Date Results Requested: _____

County / State origin of sample(s): Missouri

Regulatory Program (DW, RCRA, etc.) as applicable:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OI), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Collected (or Composite Start)		Composite End		Res. CL2		Number & Type of Containers	
		Date	Time	Date	Time	Time	Time	Plastic	Glass
S-BMW-1S	WT	6	11-10-23	0957				4	
S-BMW-3S	WT	6	11-10-23	0918				4	
S-LMW-1S	WT								
S-LMW-2S	WT								
S-LMW-4S	WT								
S-LMW-5S	WT								
S-LMW-6S	WT								
S-AM-1S	WT	6	11-10-23	1123				4	
S-AM-1D	WT	6	11-10-23	1154				4	
S-PZ-1S	WT	6	11-10-23	0902				4	

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, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se, Cd

Collected By: Grant Mory
Printed Name: Grant Mory
Signature: *Grant Mory*

Received by (Company): *Rocksmith*
Received by (Company): *Rocksmith*
Received by (Company): *Rocksmith*
Received by (Company): *Rocksmith*

Date/Time: 11-10-23/1550
Date/Time:
Date/Time:
Date/Time:

Additional Instructions from Pace*:

Coolers: 4
Thermometer ID: T298
Correction Factor (°C): -0.3
Obs. Temp. (°C): 0.6117
Corrected Temp. (°C): 0.3117

Tracking Number: 17-415417-1/15.1
Date/Time: 11/11/23 0450

Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other

Page: 1 of 2



LAB USE ONLY - Affix Workorder/Login Label Here

Scan QR Code for instructions

60441897

Specify Container Size **

125mL, (5) 100mL, (6) 40mL wat, (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) NaOH, (11) Other

Analysis Requested

Chloride/Fluoride/Sulfate
 Alkalinity
 TDS
 App III and Cat/An Metals (200.7)*
 Appendix IV Metals (200.7/200.8)**
 Radium 226 & Radium 228

Lab Use Only

Preservation non-conformance identified for

Prof. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856, Line 1
Prelog / Bottle Ord. ID:
EZ 3011901

Sample Comment

1/2

Client: Rocksmith Green

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			2								
2	↓																		1			2								
3																														
4																														
5																														
6																														
7																														
8	WT																		1			2								
9																			1			2								
10	↓																		1			2								
11																			1			2								
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 Colliform 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	AG3U	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:

6004187

2/2

Client: Rocksmith Becong

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	WT																					1	2	1						
7	WT																					1	2	1						
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic
DG9H	40mL HCl amber vial	WGDU	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:

60441897

WO#: 60441897



60441897



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

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geo eng

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 1.7/2.0/1.6 Corr. Factor -0.3 Corrected 1.4/1.7/1.3

Date and initials of person examining contents: 12/11/15/23

Temperature should be above freezing to 6°C 0.9/1.4/1.5.0

0.6/1.4.1/1.4.7

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 checked="" type="checkbox"/> Yes <input 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

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Scan QR Code for instructions 

Company Name: Pace Analytical Kansas
Street Address: 9608 Loiret Blvd, Lenexa, KS 66219
City/State: Lenexa, KS
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
Purchase Order # (if applicable):
Quote #:

Project Name: AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):
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
County / State origin of sample(s): Missouri
Rush (Pre-approval required): DW PWSID # or WW Permit # as applicable:
 [] 2 Day [] 3 day [] 5 day [] Other: _____
Date Results Requested:
 Field Filtered (if applicable): [] Yes [] No
 Analytic: _____

Customer Sample ID	Matrix * Comp / Grab	Collected (or Composite Start)		Composite End		Res. CL2	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Lab Use Only	Proj. Mgr: Jamie Church	AcctNum / Client ID:	Table #:	Profile / Template: 15856, Line 1	Prag / Bottle Ord. ID: EZ 3011901	Sample Comment	Preservation non-conformance identified for sample
		Date	Time	Date	Time		Plastic	Glass														
S-BMW-1S	WT																					
S-BMW-3S	WT																					
S-LMW-1S	WT	G	11-14-23	1153				4														
S-LMW-2S	WT	G	11-14-23	0906				4														
S-LMW-4S	WT	G	11-14-23	0830				4														
S-LMW-5S	WT	G	11-14-23	1129				4														
S-LMW-6S	WT	G	11-14-23	1218				4														
S-AM-1S	WT																					
S-AM-1D	WT																					
S-PZ-1S	WT																					

Additional Instructions from Pace:
 Collected By: Grant Mory
 Printed Name: Grant Mory
 Signature: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 
 Received by/Company: 

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

Scan QR Code for instructions

60041897

Company Name: Rocksmith Geoeengineering, LLC.
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
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
Purchase Order # (if applicable):
Quote #:

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:
 Yes [] No
 Analysis: _____
 DW PWSID # or WW Permit # as applicable: _____
 Field Filtered (if applicable): [] Yes [] No

* 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 (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Collected (or Composite Start)		Res. CL	Composite End		Number & Type of Containers	
		Date	Time		Date	Time	Plastic	Glass
S-CA-DUP-2	WT	G	11-13-23	-			4	
S-CA-FB-1	WT	G	11-13-23	0859			4	
S-CA-FB-2	WT	G	11-14-23	0901			4	
S-CA-MS-1	WT	G	11-13-23	0845			4	
S-CA-MSD-1	WT	G	11-13-23	0845			4	

Customer Remarks / Special Conditions / Possible Hazards:
 * - App III and Cal/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 ** - App IV Metals - EPA 200.7 - Ba, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se, Cd
 60

Collected By: Grant Money
Printed Name: Grant Money
Signature: *Grant Money*

Received by/Company (Signature)
 Date/Time: 11-14-23/1430
 Date/Time: _____
 Date/Time: _____
 Date/Time: _____

Specify Container Size **	Identify Container Preservative Type ***	Analysis Requested	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cal/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
125mL (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other	H2SO4 (4) HCl (5) NaOH (6) Zn Acetate (7) NeHSO4 (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other		✓	✓	✓	✓	✓	✓	Proj. Mgr: Jamie Church AcctNum / Client ID: Table #: Profile / Template: 15856, Line 1 Prelog / Bottle Ord. ID: EZ 3011901
			✓	✓	✓	✓	✓	✓	Sample date: 11-14-23
			✓	✓	✓	✓	✓	✓	Collective S-TP-2D
			✓	✓	✓	✓	✓	✓	
			✓	✓	✓	✓	✓	✓	

Preservation non-conformance identified for sample:
 Additional Instructions from Pace*:
 # Coolers: _____ Thermometer ID: _____ Obs. Temp. (°C) _____ Corrected Temp. (°C) _____
 Tracking Number: _____
 Delivered by: [] In-Person [] Courier
 [] FedEx [] UPS [] Other
 Page: 3 of 3

2/3 only print what you log.

Rocksmith Geoen

Client:

Profile #

Site:

Notes: Append to 60041897

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			2	1							
2	→																		3			2	3							
3																														
4																						2	1							
5	→																		1			2	1							
6																			1			2	1							
7																						2								
8																						2								
9																						2								
10	→																					2								
11																						2								
12																						2								

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 unres 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:

60041897

3/3 only print what you log.

Client: Locksmiths Geoeng

Site: _____

Profile # _____

Notes: Append to 60411897

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																													
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

(only 109 Radium) ↓

↑

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 unres glass	250mL HNO3 plastic - field filtered	WT
BG3H	250mL HCl Clear glass	250mL HNO3 plastic	SL
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:

60411897

Internal Transfer Chain of Custody



Rush Multiplier X
 Samples Pre-Logged into eCOC
 State Of Origin: MO
 Cert. Needed: Yes No
 Owner Received Date: 11/11/2023 Results Requested By: 12/16/2023



Workorder: 60441897 Workorder Name: AMEREN SCPA-CA
 Subcontract To:

Requested Analysis: Radium 226 Radium 228

Jamie Church
 Pace Analytical Kansas
 1638 Roseytown Road
 Suites 2,3, & 4
 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	
						Matrix	Matrix
20	S-CA-DUP-1	PS	11/13/2023 00:00	60441897020	Water	2	
21	S-CA-DUP-2	PS	11/13/2023 00:00	60441897021	Water	2	
22	S-CA-FB-1	PS	11/13/2023 08:59	60441897022	Water	2	
23	S-CA-FB-2	PS	11/14/2023 09:01	60441897023	Water	2	
24	S-CA-MS-1	PS	11/13/2023 08:45	60441897024	Water	2	
25	S-CA-MSD-1	PS	11/13/2023 08:45	60441897025	Water	2	

Transfers	Released By	Date/Time	Received By	Date/Time
1	J.A. Pace	11/21/23 17:00	Jamy Brown Pace	11/27/23 9:05
2				
3				

Cooler Temperature on Receipt _____ °C Custody Seal Y or (N) Received on Ice Y or (N) Samples Intact (Y or N)

Comments	
Note: Sample 015 is parent sample for MS/MSD (024/025).	
KS Sample location: Receiving	

WO#: 30642213

PM: MAR Due Date: 11/27/23
 CLIENT: PACE_60_LEKS

***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.

DC#_Title: ENV-FRM-GBUR-0088 v06_Sample Condition Upon Receipt-
Pittsburgh



Effective Date: 09/20/2023

WO#: 30642213

Client Name: Pace - KS

PM: MAR Due Date: 11/27/23
CLIENT: PACE_60_LEKS

Courier: Fed Ex UPS USPS Client Commercial Pace C

Tracking Number: 64321395 1607

Examined By: JS 11/28/23
Labeled By: JS 11/28/23
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 #
				1000831	_____
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC: -Includes date/time/ID Matrix: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for dissolved tests:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>JS</u>	Date/Time of Preservation
				Lot# of added Preservative	
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <.05 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>LB</u>	Date: <u>11/22/23</u> Survey Meter SN: <u>25019380</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 22, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPA-CA – Data Package 60441897**

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).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren SCPA-CA
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 01/22/2024

Laboratory: Pace Analytical SDG #: 60441897

Analytical Method (type and no.): EPA 200.7/200.8 (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 S-BMW-1S, S-BMW-3S, S-AM-1S, S-AM-1D, S-PZ-1S, S-TP-3D, S-TP-6S, S-TP-6D, S-LMW-1S, S-LMW-2S, S-LMW-4S, S-LMW-5S, S-LMW-6S, S-PZ-9D, S-TP-2D, S-TP-4D, S-TP-5D, S-TP-8D, S-UG-3, S-CA-DUP-1, S-CA-DUP-2, S-CA-FB-1, S-CA-FB-2, S-CA-MS-1, S-CA-MSD-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>11/10/2023 - 11/14/2023</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 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 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 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"/>	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:

Chloride, fluoride, and sulfate analyzed outside of hold time for several samples. 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:

Field Blanks:

S-CA-FB-1 @ S-TP-8D: Boron (8.3J) and Chloride (0.64J). Boron result < RL, qualified as non-detect at PQL. Chloride result > RL and 10x blank, no qualification necessary.

S-CA-FB-2 @ S-PZ-9D: All results are non-detects.

Laboratory Control Samples:

3471853: LCS recovery high for fluoride, associated with samples -001 through -008. All results are non-detects, no qualification necessary.

3472120/3474159/3475196: LCS recovery high for fluoride, associated with samples -015 through -033. All results are non-detects, no qualification necessary.

3473824: LCS recovery high for fluoride, associated with samples -009 through -014 and -023. All results are non-detects, no qualification necessary.

Duplicates:

S-CA-DUP-1 @ S-TP-4D: Field duplicate RPD exceeds control limit for chloride (30%), sulfate (164%) and TDS (24%). Results qualified as estimates. Cobalt, molybdenum, and radium-226 detected in duplicate and not in parent sample, results qualified as estimates. Radium-228 detected in parent sample and not in duplicate, results qualified as estimates.

S-CA-DUP-2 @ S-TP-5D: Field duplicate RPD exceeds control limit for cobalt (50%), results qualified as estimates. Chromium detected in field duplicate and not in parent sample, results qualified as estimates.

3472123: Lab duplicate RPD exceeds control limit for sulfate. Associated with unrelated sample, no qualification necessary.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3465243/3465244: MS recovery high & MSD recovery low for sodium, associated with unrelated sample, no qualification necessary.

3465245: MS recovery low for sodium, associated with unrelated sample, no qualification necessary.

3467641/3467642: MS/MSD recoveries high for calcium, magnesium, manganese, and sodium. Associated with unrelated sample, no qualifications necessary.

3467868/3467869: MSD recovery high for calcium, MS recovery and RPD within control limits, no qualification necessary.

3469021/3469022: MSD recovery high for fluoride, MS recovery and RPD within control limits, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-1S	Chloride	68.8	J	Analyzed outside of hold time controls
"	Fluoride	0.12	UJ	"
"	Sulfate	103	J	"
S-LMW-2S	Chloride	159	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	221	J	"
S-LMW-4S	Chloride	5.3	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	51.8	J	"
S-LMW-5S	Chloride	23.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	644	J	"
S-LMW-6S	Chloride	9.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	586	J	"
S-PZ-9D	Chloride	8.5	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	244	J	"
S-TP-2D	Chloride	61.2	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	459	J	"
S-TP-4D	Chloride	6.2	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	95.1	J	"
S-TP-5D	Chloride	34.9	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	256	J	"
S-TP-8D	Chloride	23.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	33.3	J	"
S-UG-3	Chloride	34.5	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	65.0	J	"
S-CA-DUP-1	Chloride	8.4	J	"

QA LEVEL II - iNORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-CA-DUP-1	Fluoride	0.12	UJ	Analyzed outside of hold time controls
"	Sulfate	9.4	J	"
S-CA-DUP-2	Chloride	39.5	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	280	J	"
S-CA-FB-1	Chloride	0.64	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	0.55	UJ	"
S-CA-FB-2	Chloride	0.53	UJ	"
"	Fluoride	0.12	UJ	"
"	Sulfate	0.55	UJ	"
S-TP-8D	Boron	100	U	Detected in field blank, result < PQL
S-CA-DUP-1	Chloride	8.4	J	Field duplicate RPD exceeds control limit
S-TP-4D	"	6.2	J	"
S-CA-DUP-1	Sulfate	9.4	J	"
S-TP-4D	"	95.1	J	"
S-CA-DUP-1	TDS	596	J	"
S-TP-4D	"	467	J	"
S-CA-DUP-1	Cobalt	1.5	J	Detected in field duplicate, ND in parent sample
S-TP-4D	"	1.2	UJ	"
S-CA-DUP-1	Molybdenum	1.4	J	"
S-TP-4D	"	1.0	UJ	"
S-CA-DUP-1	Radium-226	1.15	J	"
S-TP-4D	"	0.56	UJ	"
S-CA-DUP-1	Radium-228	0.674	UJ	Detected in parent sample, ND in field duplicate
S-TP-4D	"	0.811	J	"
S-CA-DUP-2	Cobalt	2.0	J	Field duplicate RPD exceeds control limit
S-TP-5D	"	1.2	J	"
S-CA-DUP-2	Chromium	0.49	J	Detected in field duplicate, ND in parent sample
S-TP-5D	"	0.30	UJ	"

Appendix B

October 2022 Assessment Monitoring Statistical Evaluation



TECHNICAL MEMORANDUM

DATE February 8, 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 SCPA SURFACE IMPOUNDMENT SIOUX ENERGY CENTER, ST. CHARLES COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the October 2022 sampling event at the SCPA Surface Impoundment of the Sioux Energy Center located in St. Charles County, Missouri. Included in this memorandum is a 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 Statistical Analysis Plan (SAP). The following outliers were removed prior to the calculation of confidence limits.

- Arsenic
 - UMW-1D at 2.7 micrograms per liter (µg/L) on 4/14/2021. The result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent arsenic results at the well and is an outlier.
- Cobalt
 - UMW-5D at 1.7 J µg/L on 3/31/2022. The result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent cobalt results at the well 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.

- Arsenic
 - UMW-6D at Non-Detect (ND) on 3/8/2017. Was removed in November 2019 as an outlier because the result was statistically lower than other values at the same well. However, based on subsequent sampling the low result was confirmed and the result is no longer an outlier.
- Fluoride

- UMW-3D at 0.32 milligrams per liter (mg/L) on 8/1/2019. Was removed in November 2019 as an outlier because the result was statistically lower than other values at the same well. However, based on subsequent sampling the low result was confirmed and the result is no longer an outlier.

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-2D, UMW-3D, UMW-4D, and UMW-5D

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
Senior Engineering Principal

Attachments: Table 1 – SCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Intervals Statistical Output
Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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	10	0.6933
Barium	µg/L	2000	2000	699
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	0.403
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	28.86
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
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.
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)
9. GWPS and background values calculated using results through April 2021 from monitoring wells BMW-1D and BMW-3D.

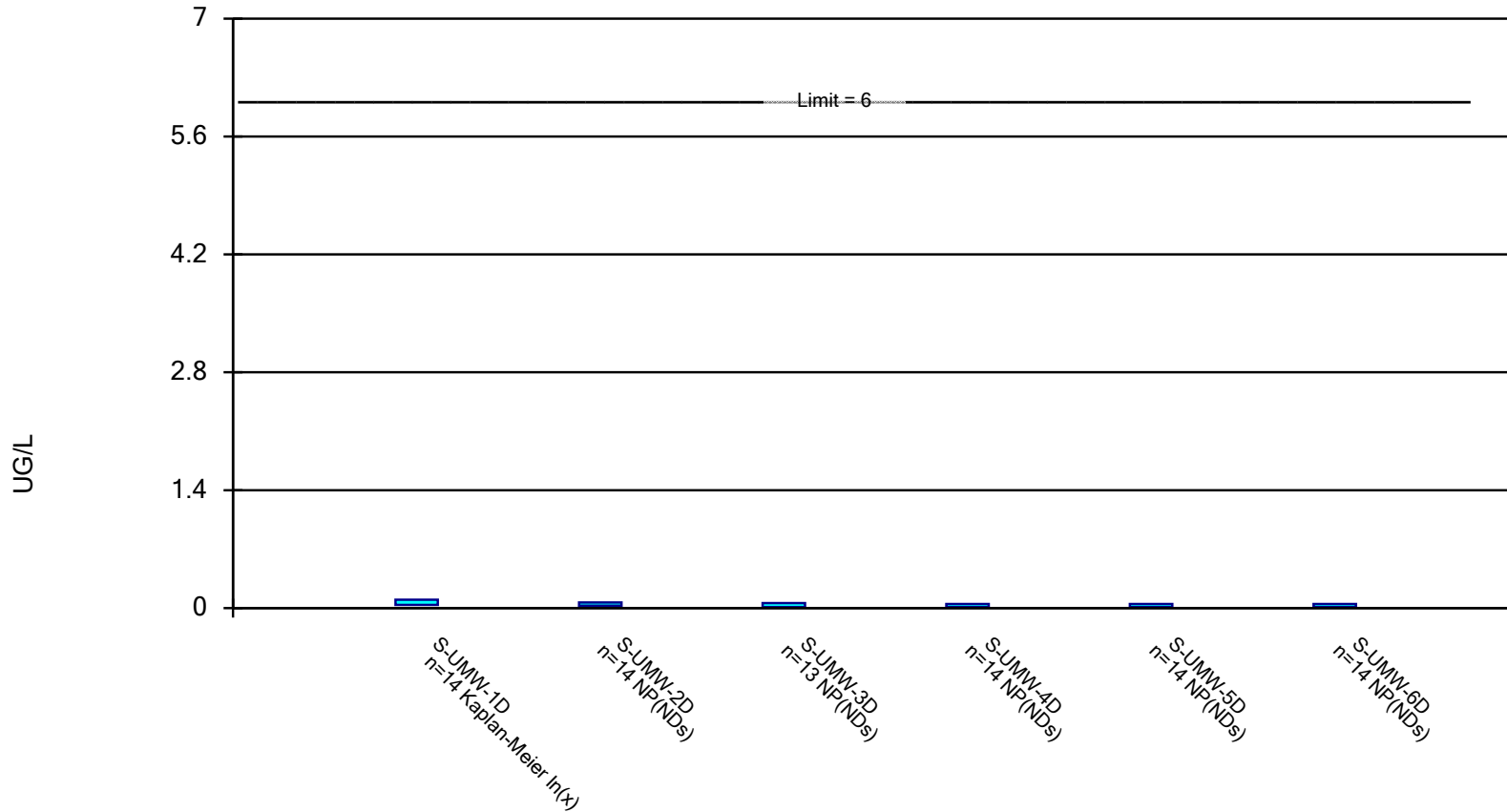
Prepared by: EMS
Checked by: LMS
Reviewed by: MNH

APPENDIX A

**Sanitas Confidence Intervals
Statistical Output**

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

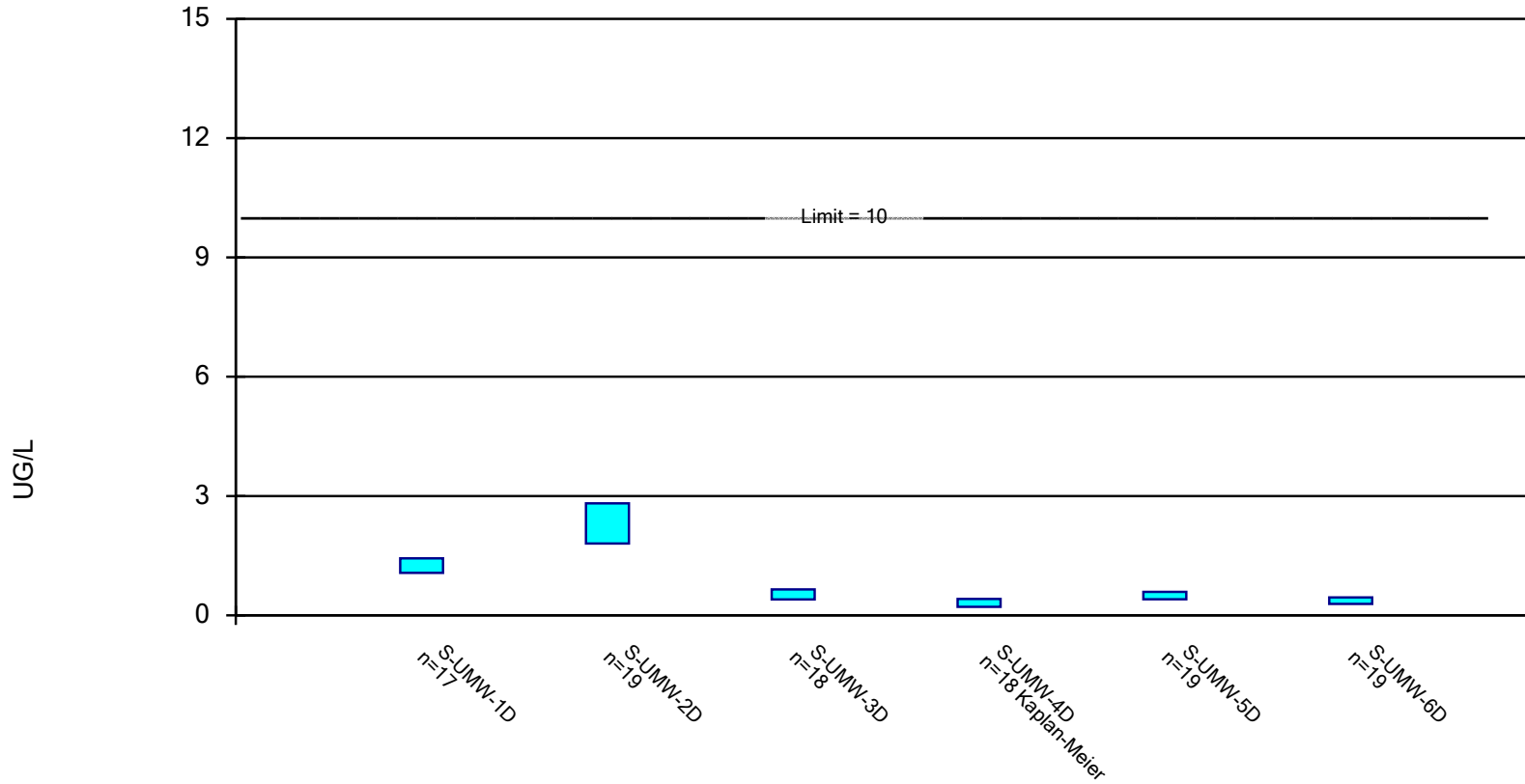


Constituent: ANTIMONY, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

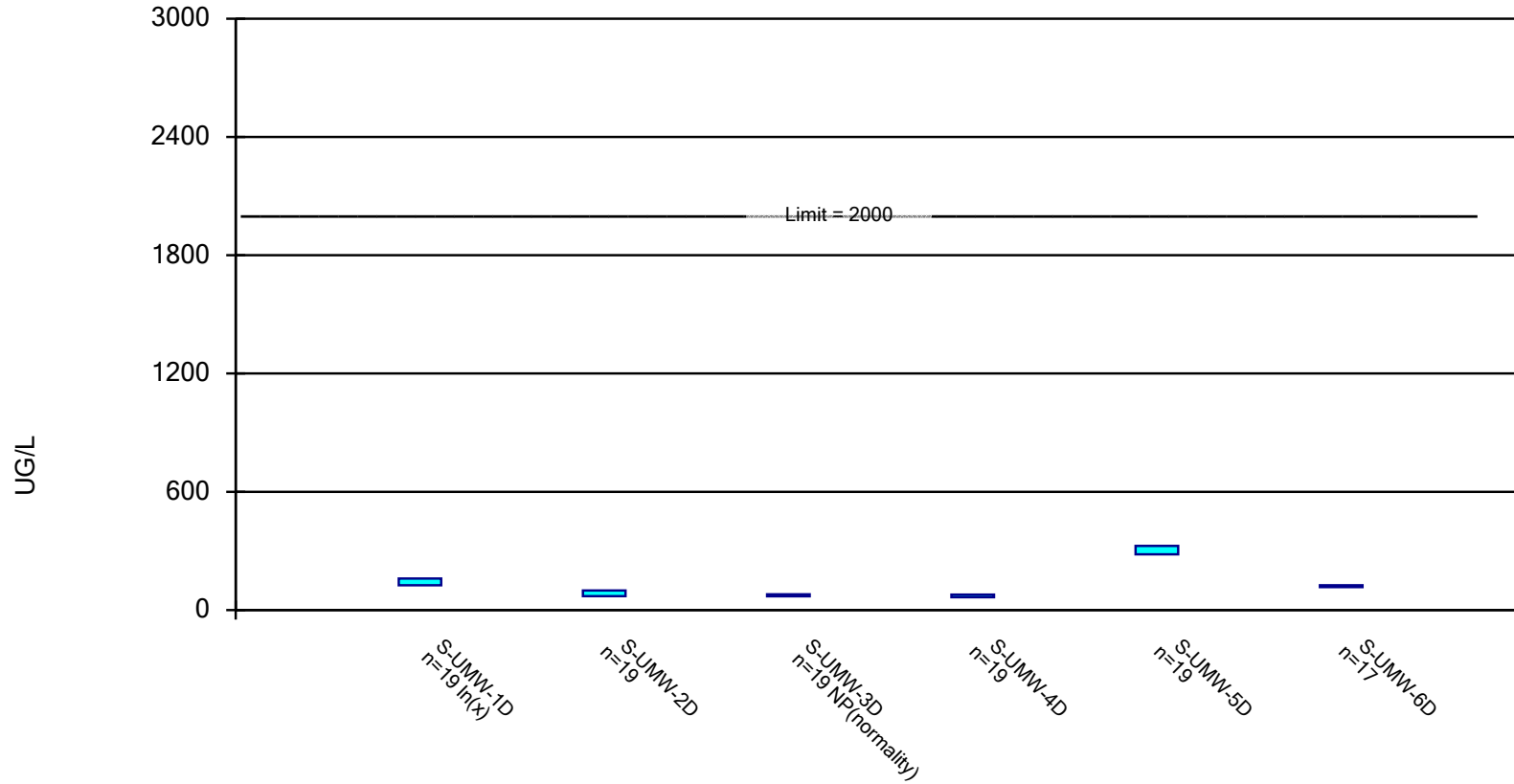


Constituent: ARSENIC, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

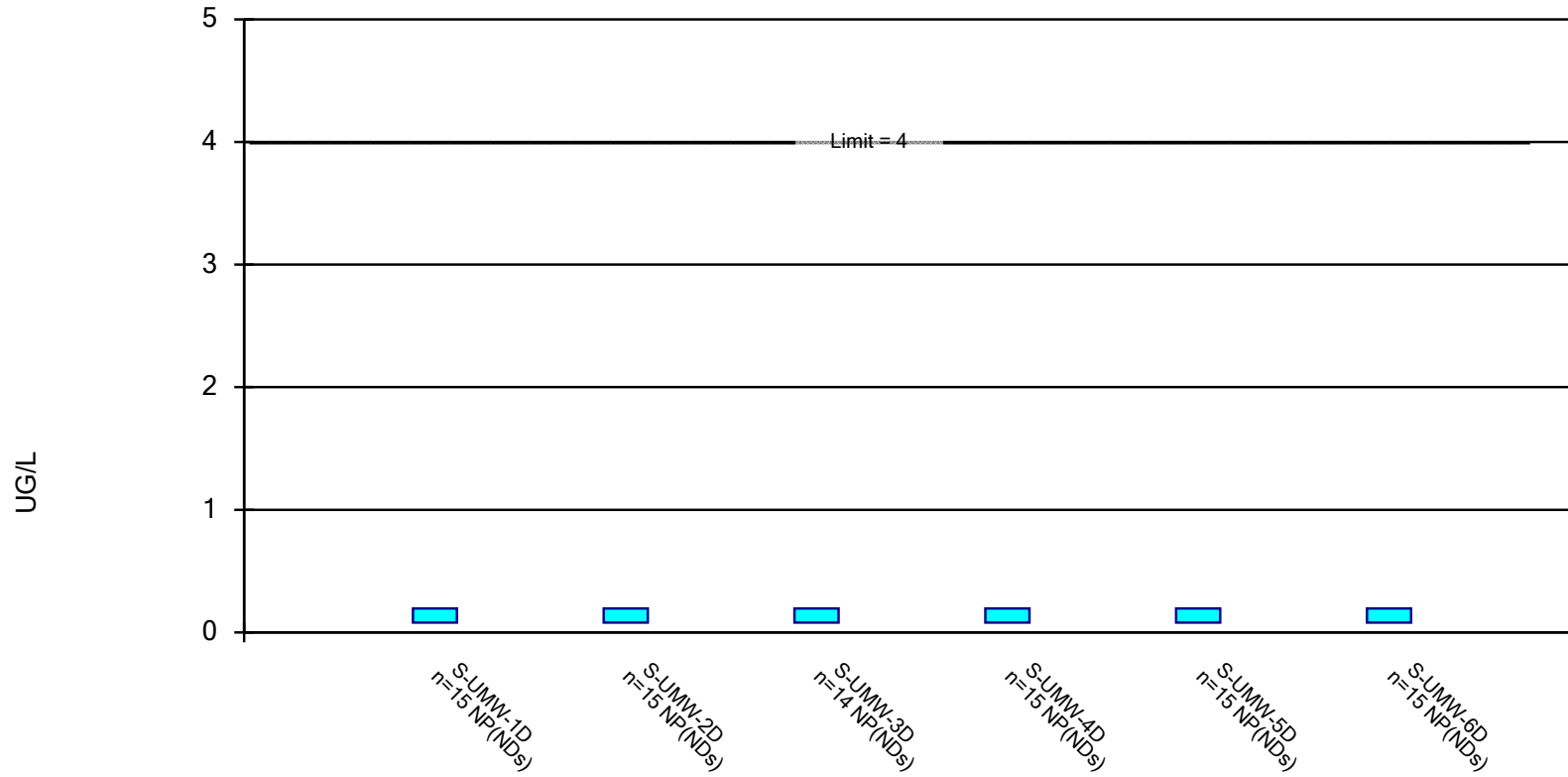


Constituent: BARIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

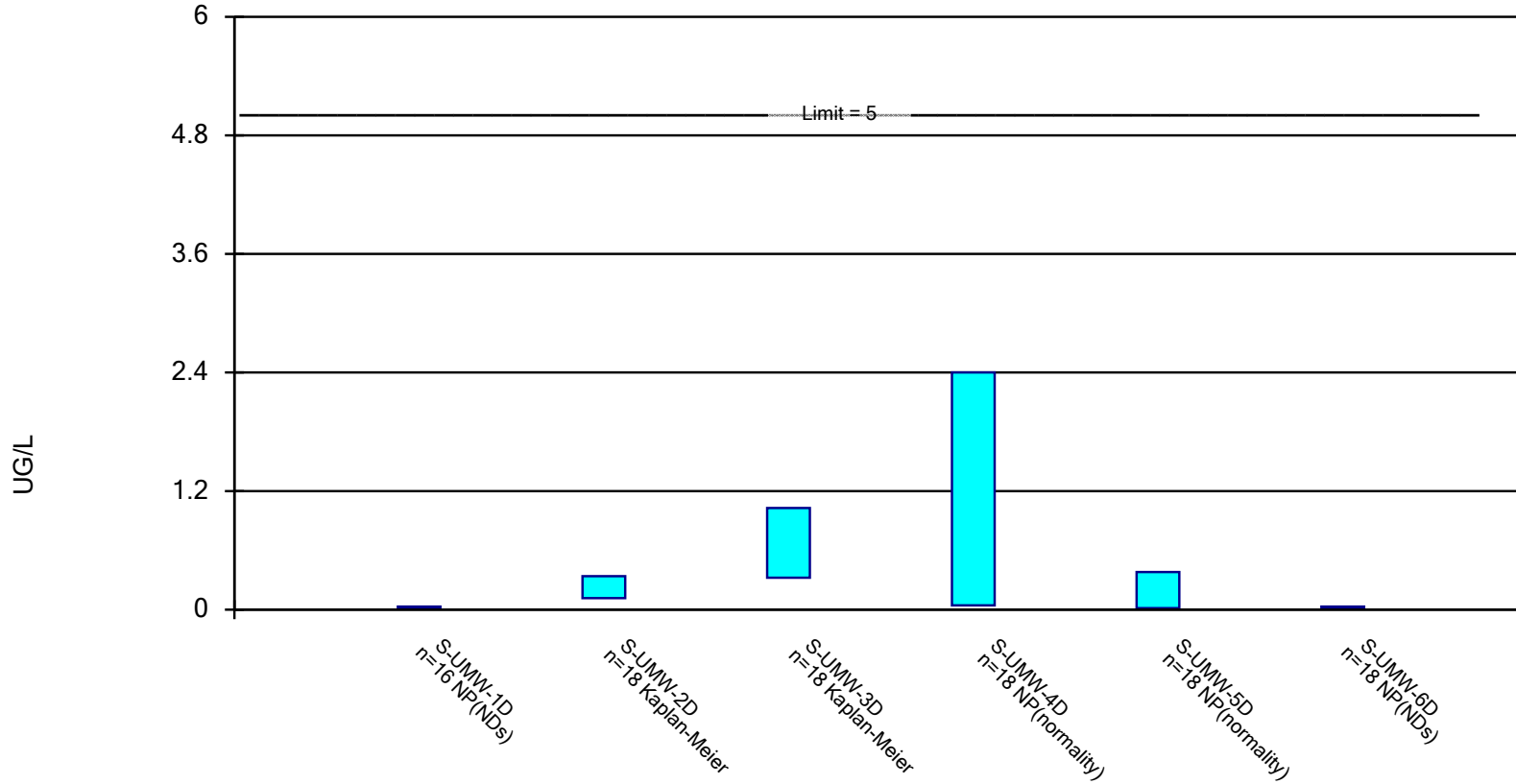


Constituent: BERYLLIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

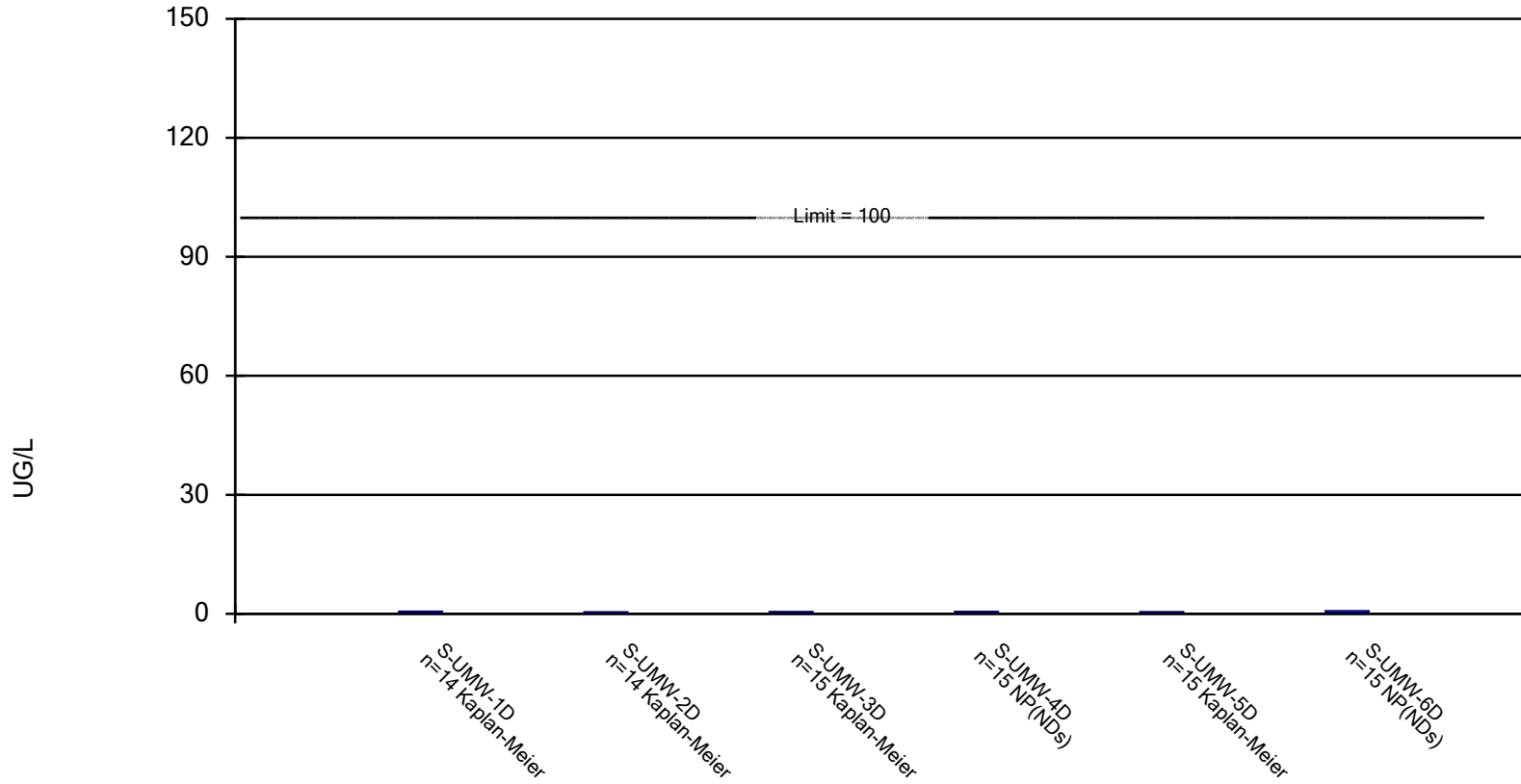


Constituent: CADMIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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.

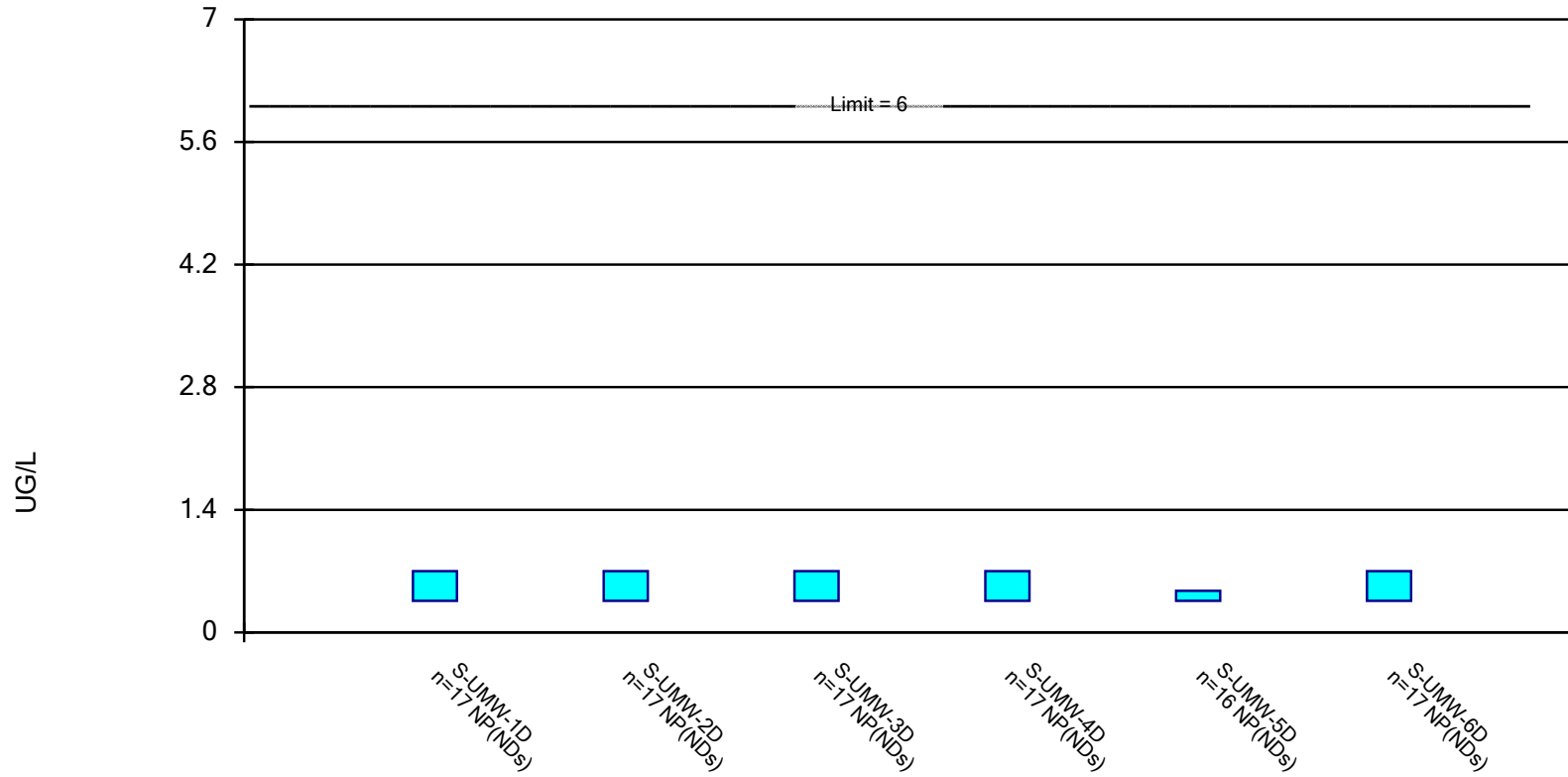


Constituent: CHROMIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

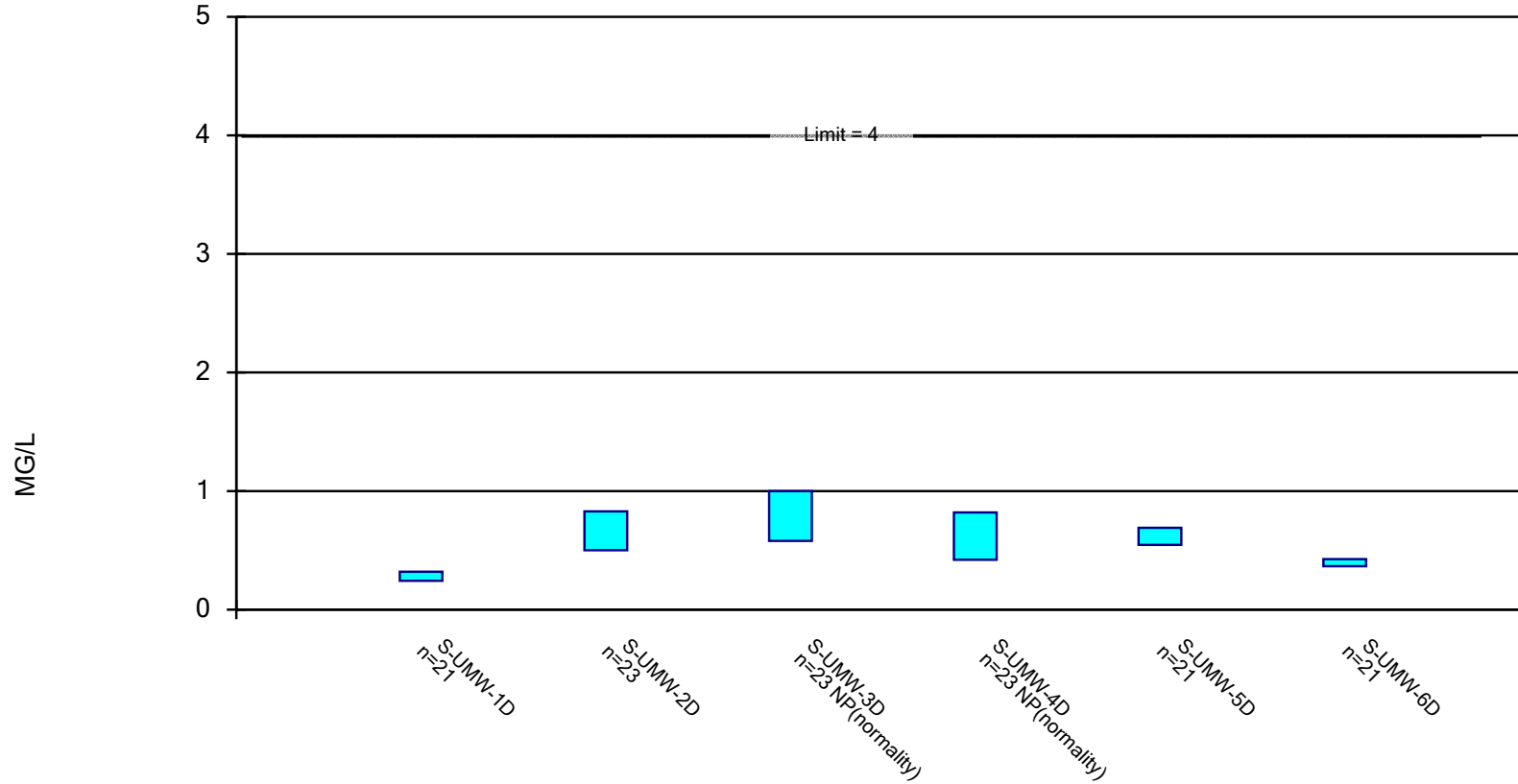


Constituent: COBALT, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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.

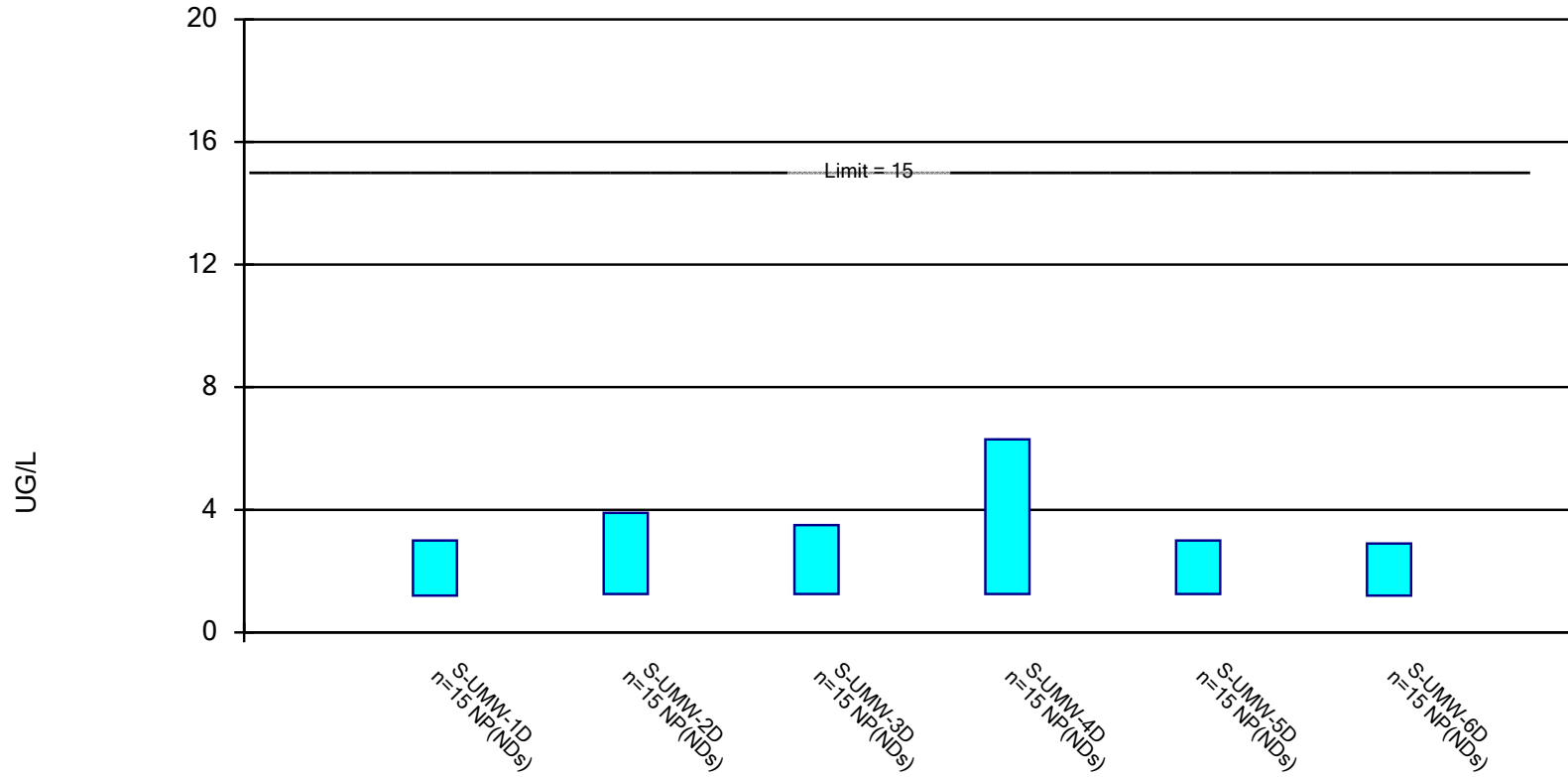


Constituent: FLUORIDE, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

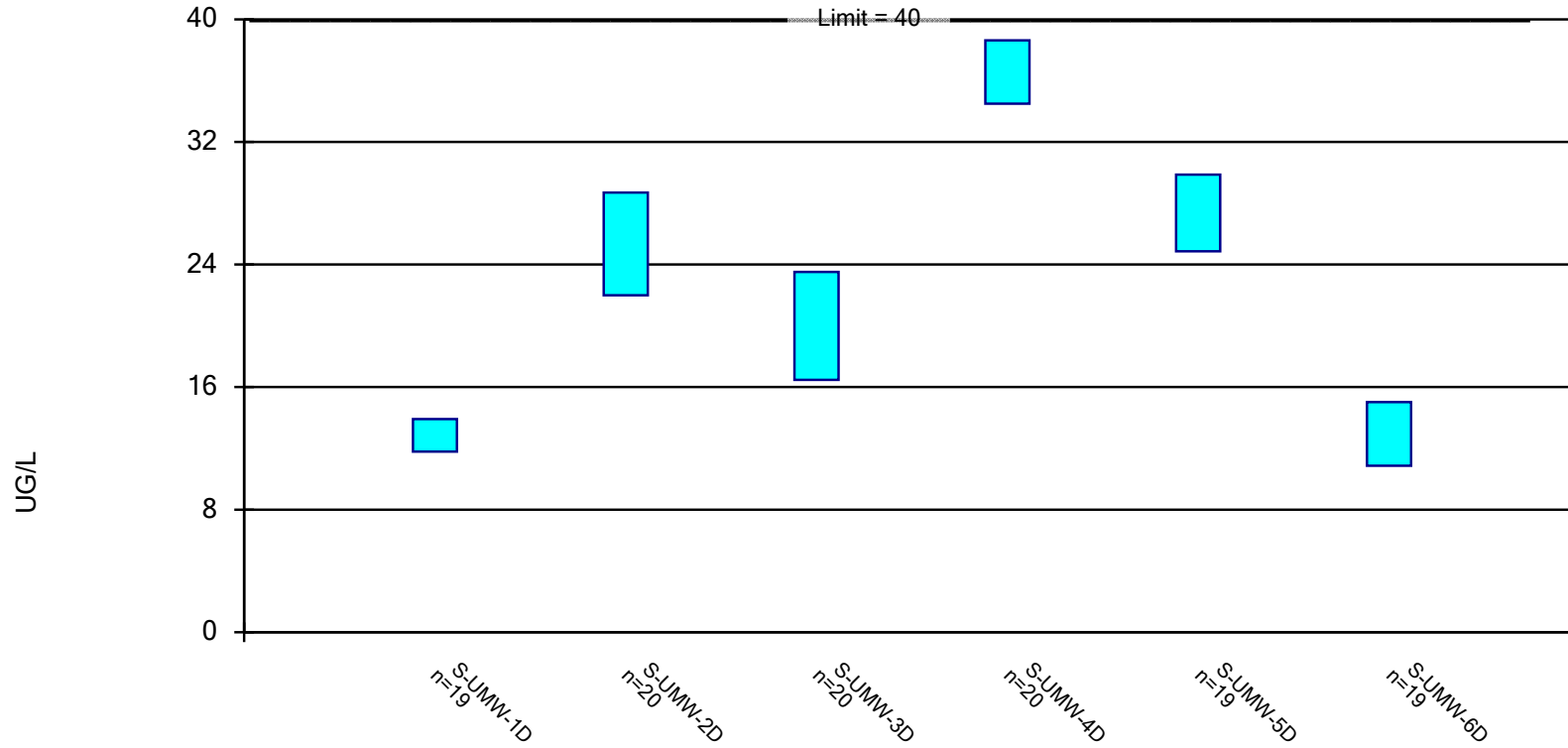


Constituent: LEAD, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

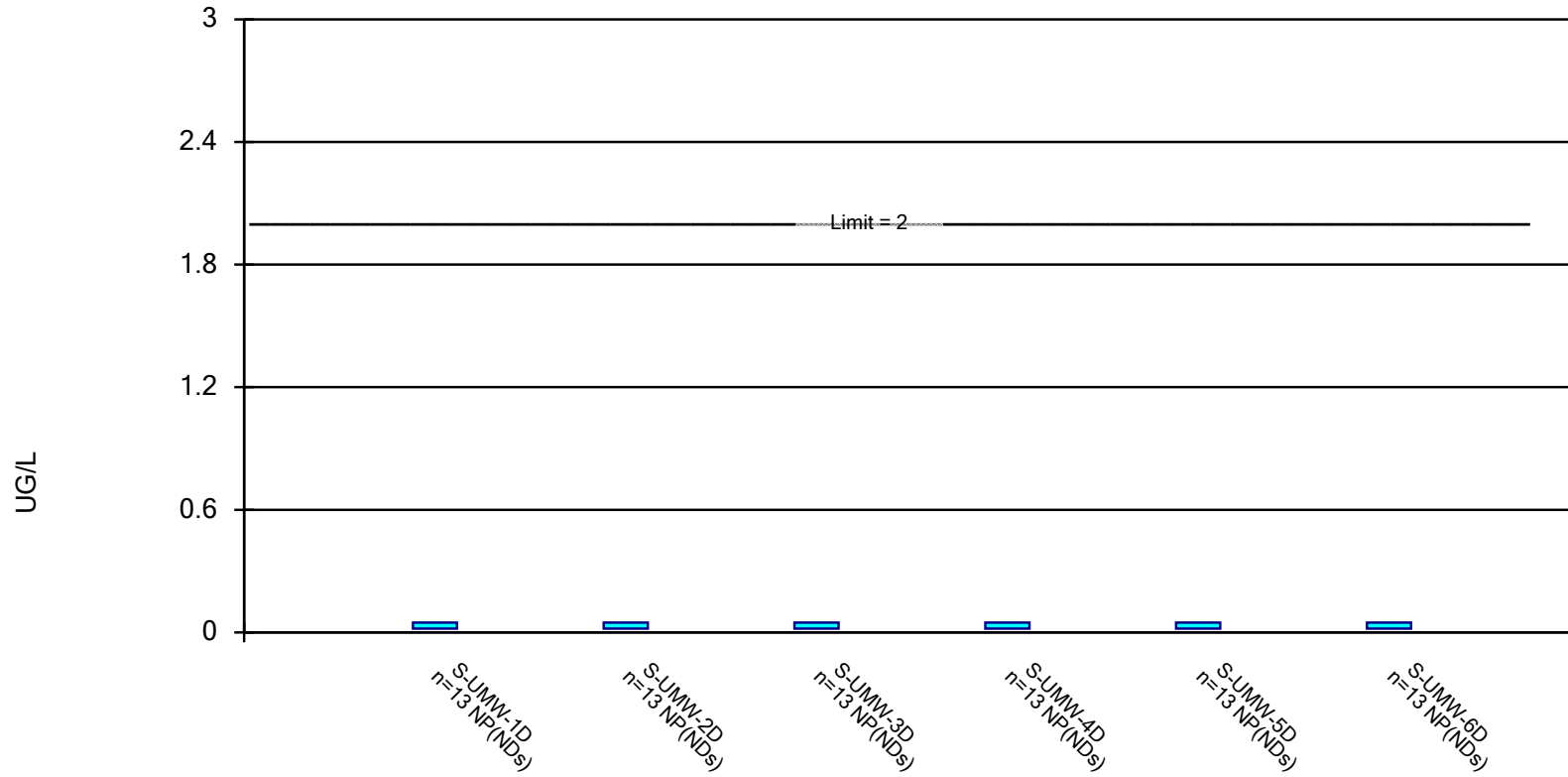


Constituent: LITHIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

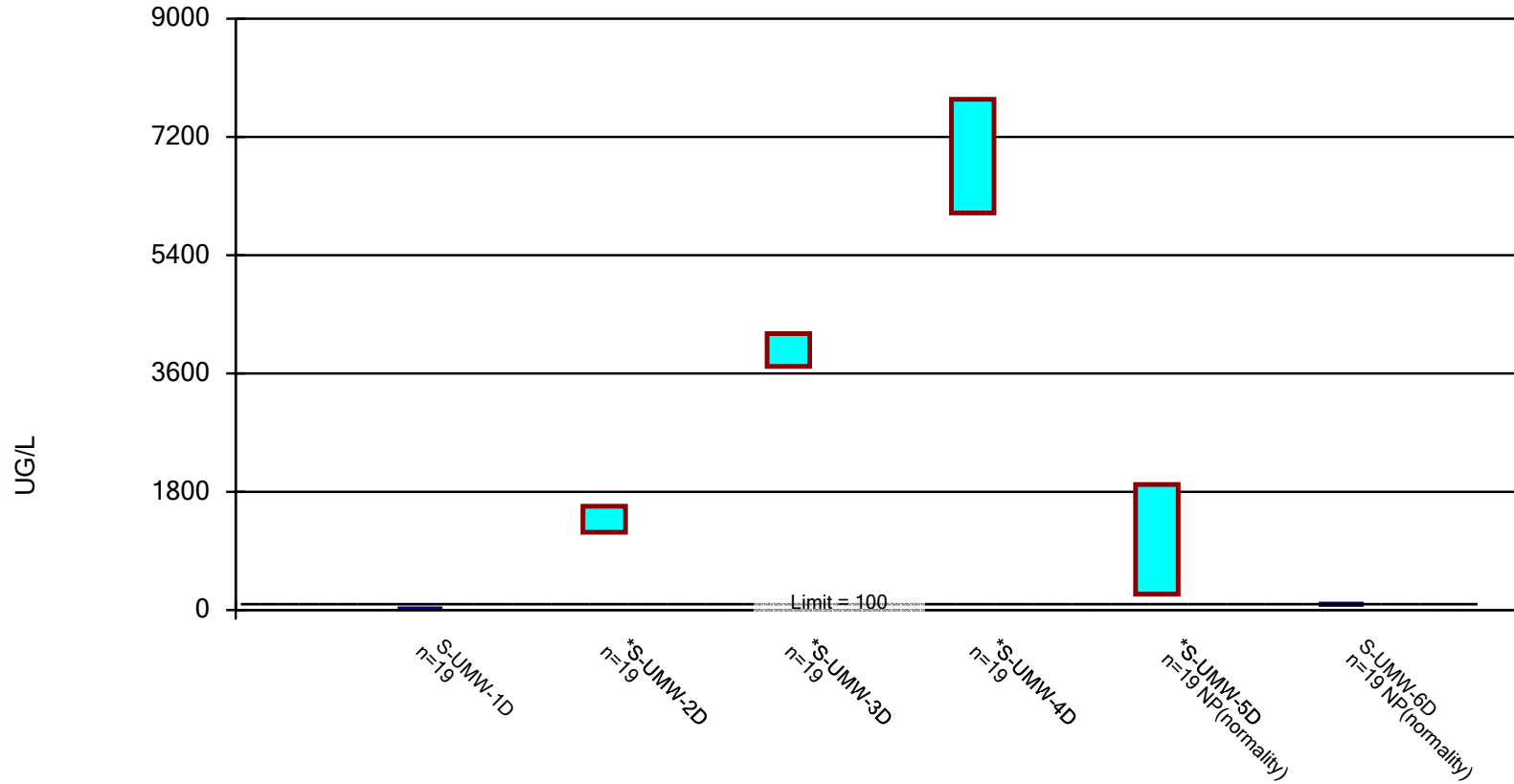


Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

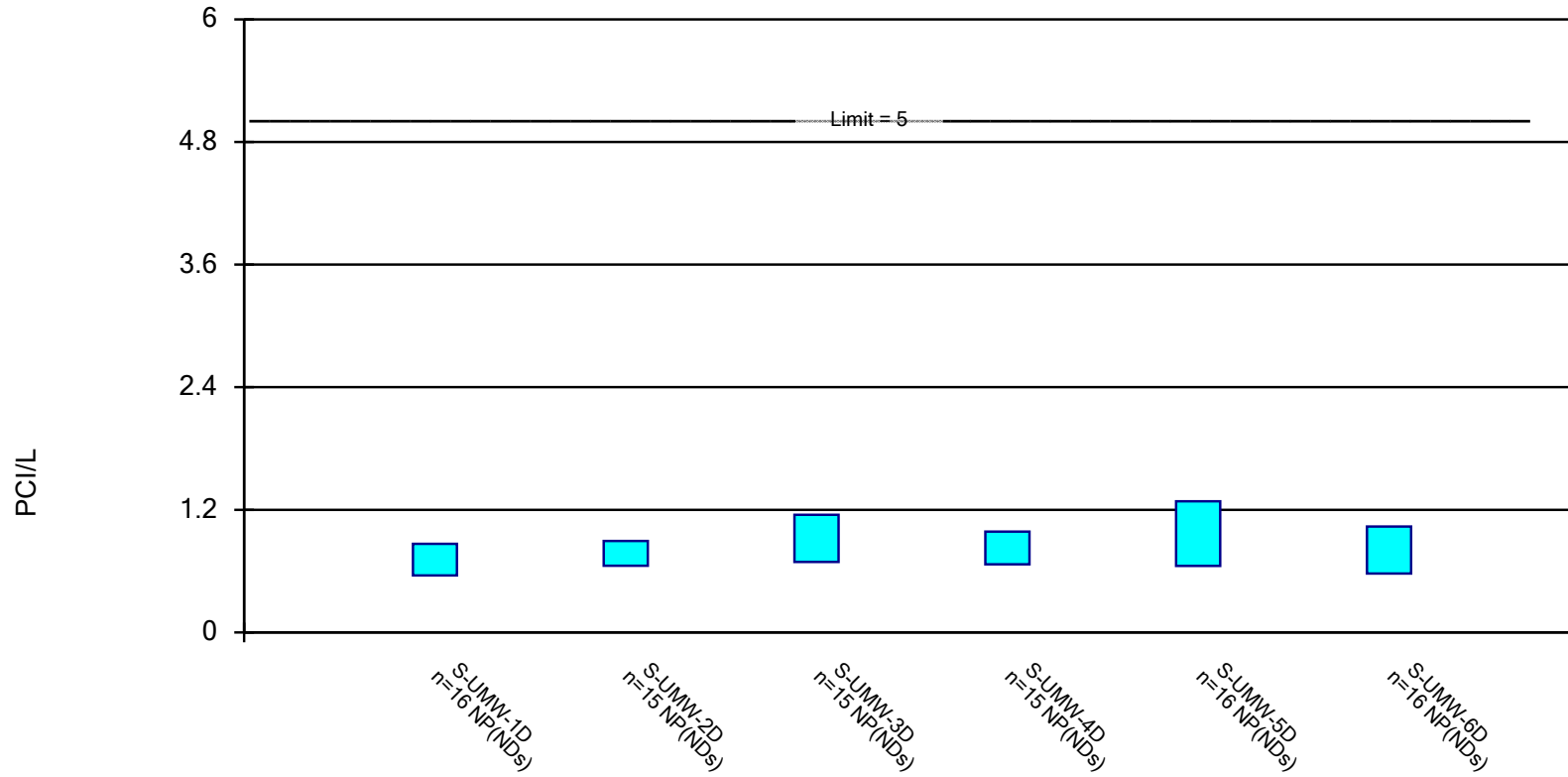


Constituent: MOLYBDENUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

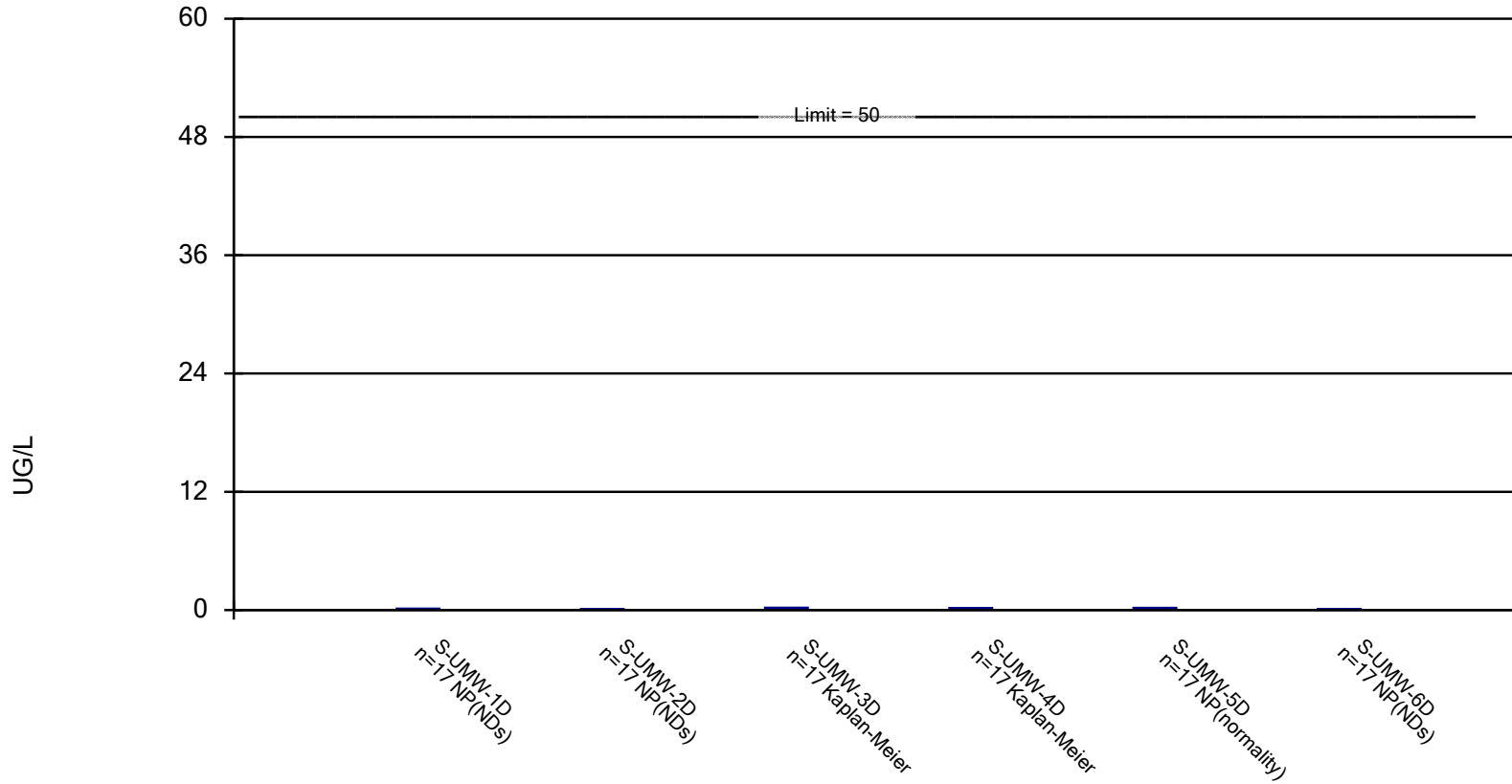


Constituent: RADIUM [226 + 228] Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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.

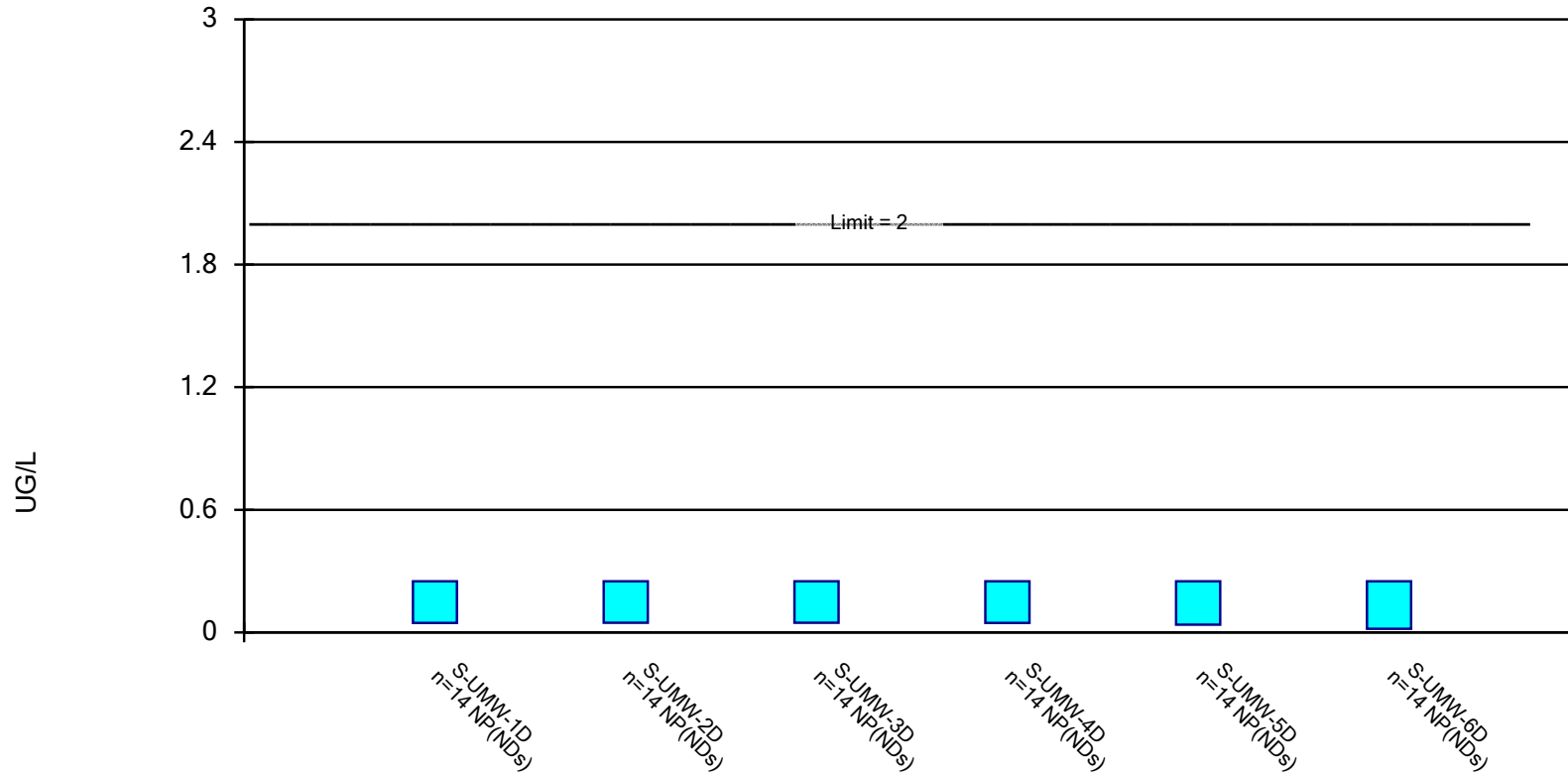


Constituent: SELENIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 1/25/2023 11:20 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 1/25/2023, 11:20 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)	S-UMW-1D	0.09862	0.03729	6	No	14	42.86	ln(x)	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.067	0.029	6	No	14	64.29	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.06	0.013	6	No	13	84.62	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.0485	0.013	6	No	14	92.86	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.0485	0.013	6	No	14	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.0485	0.013	6	No	14	100	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.433	1.066	10	No	17	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.814	1.804	10	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.6519	0.4004	10	No	18	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.4117	0.2138	10	No	18	22.22	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.5911	0.4046	10	No	19	10.53	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.4499	0.2869	10	No	19	10.53	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-1D	160.1	125.9	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	99.31	70.49	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	79.8	69.5	2000	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-4D	78.47	65.11	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	325.4	282.5	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-6D	125.6	116.3	2000	No	17	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0.195	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.031	0.009	5	No	16	87.5	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.3382	0.1165	5	No	18	38.89	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-3D	1.029	0.3221	5	No	18	27.78	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-4D	2.4	0.0435	5	No	18	22.22	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.38	0.0145	5	No	18	44.44	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.031	0.0145	5	No	18	77.78	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.537	0.1291	100	No	14	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	0.363	0.08889	100	No	14	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	0.4377	0.1613	100	No	15	46.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0.48	0.08	100	No	15	53.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	0.4051	0.1127	100	No	15	46.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.67	0.039	100	No	15	53.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-1D	0.7	0.36	6	No	17	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-2D	0.7	0.36	6	No	17	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-3D	0.7	0.36	6	No	17	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-4D	0.7	0.36	6	No	17	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-5D	0.475	0.36	6	No	16	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-6D	0.7	0.36	6	No	17	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0.3202	0.2427	4	No	21	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	0.8284	0.5014	4	No	23	4.348	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	1	0.58	4	No	23	8.696	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	0.82	0.42	4	No	23	8.696	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.6897	0.5456	4	No	21	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.4256	0.3668	4	No	21	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-UMW-1D	3	1.2	15	No	15	86.67	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-2D	3.9	1.25	15	No	15	73.33	No	0.01	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 1/25/2023, 11:20 AM

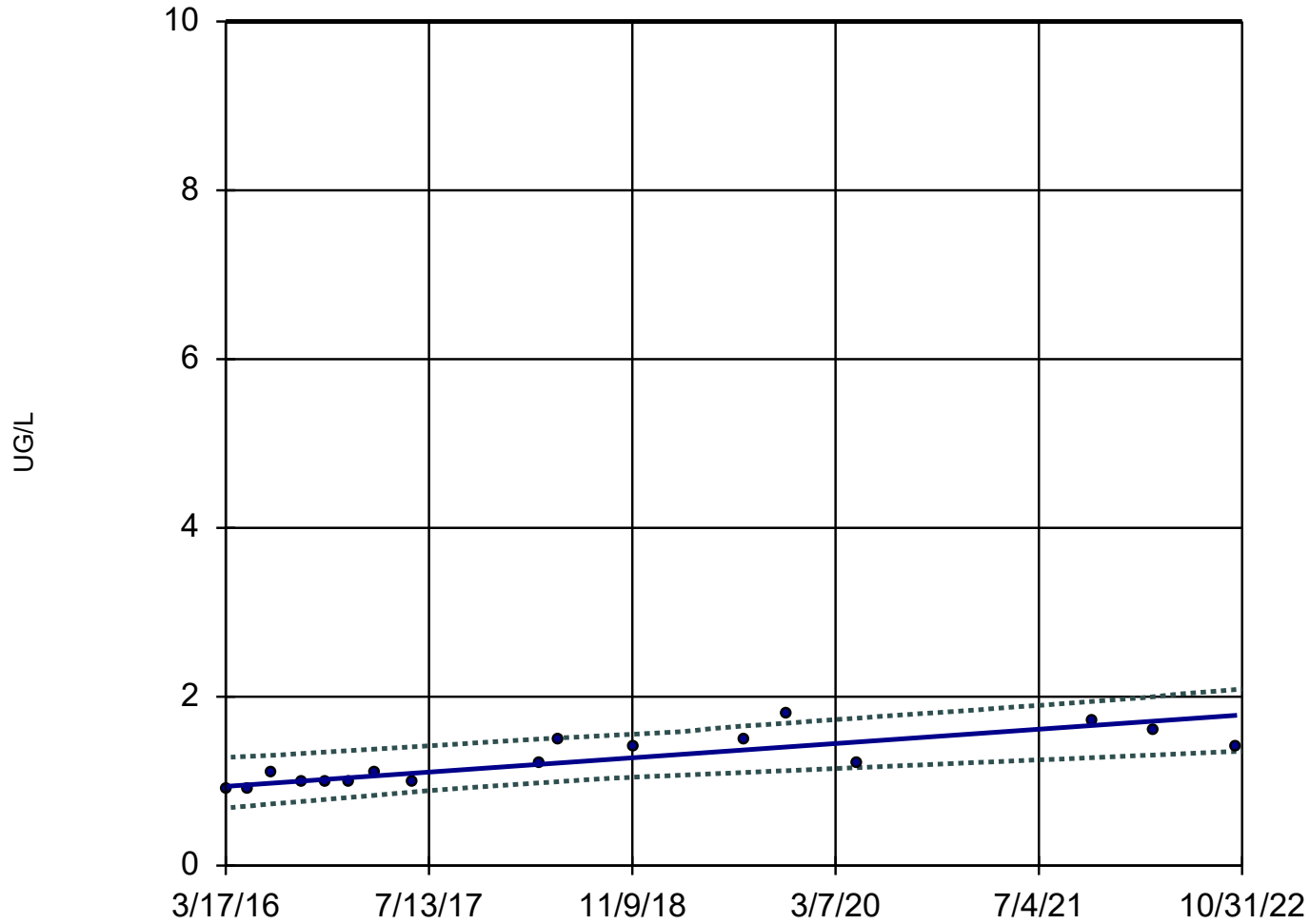
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
LEAD, TOTAL (UG/L)	S-UMW-3D	3.5	1.25	15	No	15	60	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-4D	6.3	1.25	15	No	15	53.33	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-5D	3	1.25	15	No	15	80	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-6D	2.9	1.2	15	No	15	86.67	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-UMW-1D	13.91	11.79	40	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	27.7	21.63	40	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	21.7	16.35	40	No	19	5.263	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	38.64	34.3	40	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	29.87	24.86	40	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	14.91	11.45	40	No	18	0	ln(x)	0.01	Param.
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	37.3	28.26	100	No	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	1579	1183	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	4207	3708	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	7773	6043	100	Yes	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	1910	242	100	Yes	19	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	110	66.1	100	No	19	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.8665	0.557	5	No	16	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.8955	0.652	5	No	15	93.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	1.151	0.689	5	No	15	80	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.987	0.667	5	No	15	93.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	1.283	0.6505	5	No	16	75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	1.036	0.576	5	No	16	93.75	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0.13	0.043	50	No	17	82.35	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0.094	0.043	50	No	17	76.47	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-3D	0.2266	0.1603	50	No	17	17.65	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0.1995	0.1438	50	No	17	23.53	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0.22	0.09	50	No	17	29.41	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0.09	0.043	50	No	17	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-1D	0.25	0.0465	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-2D	0.25	0.047	2	No	14	85.71	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-3D	0.25	0.047	2	No	14	85.71	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-4D	0.25	0.0465	2	No	14	85.71	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-5D	0.25	0.038	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-6D	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

S-UMW-1D



n = 17

Slope = 0.1276
units per year.

Mann-Kendall
statistic = 88
critical = 58

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

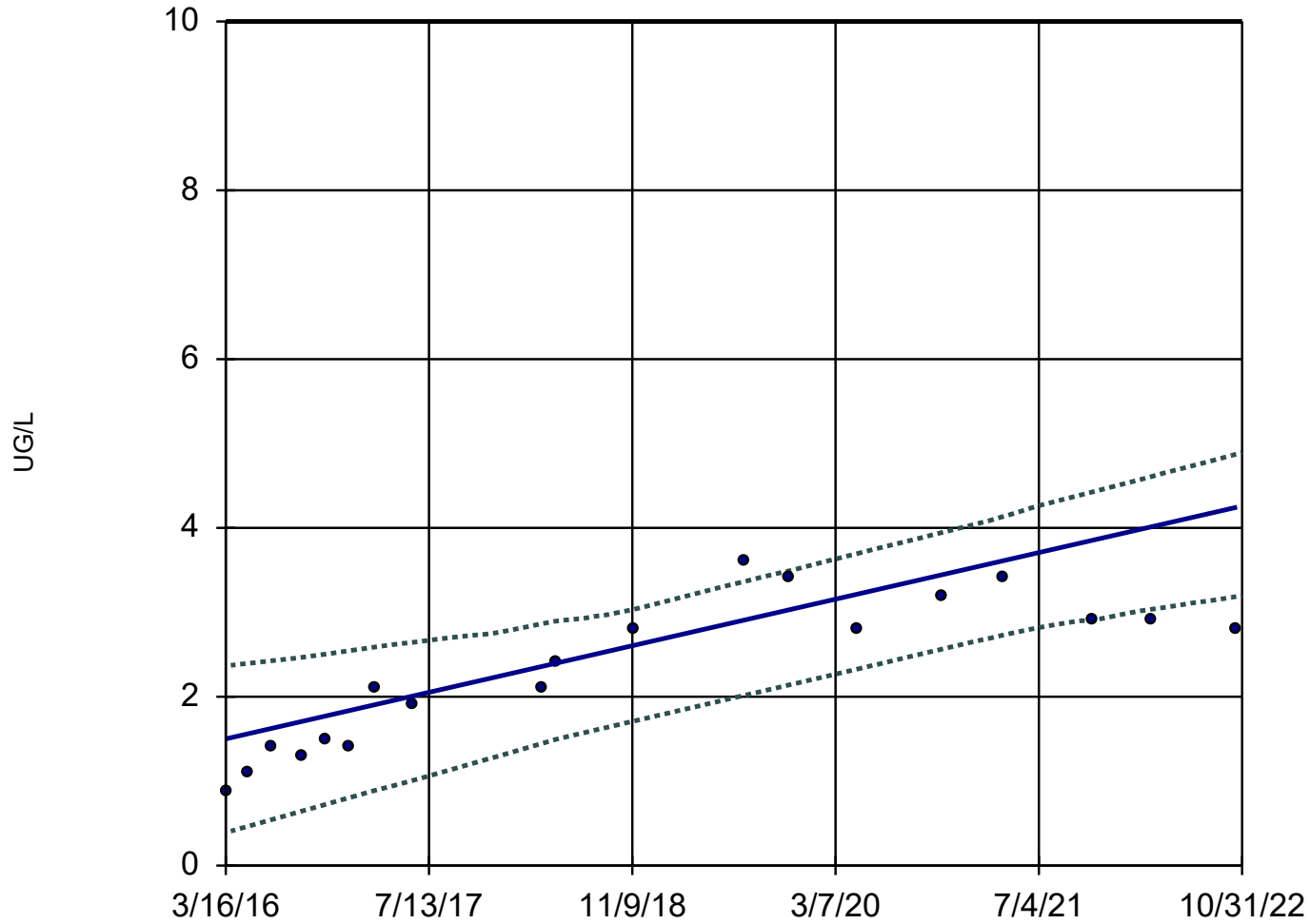
Confidence band is
below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 1/25/2023 11:55 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 19

Slope = 0.4161
units per year.

Mann-Kendall
statistic = 118
critical = 68

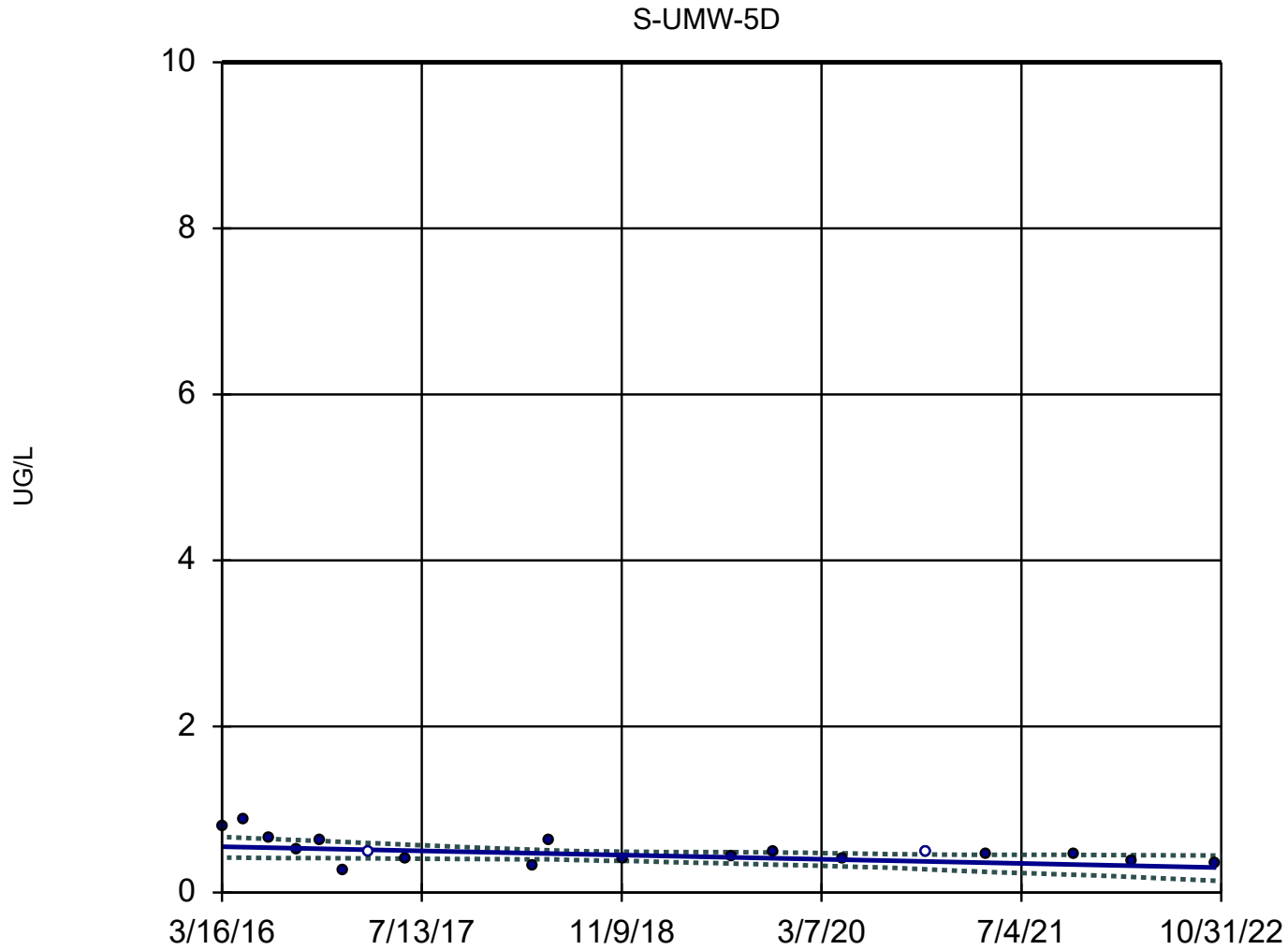
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 1/25/2023 11:55 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

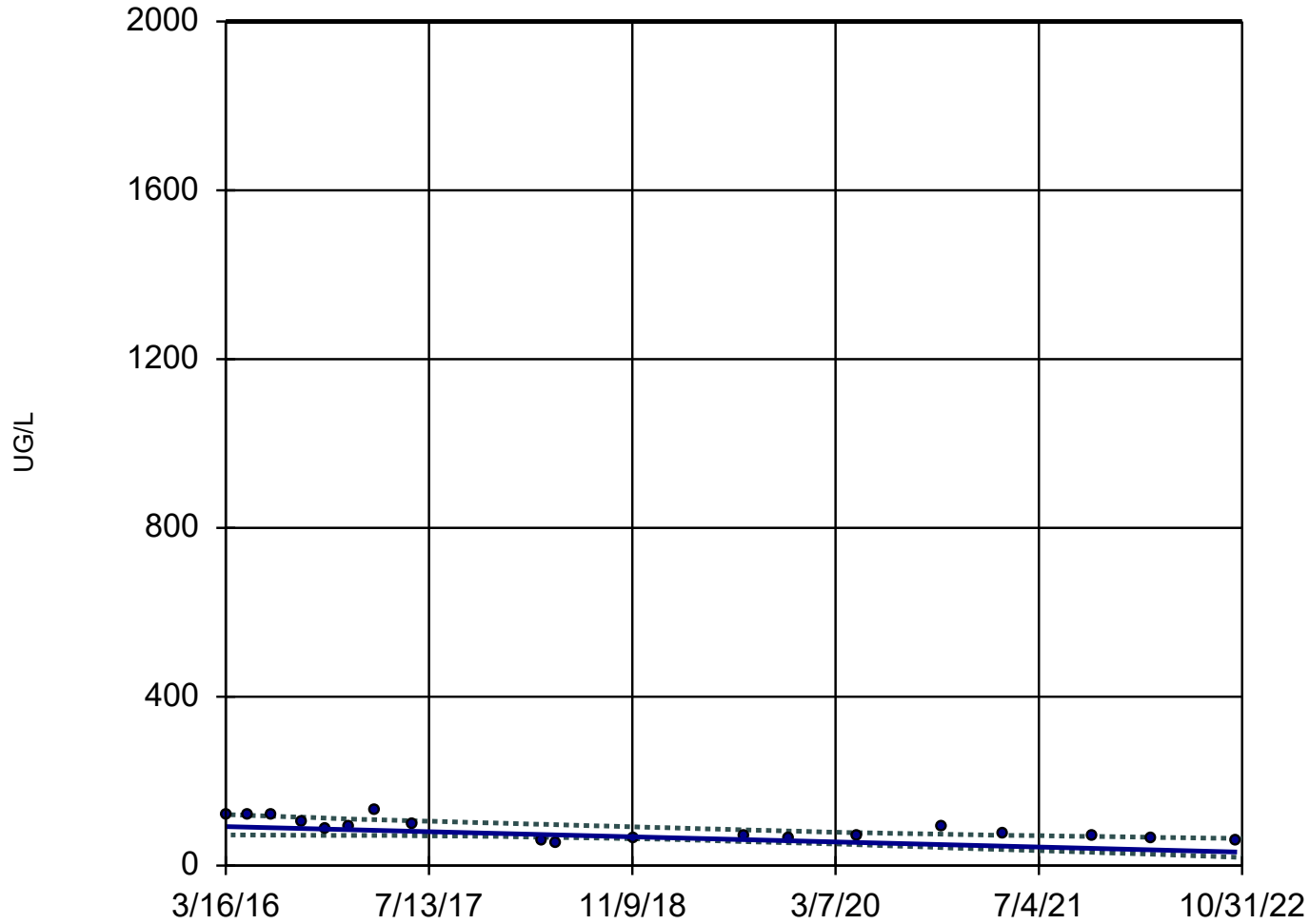


Constituent: ARSENIC, TOTAL Analysis Run 1/25/2023 11:55 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 19

Slope = -9.125
units per year.

Mann-Kendall
statistic = -87
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

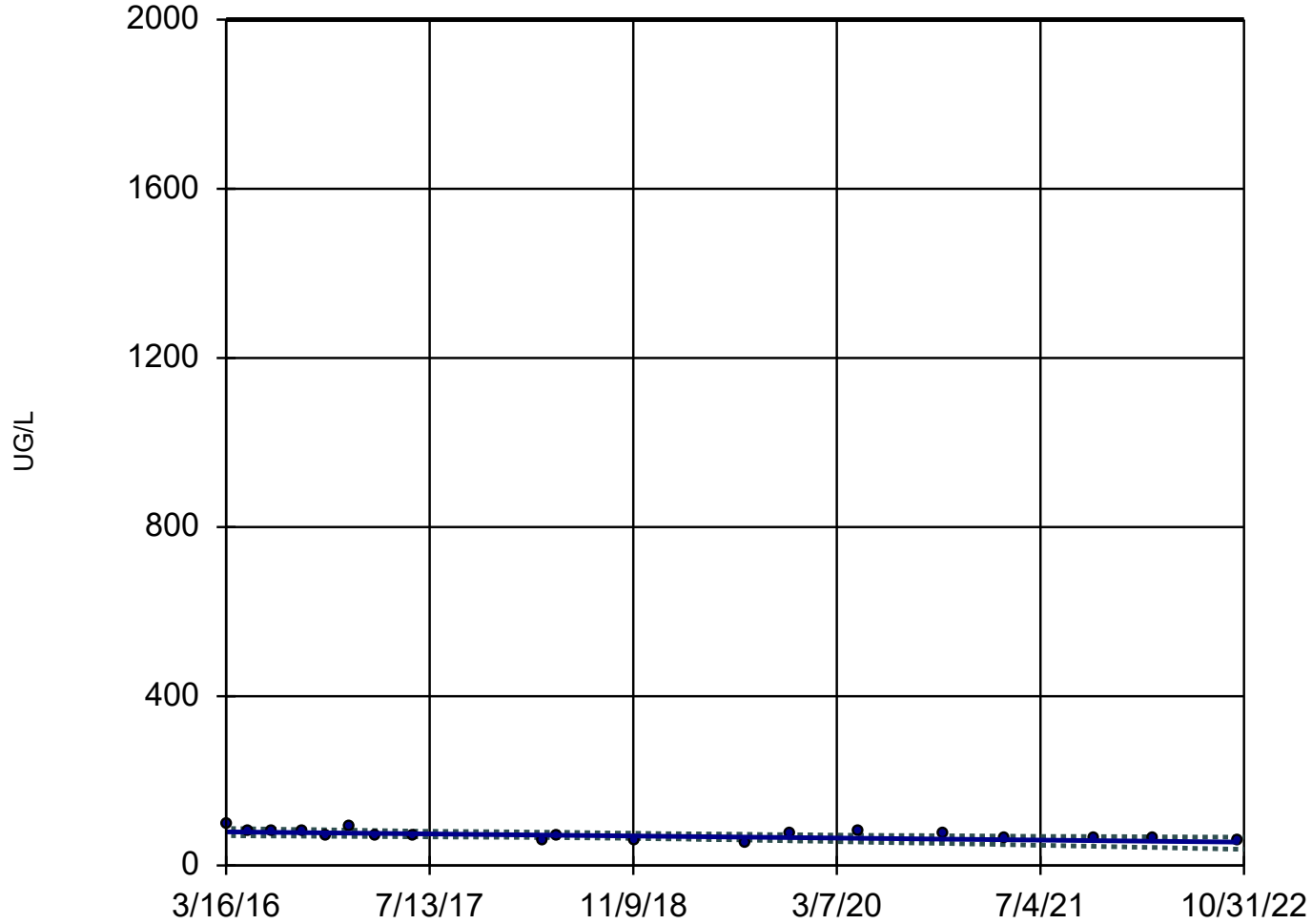
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 1/25/2023 11:56 AM

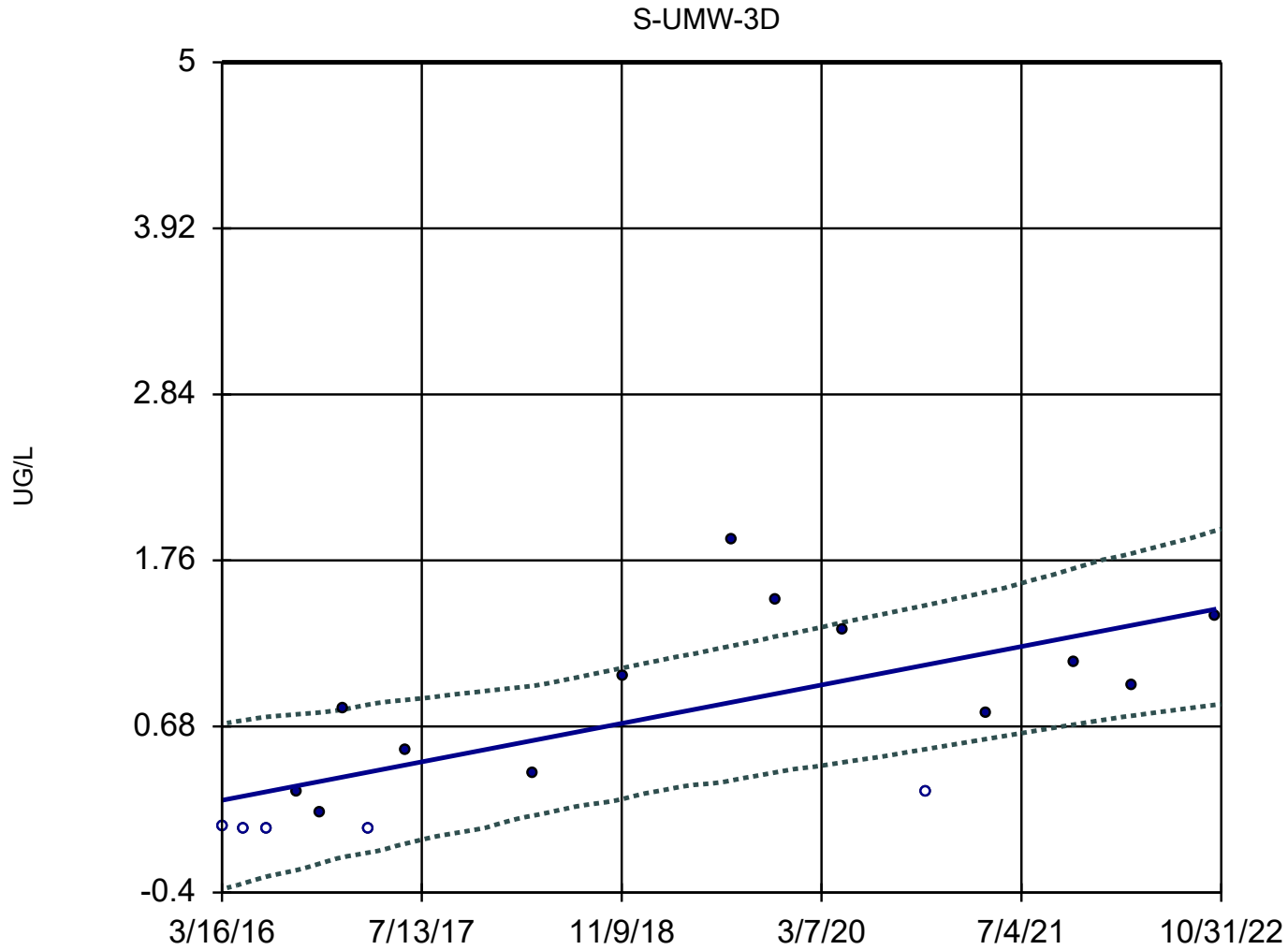
Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

S-UMW-4D



Sen's Slope and 95% Confidence Band



n = 18

Slope = 0.1886
units per year.

Mann-Kendall
statistic = 77
critical = 63

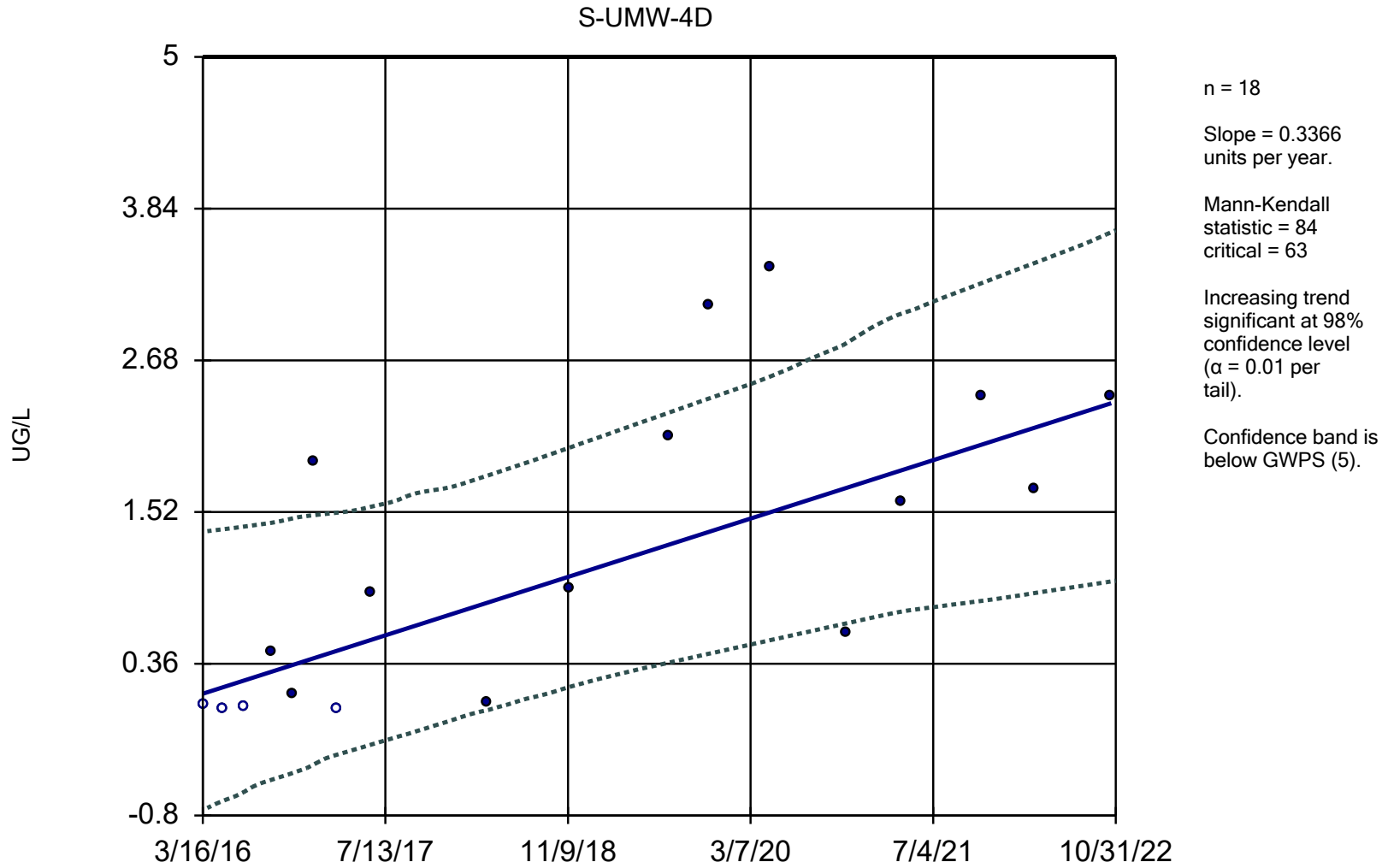
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (5).

Constituent: CADMIUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

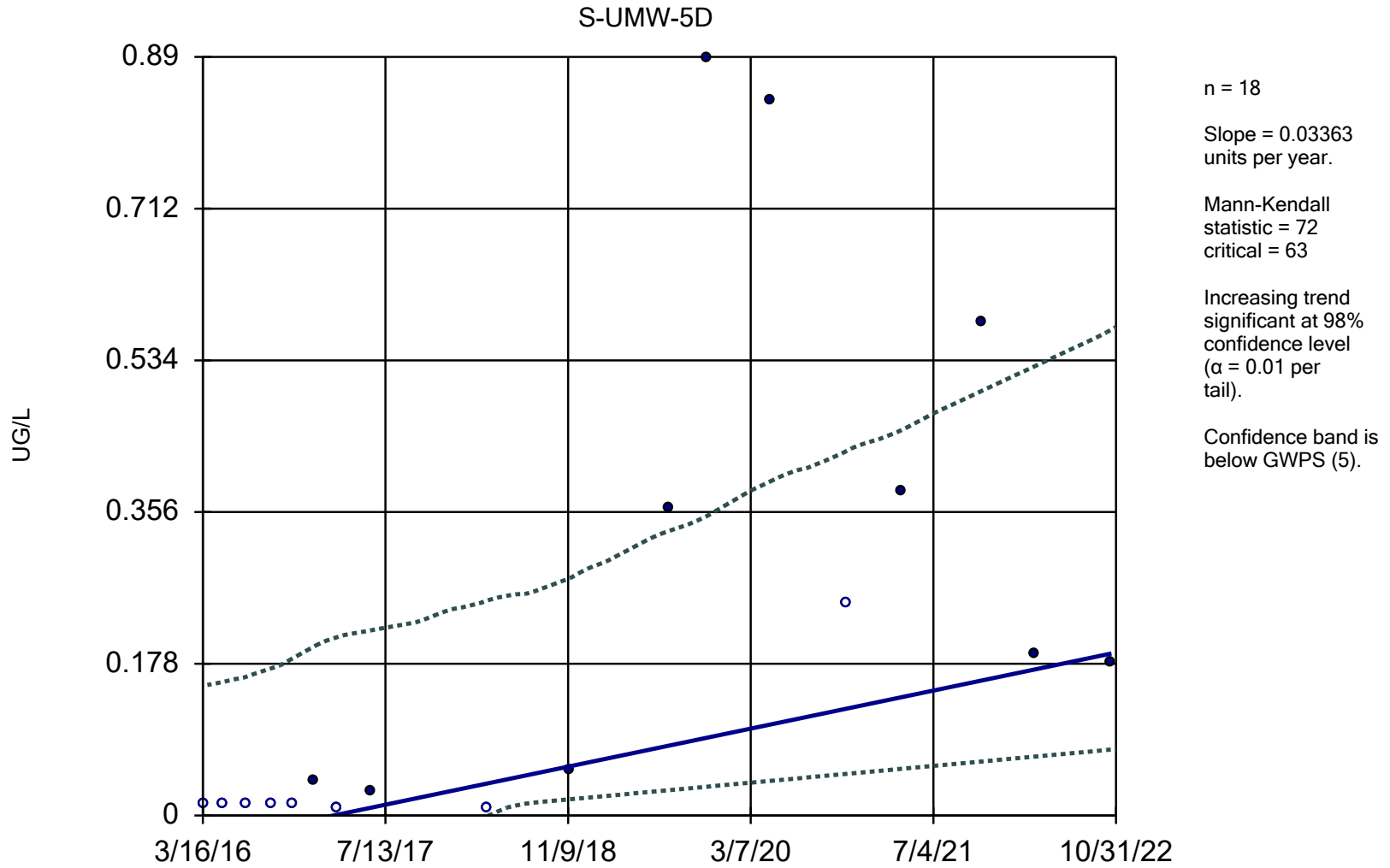
Sen's Slope and 95% Confidence Band



Constituent: CADMIUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

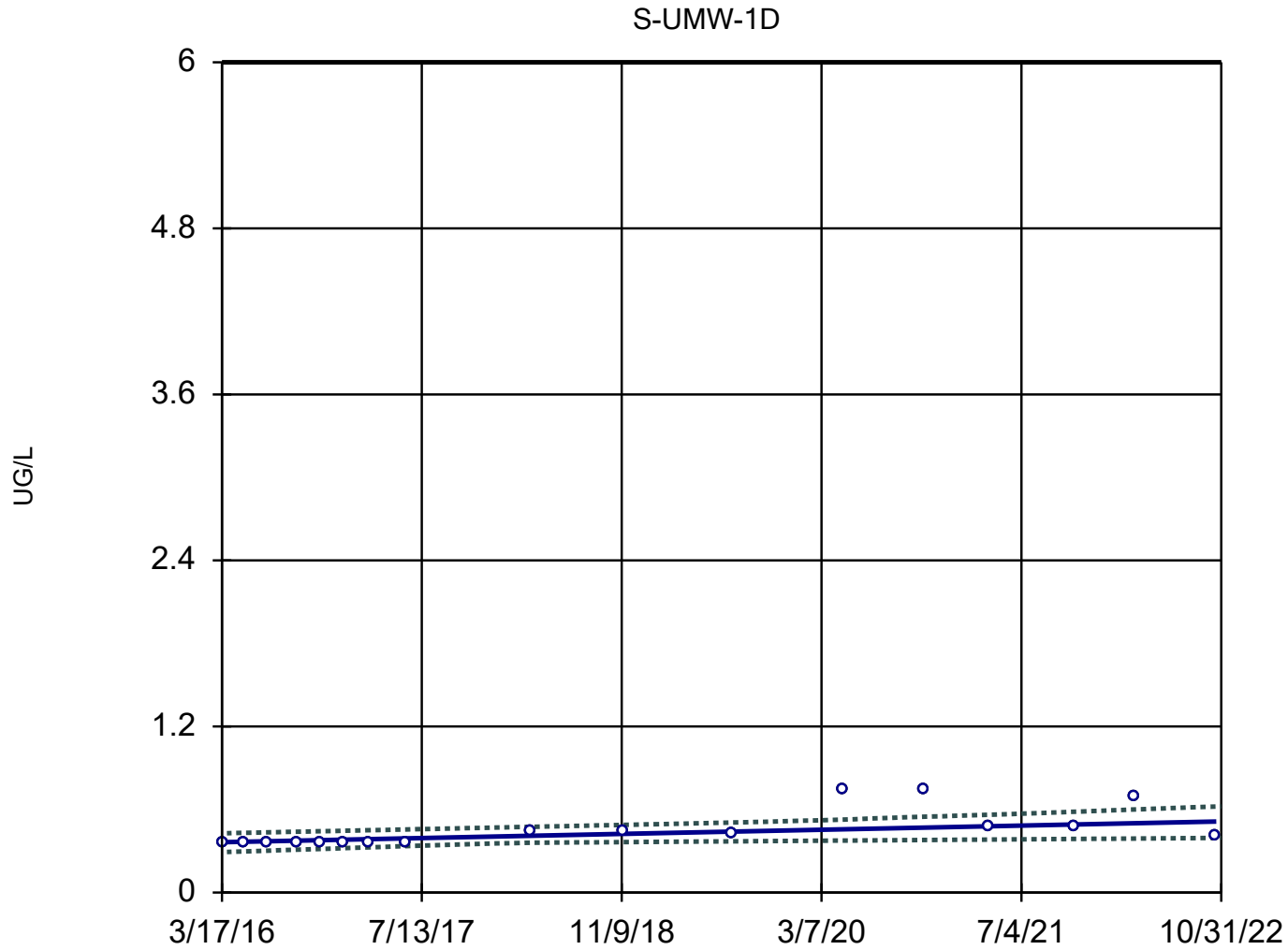
Sen's Slope and 95% Confidence Band



Constituent: CADMIUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

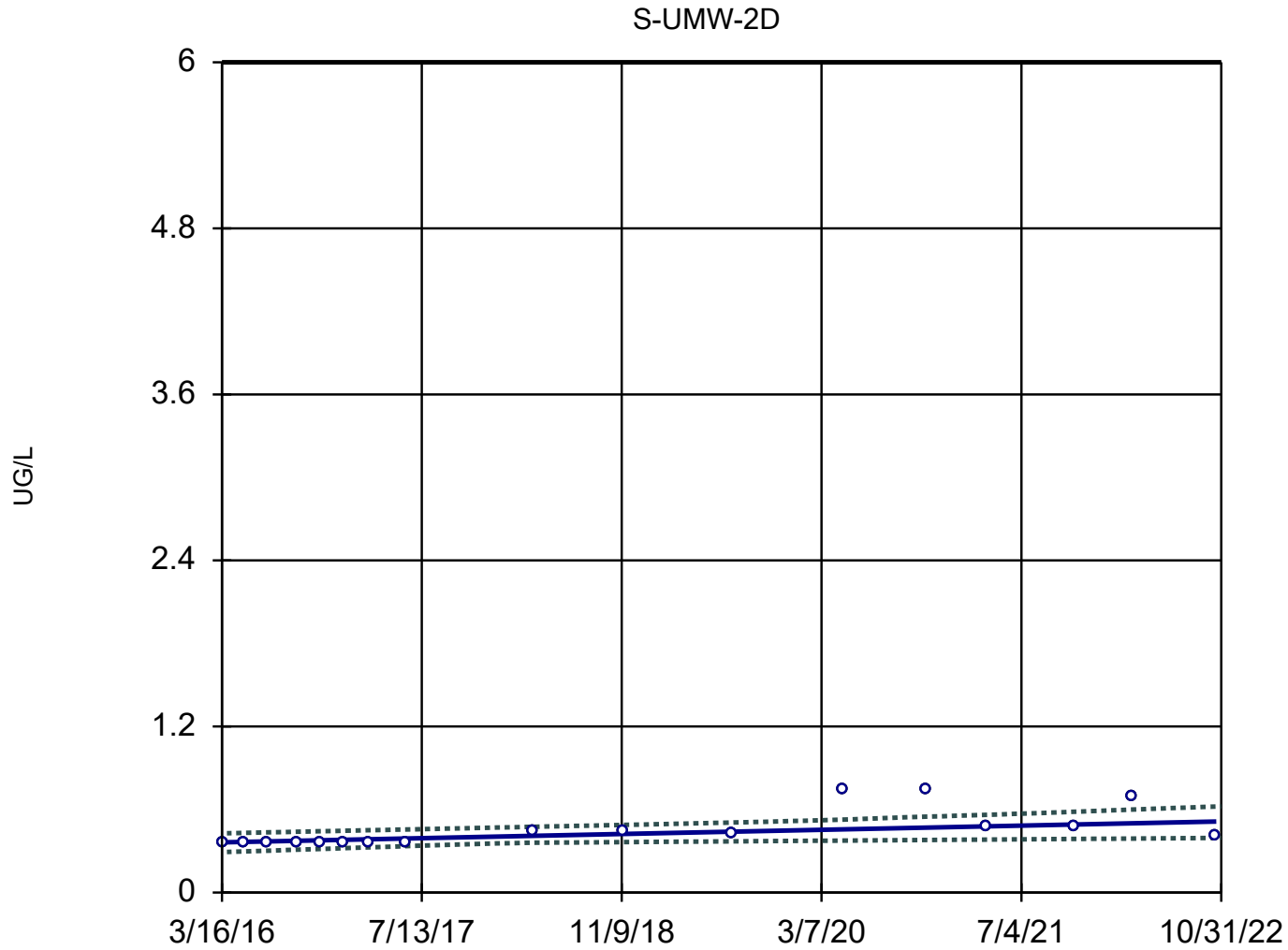
Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

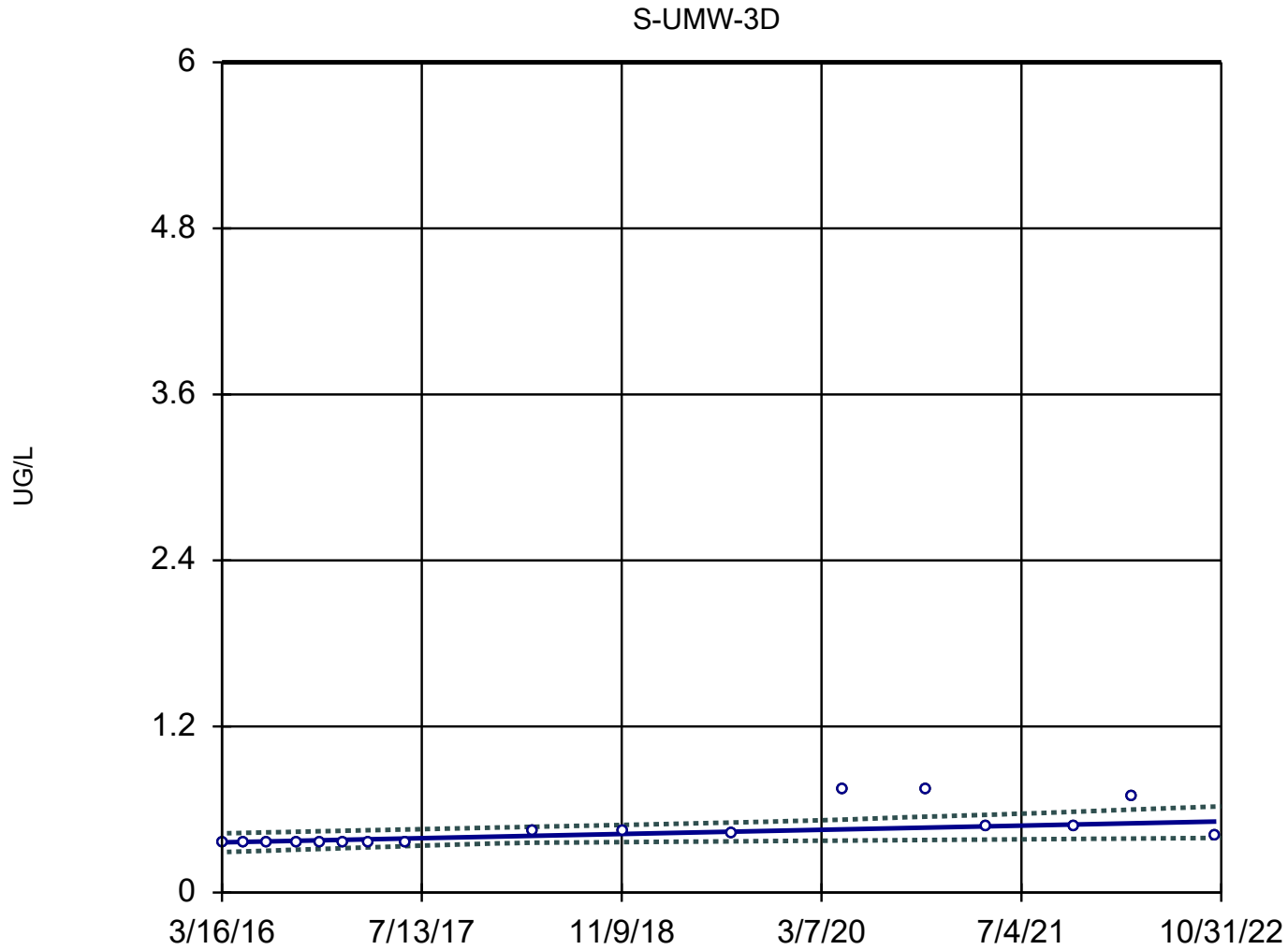
Sen's Slope and 95% Confidence Band



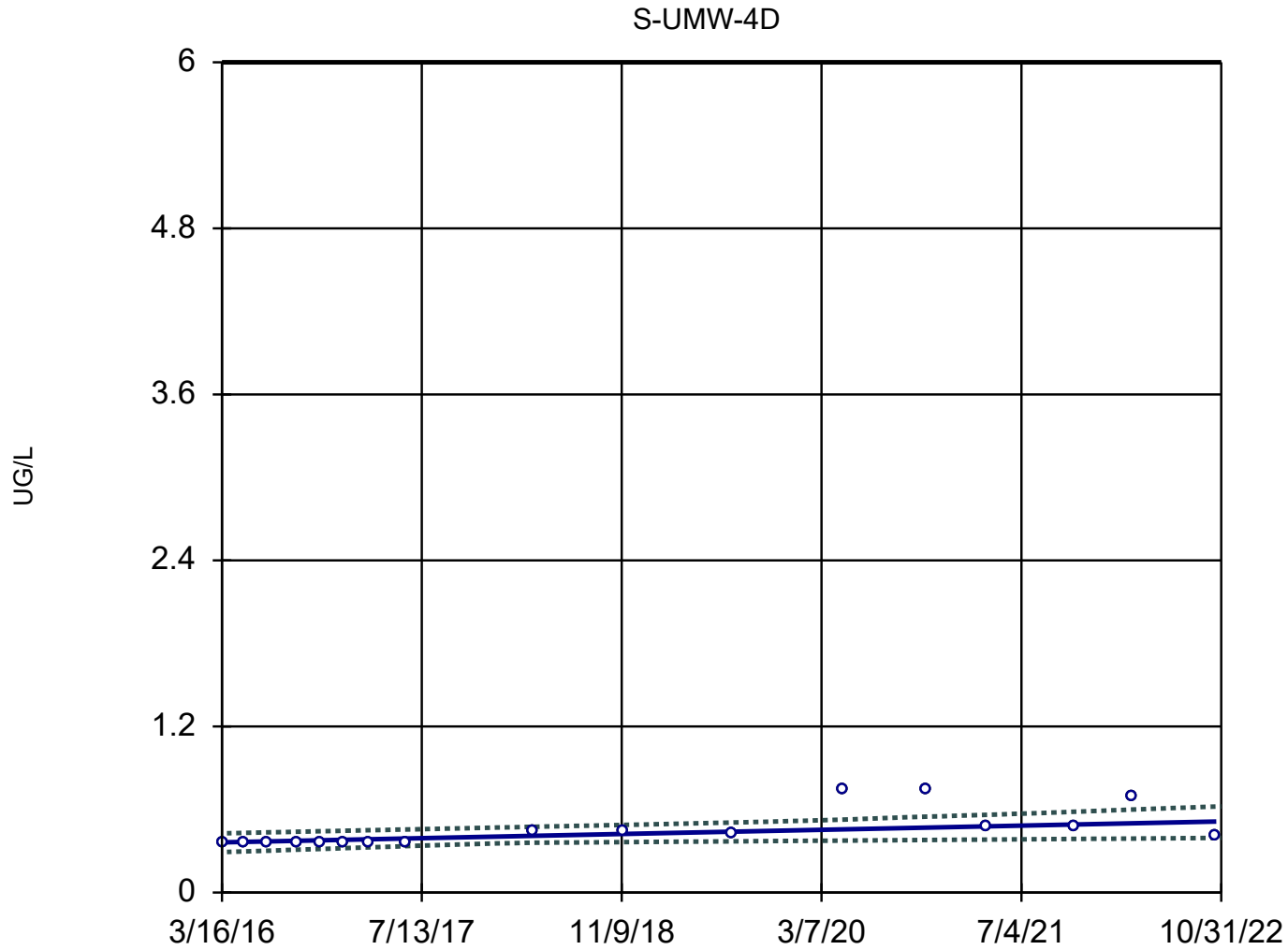
Constituent: COBALT, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

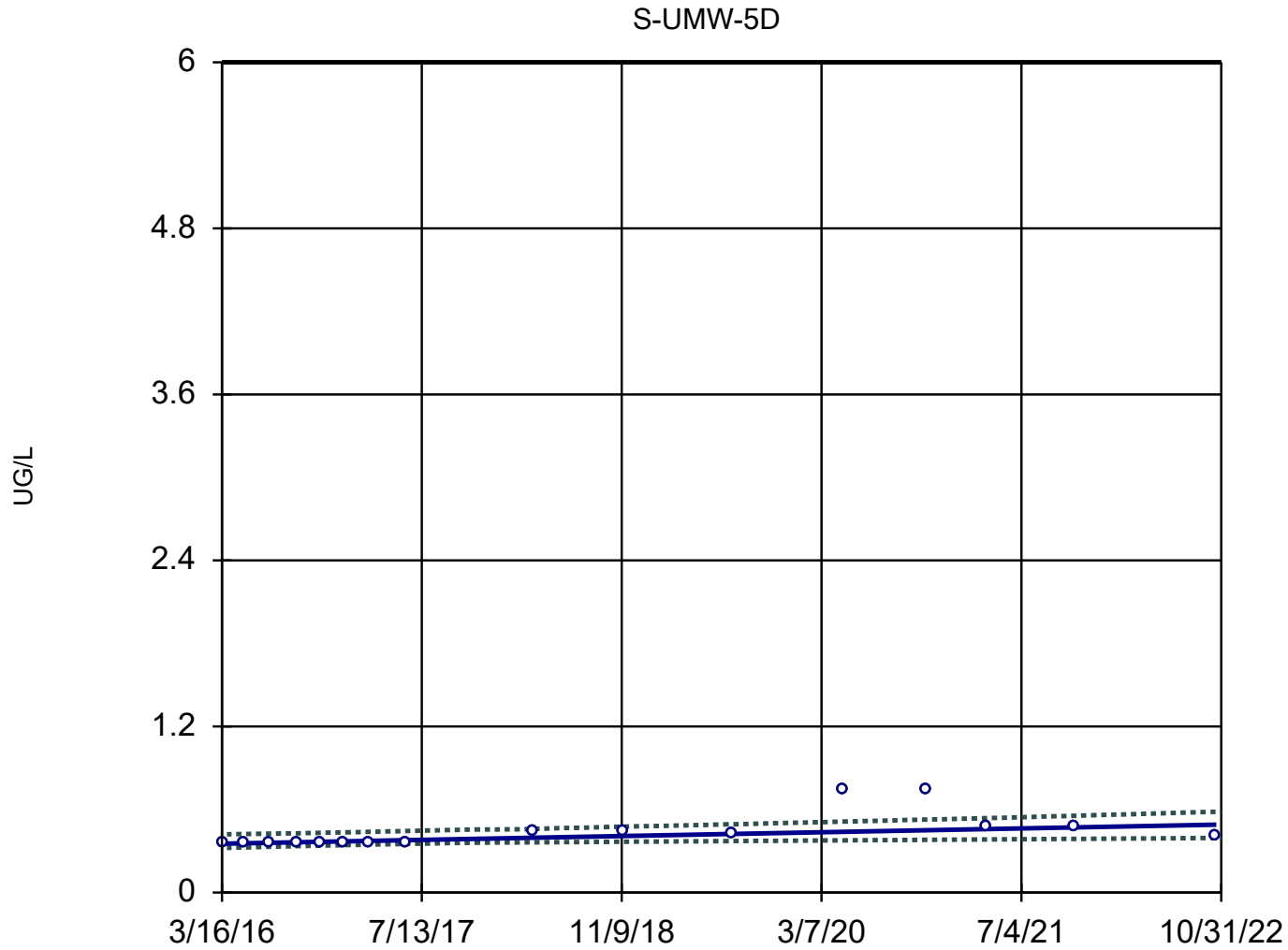
Sen's Slope and 95% Confidence Band



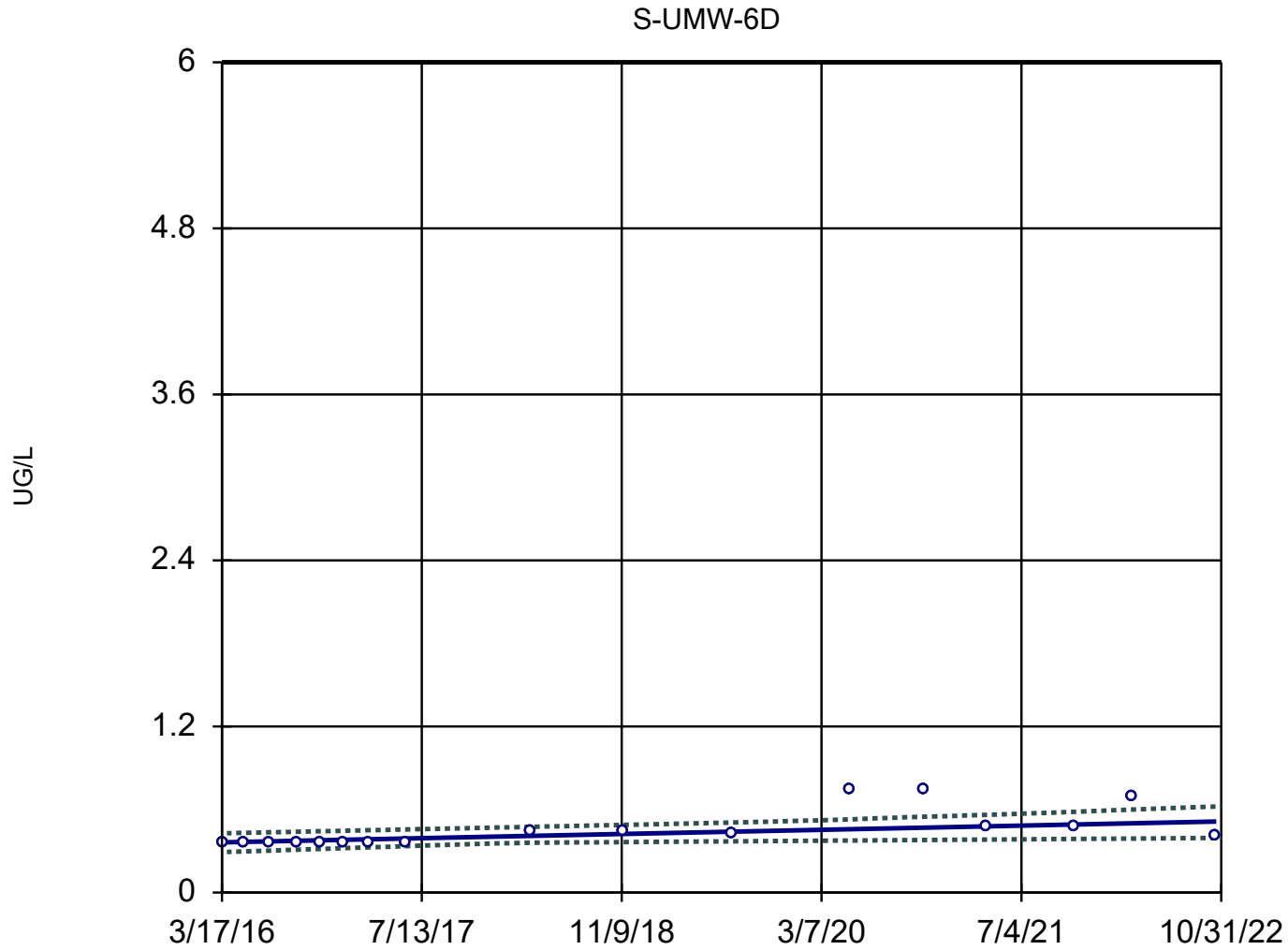
Sen's Slope and 95% Confidence Band



Sen's Slope and 95% Confidence Band



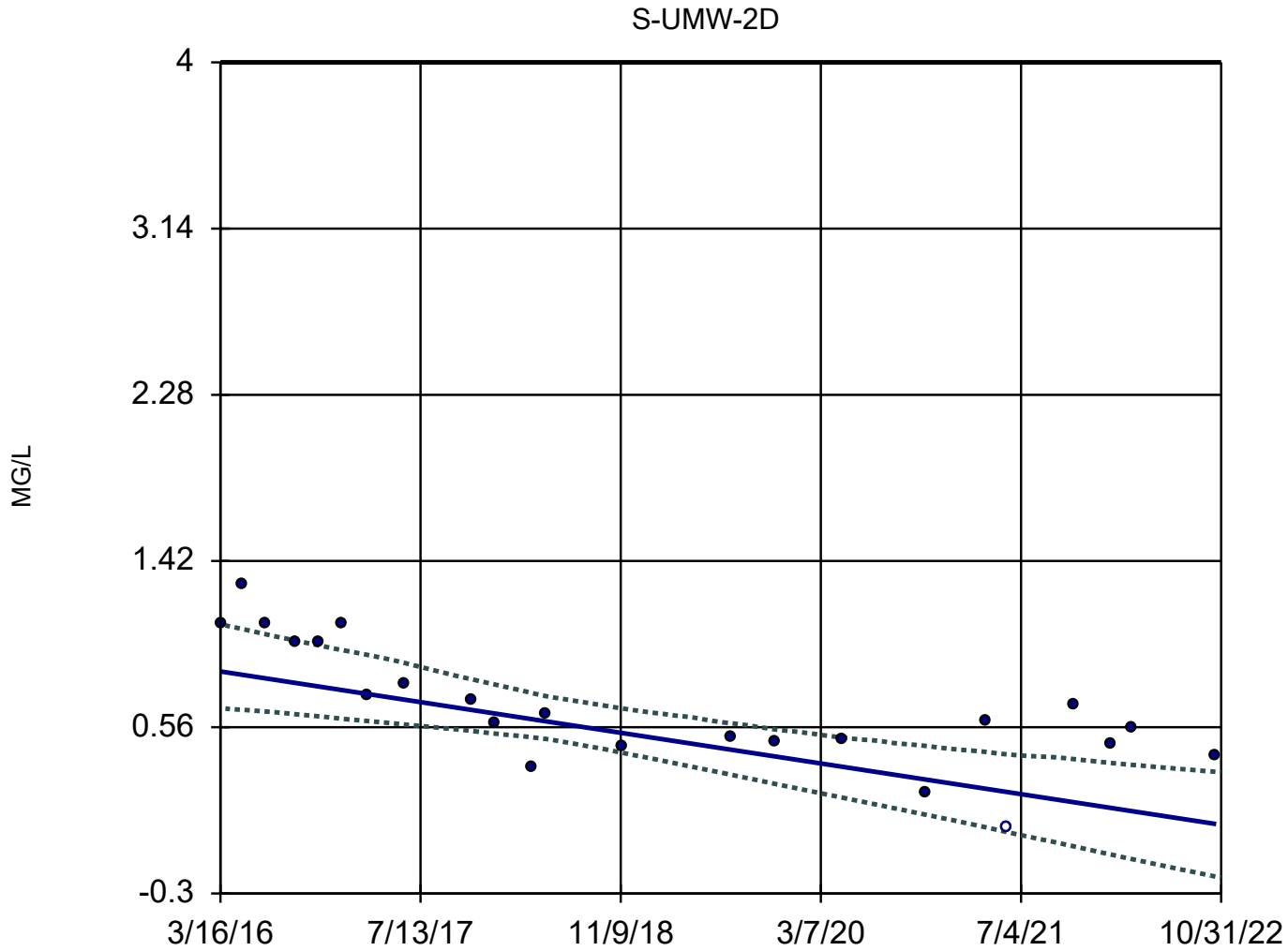
Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band



n = 23

Slope = -0.1197
units per year.

Mann-Kendall
statistic = -157
critical = -89

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

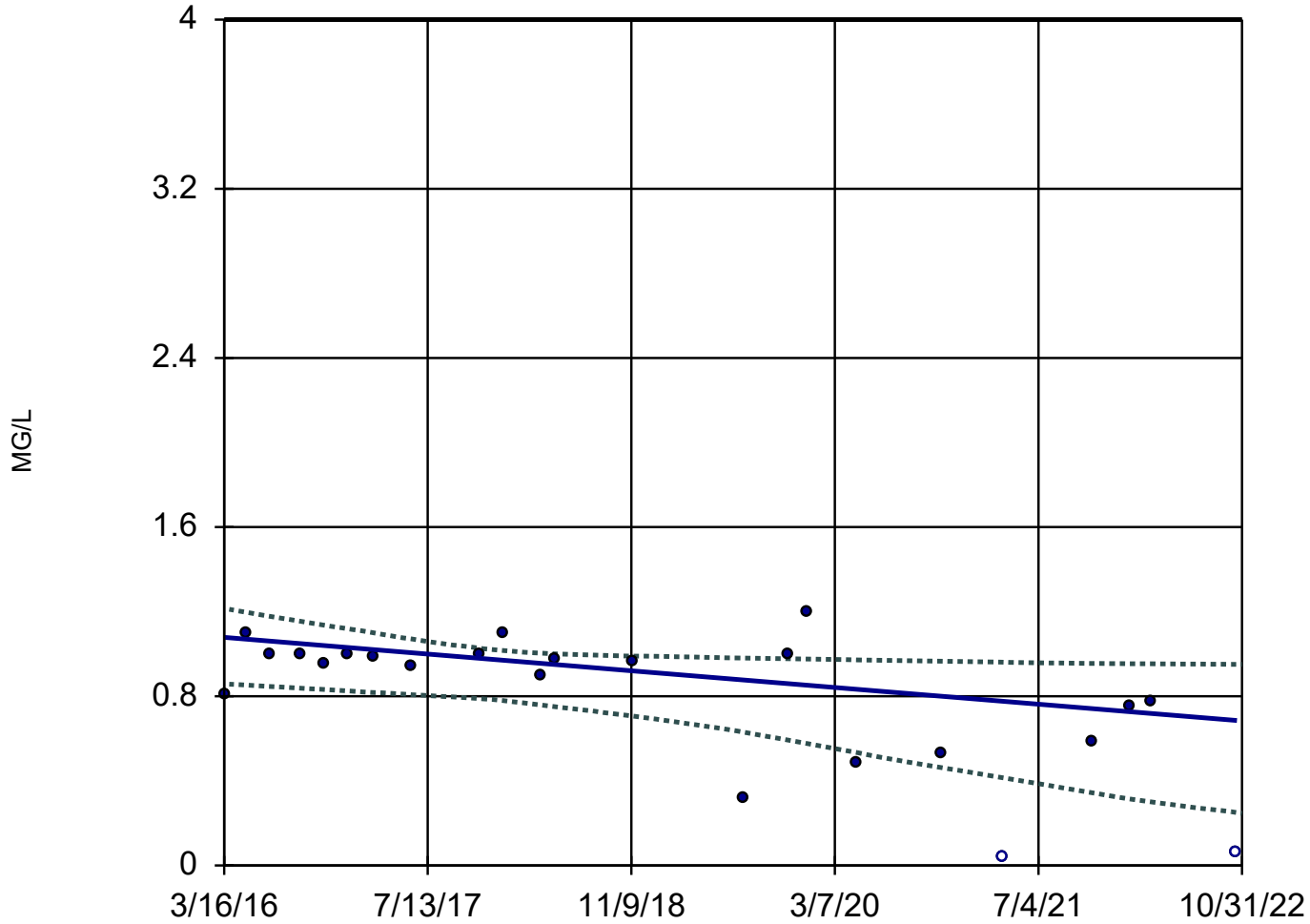
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

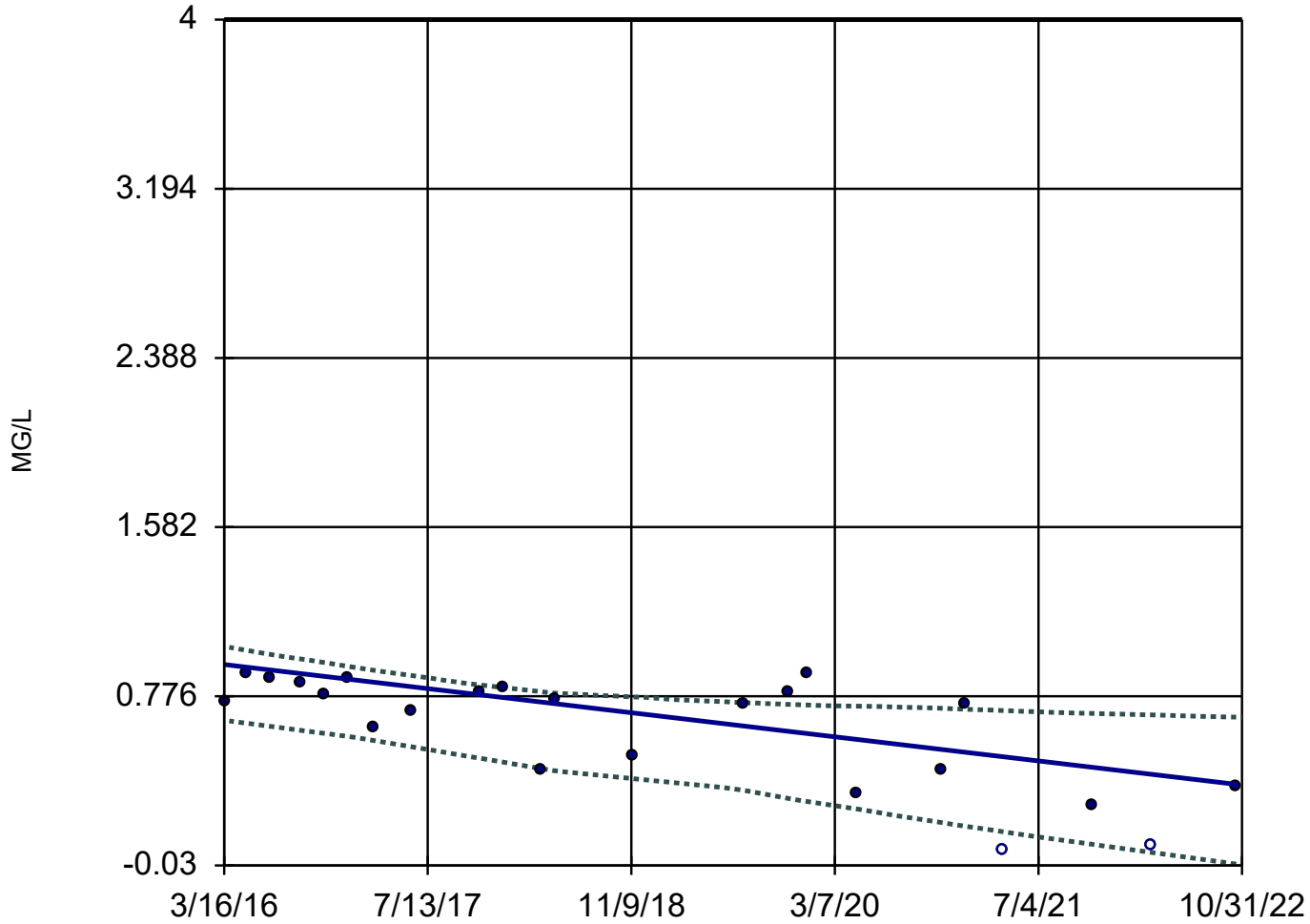
Sen's Slope and 95% Confidence Band

S-UMW-3D

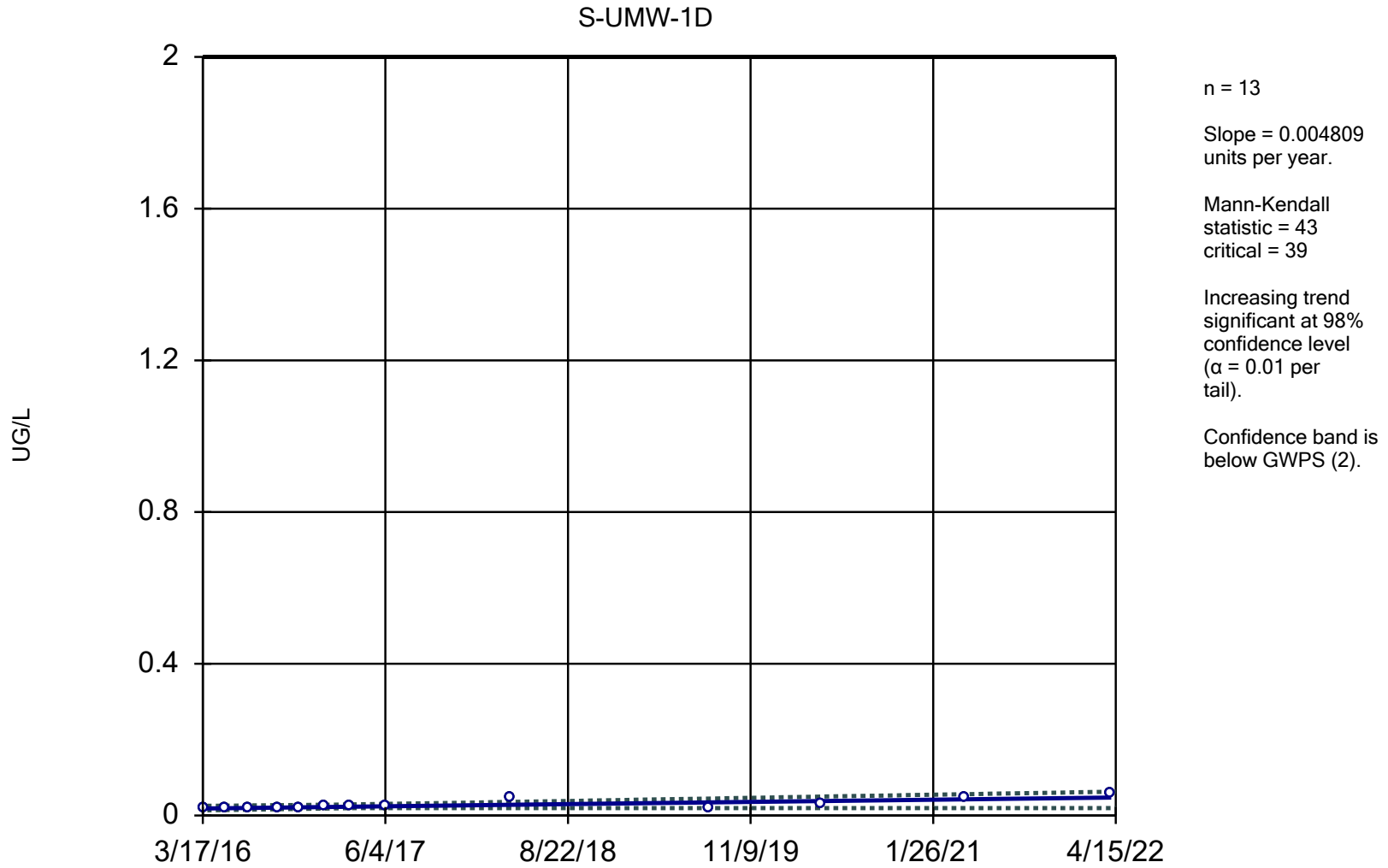


Sen's Slope and 95% Confidence Band

S-UMW-4D



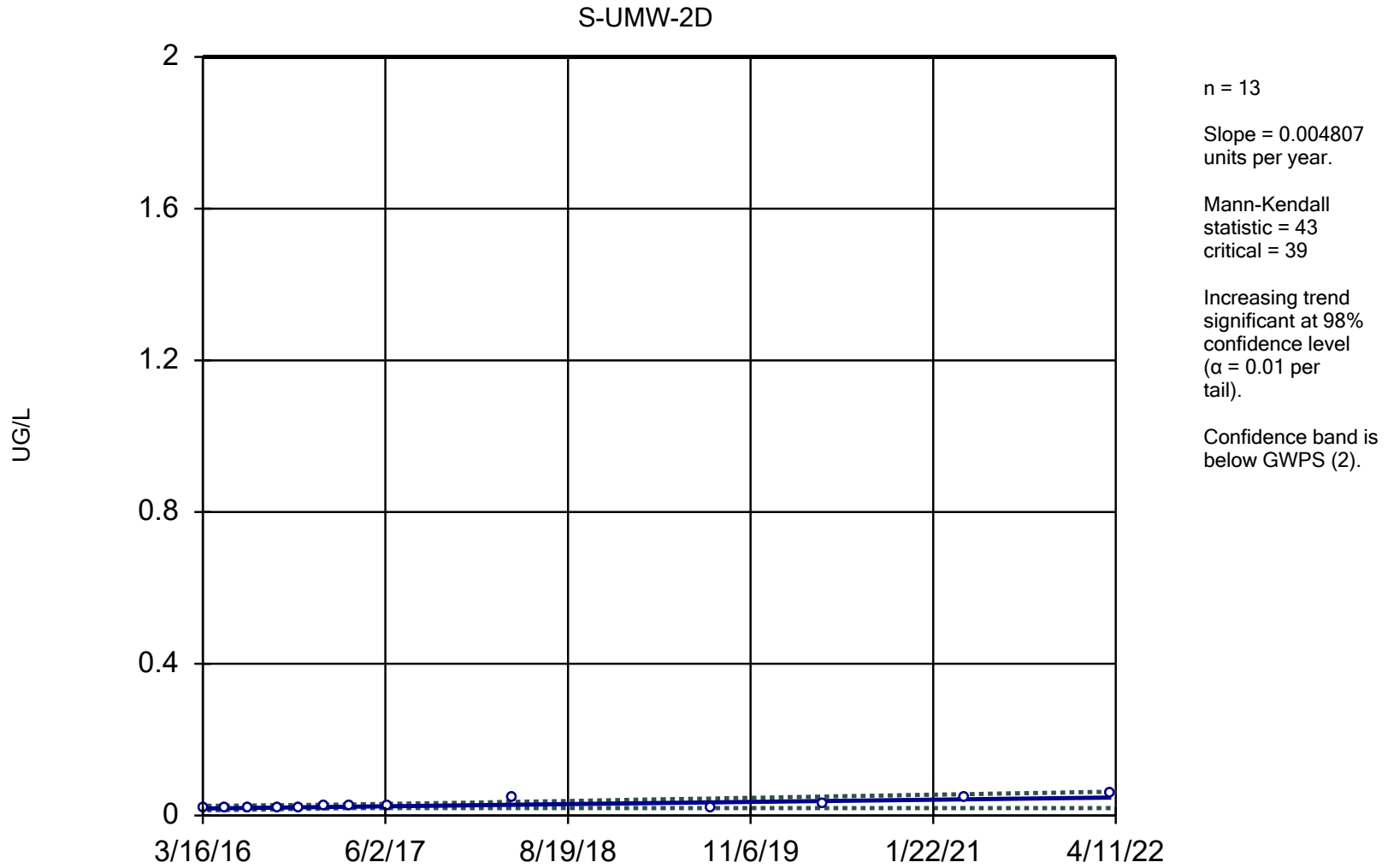
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

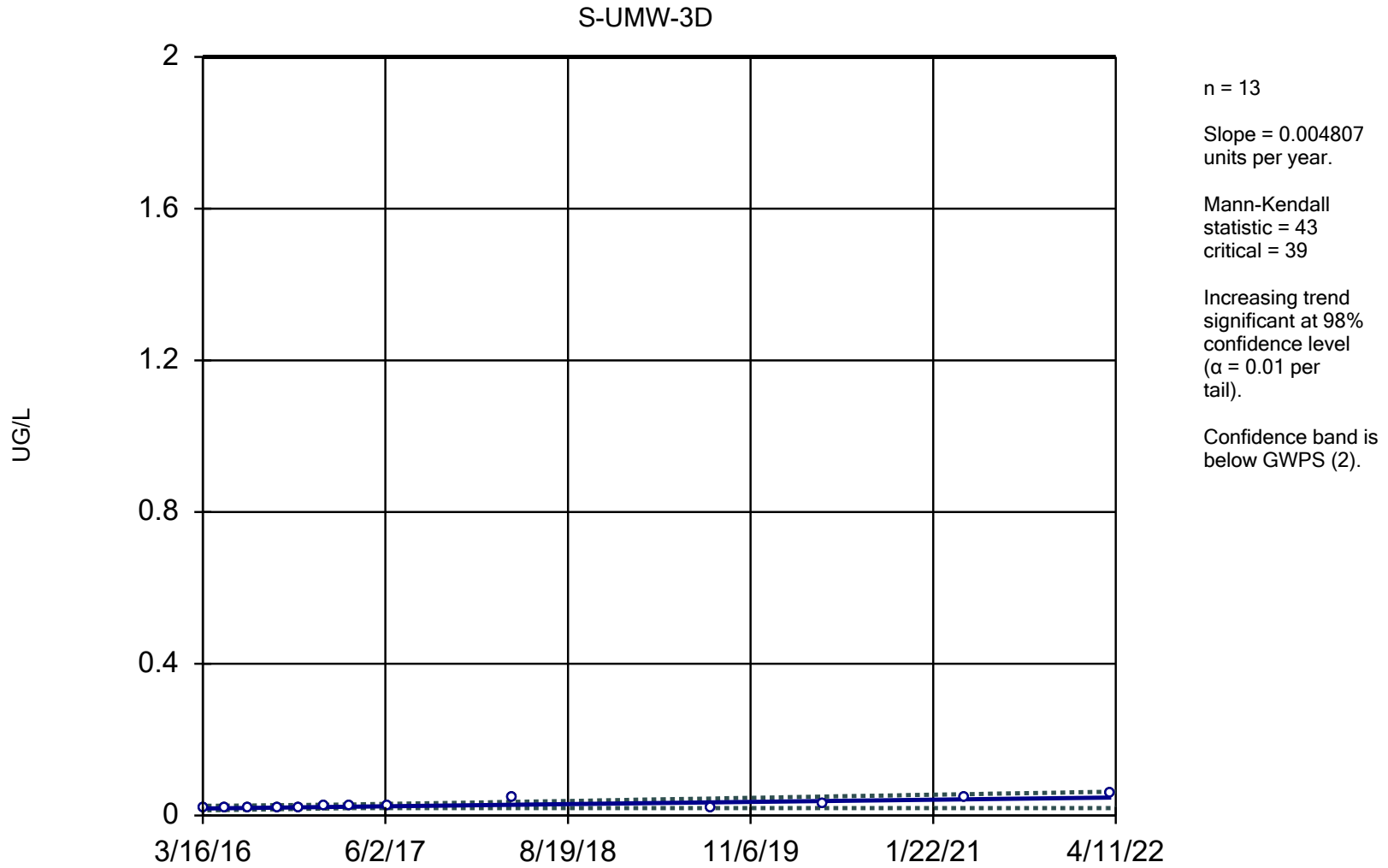
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

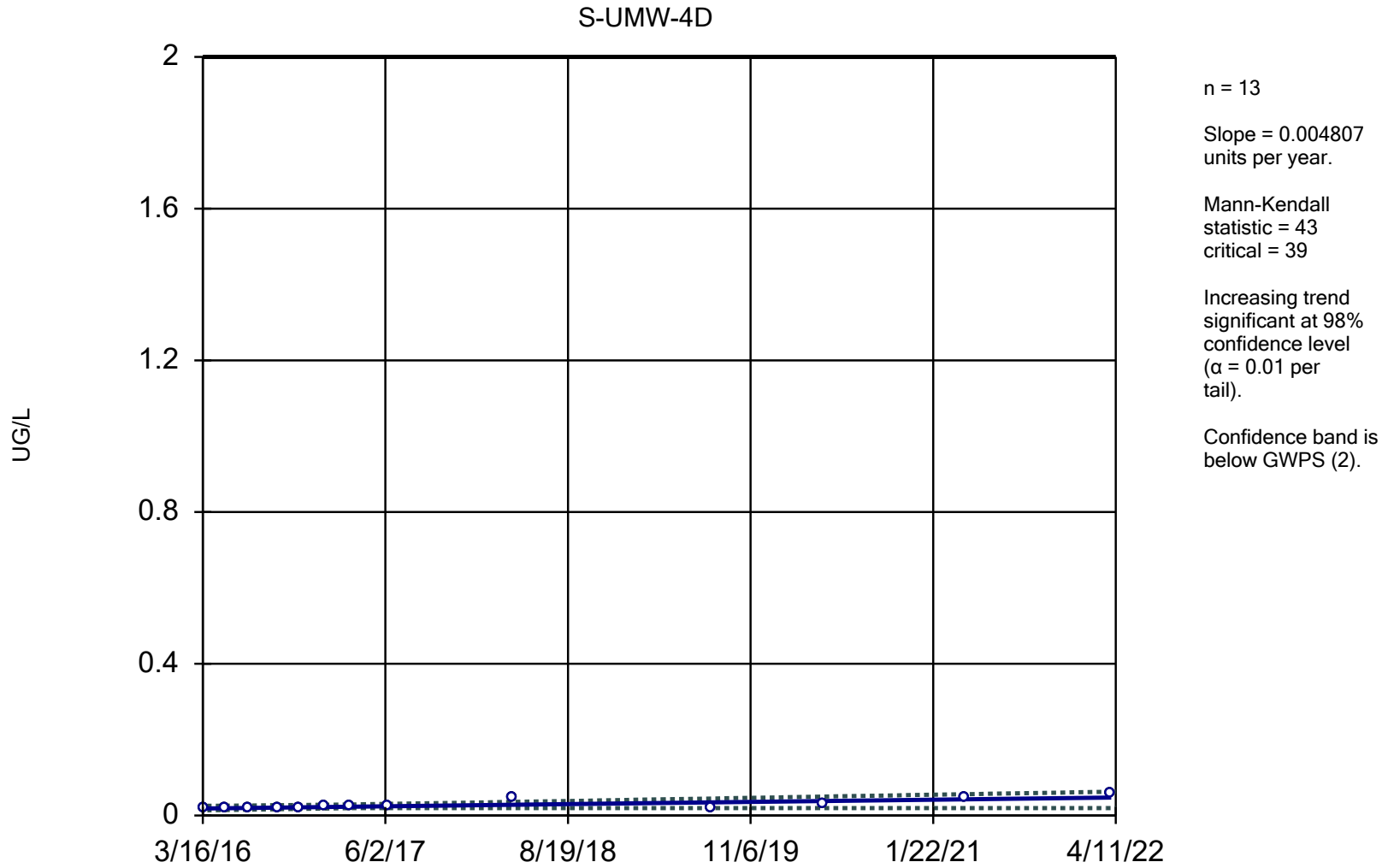
Sen's Slope and 95% Confidence Band



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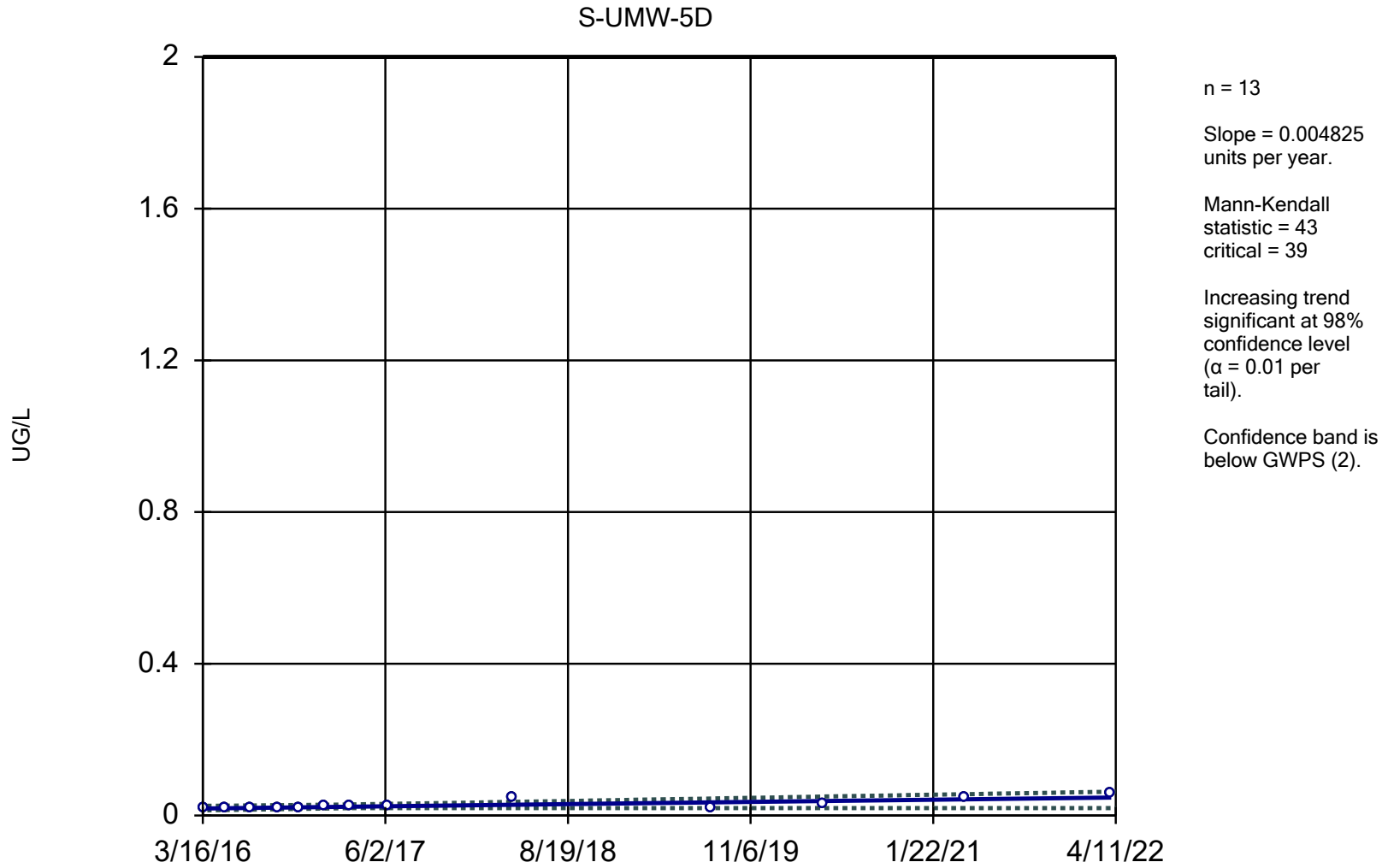
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:56 AM

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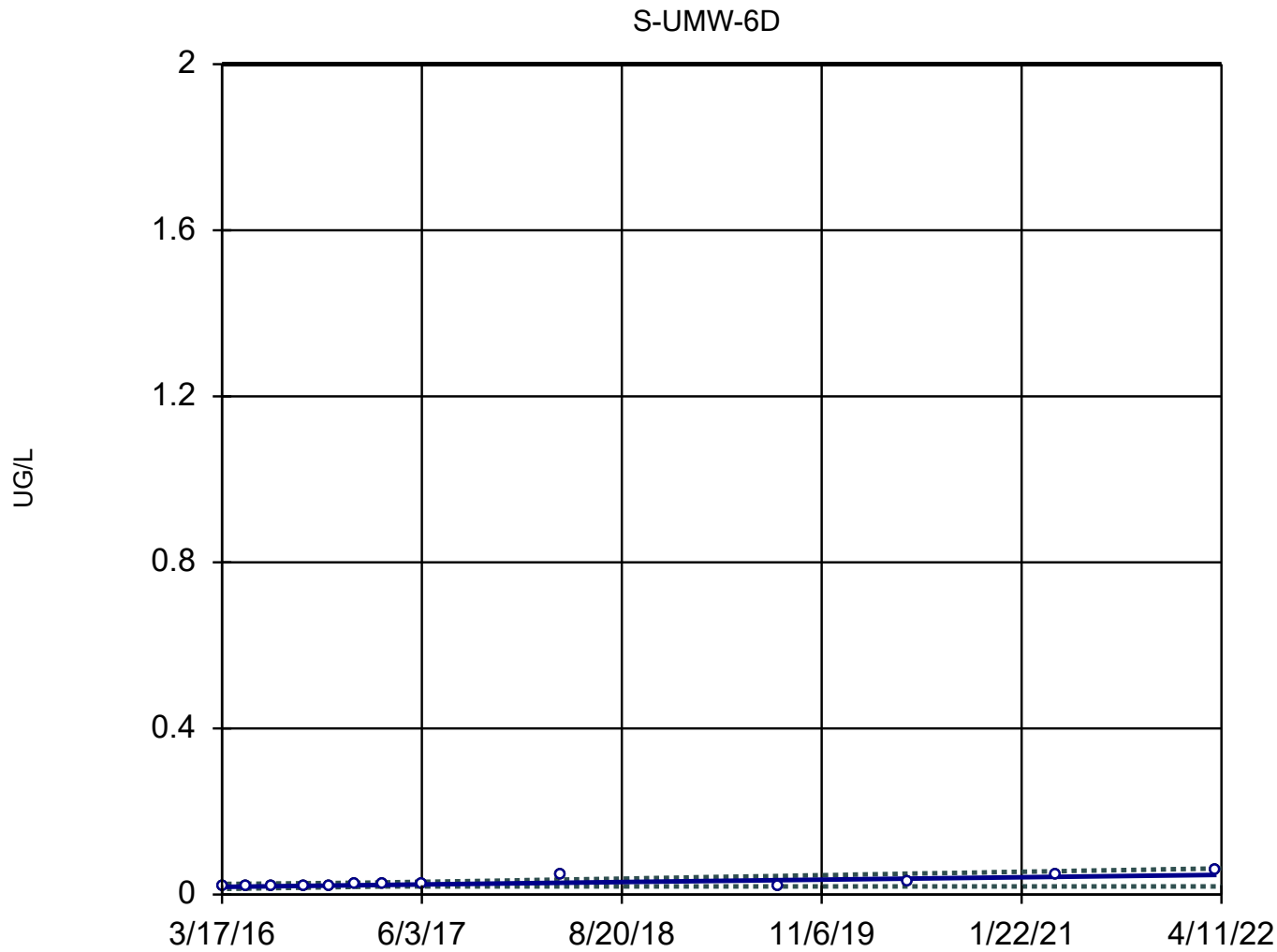
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band



n = 13

Slope = 0.004835
units per year.

Mann-Kendall
statistic = 43
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

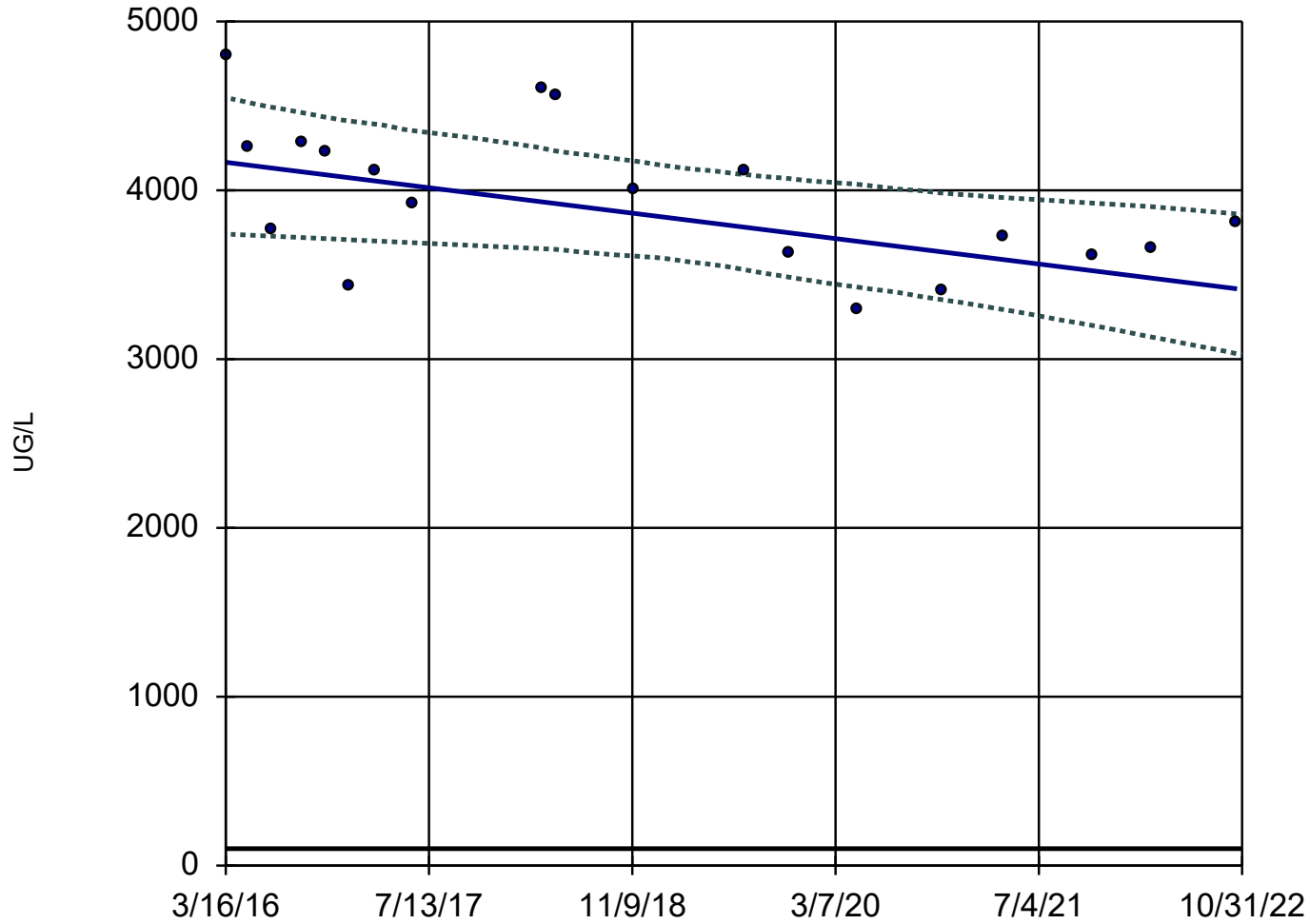
Confidence band is
below GWPS (2).

Constituent: MERCURY, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 19

Slope = -113.6
units per year.

Mann-Kendall
statistic = -70
critical = -68

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

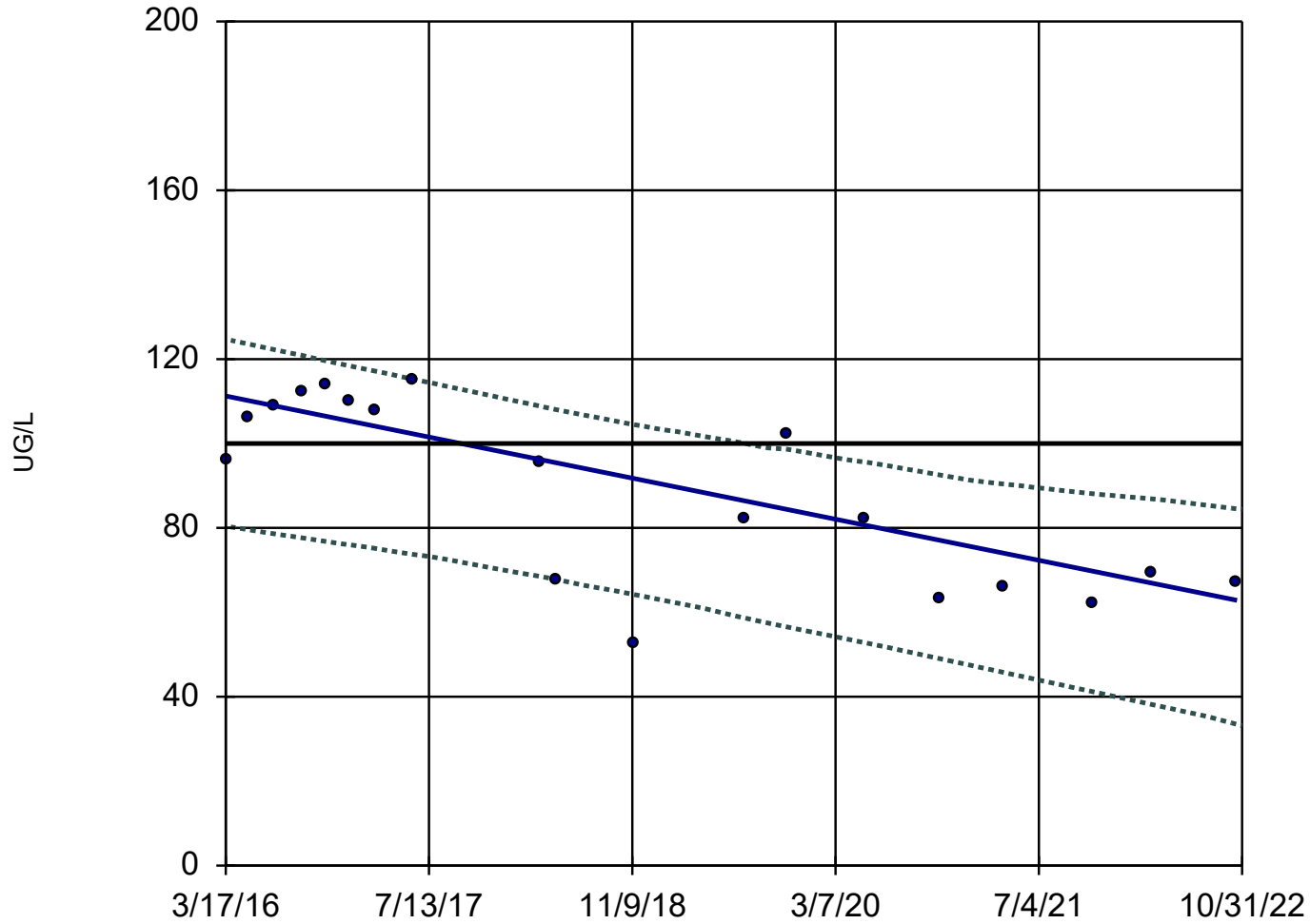
Confidence band is
above GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 19

Slope = -7.337
units per year.

Mann-Kendall
statistic = -81
critical = -68

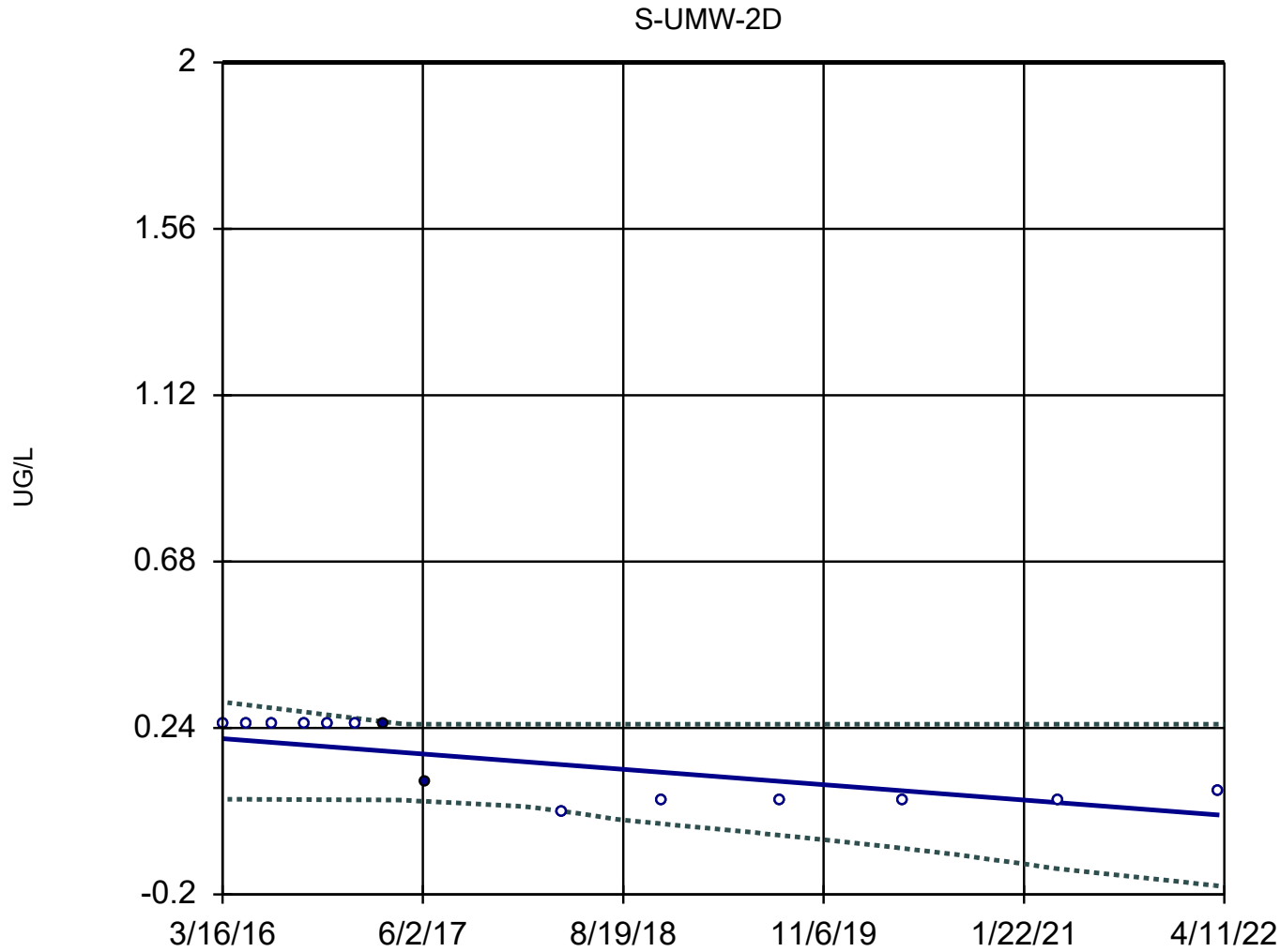
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 08/08/19.

Constituent: MOLYBDENUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band



n = 14

Slope = -0.03342
units per year.

Mann-Kendall
statistic = -49
critical = -44

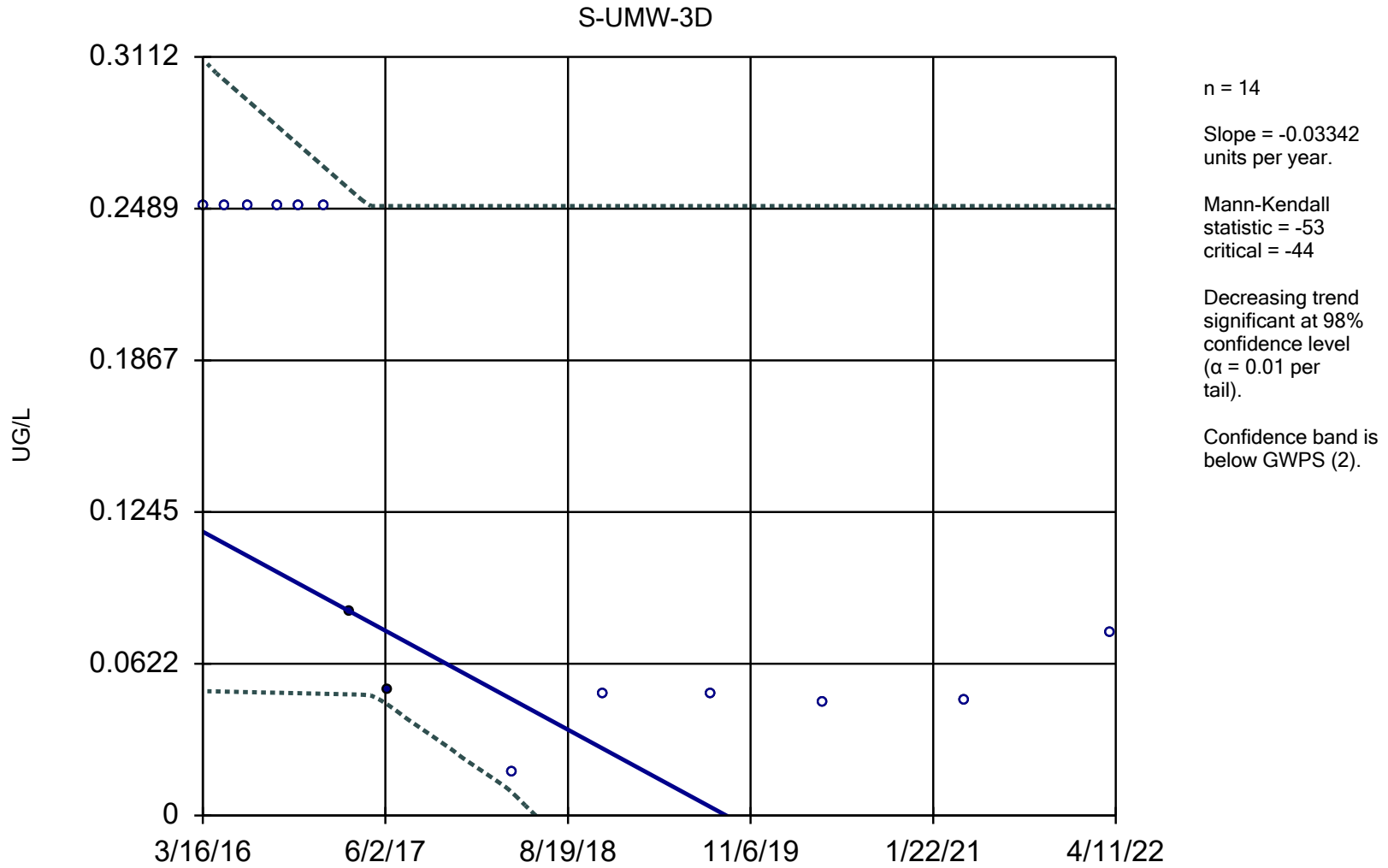
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (2).

Constituent: THALLIUM, TOTAL Analysis Run 1/25/2023 11:56 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Sen's Slope and 95% Confidence Band



Constituent: THALLIUM, TOTAL Analysis Run 1/25/2023 11:57 AM

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 1/25/2023, 12:52 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)	S-UMW-1D	-0.00313	-6	-44	No	14	42.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.001582	18	44	No	14	64.29	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.004214	28	39	No	13	84.62	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.004244	44	44	No	14	92.86	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.00398	36	44	No	14	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.003976	36	44	No	14	100	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-1D	0.1276	88	58	Yes	17	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-2D	0.4161	118	68	Yes	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.03111	27	63	No	18	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.01283	16	63	No	18	22.22	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-5D	-0.03782	-76	-68	Yes	19	10.53	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.03004	52	68	No	19	10.53	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-1D	-0.7631	-7	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-2D	-9.125	-87	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.5931	-39	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-4D	-3.65	-85	-68	Yes	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-5D	-1.025	-4	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	-0.8814	-42	-58	No	17	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0	-1	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0	19	48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0	0	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0	-1	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0	-1	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0	-1	-48	No	15	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.002025	44	53	No	16	87.5	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.06992	105	63	Yes	18	38.89	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-3D	0.1886	77	63	Yes	18	27.78	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-4D	0.3366	84	63	Yes	18	22.22	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.03363	72	63	Yes	18	44.44	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.002166	49	63	No	18	77.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.026	12	44	No	14	42.86	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	-0.01389	-15	-44	No	14	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	-0.01573	-9	-48	No	15	46.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	-0.01657	-13	-48	No	15	53.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	-0.02376	-20	-48	No	15	46.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0	-3	-48	No	15	53.33	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-1D	0.02278	85	58	Yes	17	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-2D	0.02281	85	58	Yes	17	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-3D	0.02281	85	58	Yes	17	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-4D	0.02281	85	58	Yes	17	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-5D	0.02086	75	53	Yes	16	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-6D	0.0228	85	58	Yes	17	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	-0.00...	-18	-78	No	21	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	-0.1197	-157	-89	Yes	23	4.348	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	-0.05967	-98	-89	Yes	23	8.696	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	-0.08657	-127	-89	Yes	23	8.696	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.003739	9	78	No	21	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.007135	32	78	No	21	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-1D	0.2005	48	48	No	15	86.67	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-2D	0.1783	46	48	No	15	73.33	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 1/25/2023, 12:52 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>
LEAD, TOTAL (UG/L)	S-UMW-3D	0.09951	8	48	No	15	60	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-4D	0.1465	15	48	No	15	53.33	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-5D	0.1158	11	48	No	15	80	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-6D	0.2001	48	48	No	15	86.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	-0.2267	-27	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-0.4506	-23	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-0.07777	-9	-68	No	19	5.263	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-0.5788	-40	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-0.5921	-34	-68	No	19	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	-0.1264	-7	-63	No	18	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.004809	43	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.004807	43	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.004807	43	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.004807	43	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.004825	43	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.004835	43	39	Yes	13	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	-0.1816	-7	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	17.67	14	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	-113.6	-70	-68	Yes	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	-61.09	-11	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	70.63	43	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	-7.337	-81	-68	Yes	19	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.01068	12	53	No	16	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.03884	33	48	No	15	93.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	0.05755	27	48	No	15	80	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.03879	43	48	No	15	93.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	0.03427	20	53	No	16	75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.05033	39	53	No	16	93.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0	19	58	No	17	82.35	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0	0	58	No	17	76.47	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-3D	-0.00...	-27	-58	No	17	17.65	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0	-7	-58	No	17	23.53	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0	0	58	No	17	29.41	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0	-6	-58	No	17	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-1D	-0.03996	-44	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-2D	-0.03342	-49	-44	Yes	14	85.71	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-3D	-0.03342	-53	-44	Yes	14	85.71	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-4D	-0.03156	-43	-44	No	14	85.71	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-5D	-0.03052	-32	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-6D	-0.03052	-32	-44	No	14	100	n/a	n/a	0.02	NP

Appendix C

May 2023 Assessment Monitoring Statistical Evaluation



To: Bill Kutosky – Ameren Missouri **Project Number:** 23009

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, SCPA Surface Impoundment Sioux Energy Center, St. Charles 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 SCPA Surface Impoundment at the Sioux Energy Center located in St. Charles 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:

- Beryllium
 - S-UMW-2D at Non-Detect (<1.0 µg/L) on 3/31/2022: Result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent beryllium results at the well and is an outlier.
- Radium 226 + 228
 - S-UMW-2D at 1.876 picocuries per liter (pCi/L) on 10/19/2022: Result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent radium results at the well 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.

- Radium 226 + 228
 - S-UMW-3D at 2.298 pCi/L on 9/14/2016: Removed in August 2019 as an outlier because the result was statistically higher than other radium values at the same well. However, based on subsequent sampling results the high result was confirmed and the result is no longer an outlier.
 - S-UMW-4D at 1.396 pCi/L on 7/6/2016: Removed in August 2019 as an outlier because the result was statistically higher than other radium values at the same well. However, based on subsequent sampling results the high result was confirmed and the result is no longer an outlier.

Based on the results from the confidence interval and trend analysis, no new SSLs were noted. SSLs at the SCPA Surface Impoundment as of May 2023 continue to be:

- Molybdenum at S-UMW-2D, S-UMW-3D, S-UMW-4D, and S-UMW-5D

3.0 CLOSING

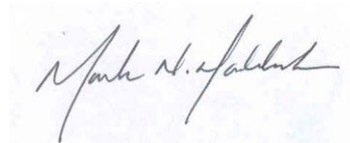
Rocksmith Appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

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 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

**Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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	10	0.6556
Barium	µg/L	2000	2000	699
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	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
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-3D.



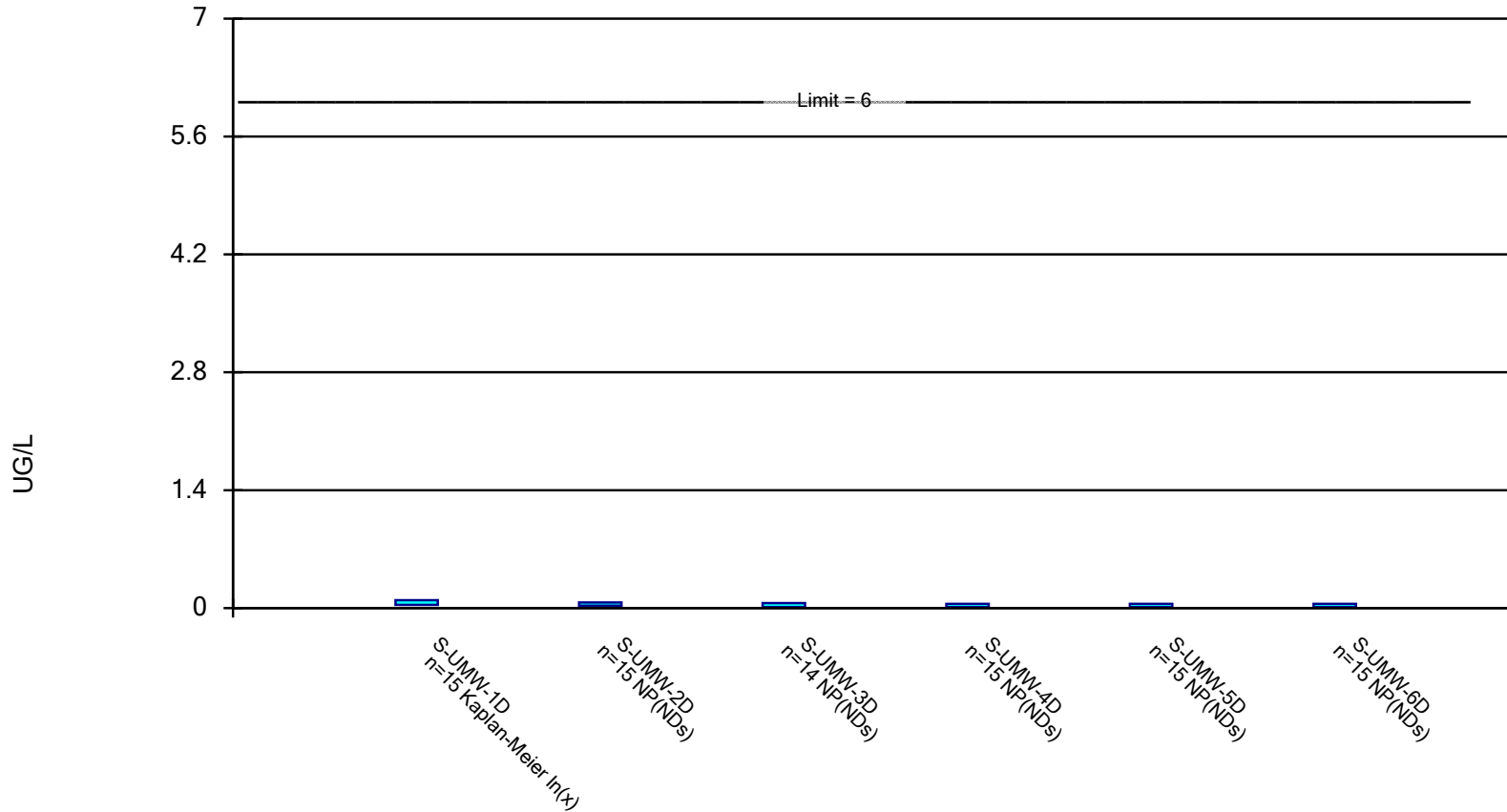
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A

Sanitas Confidence Interval Statistical Output

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

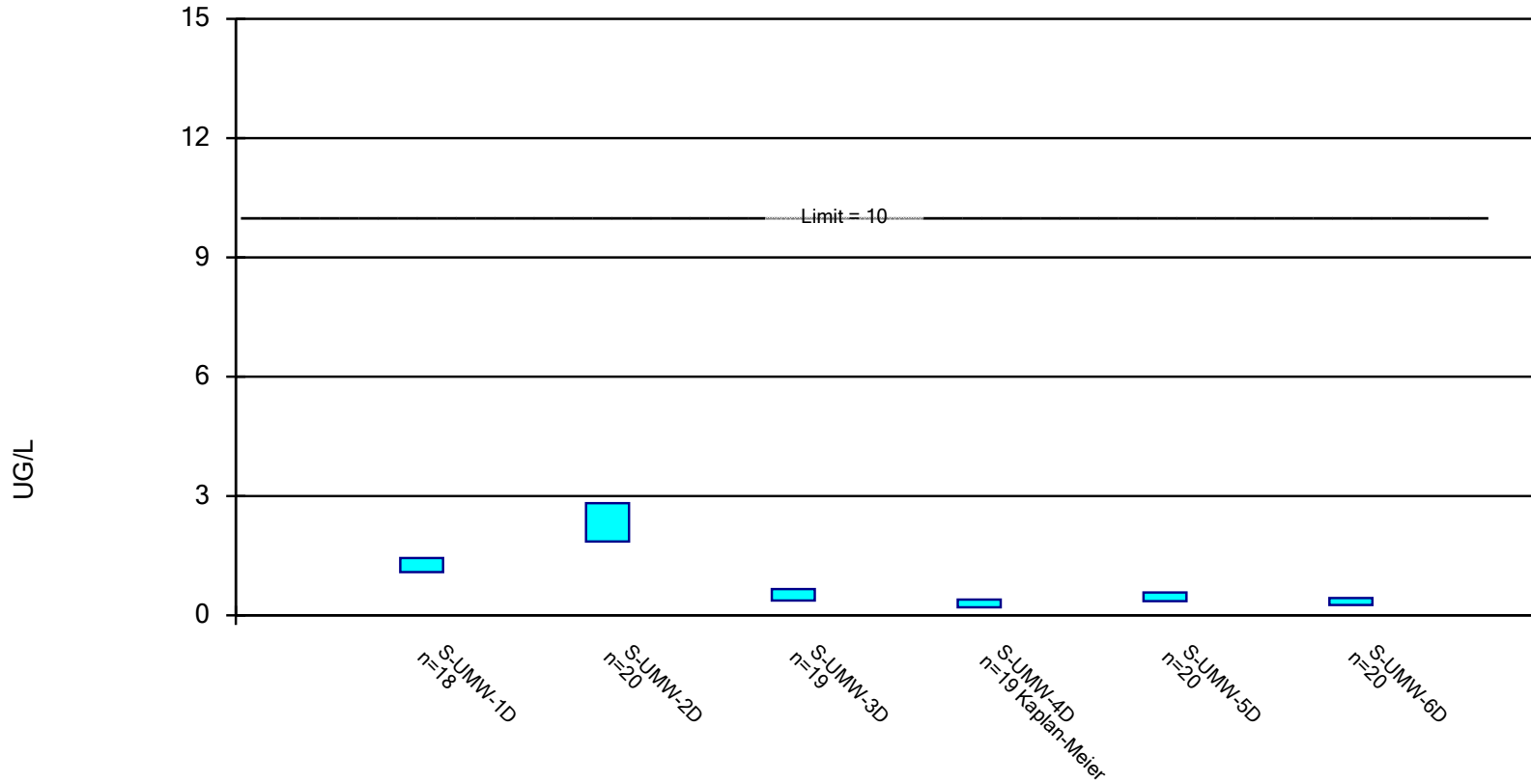


Constituent: ANTIMONY, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

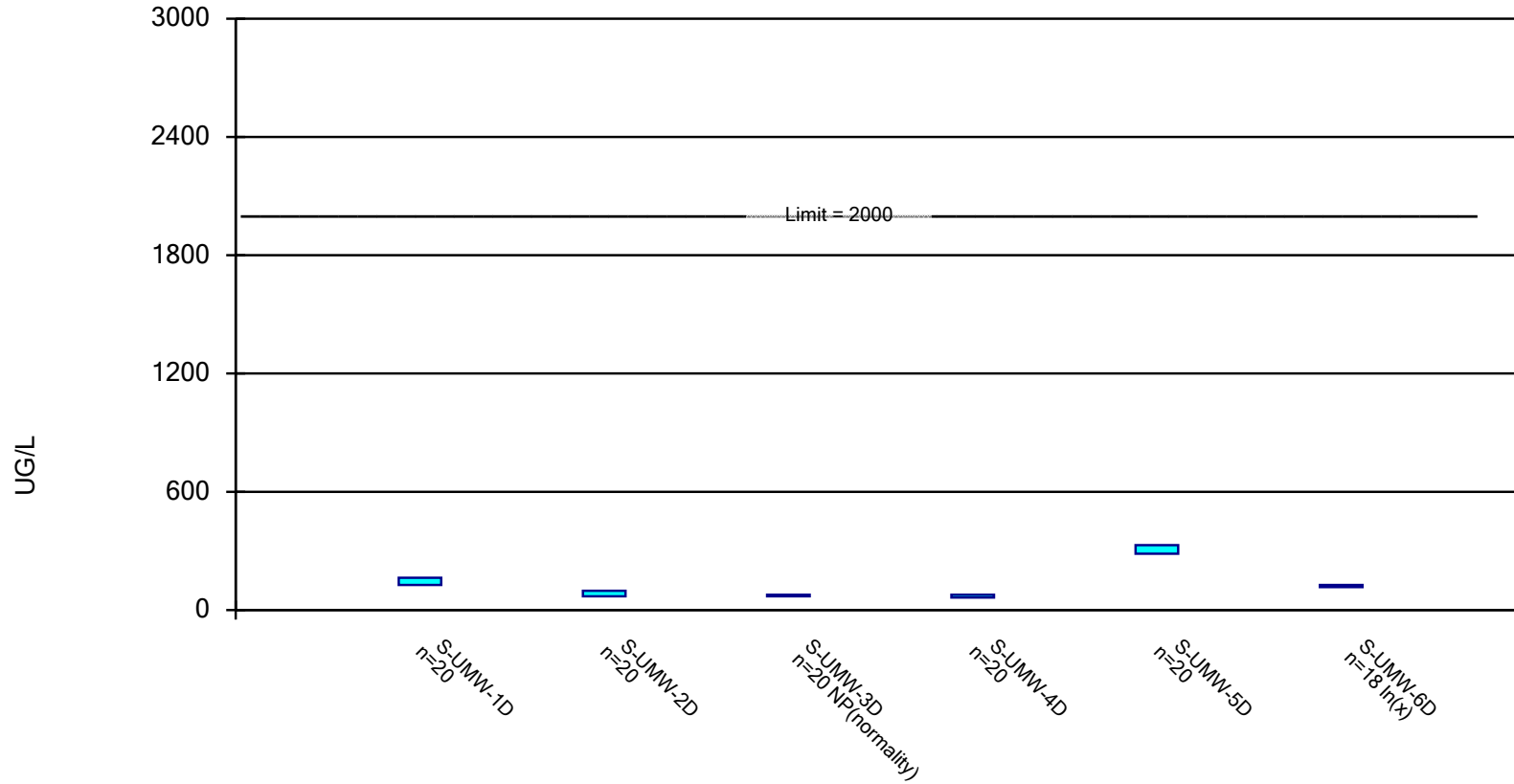


Constituent: ARSENIC, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

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.

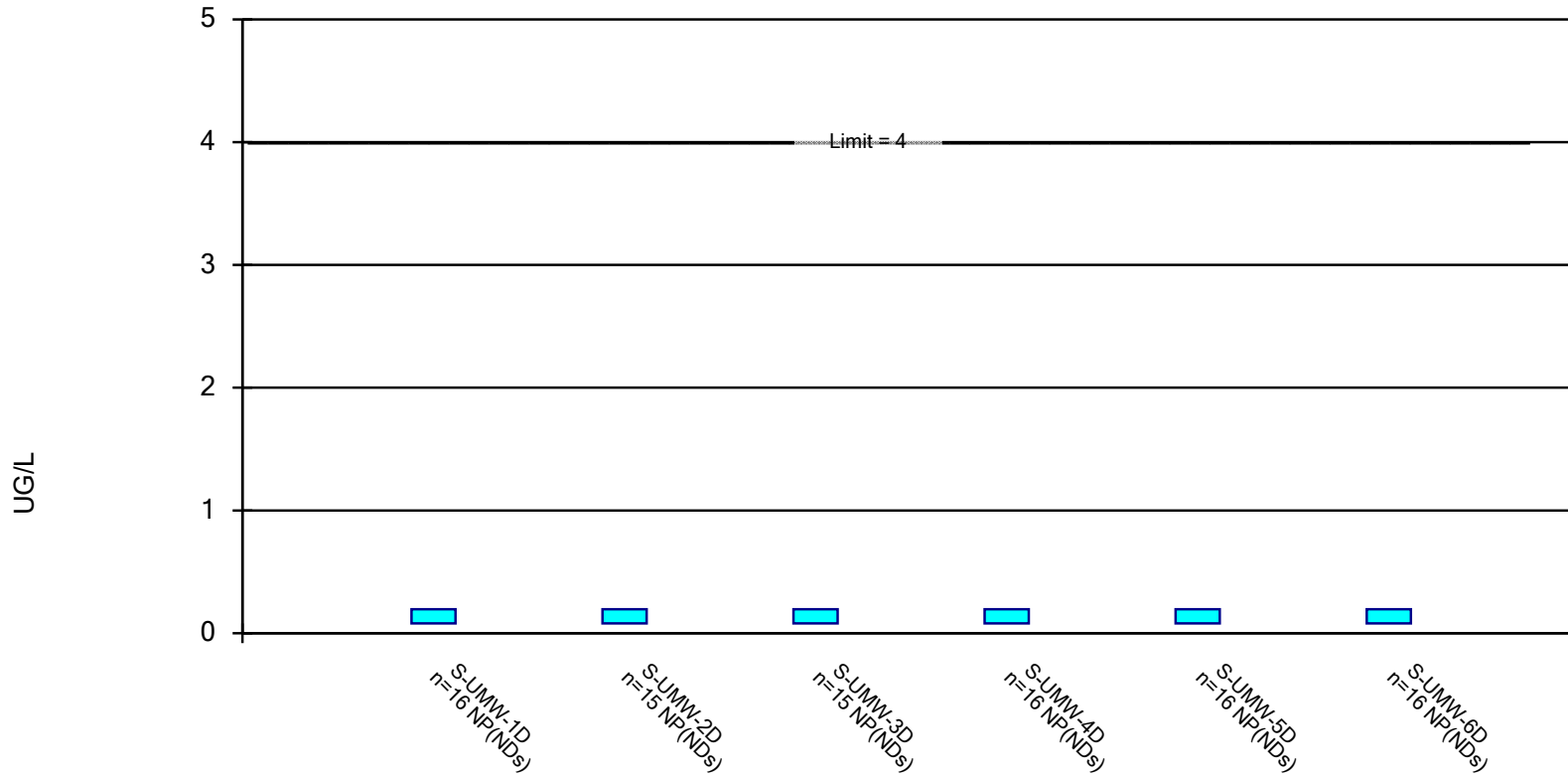


Constituent: BARIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

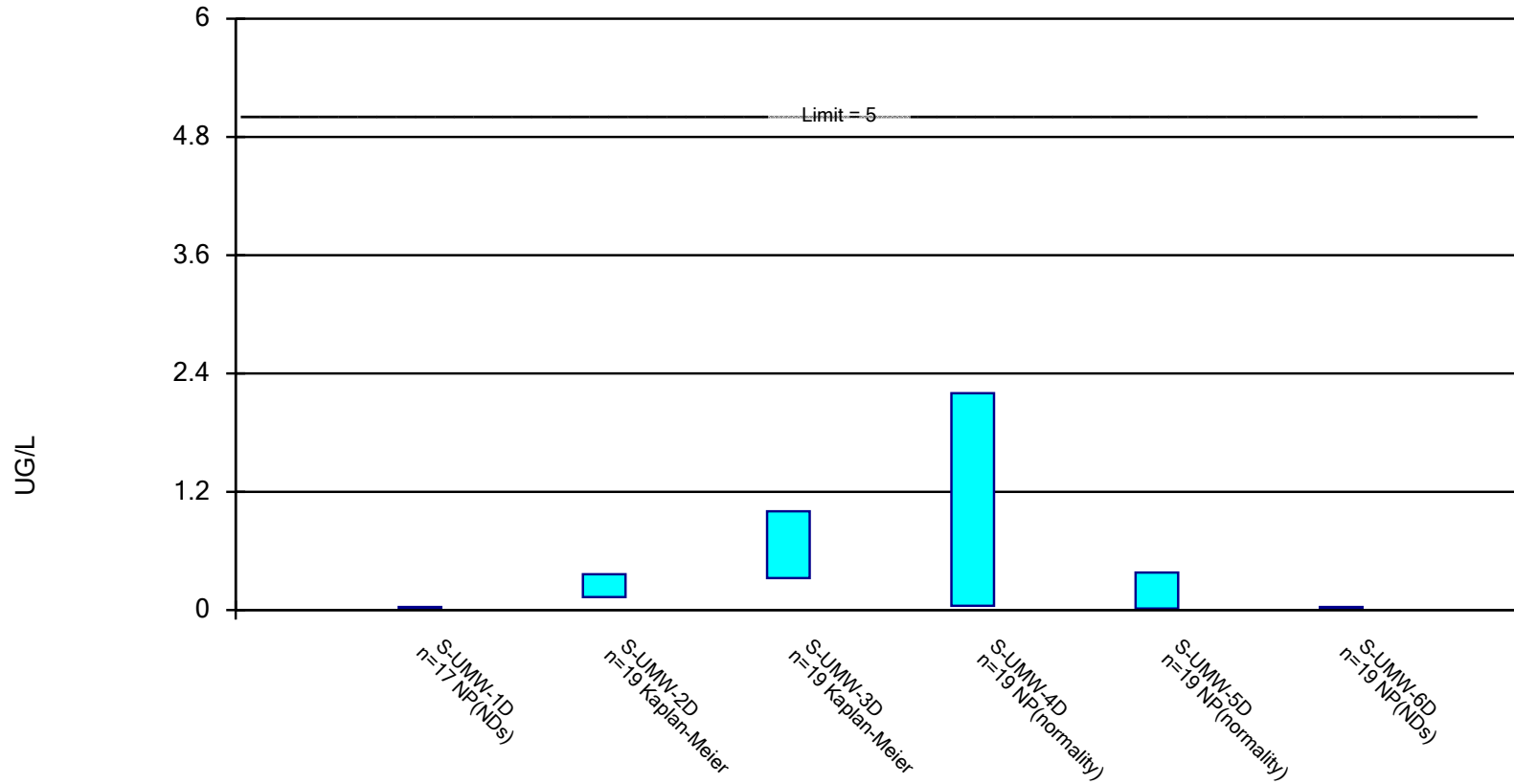


Constituent: BERYLLIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

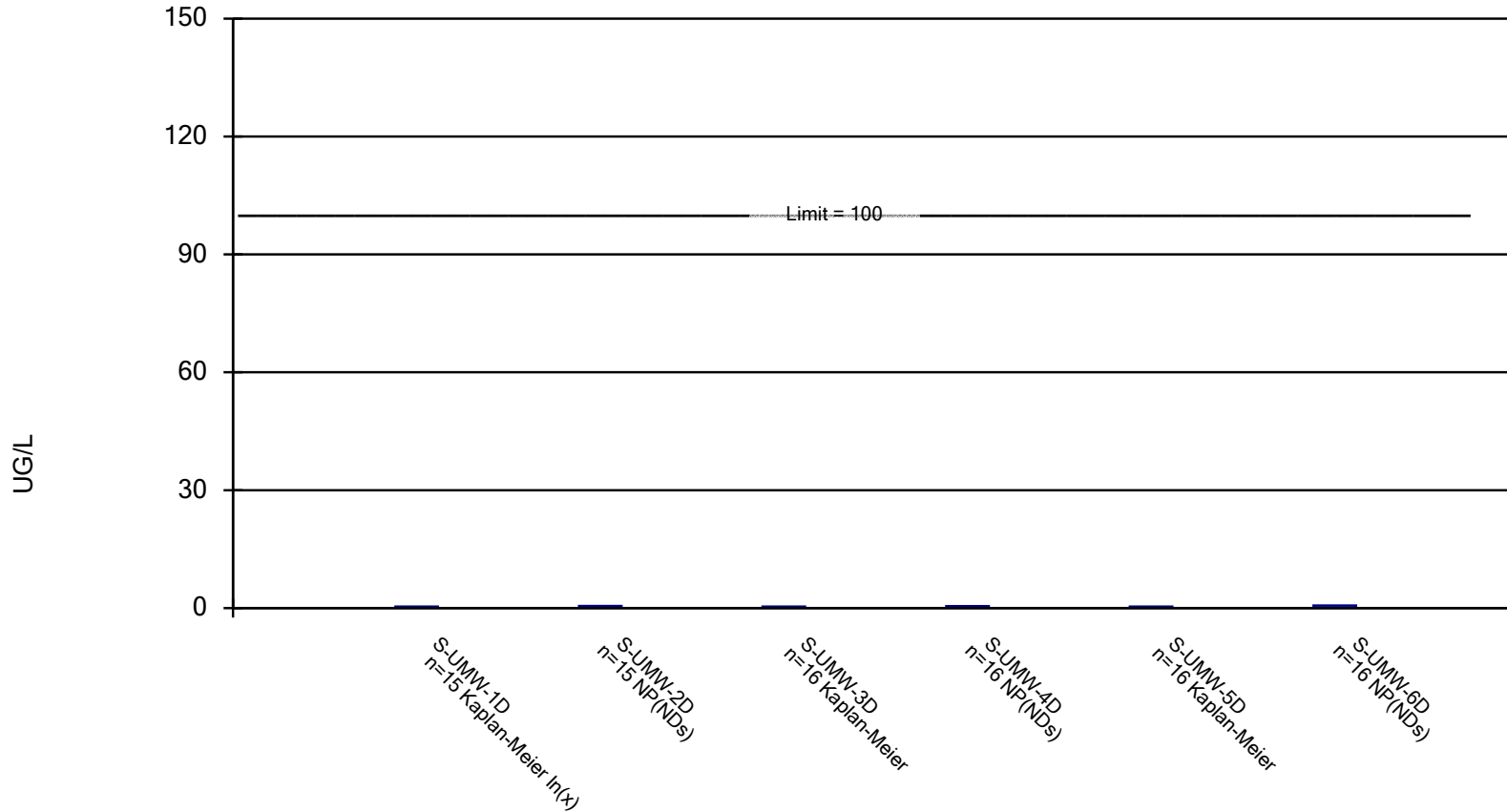


Constituent: CADMIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

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.

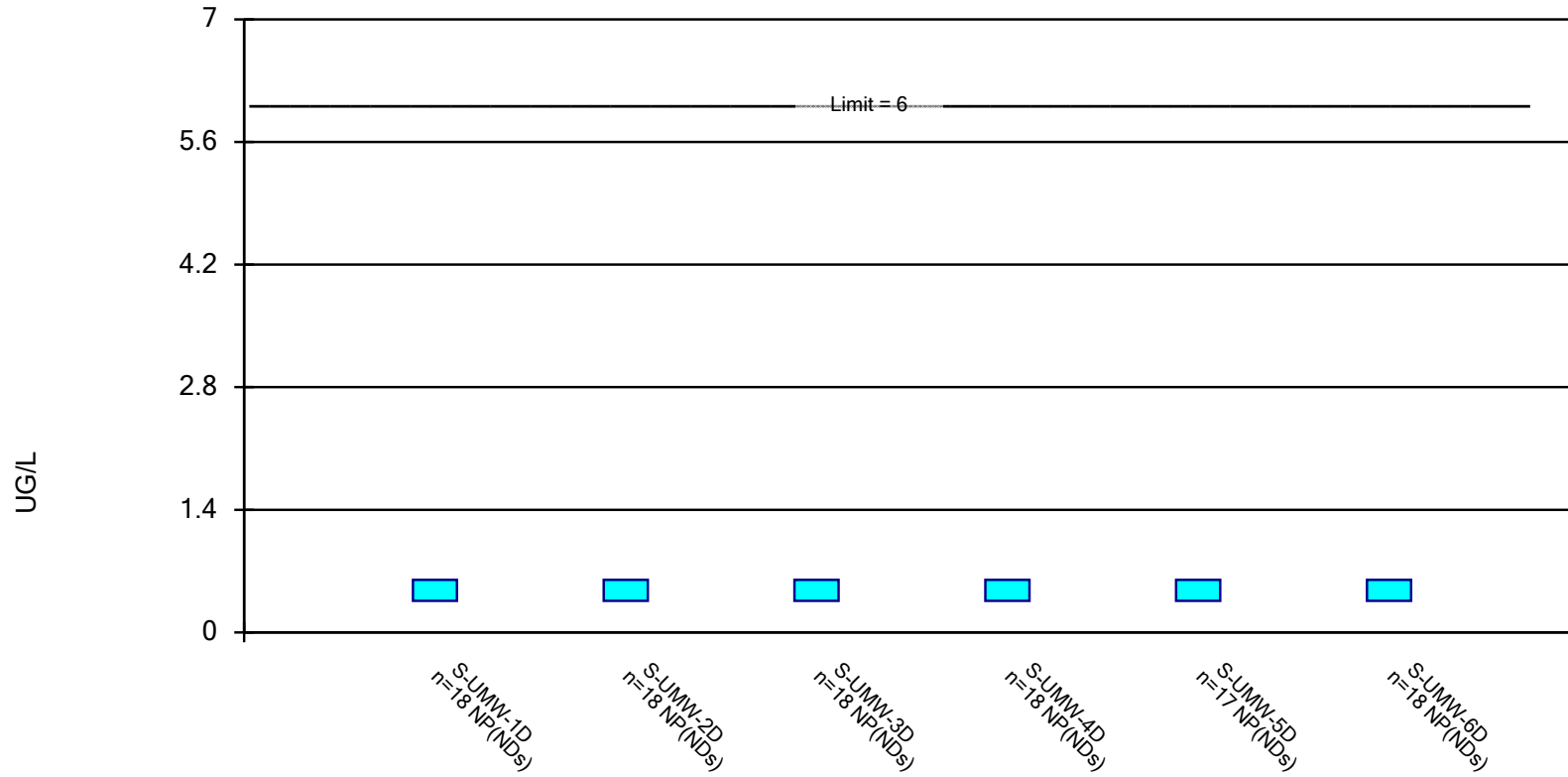


Constituent: CHROMIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

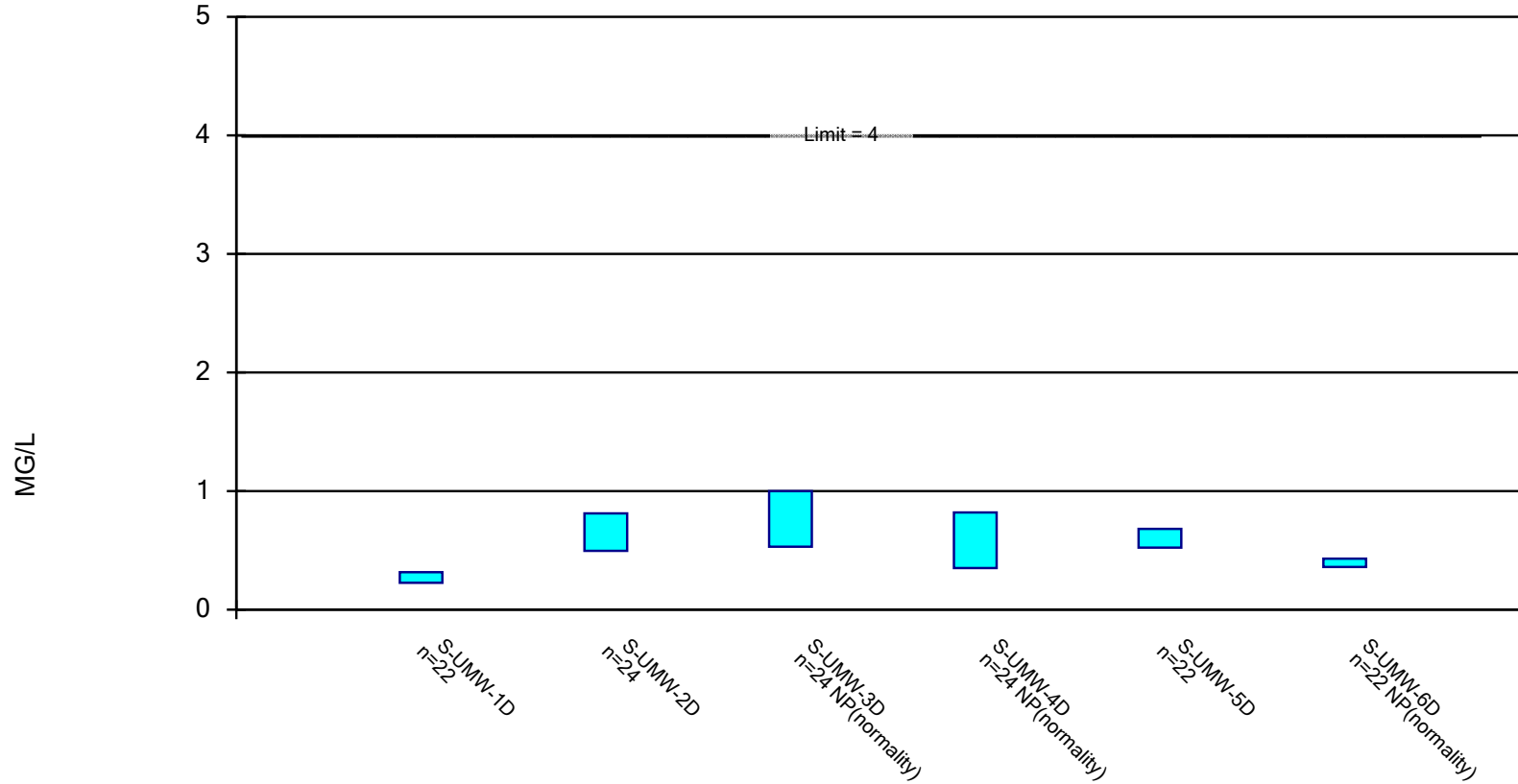


Constituent: COBALT, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

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.

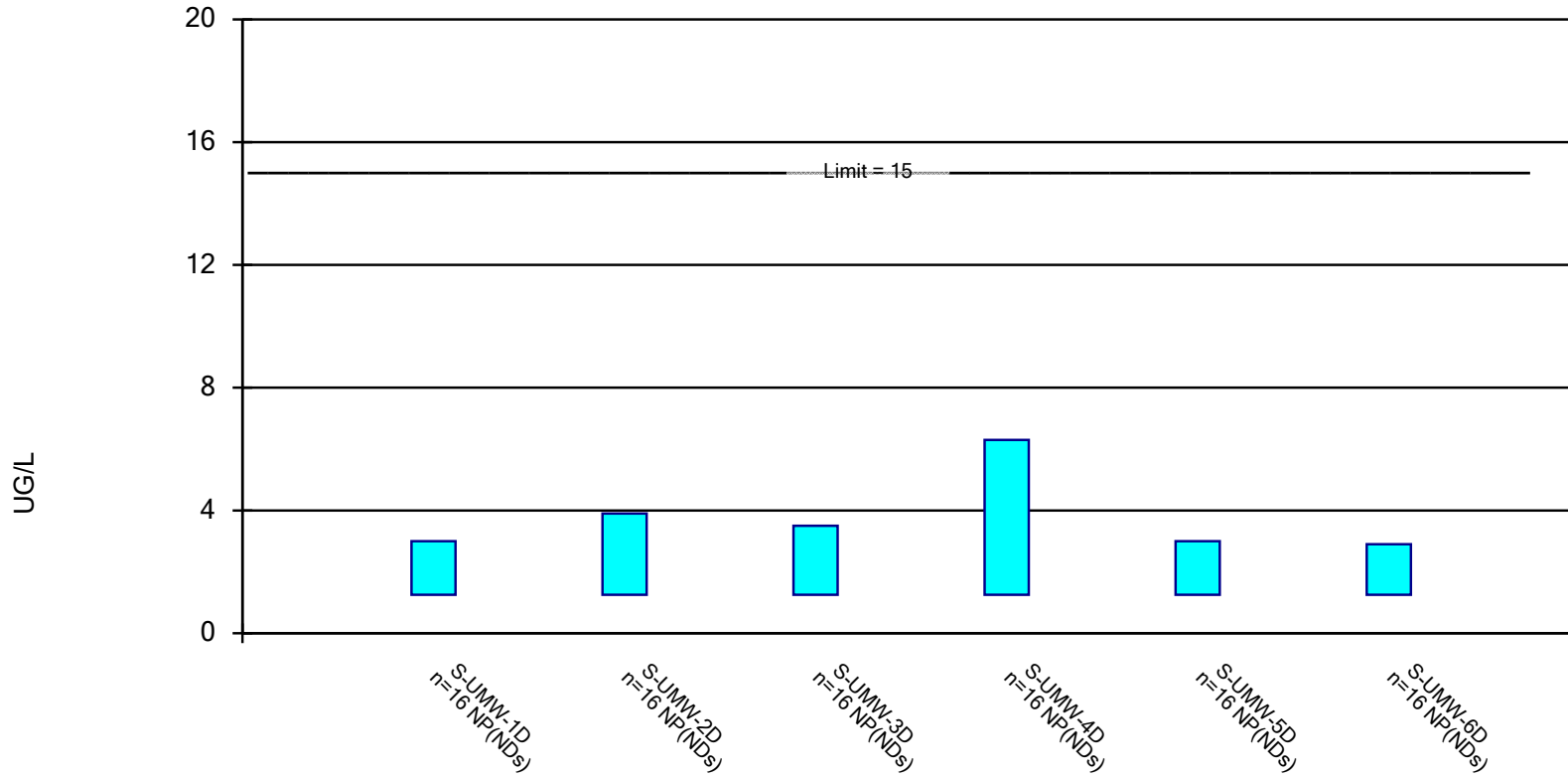


Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

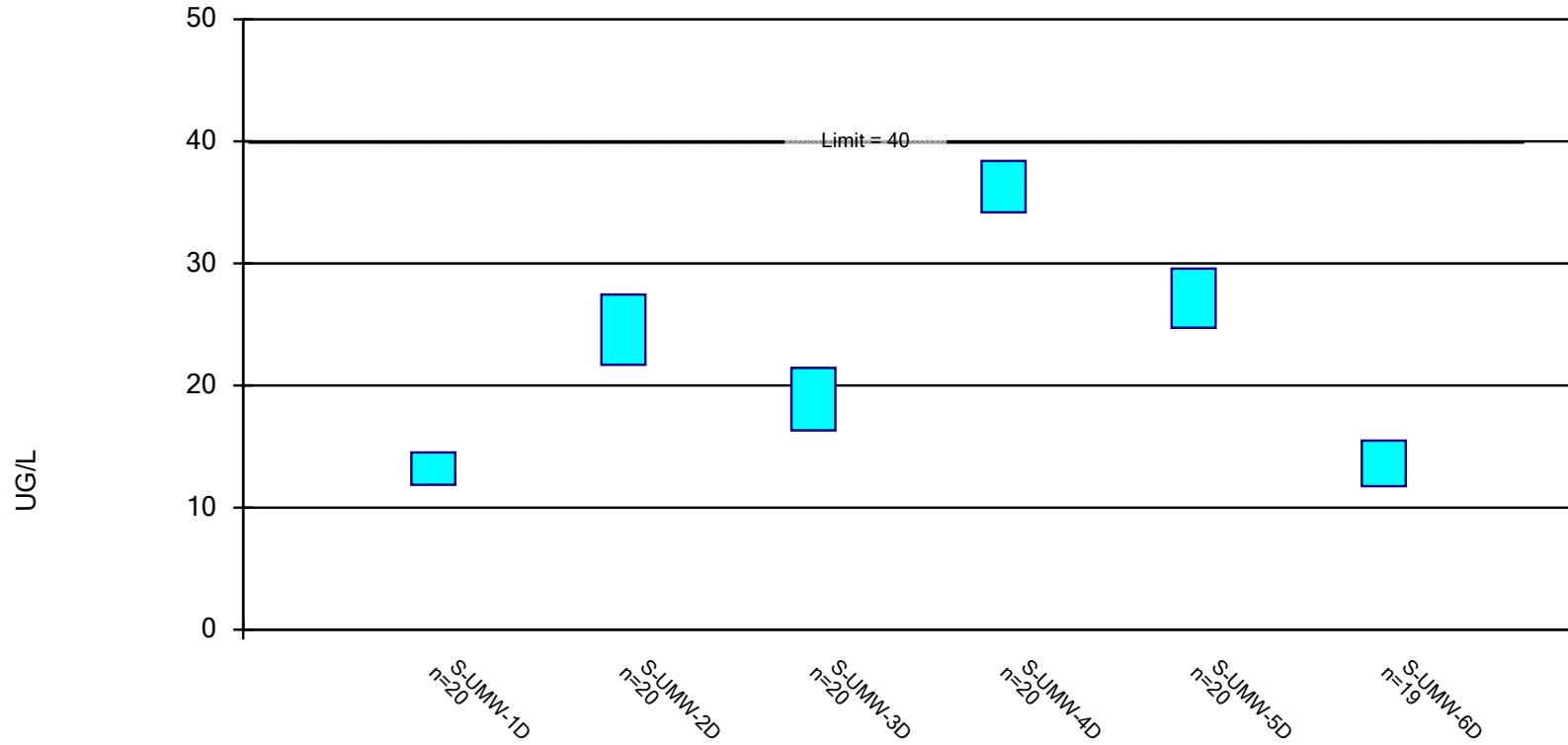


Constituent: LEAD, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

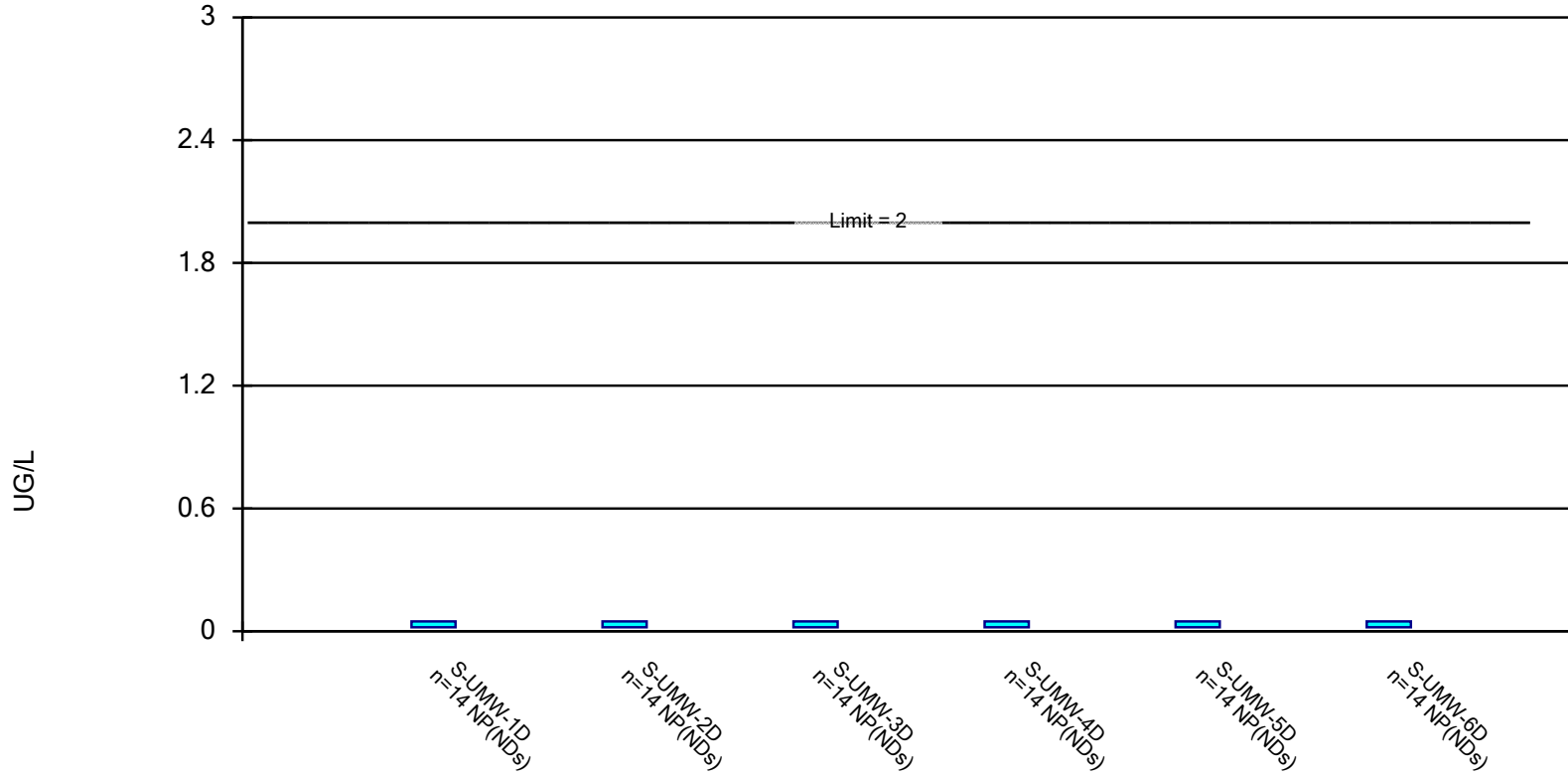


Constituent: LITHIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

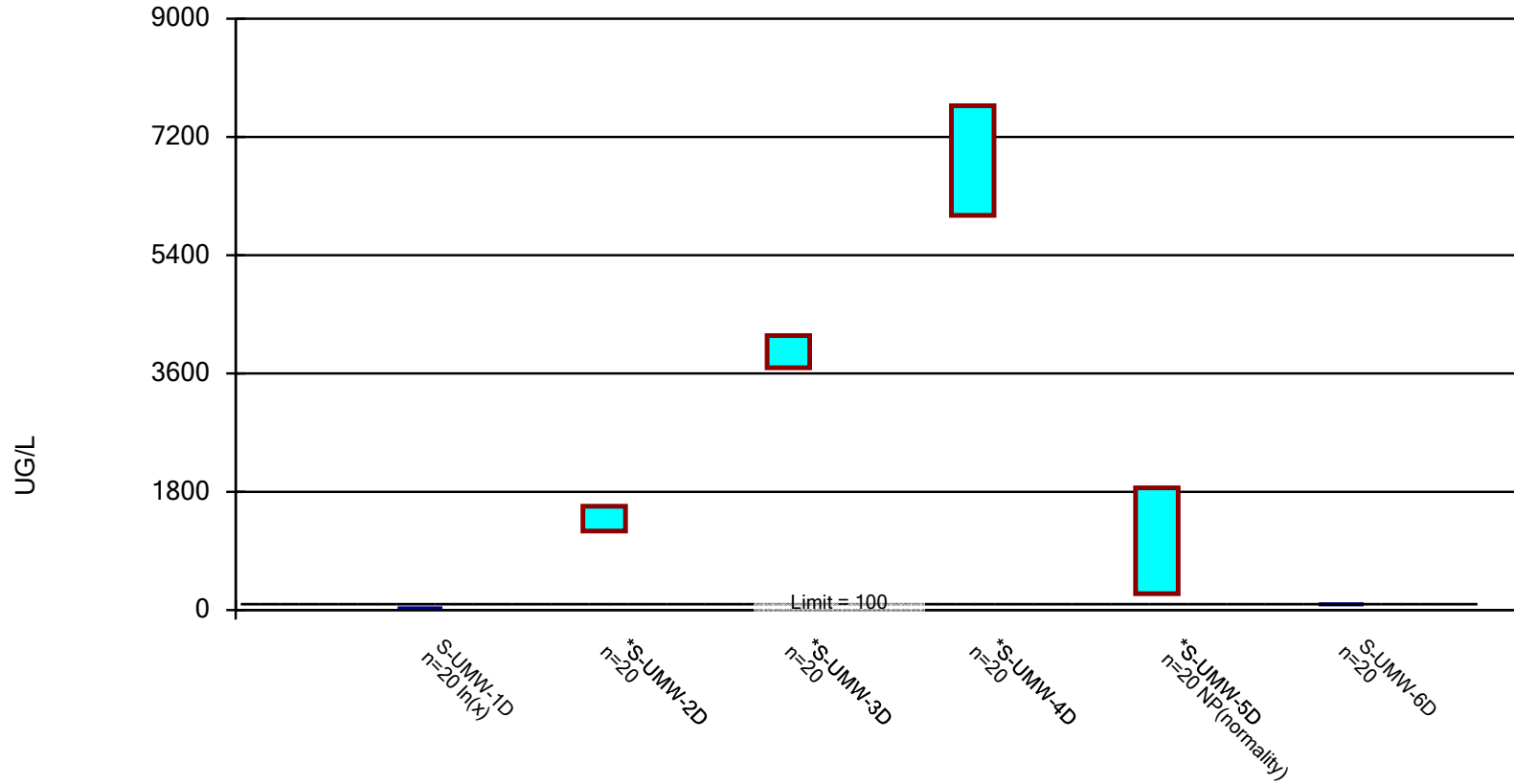


Constituent: MERCURY, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

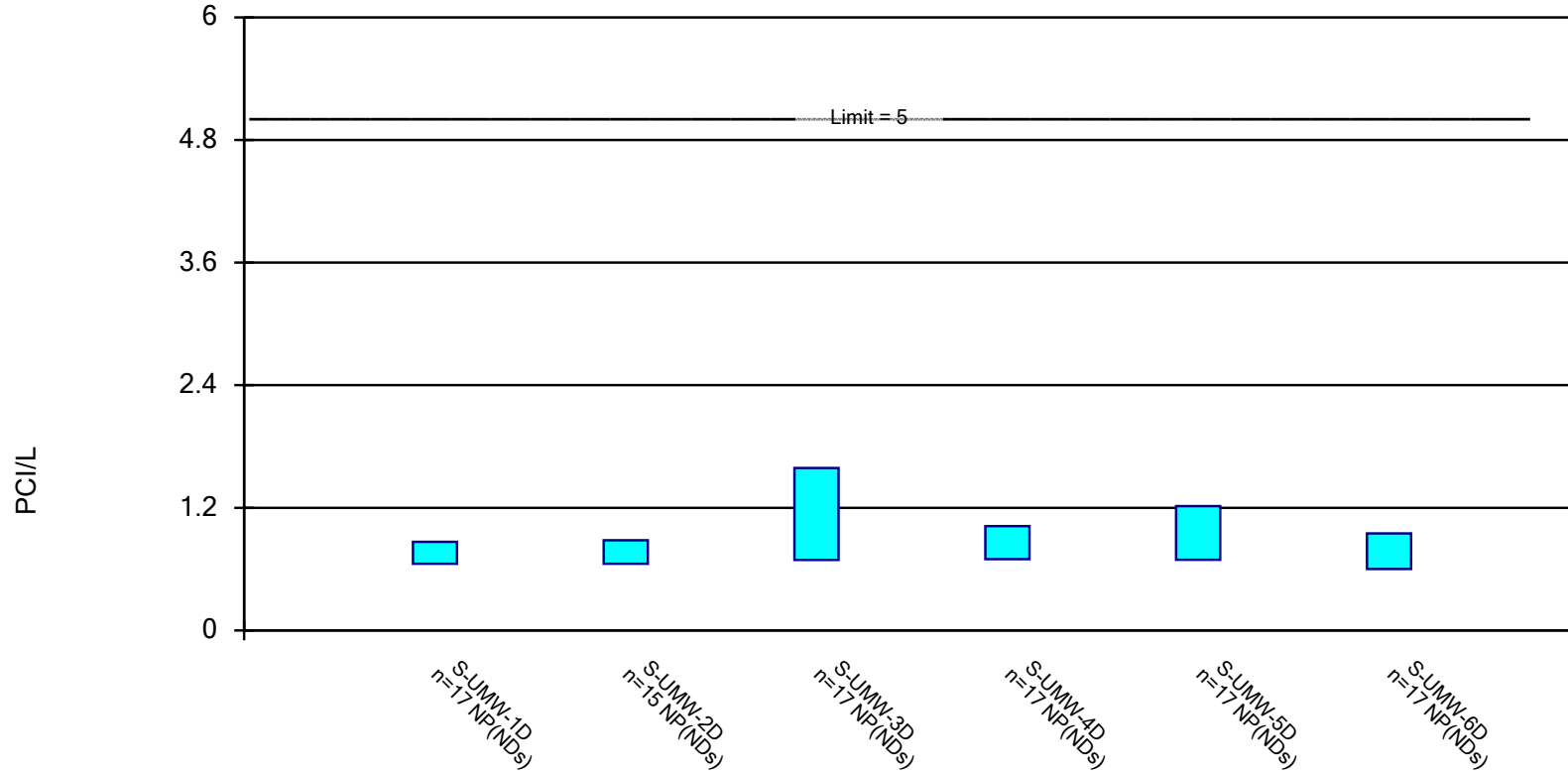


Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

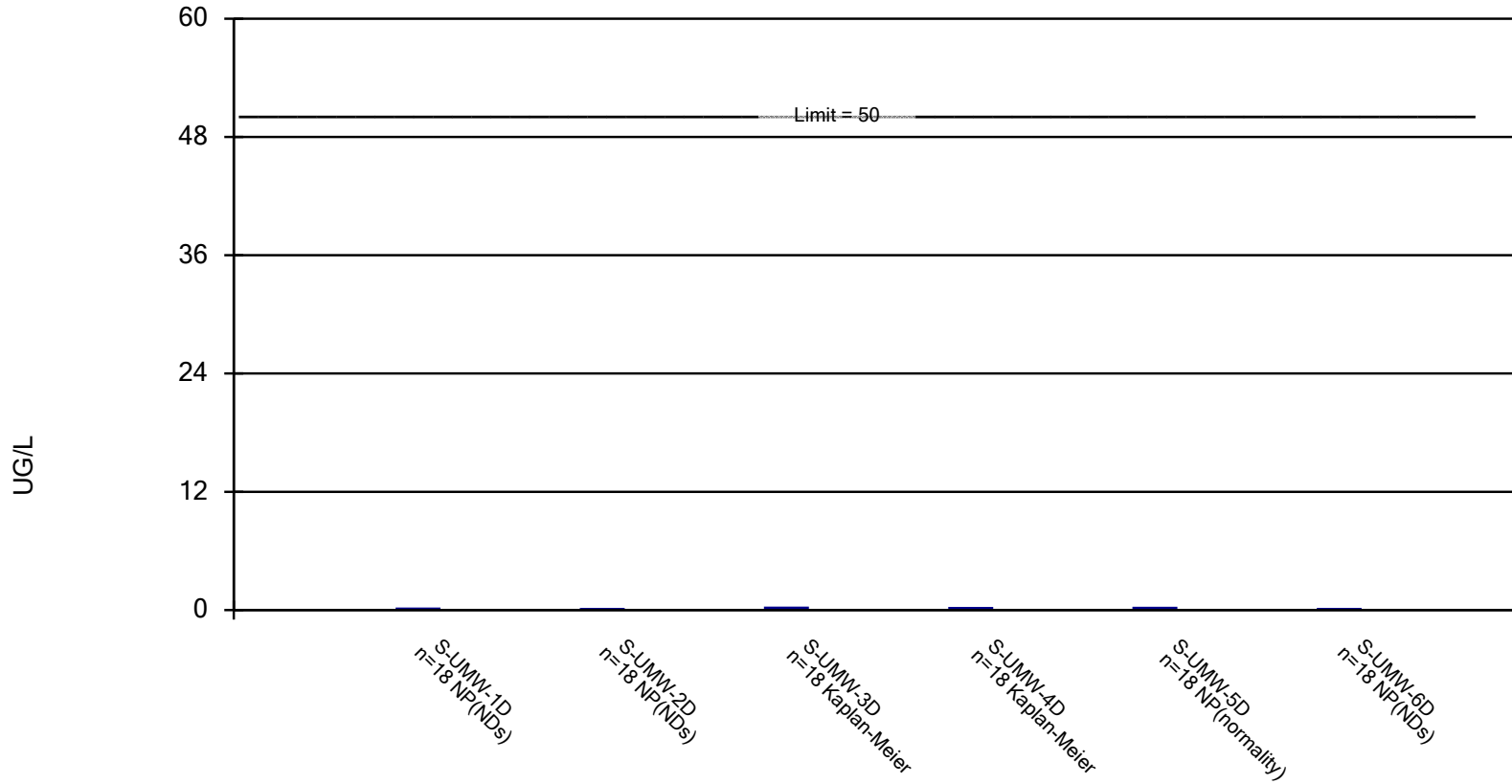


Constituent: RADIUM [226 + 228] Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

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.

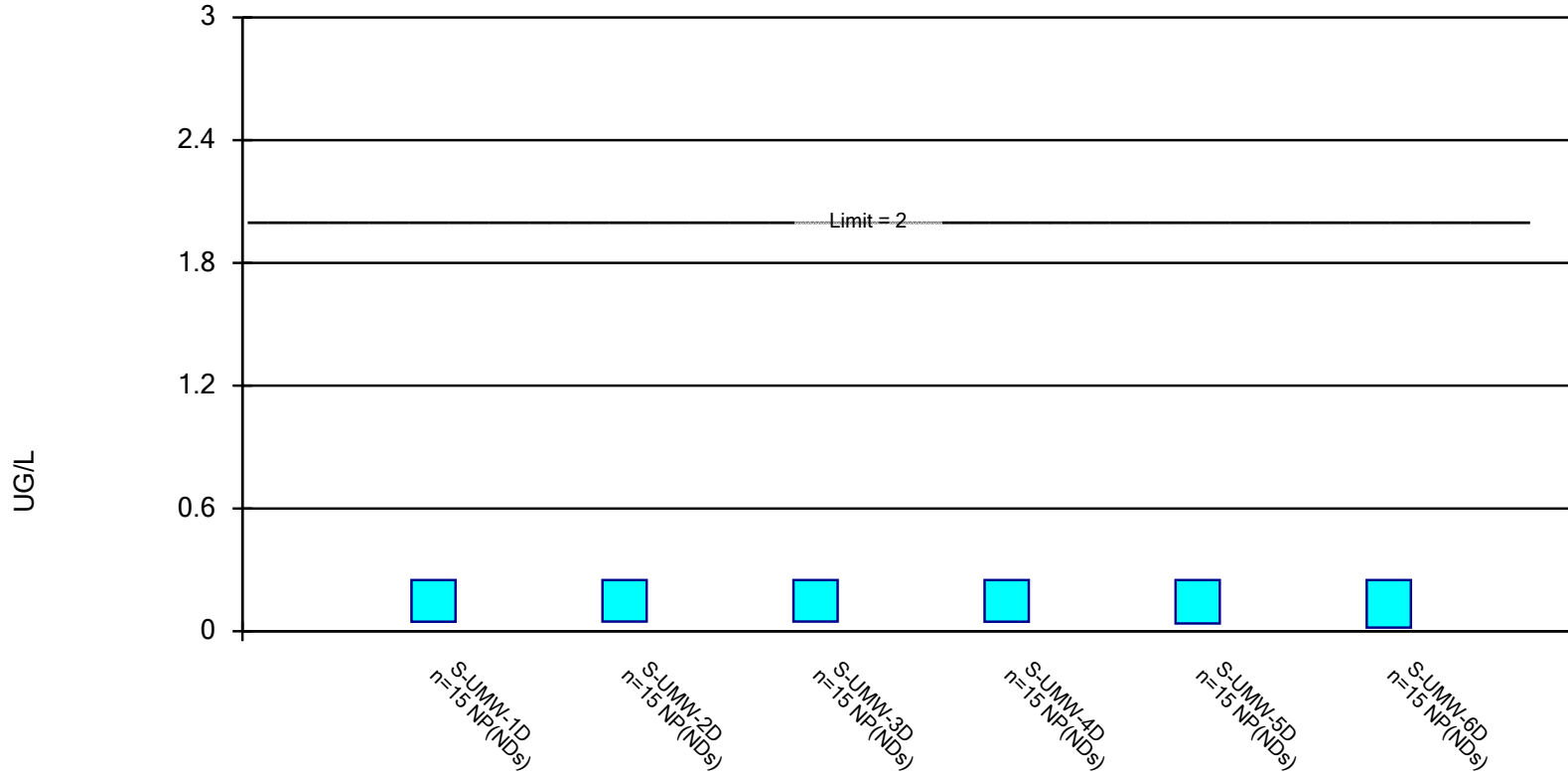


Constituent: SELENIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 8/3/2023 1:32 PM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 1:33 PM

<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)	S-UMW-1D	0.09467	0.03783	6	No	15	46.67	ln(x)	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.067	0.029	6	No	15	66.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.06	0.013	6	No	14	85.71	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.05	0.013	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.439	1.088	10	No	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.821	1.856	10	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.6584	0.3738	10	No	19	10.53	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.3944	0.2007	10	No	19	21.05	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.573	0.3556	10	No	20	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.4333	0.2603	10	No	20	10	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-1D	163.5	127.5	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	97.6	69.62	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	77.8	70.1	2000	No	20	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-4D	77.6	63.48	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	329.3	285.4	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-6D	127.2	116.7	2000	No	18	0	ln(x)	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0.195	0.08	4	No	15	93.33	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.031	0.0145	5	No	17	88.24	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.3632	0.1317	5	No	19	36.84	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-3D	1.001	0.3241	5	No	19	26.32	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-4D	2.2	0.0435	5	No	19	21.05	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.38	0.0145	5	No	19	42.11	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.031	0.0145	5	No	19	78.95	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.3978	0.1	100	No	15	46.67	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	0.55	0.11	100	No	15	53.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	0.3982	0.1227	100	No	16	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0.48	0.039	100	No	16	56.25	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	0.3887	0.1188	100	No	16	43.75	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.67	0.039	100	No	16	56.25	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-1D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-2D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-3D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-4D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-5D	0.6	0.36	6	No	17	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-6D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0.316	0.2267	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	0.8123	0.4955	4	No	24	4.167	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	1	0.53	4	No	24	12.5	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	0.82	0.35	4	No	24	12.5	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.681	0.5227	4	No	22	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.43	0.36	4	No	22	4.545	No	0.01	NP (normality)
LEAD, TOTAL (UG/L)	S-UMW-1D	3	1.25	15	No	16	87.5	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-2D	3.9	1.25	15	No	16	75	No	0.01	NP (NDs)

Confidence Interval

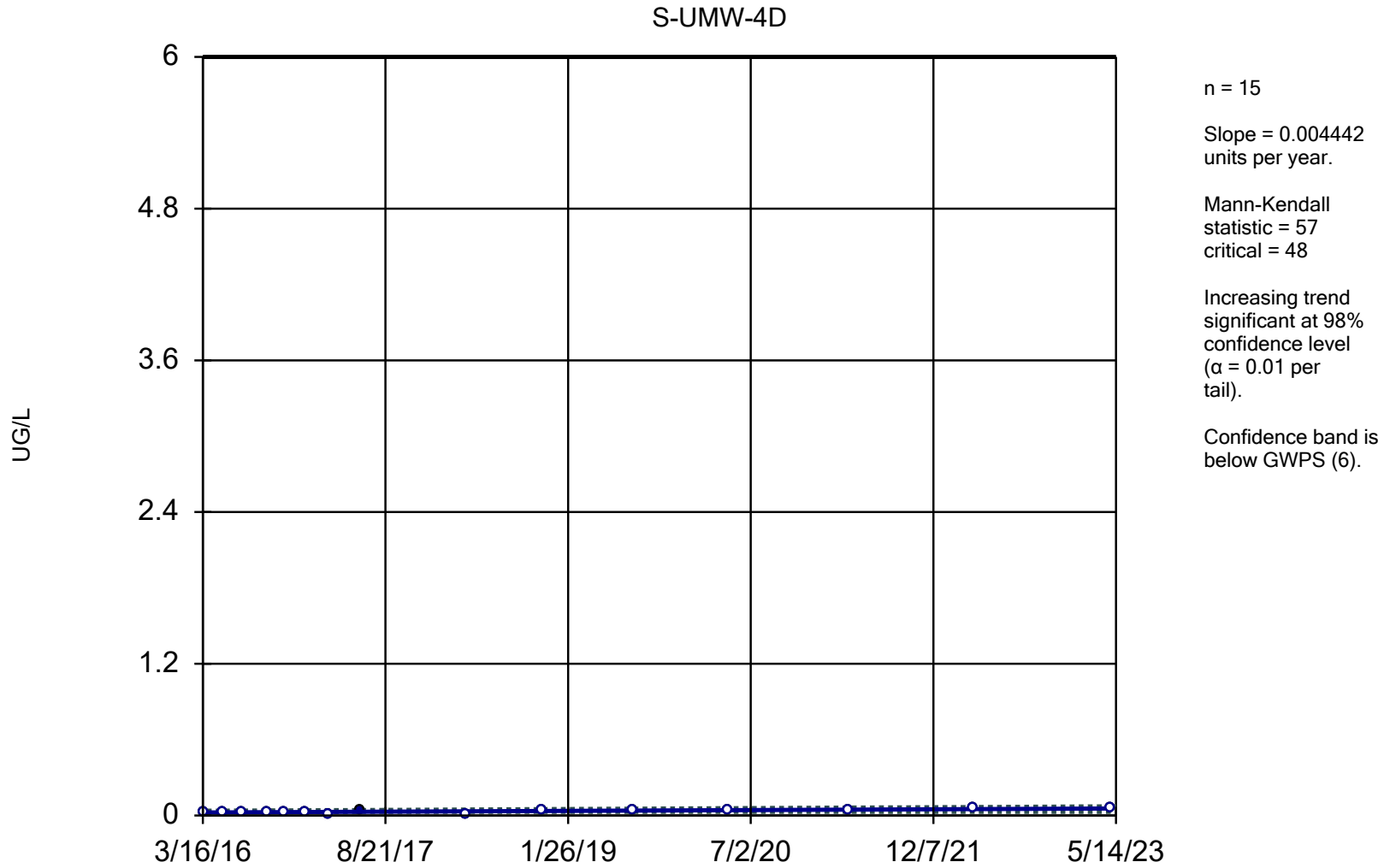
Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 1:33 PM

<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>
LEAD, TOTAL (UG/L)	S-UMW-3D	3.5	1.25	15	No	16	62.5	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-4D	6.3	1.25	15	No	16	56.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-5D	3	1.25	15	No	16	81.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-6D	2.9	1.25	15	No	16	87.5	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-UMW-1D	14.51	11.87	40	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	27.44	21.7	40	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	21.44	16.33	40	No	20	5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	38.39	34.18	40	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	29.58	24.73	40	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	15.48	11.75	40	No	19	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	39.65	27.93	100	No	20	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	1579	1202	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	4176	3688	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	7675	6007	100	Yes	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	1860	250	100	Yes	20	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	99.32	74.28	100	No	20	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.8665	0.6525	5	No	17	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.8825	0.652	5	No	15	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	1.59	0.69	5	No	17	70.59	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	1.02	0.6975	5	No	17	82.35	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	1.216	0.6915	5	No	17	76.47	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.949	0.6005	5	No	17	94.12	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0.13	0.043	50	No	18	83.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0.094	0.043	50	No	18	77.78	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-3D	0.2224	0.1582	50	No	18	22.22	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0.1967	0.1435	50	No	18	27.78	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0.22	0.09	50	No	18	27.78	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0.09	0.043	50	No	18	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-1D	0.25	0.0465	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-2D	0.25	0.047	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-3D	0.25	0.047	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-4D	0.25	0.0465	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-5D	0.25	0.038	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-6D	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)

Appendix B

Sanitas Trending Confidence Bands Statistical Output

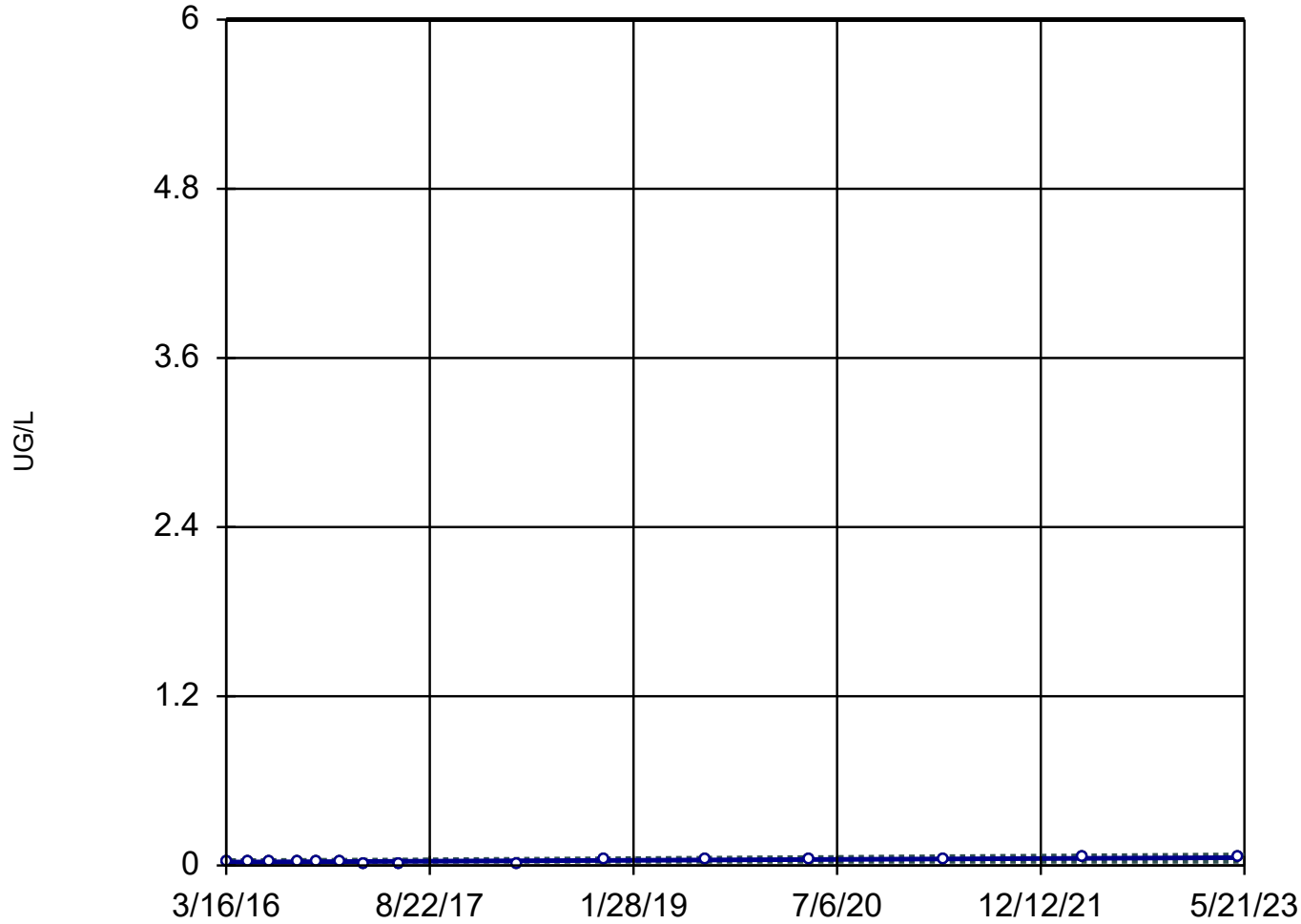
Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring
Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 15

Slope = 0.004413
units per year.

Mann-Kendall
statistic = 49
critical = 48

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

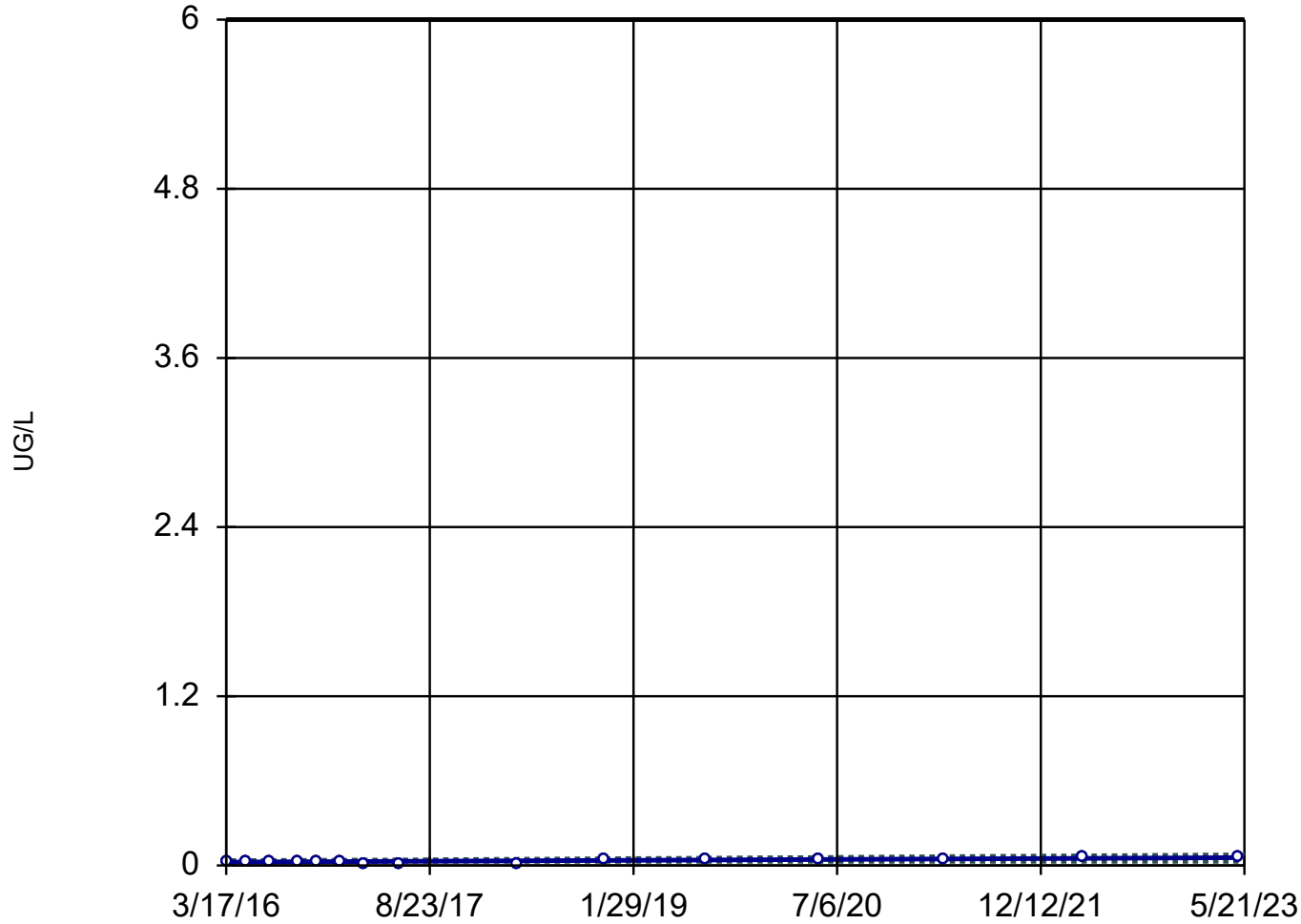
Confidence band is
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 15

Slope = 0.004413
units per year.

Mann-Kendall
statistic = 49
critical = 48

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

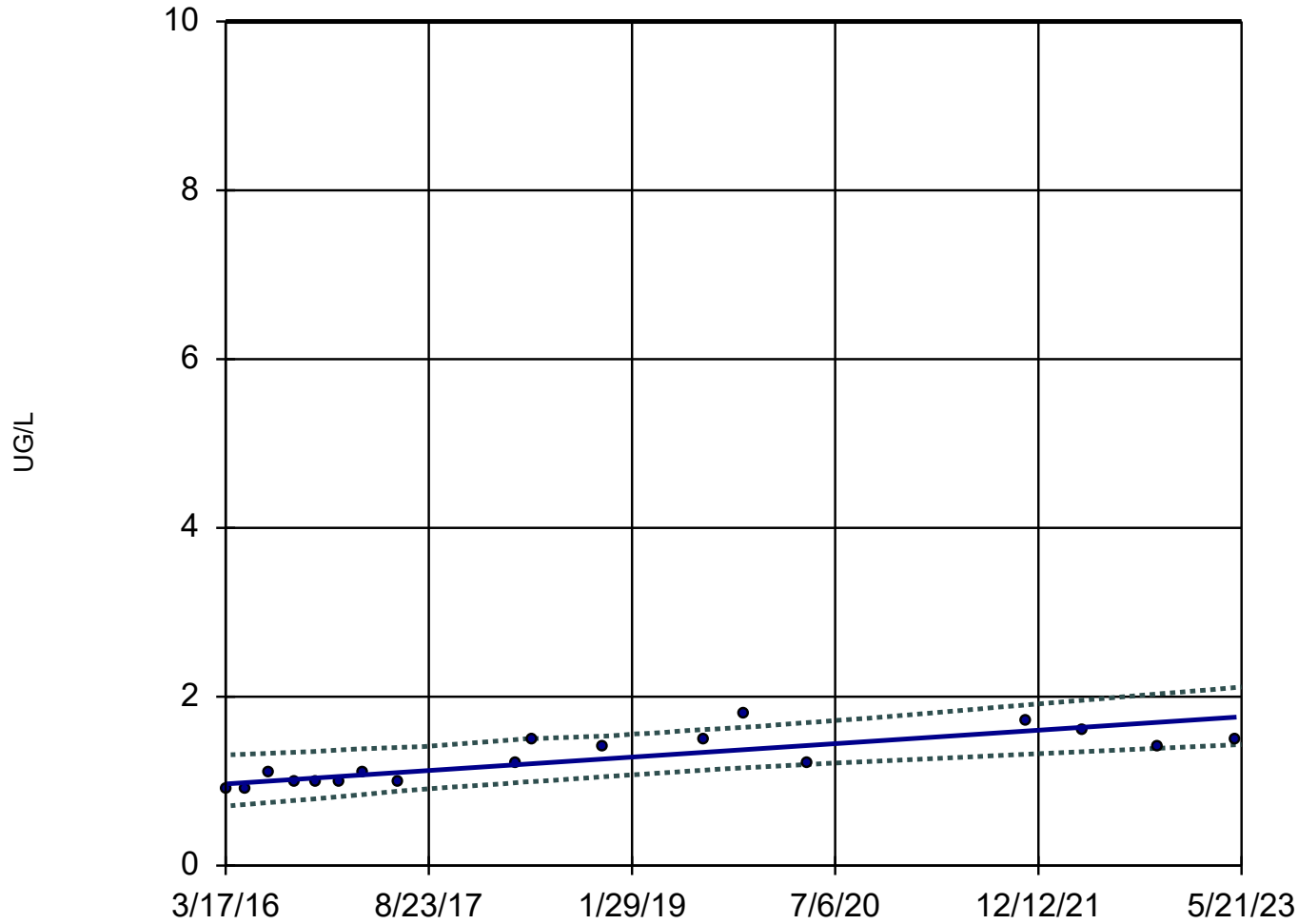
Confidence band is
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 18

Slope = 0.111
units per year.

Mann-Kendall
statistic = 97
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

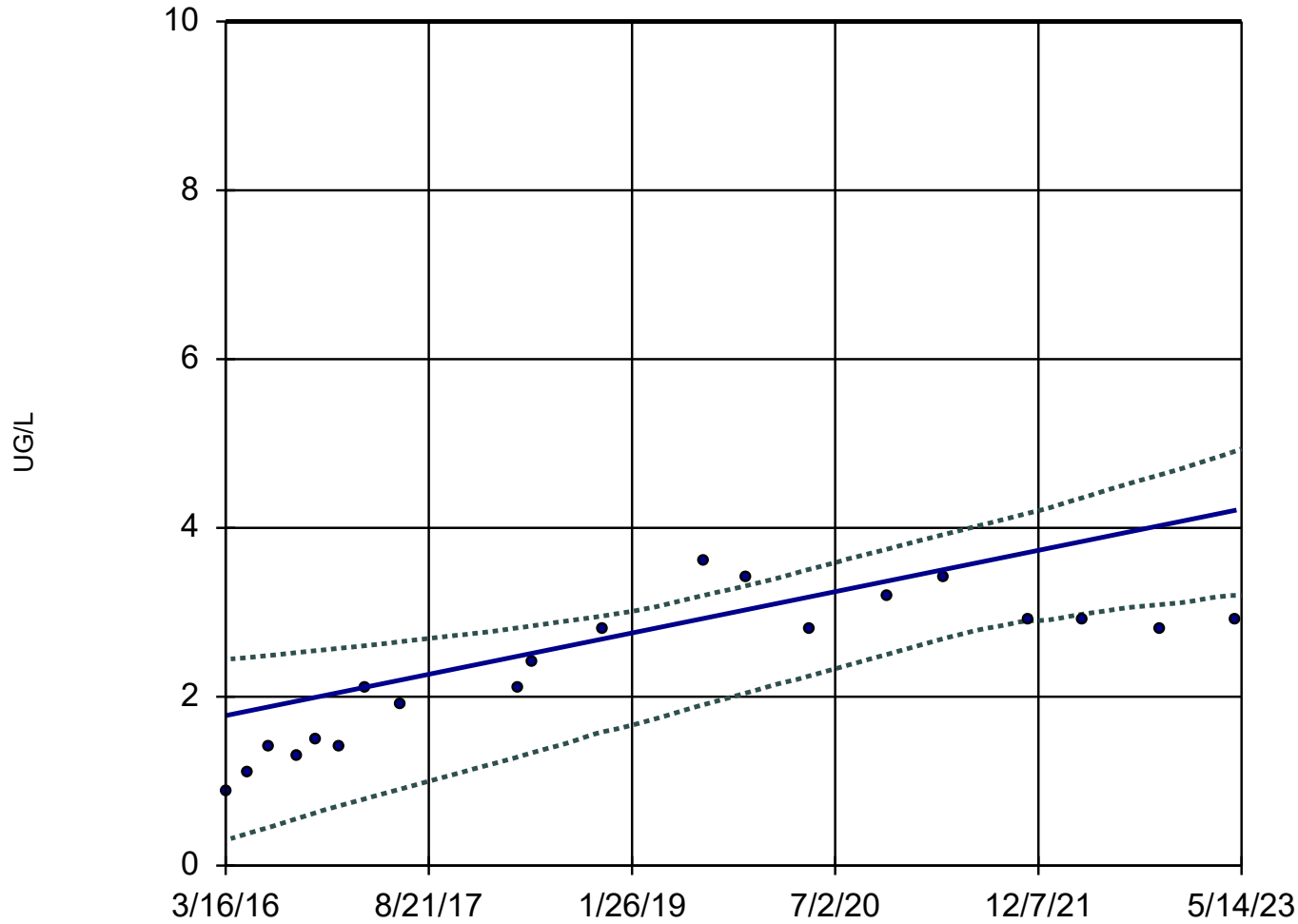
Confidence band is
below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 20

Slope = 0.3417
units per year.

Mann-Kendall
statistic = 127
critical = 73

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

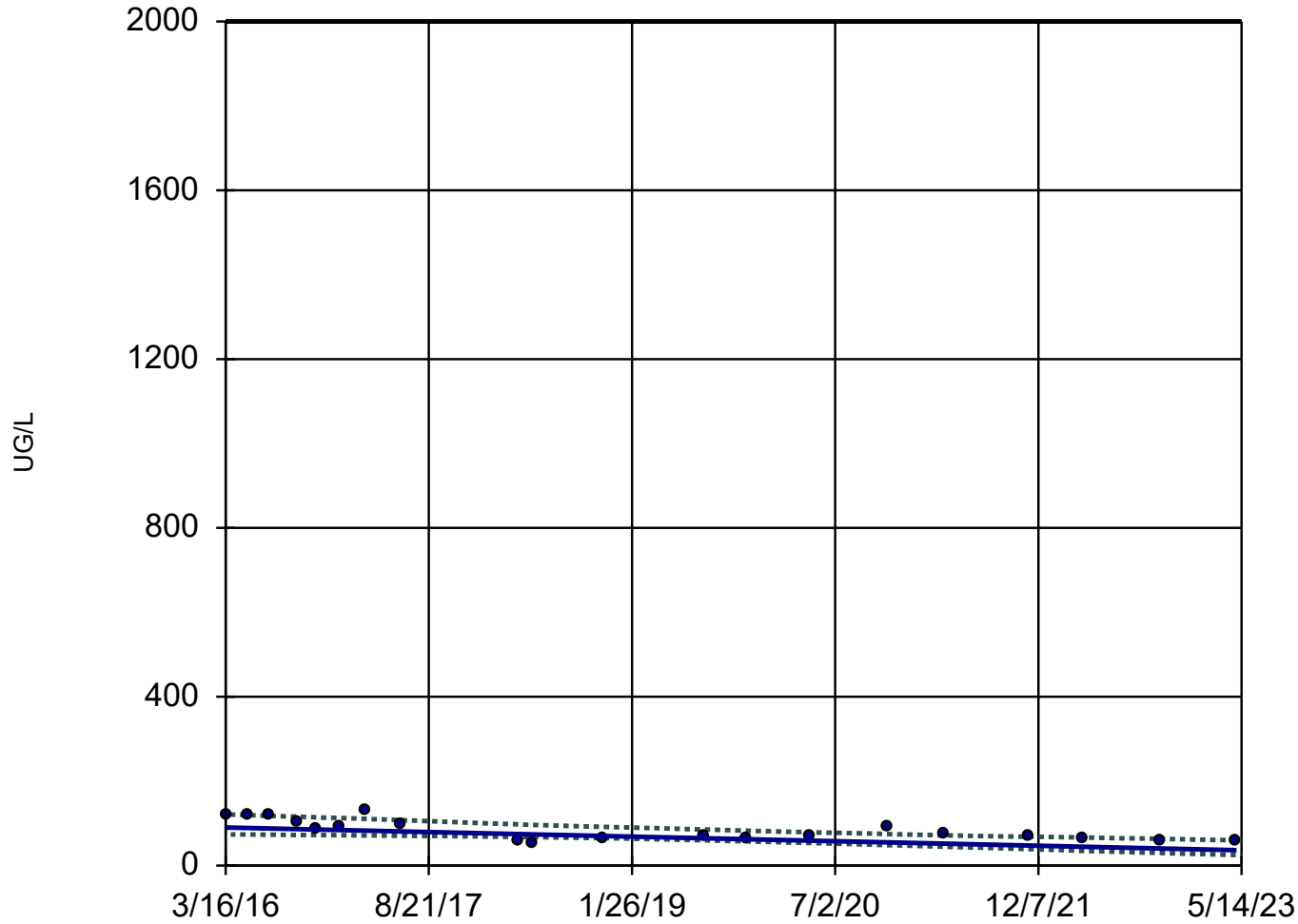
Confidence band is
below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 20

Slope = -7.549
units per year.

Mann-Kendall
statistic = -102
critical = -73

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

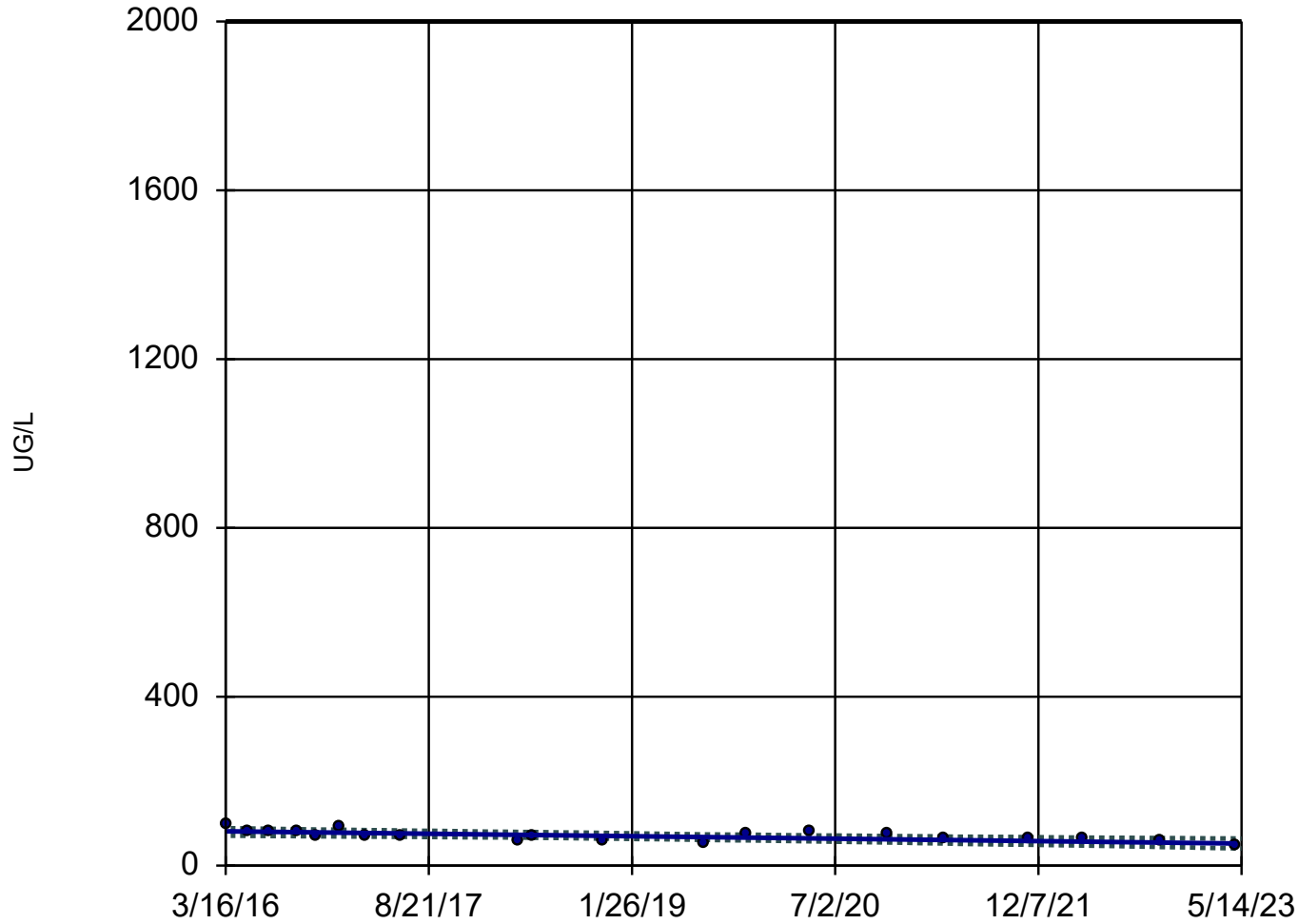
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 20

Slope = -4.026
units per year.

Mann-Kendall
statistic = -104
critical = -73

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

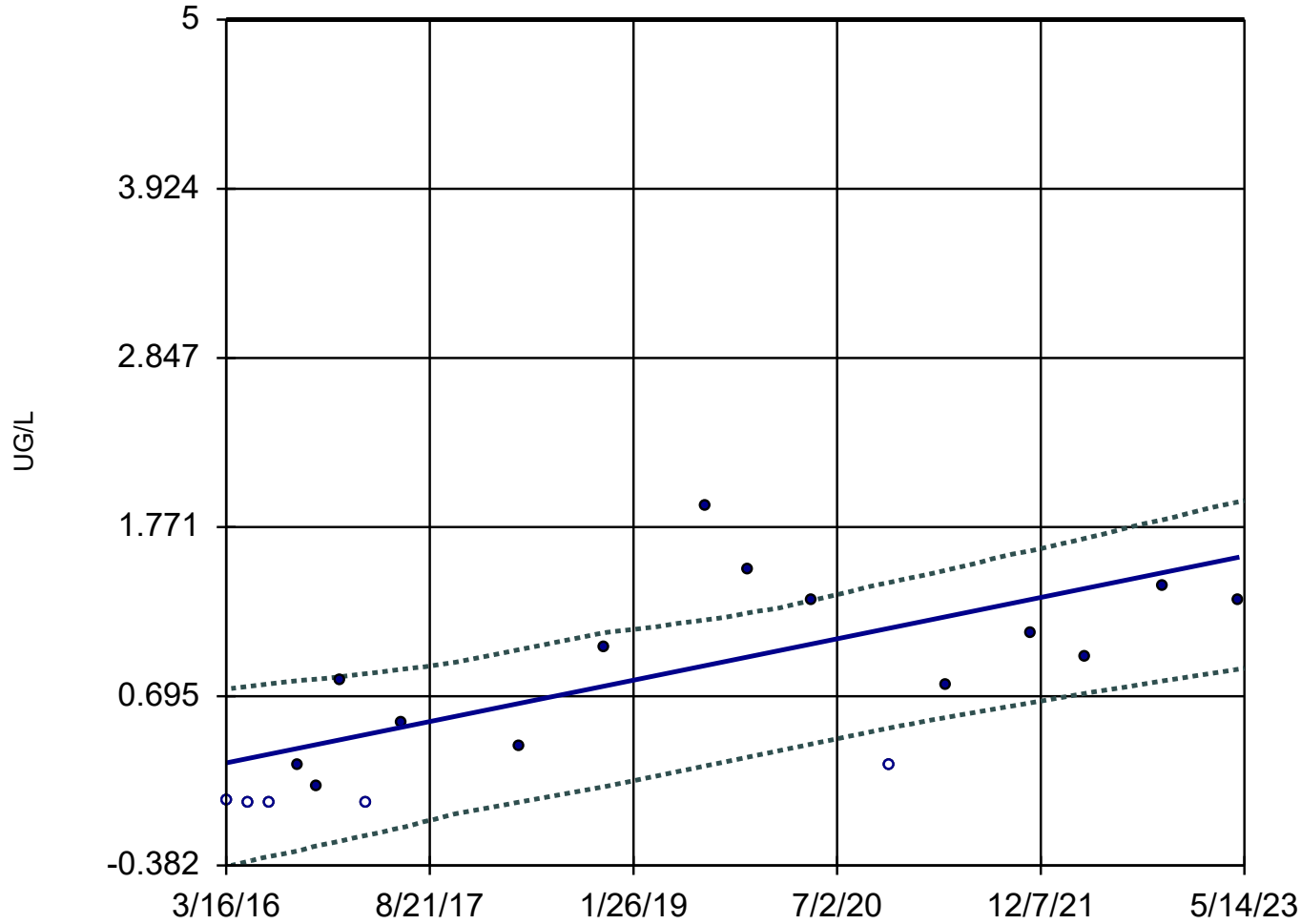
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 19

Slope = 0.1837
units per year.

Mann-Kendall
statistic = 88
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

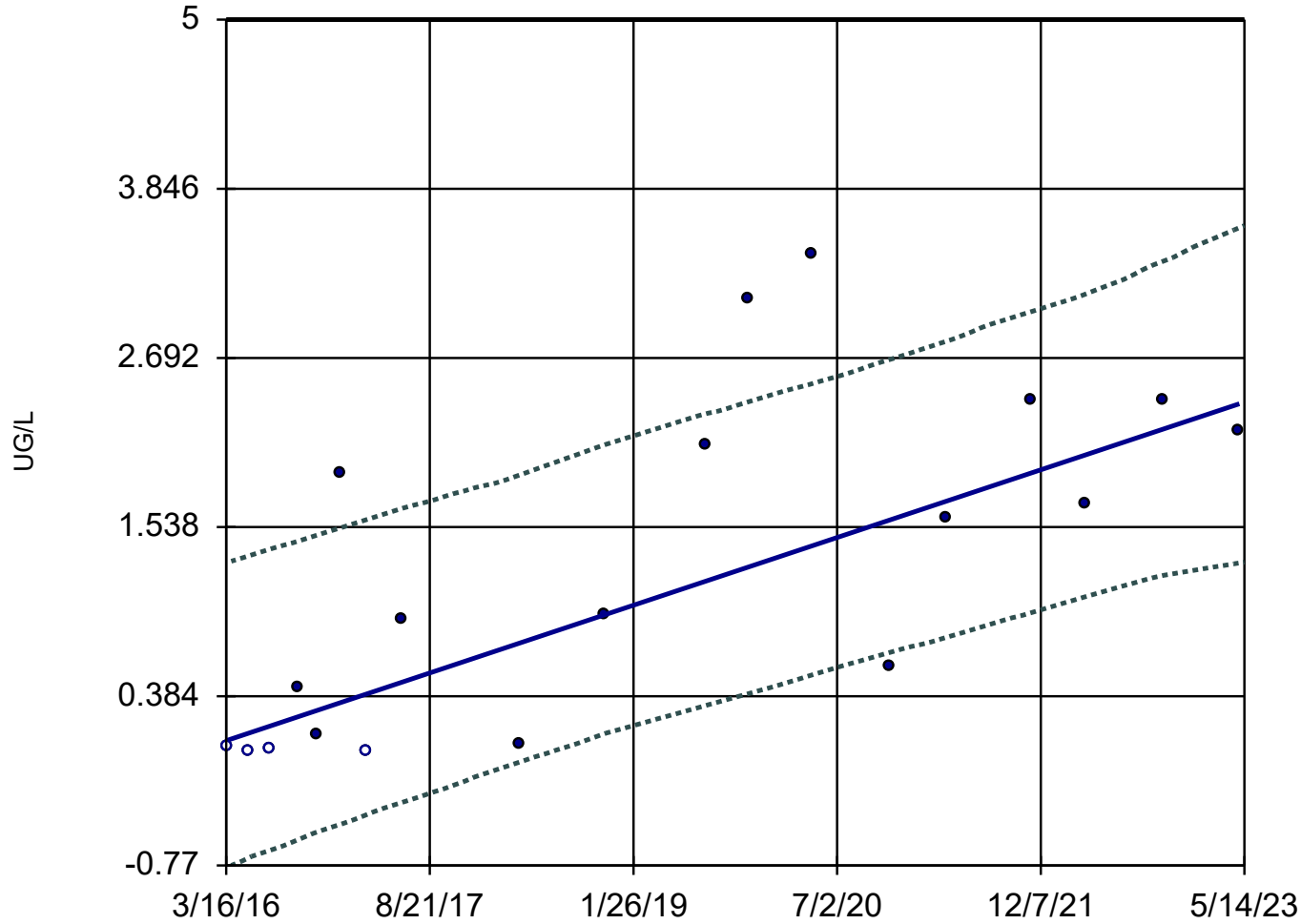
Confidence band is
below GWPS (5).

Constituent: CADMIUM, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 19

Slope = 0.3224
units per year.

Mann-Kendall
statistic = 94
critical = 68

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

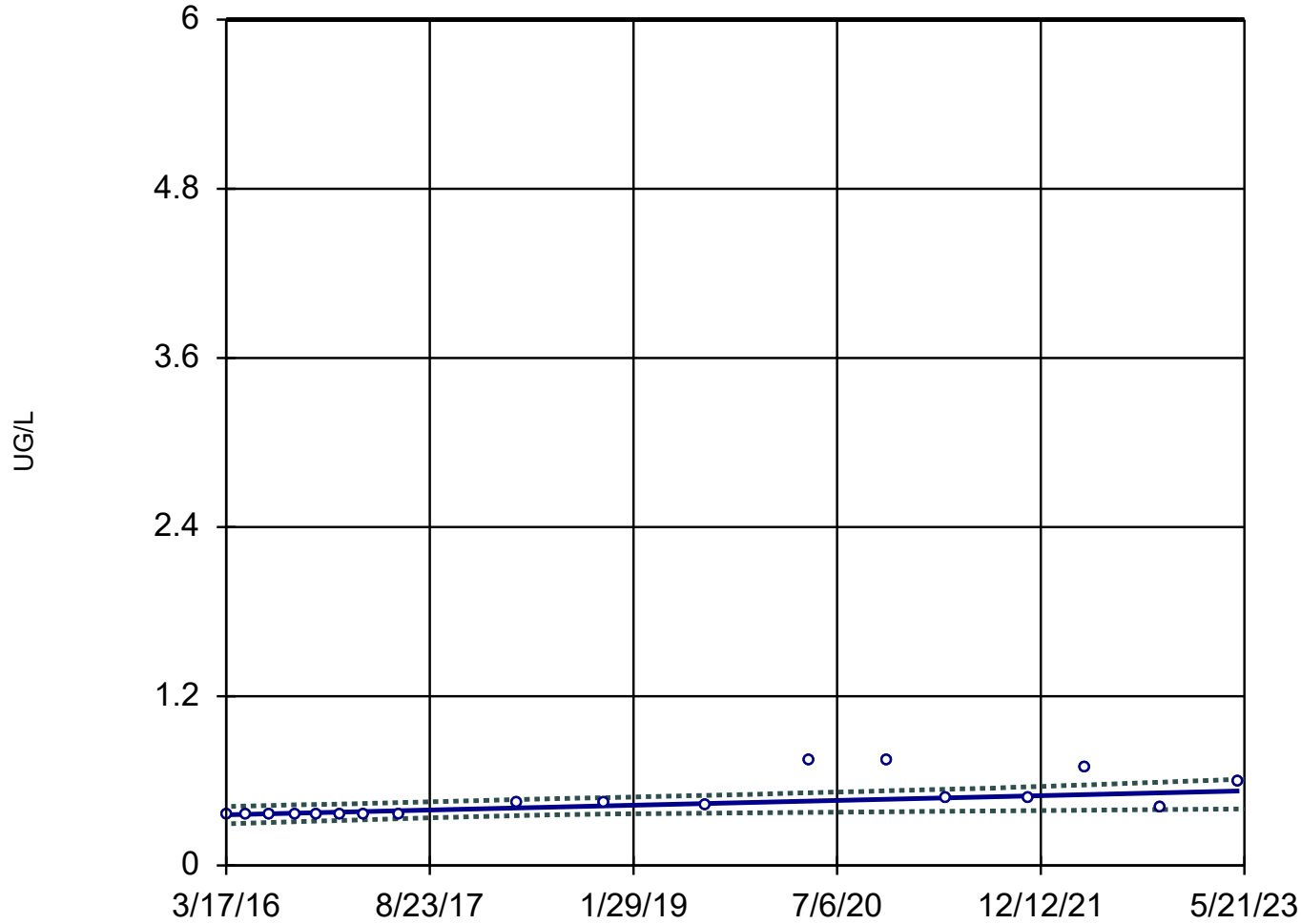
Confidence band is
below GWPS (5).

Constituent: CADMIUM, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 18

Slope = 0.0237
units per year.

Mann-Kendall
statistic = 96
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

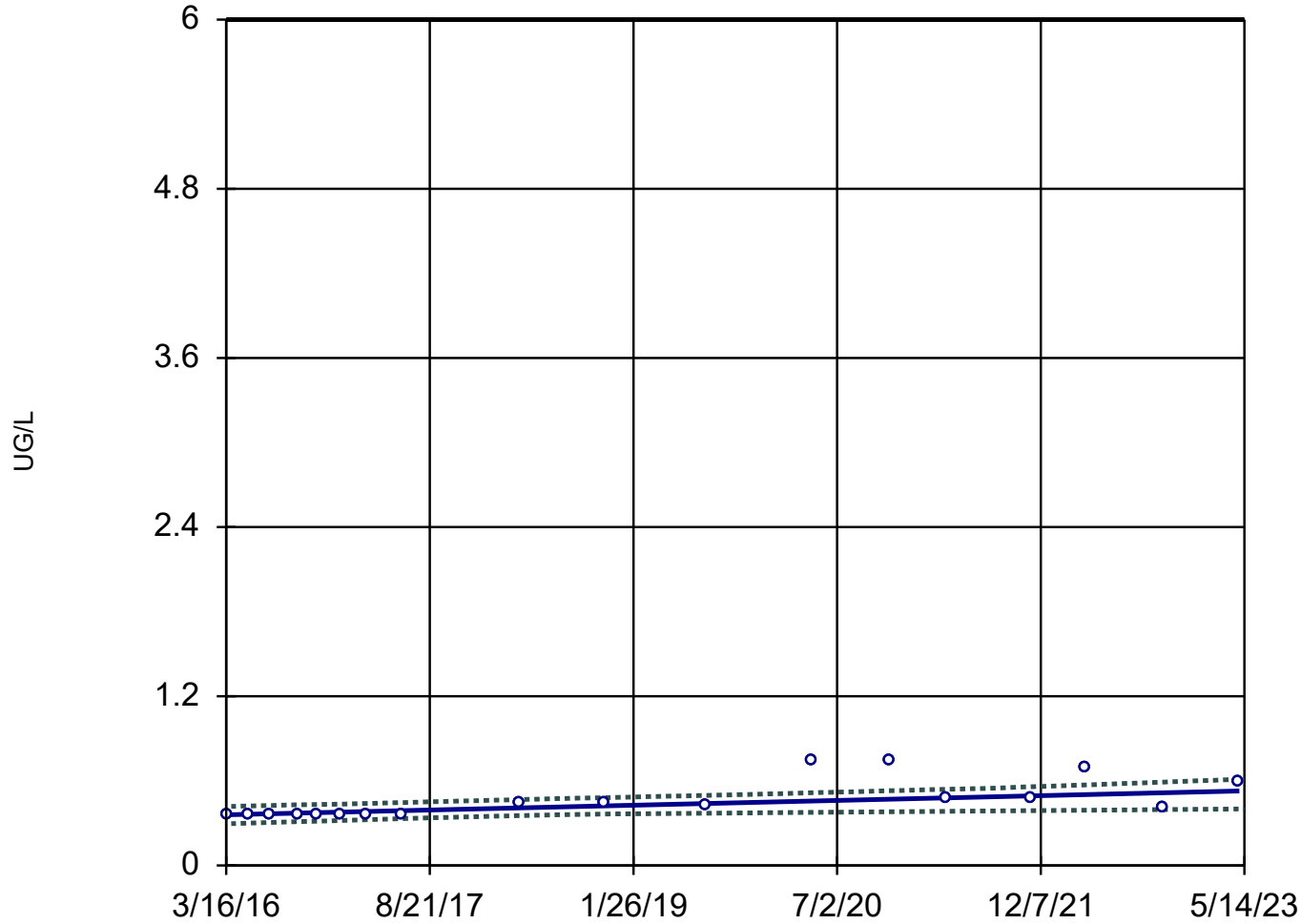
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 18

Slope = 0.0237
units per year.

Mann-Kendall
statistic = 96
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

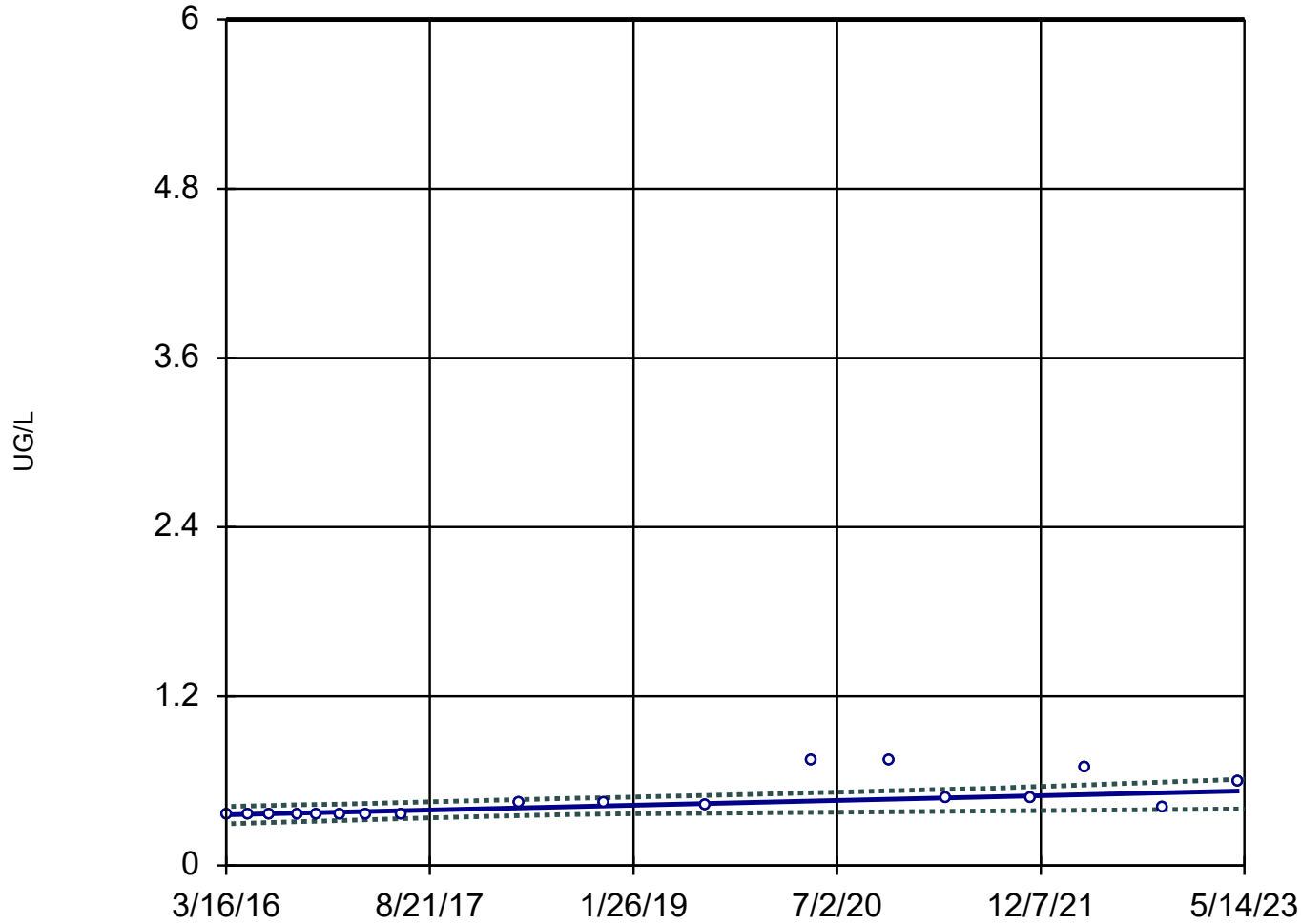
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 18

Slope = 0.0237
units per year.

Mann-Kendall
statistic = 96
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

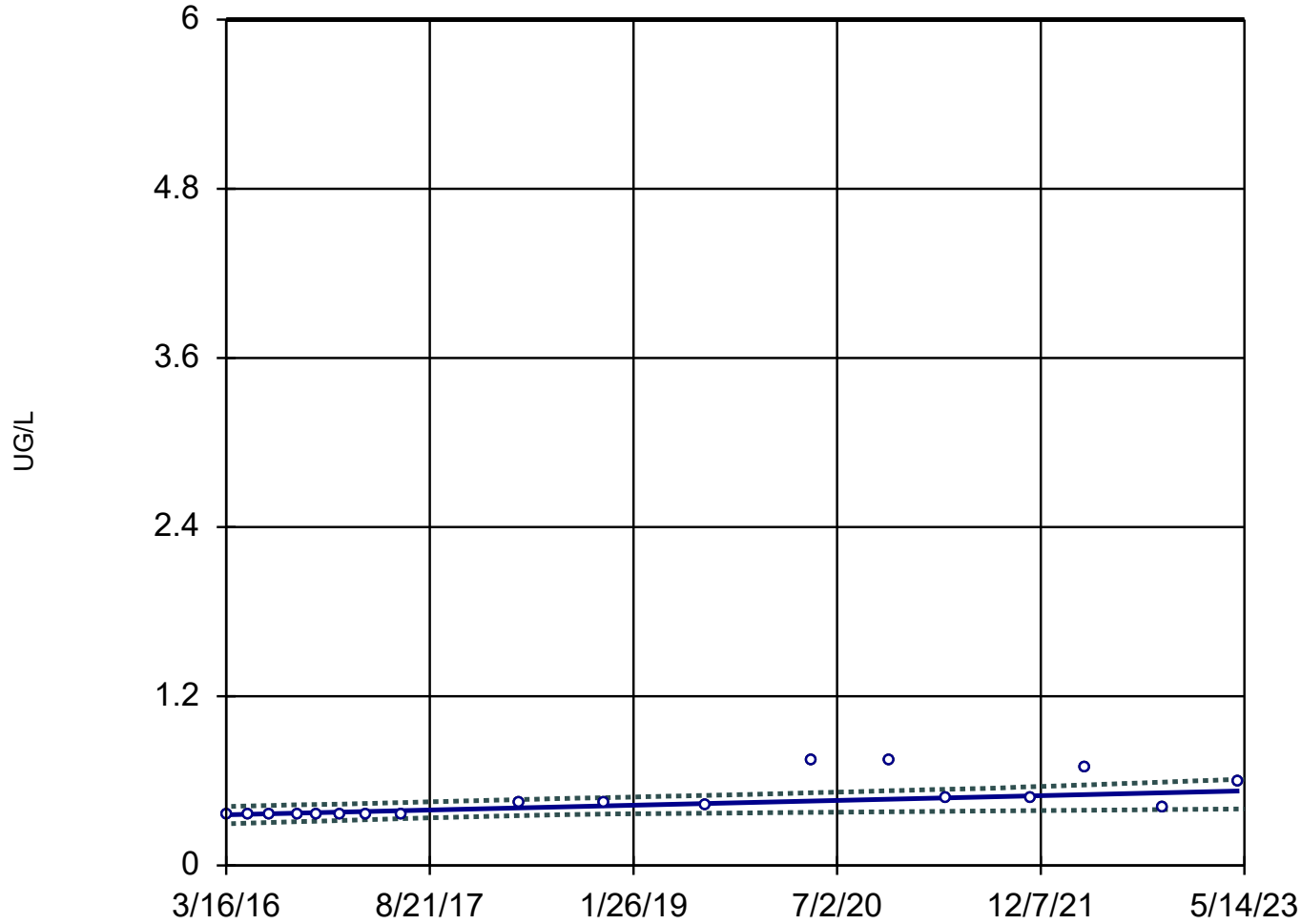
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 18

Slope = 0.0237
units per year.

Mann-Kendall
statistic = 96
critical = 63

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

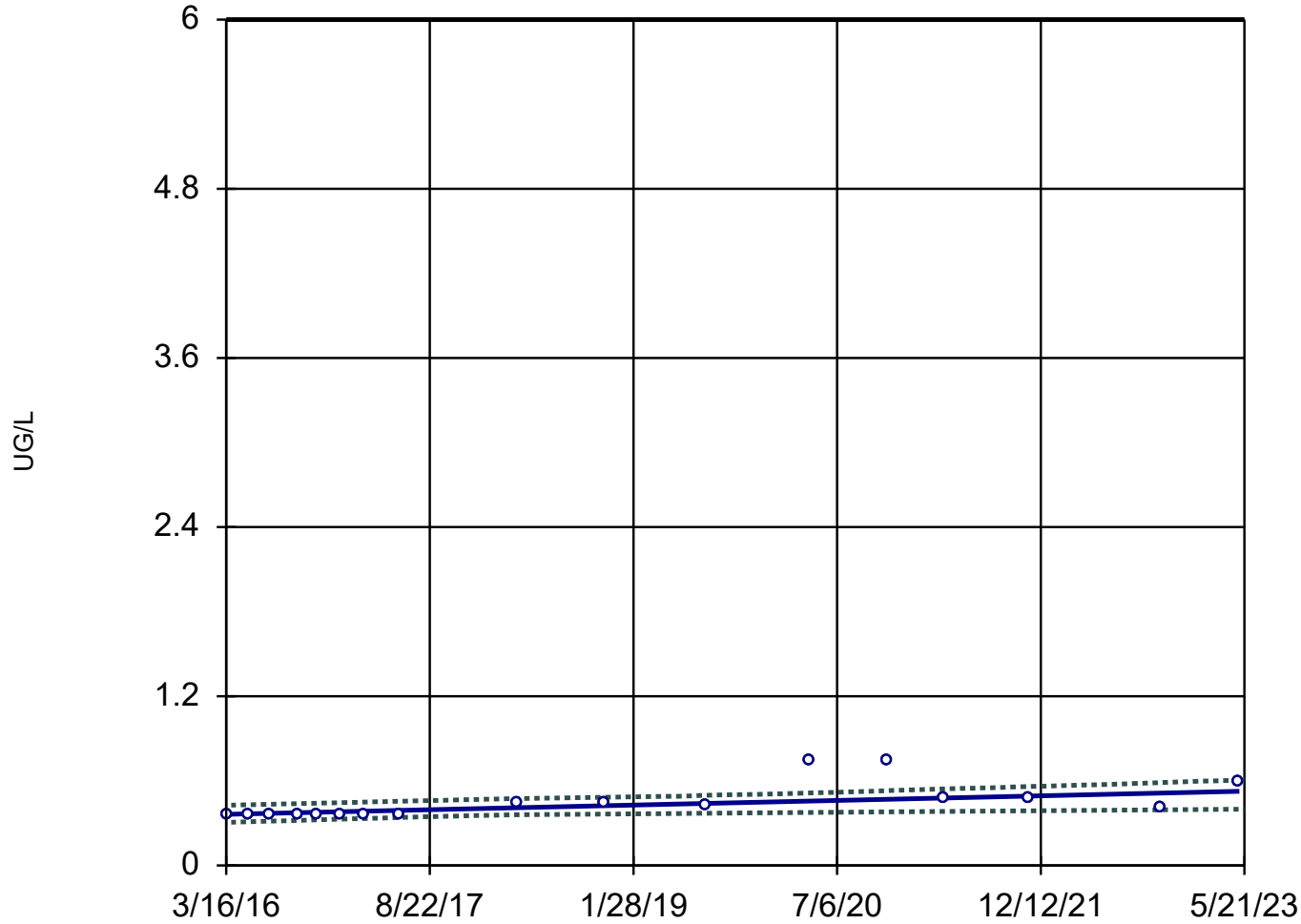
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 17

Slope = 0.02291
units per year.

Mann-Kendall
statistic = 87
critical = 58

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

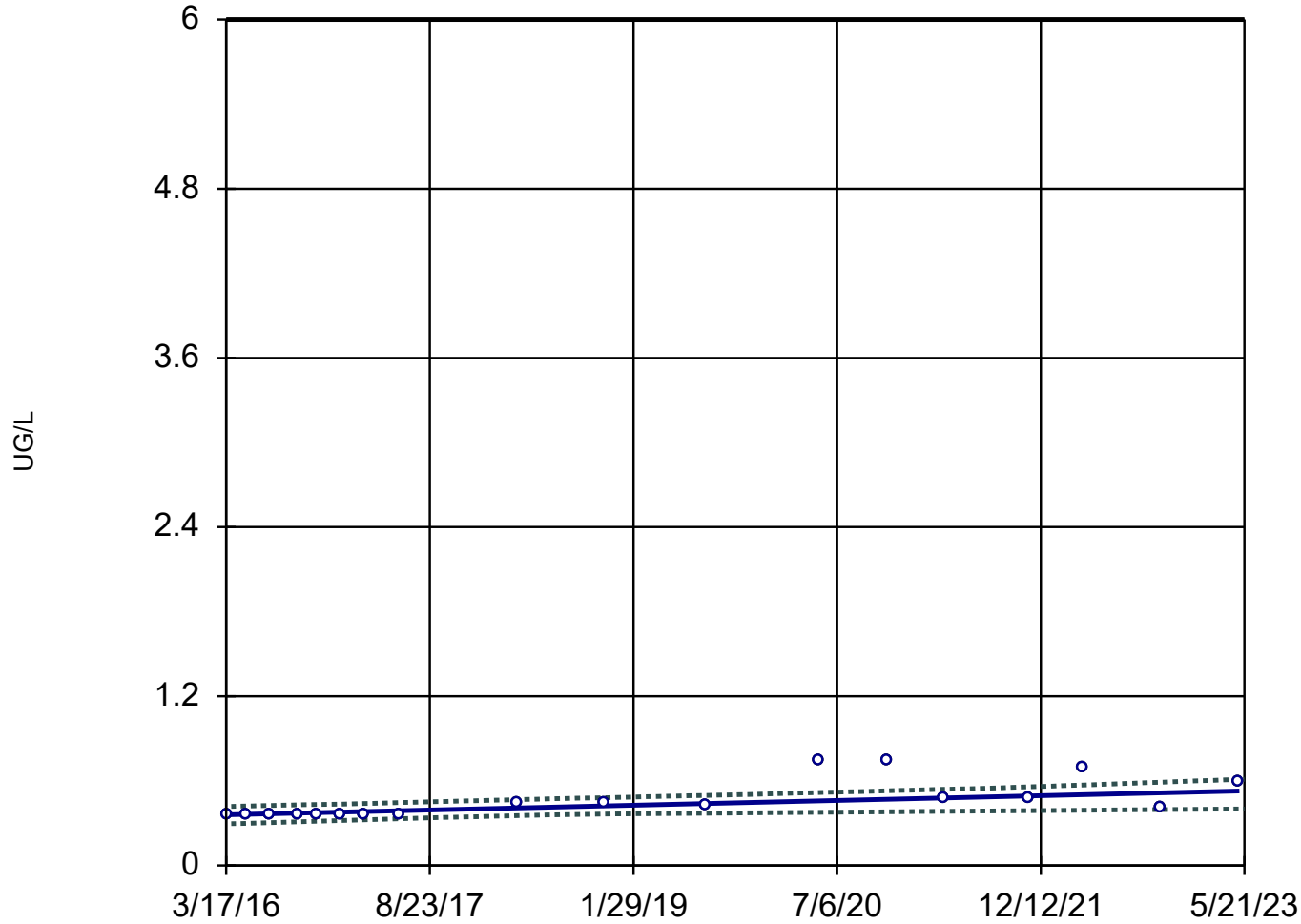
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

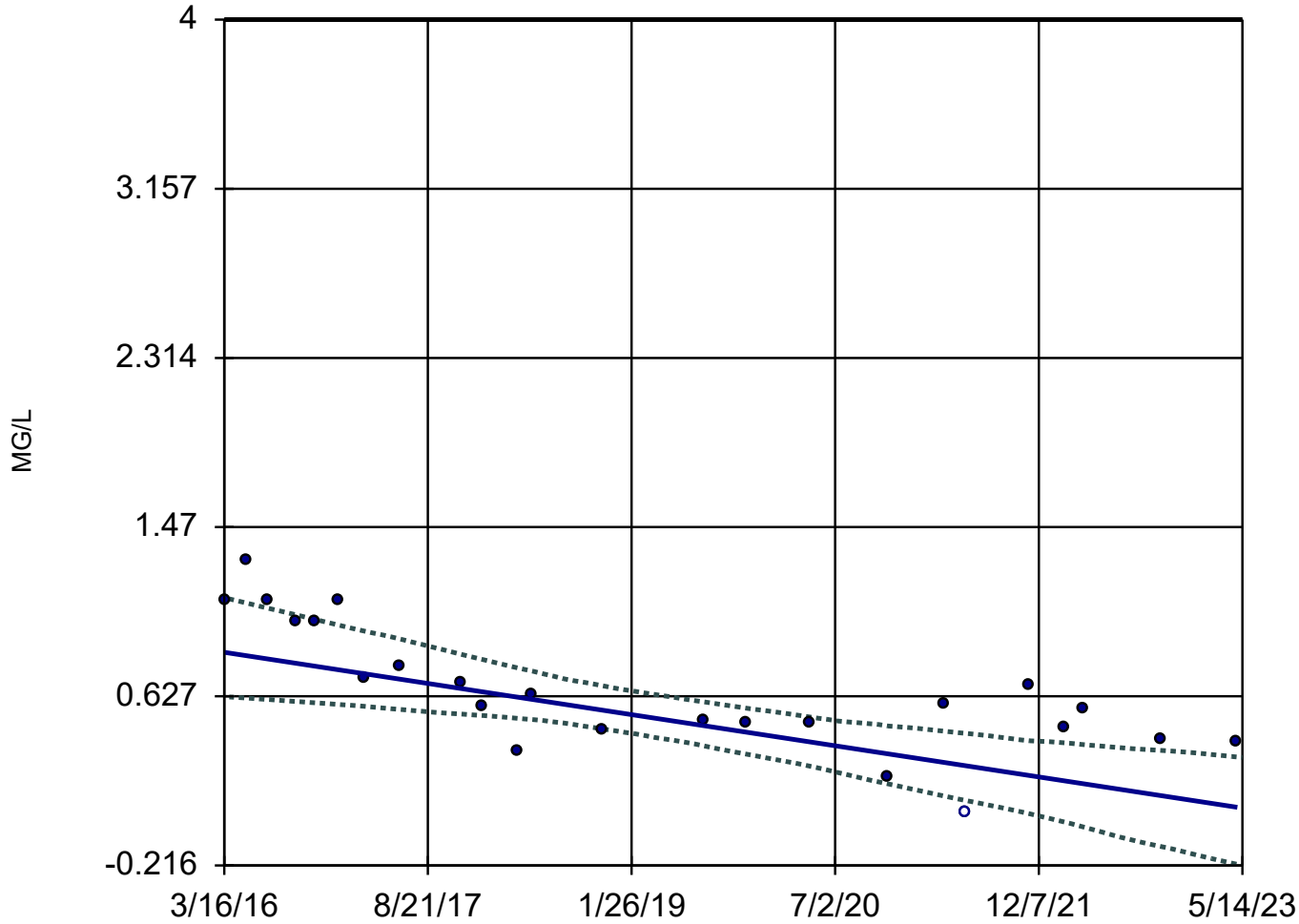
Sen's Slope and 95% Confidence Band

S-UMW-6D



Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 24

Slope = -0.1084
units per year.

Mann-Kendall
statistic = -174
critical = -95

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

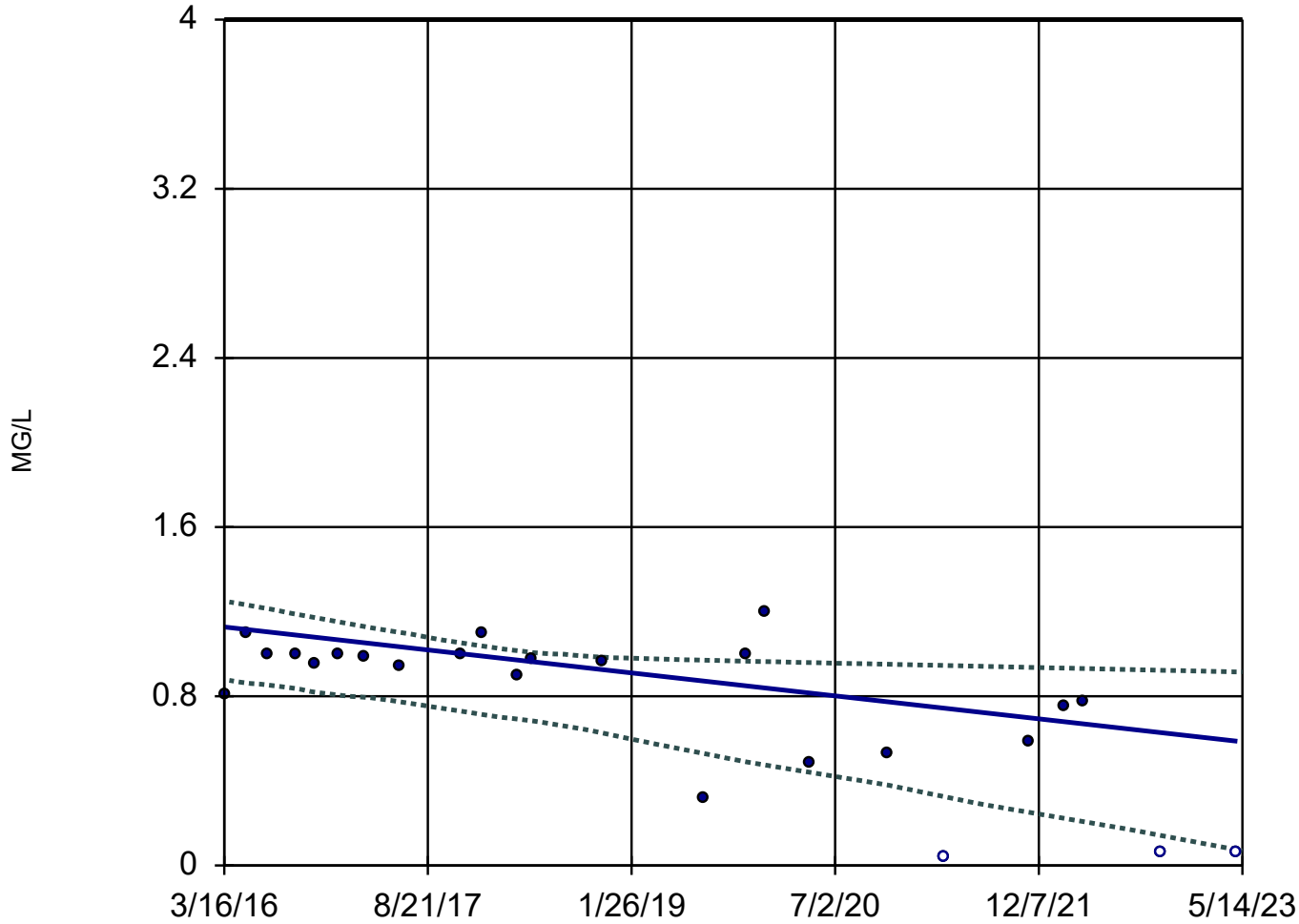
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

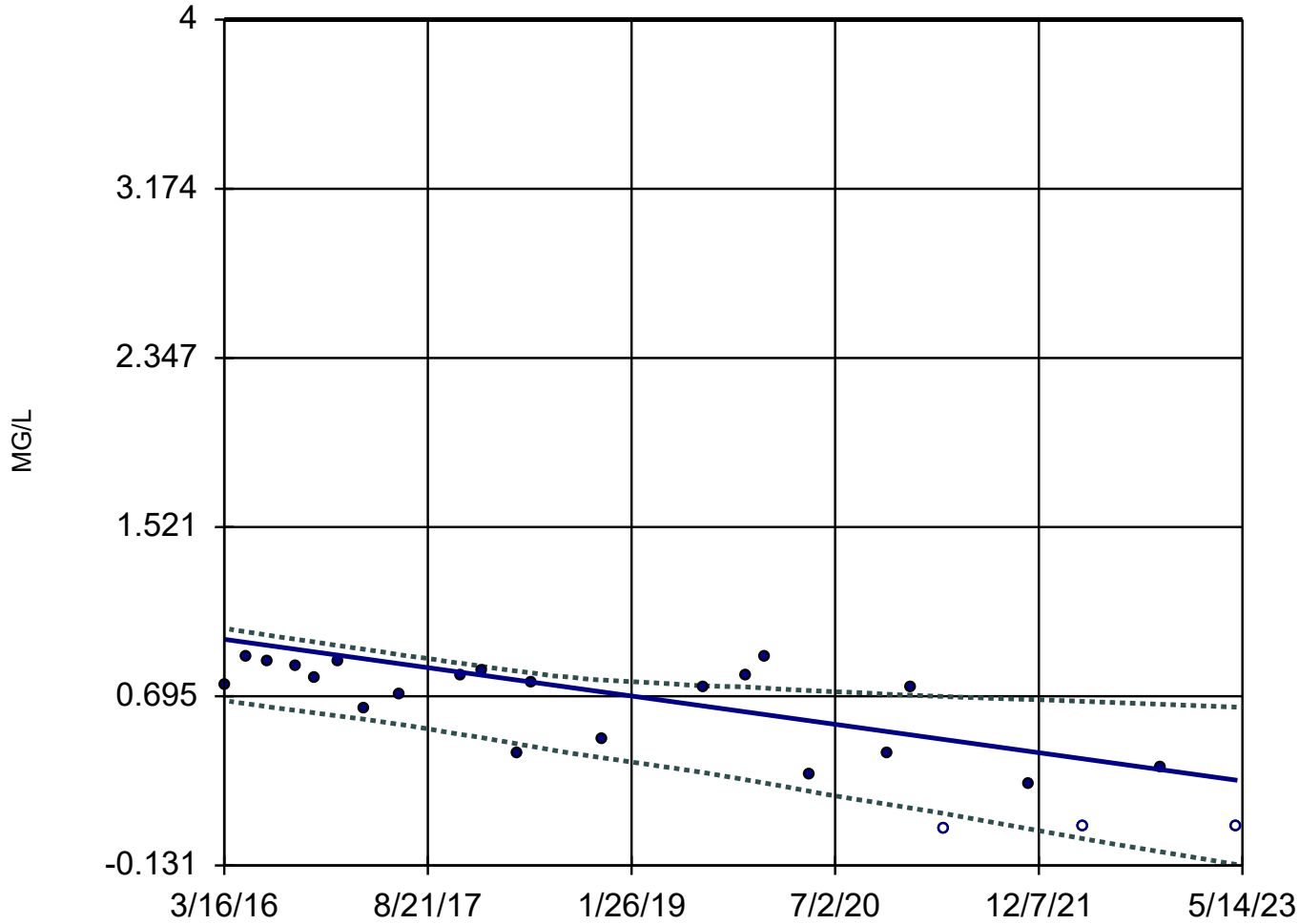
Sen's Slope and 95% Confidence Band

S-UMW-3D



Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 24

Slope = -0.09654
units per year.

Mann-Kendall
statistic = -147
critical = -95

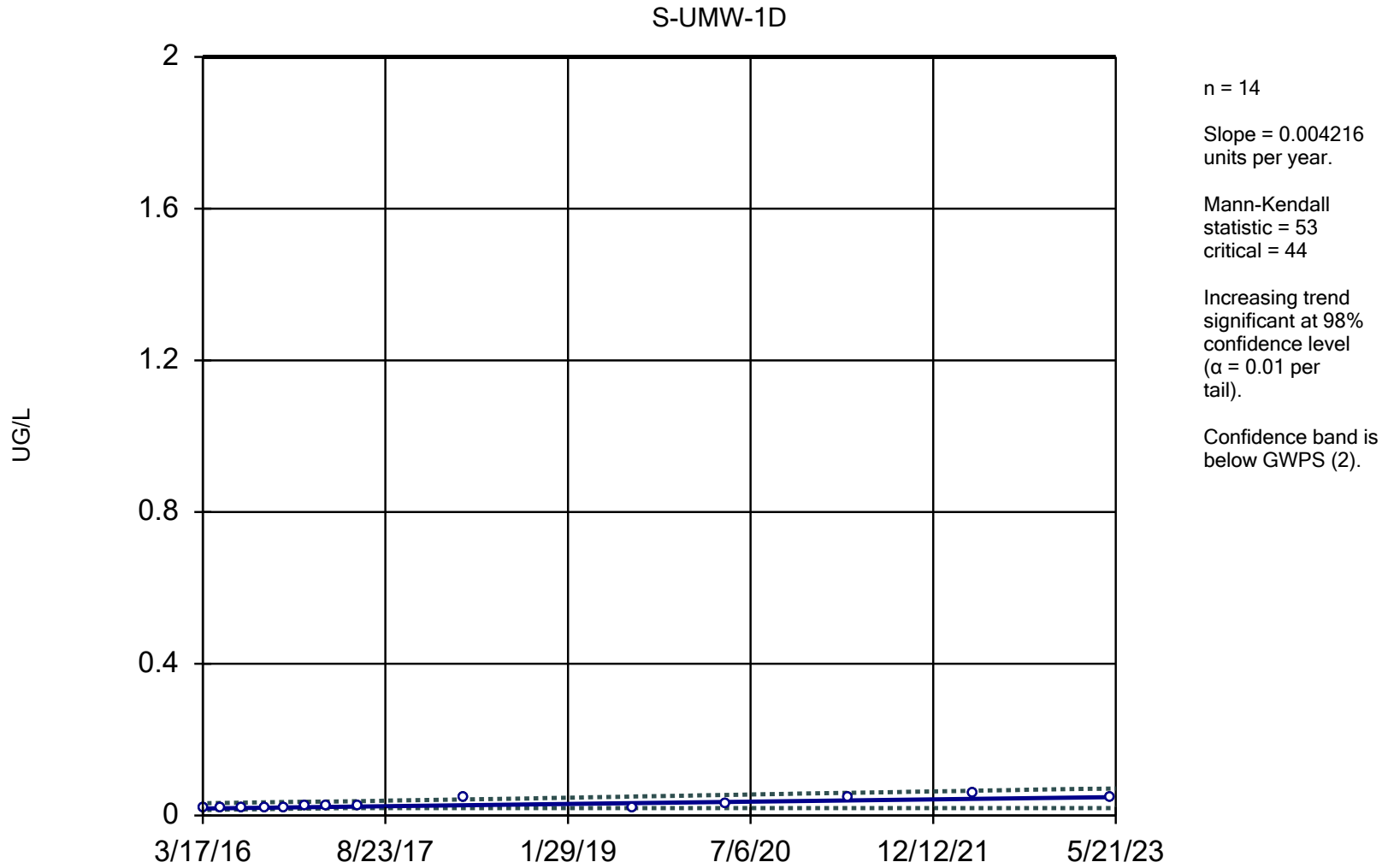
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/31/2023 9:19 AM View: Assessment Monitoring

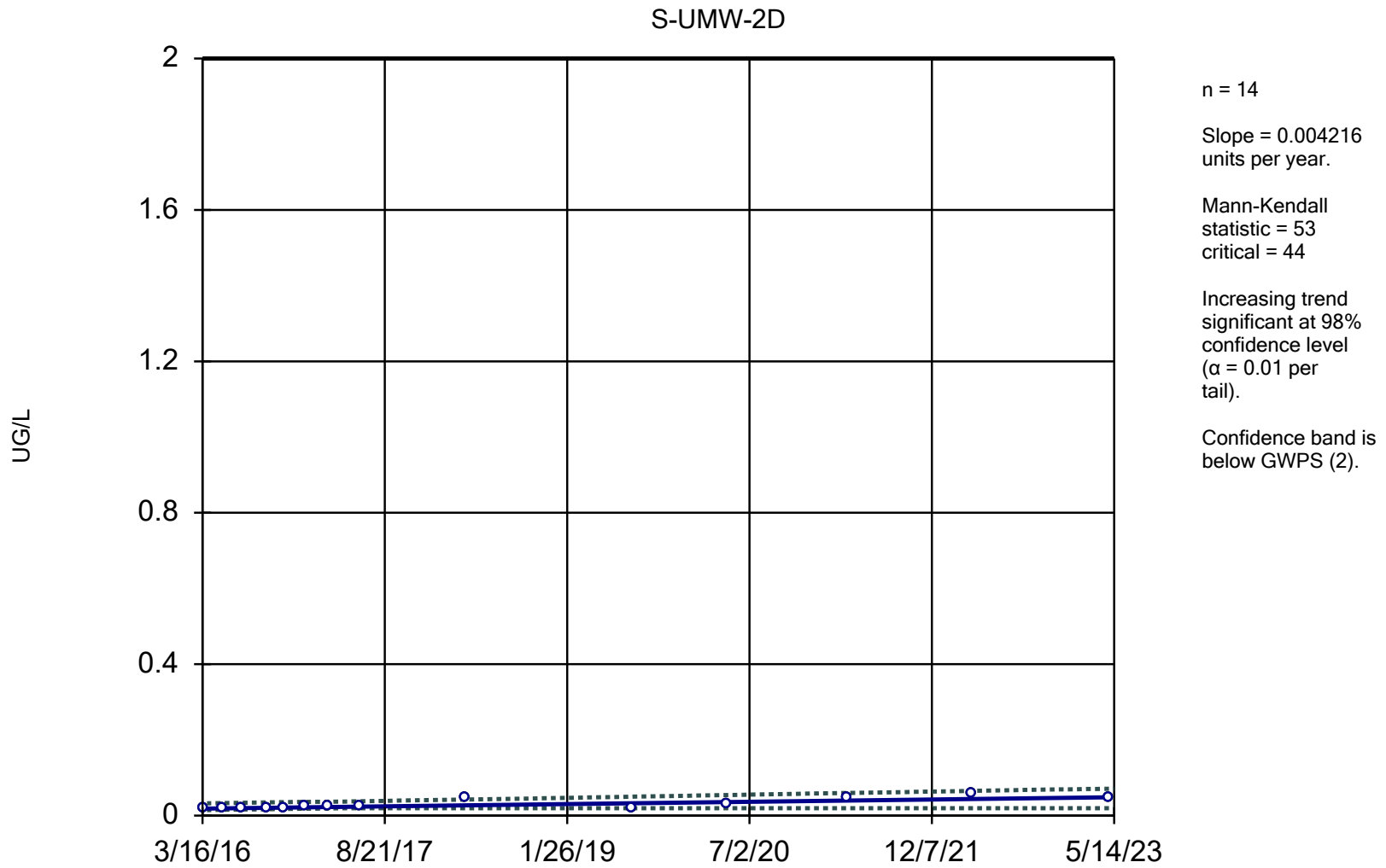
Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band



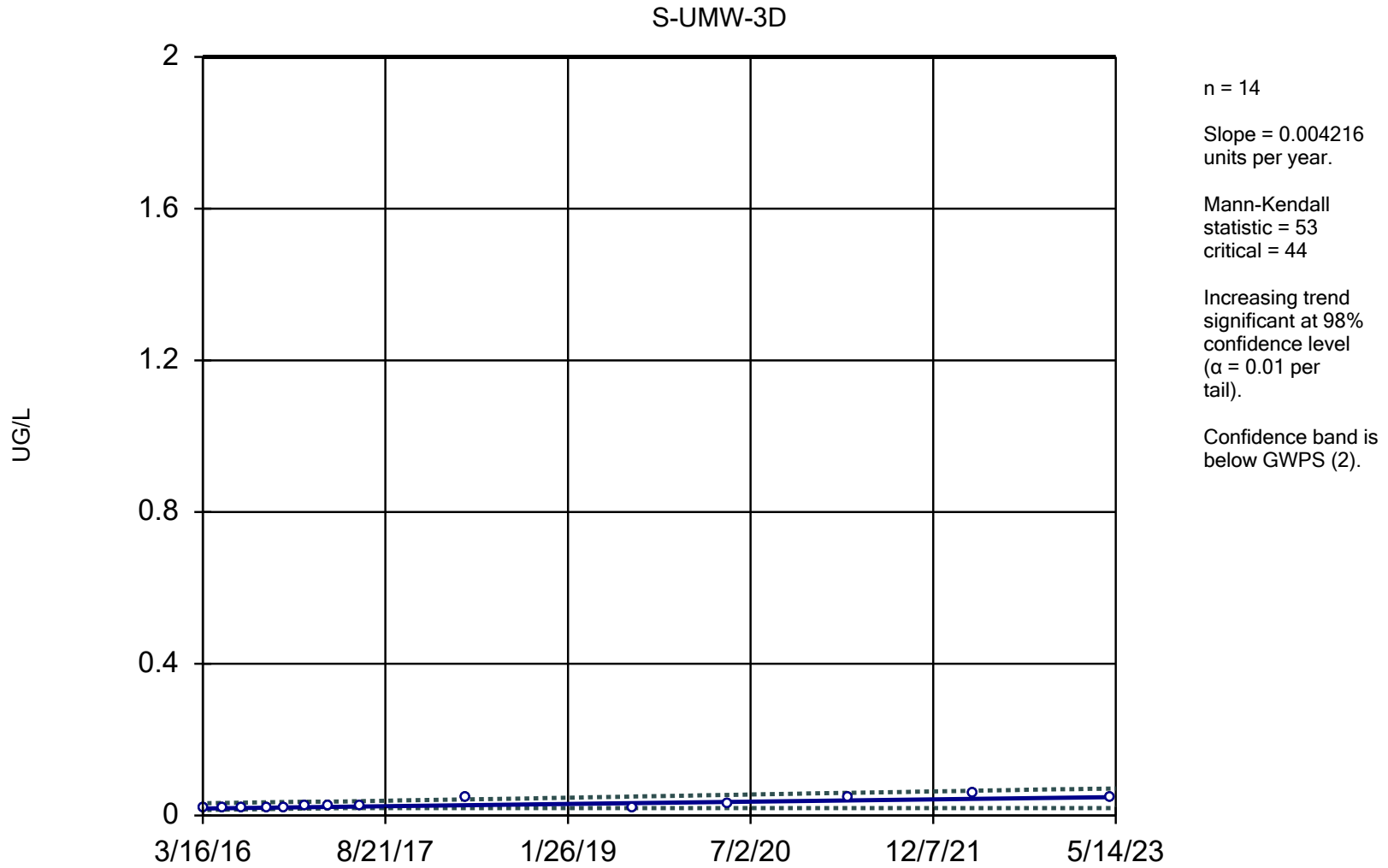
Constituent: MERCURY, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring
Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring
Sioux E.C. Client: Ameren Data: SEC DATA

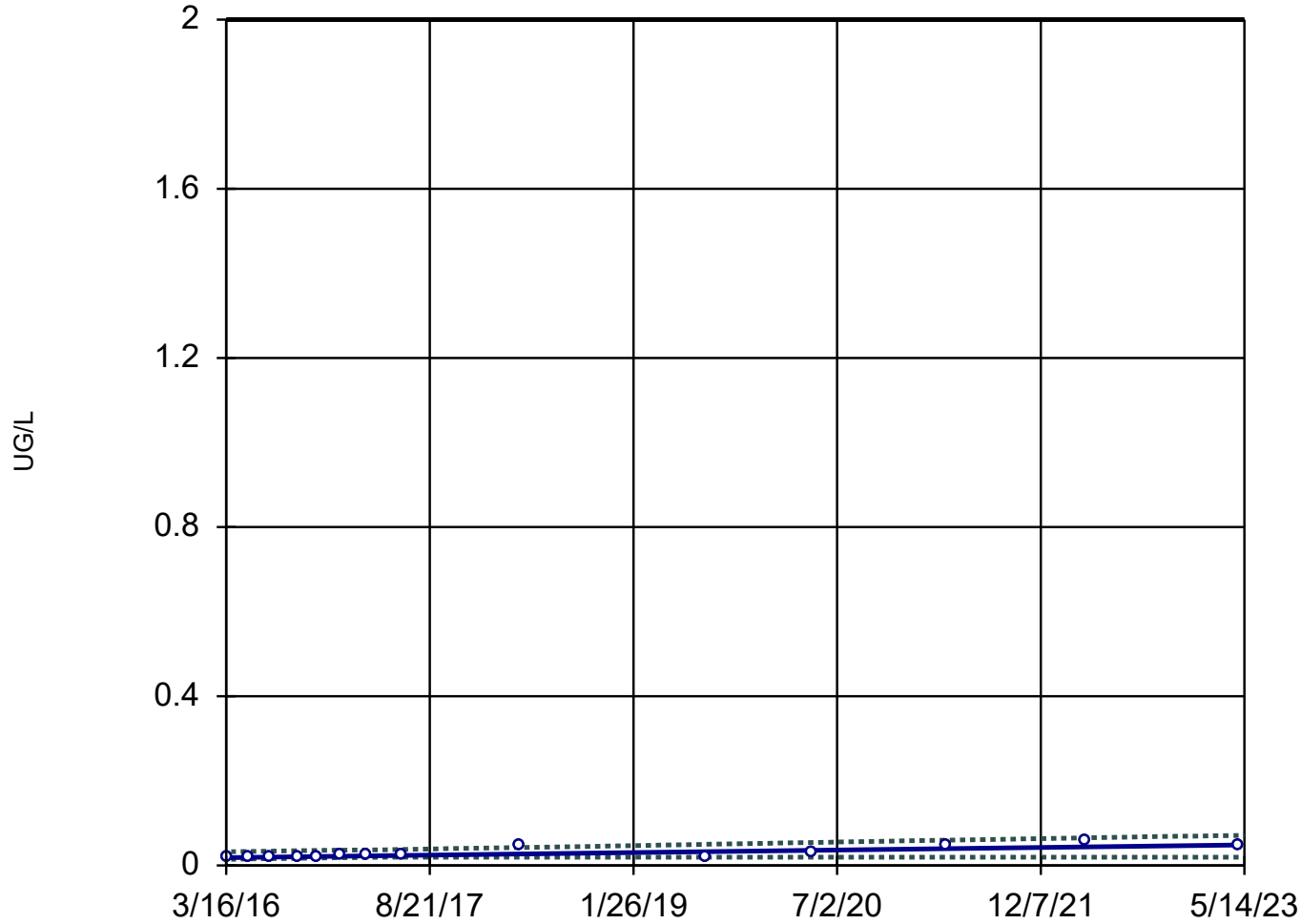
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring
Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 14

Slope = 0.004216
units per year.

Mann-Kendall
statistic = 53
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

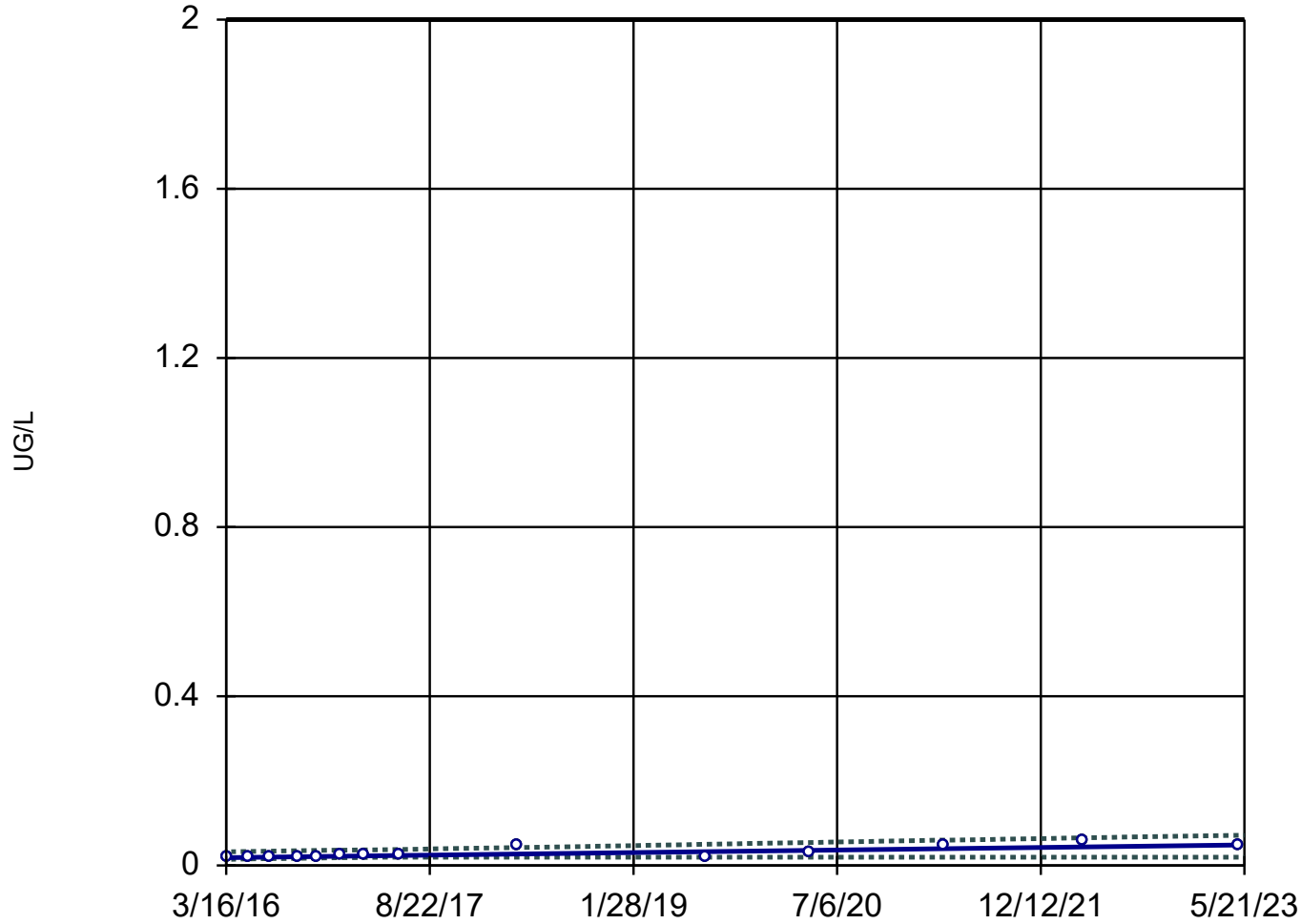
Confidence band is
below GWPS (2).

Constituent: MERCURY, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 14

Slope = 0.004223
units per year.

Mann-Kendall
statistic = 53
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

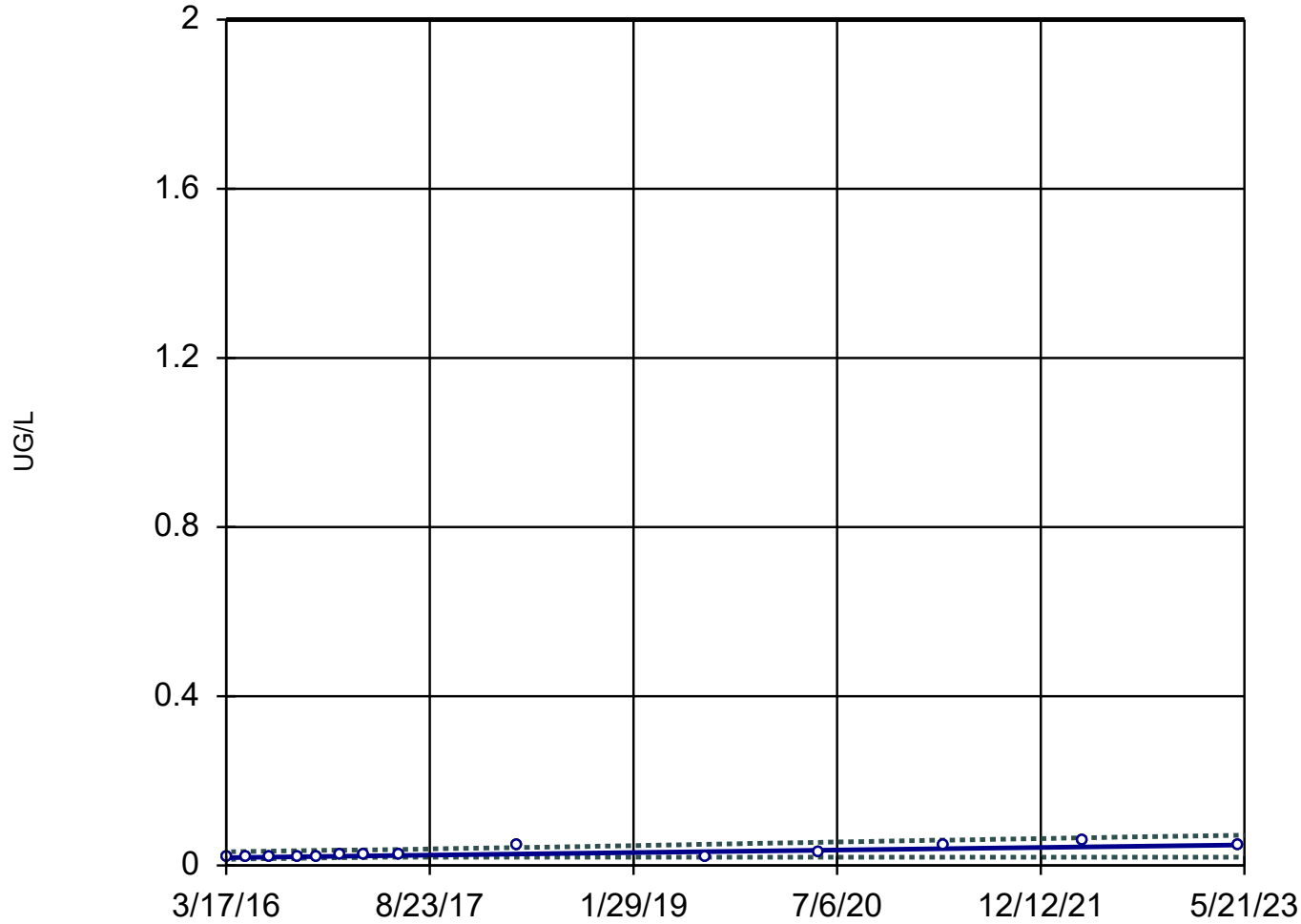
Confidence band is
below GWPS (2).

Constituent: MERCURY, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

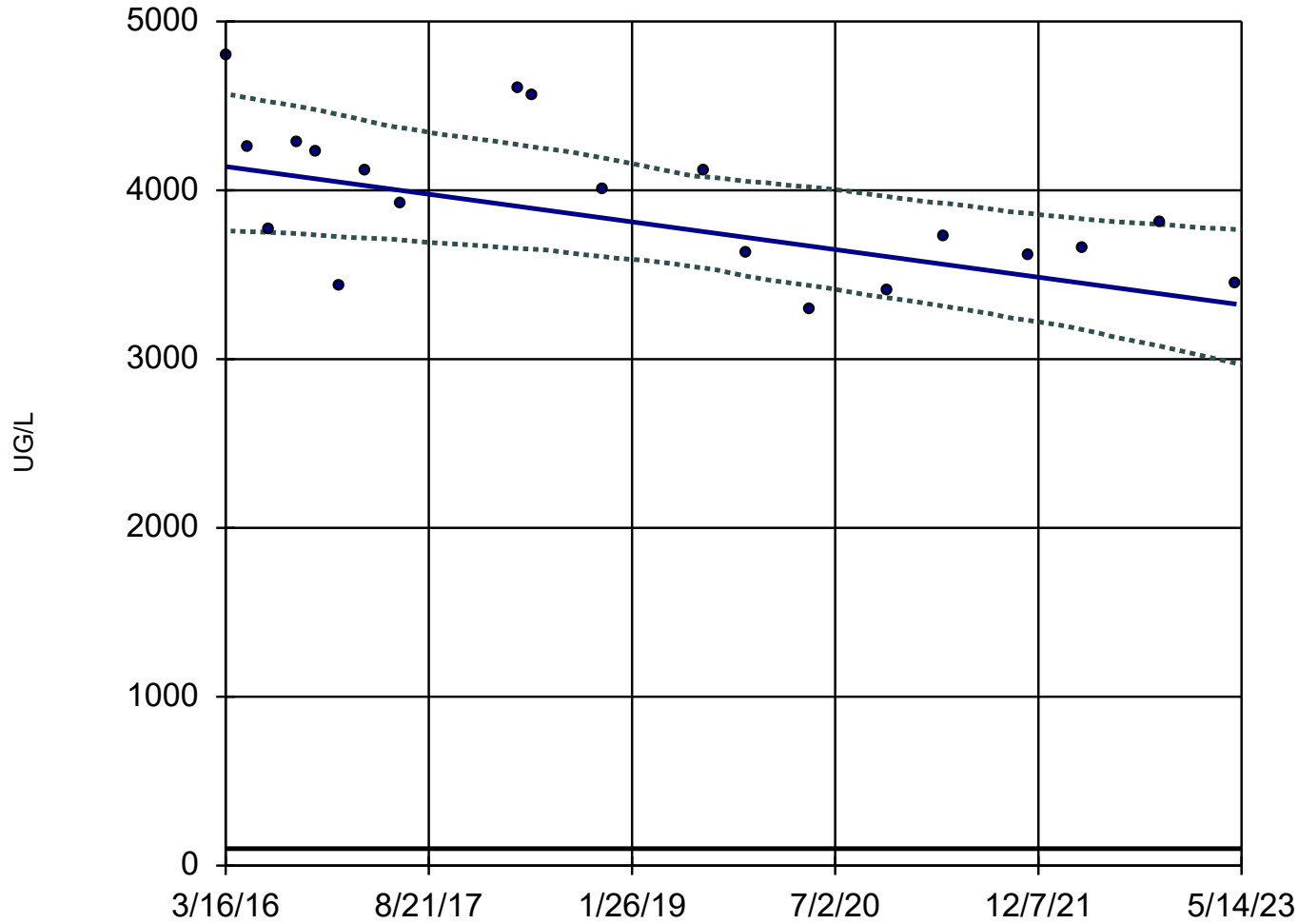
Sen's Slope and 95% Confidence Band

S-UMW-6D



Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 20

Slope = -114.4
units per year.

Mann-Kendall
statistic = -83
critical = -73

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

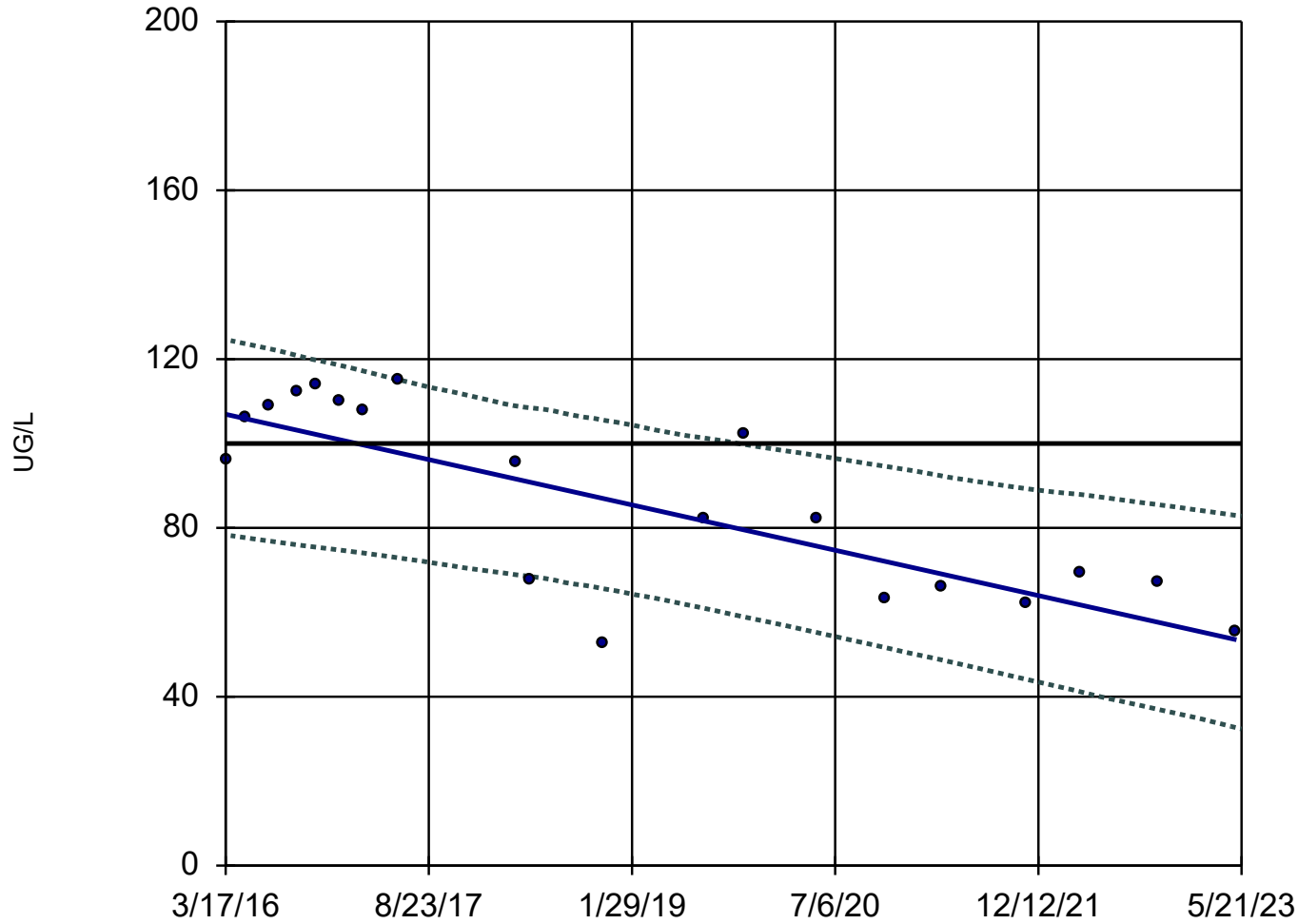
Confidence band is
above GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/31/2023 9:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 20

Slope = -7.479
units per year.

Mann-Kendall
statistic = -98
critical = -73

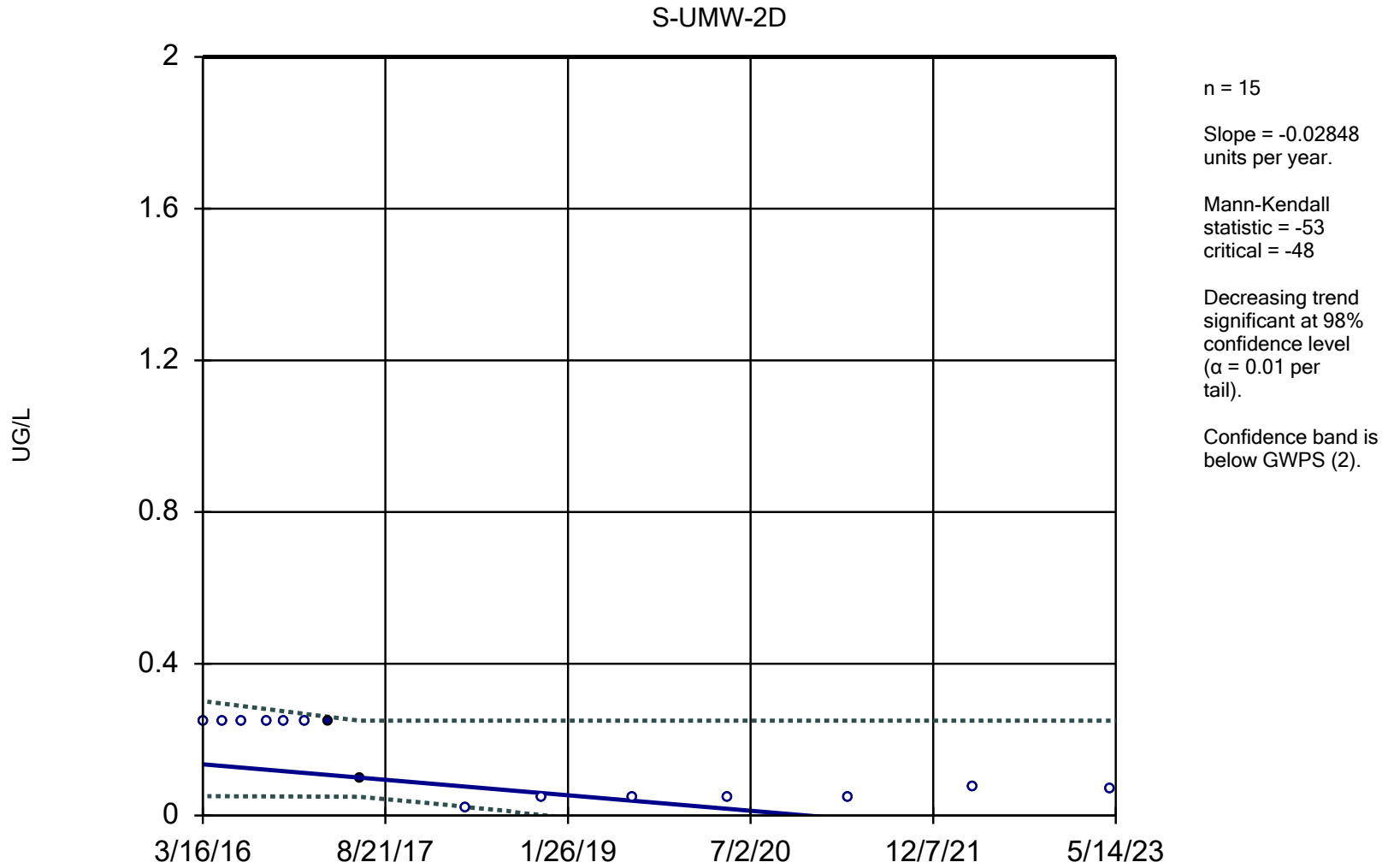
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 11/20/19.

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/31/2023 9:24 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

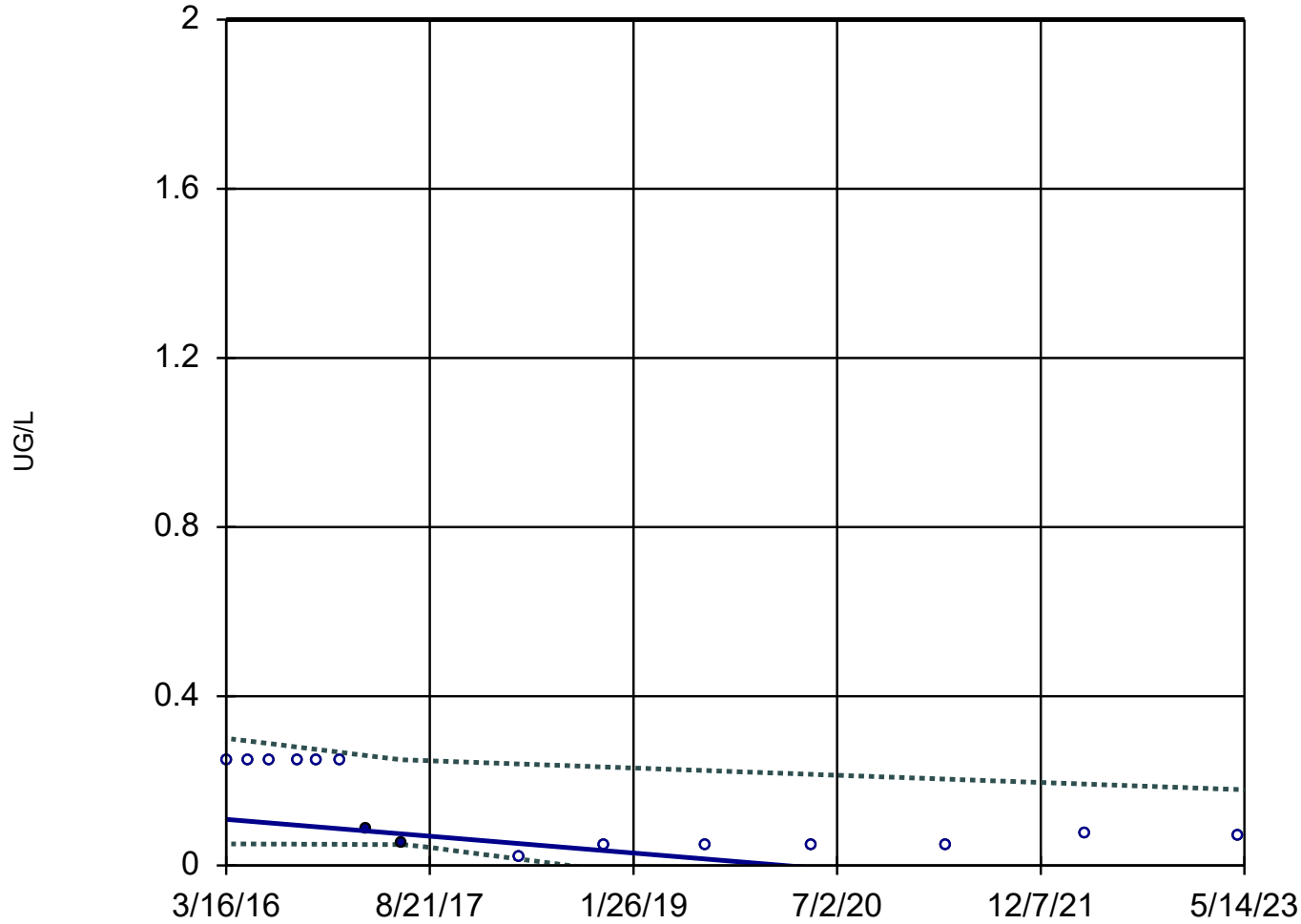
Sen's Slope and 95% Confidence Band



Constituent: THALLIUM, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring
Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 15

Slope = -0.02777
units per year.

Mann-Kendall
statistic = -55
critical = -48

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (2).

Constituent: THALLIUM, TOTAL Analysis Run 7/31/2023 9:20 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 7/31/2023, 9:21 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-UMW-1D	-0.00108	-5	-48	No	15	46.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.002711	25	48	No	15	66.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.004573	38	44	No	14	85.71	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.004442	57	48	Yes	15	93.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.004413	49	48	Yes	15	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.004413	49	48	Yes	15	100	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-1D	0.111	97	63	Yes	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-2D	0.3417	127	73	Yes	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.04769	38	68	No	19	10.53	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.01508	28	68	No	19	21.05	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-5D	-0.0388	-73	-73	No	20	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.0303	68	73	No	20	10	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-1D	0.1101	1	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-2D	-7.549	-102	-73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.5236	-38	-73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-4D	-4.026	-104	-73	Yes	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-5D	0.9556	15	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	-0.5232	-25	-63	No	18	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0	13	48	No	15	93.33	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0	-14	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.001879	46	58	No	17	88.24	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.07263	121	68	Yes	19	36.84	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-3D	0.1837	88	68	Yes	19	26.32	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-4D	0.3224	94	68	Yes	19	21.05	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.02846	74	68	Yes	19	42.11	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.001908	47	68	No	19	78.95	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.005081	4	48	No	15	46.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	-0.00...	-7	-48	No	15	53.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	-0.00901	-11	-53	No	16	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0	3	53	No	16	56.25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	-0.01518	-16	-53	No	16	43.75	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.006052	9	53	No	16	56.25	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-1D	0.0237	96	63	Yes	18	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-2D	0.0237	96	63	Yes	18	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-3D	0.0237	96	63	Yes	18	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-4D	0.0237	96	63	Yes	18	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-5D	0.02291	87	58	Yes	17	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UMW-6D	0.02371	96	63	Yes	18	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	-0.00...	-39	-84	No	22	4.545	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	-0.1084	-174	-95	Yes	24	4.167	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	-0.07573	-118	-95	Yes	24	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	-0.09654	-147	-95	Yes	24	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	-0.00...	-12	-84	No	22	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.001997	11	84	No	22	4.545	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-1D	0.1485	53	53	No	16	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-2D	0.1447	49	53	No	16	75	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 7/31/2023, 9:21 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>
LEAD, TOTAL (UG/L)	S-UMW-3D	0.05135	5	53	No	16	62.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-4D	0.09421	12	53	No	16	56.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-5D	0.08388	13	53	No	16	81.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-6D	0.1488	53	53	No	16	87.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	-0.07256	-8	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-0.4519	-28	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-0.2683	-17	-73	No	20	5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-0.5975	-53	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-0.6946	-45	-73	No	20	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	0.1804	5	68	No	19	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.004216	53	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.004216	53	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.004216	53	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.004216	53	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.004223	53	44	Yes	14	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.004221	53	44	Yes	14	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	0.3104	12	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	19.69	23	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	-114.4	-83	-73	Yes	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	-84.46	-24	-73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	40.86	32	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	-7.479	-98	-73	Yes	20	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.02459	26	58	No	17	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.01629	17	48	No	15	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	0.05864	28	58	No	17	70.59	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.044	48	58	No	17	82.35	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	0.007866	10	58	No	17	76.47	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.02921	35	58	No	17	94.12	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0	19	63	No	18	83.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0	-3	-63	No	18	77.78	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-3D	-0.00...	-41	-63	No	18	22.22	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-4D	-0.00...	-20	-63	No	18	27.78	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0	1	63	No	18	27.78	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0	-1	-63	No	18	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-1D	-0.02964	-46	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-2D	-0.02848	-53	-48	Yes	15	86.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-3D	-0.02777	-55	-48	Yes	15	86.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-4D	-0.02639	-45	-48	No	15	86.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-5D	-0.02572	-32	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-6D	-0.02572	-32	-48	No	15	100	n/a	n/a	0.02	NP

Appendix D

October 2022 Corrective Action Statistical Evaluation



TECHNICAL MEMORANDUM

DATE February 13, 2023

Project No. 153140604

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram, Mark Haddock

EMAIL Jeffrey.Ingram@wsp.com

CORRECTIVE ACTION STATISTICAL EVALUATION SCPA SURFACE IMPOUNDMENT SIOUX ENERGY CENTER, ST. CHARLES COUNTY, MISSOURI

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the October 2022 sampling event for the SCPA Surface Impoundment at the Sioux Energy Center located in St. Charles County, Missouri. As outlined in the remedy selection report for the SCPA, Corrective Action at the SCPA 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 modeling evaluations to document concentration trends following Corrective Action.

Phase 1 of Corrective Action commenced on January 20, 2021, and substantially completed on April 10, 2022 with the installation of the low permeability cover system. The SCPA unit was certified closed on October 14, 2022 and thus the SCPA has transitioned into the post-closure care requirements of the CCR rule effective October 2022 and Phase 2 of Corrective Action has begun. 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 SEC. Corrective Action statistical analyses cannot be completed until a minimum of four (4) sampling events have been collected during the Corrective Action monitoring period and until Phase 1 of remedy is completed. Thus, the statistical evaluation described herein is the first Corrective Action statistical evaluation and is the first event completed following the end of Phase 1. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020), as data collected prior to April 2020 was collected during active conditions at the SCPA, prior to the cessation of CCR materials being added to the SCPA and is thus 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 antimony, beryllium, chromium, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling event, they were not re-sampled during the subsequent 2020 semi-annual sampling events in May and November

2020. Like the 2020 sampling event, all Appendix IV parameters were analyzed during the April 2021 event, and several constituents (antimony, lead, mercury, and thallium) were not detected above the PQL during the April 2021 sampling event and therefore, were not collected during the November 2021 sampling event. As with previous sampling events, all Appendix IV parameters were analyzed during the March-April 2022 sampling event, and several constituents (arsenic, beryllium, chromium, lead, mercury, thallium) were not detected above the PQL during the March-April 2022 sampling event, and therefore, were not collected during the October 2022 sampling event.

Confidence intervals have been calculated for each Appendix IV constituent that has at least four (4) data points starting in April 2020. These include: arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, molybdenum, radium 226+228 and selenium. The remaining constituents of antimony, mercury, and thallium do not have the minimum number of applicable data points required to calculate confidence intervals and will be further evaluated once they have the minimum four (4) results.

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.

- Beryllium
 - LMW-6S at 1.2 micrograms per liter ($\mu\text{g/L}$) on 4/14/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent beryllium results at the well and is an outlier.
- Cadmium
 - PZ-1S at 3.5 $\mu\text{g/L}$ on 4/29/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent cadmium results at the well and is an outlier.
- Chromium
 - BMW-1S at Non-Detect (ND) on 4/22/2020. The result is statistically lower than other values at the same well. The low result is not consistent with previous or subsequent chromium results at the well and is an outlier.
 - TP-6D at 2.6 $\mu\text{g/L}$ on 4/8/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent chromium results at the well and is an outlier.
 - TP-8D at 9.4 $\mu\text{g/L}$ on 4/14/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent chromium results at the well and is an outlier.
- Cobalt
 - TP-6S at 2.3 $\mu\text{g/L}$ on 3/29/2022. 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.

- TP-3D at 3.7 J µg/L on 4/1/2022. 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.
 - TP-4D at 3.7 J µg/L on 4/1/2022. 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.
 - TP-5D at 1.9 J µg/L on 4/1/2022. 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.
 - TP-8D at 2.1 J µg/L on 4/4/2022. 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
 - BMW-1S at ND on 11/8/2021. The result is statistically lower than other values at the same well. The low result is not consistent with previous or subsequent fluoride results at the well and is an outlier.
- Lead
 - TP-2D at 7.7 J µg/L on 4/14/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent lead results at the well and is an outlier.
- Lithium
 - PZ-1S at 21.6 µg/L on 4/29/2020. The result was statistically higher than other values at the same well. The high result is not consistent with previous or subsequent lithium results at the well and is an outlier.
 - BMW-1S, BMW-3S, LMW-5S, LMW-6S, TP-8D, and PZ-1S at 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). Based on review of historical data and professional judgement, these results are considered outliers.
- Molybdenum
 - TP-2D at 2.4 J µg/L on 4/29/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent molybdenum results at the well and is an outlier.
 - LMW-6S at 2.4 J µg/L on 11/11/2020 The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent molybdenum results at the well and is an outlier.
 - BMW-1S, BMW-3S, TP-6S and UG-3 at ND on 11/16/2020 and 11/17/2020. Analysis of the November 2020 sampling event revealed through data validation that molybdenum was detected in the method blank causing the data to be considered non-detects. The resultant values after data

validation (1/2 the practical quantitation limit) are not consistent with historical results and are outliers.

- TP-6S at 6.9 J µg/L on 11/10/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous or subsequent molybdenum results and is an outlier.
- BMW-1S, BMW-3S, LMW-4S, and UG-3 at ND in November 2021. Analysis of the November 2021 sampling event revealed through data validation that molybdenum was detected in the method blank causing the data to be considered non-detects. The resultant value after data validation (1/2 the practical quantitation limit) are not consistent with historical results and are outliers.
- Radium 226 + 228
 - PZ-9D at 1.783 picocuries per liter (pCi/L) on 11/12/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous sampling or subsequent radium 226 + 228 results at the well and is an outlier.
 - BMW-1S at 2.086 pCi/L on 11/16/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous sampling or subsequent radium 226 + 228 results at the well and is an outlier.
 - TP-8D at 1.493 pCi/L on 4/14/2021. The result is statistically higher than other values at the same well. The high result is not consistent with previous sampling or subsequent radium 226 + 228 results at the well and is an outlier.
- Selenium
 - LMW-1S at 29 µg/L on 6/17/2020. The result is statistically higher than other values at the same well. The high result is not consistent with previous sampling or subsequent selenium results at the well and is an outlier.

Following the removal of outliers, statistical analyses were completed using the methods and procedures outlined in the CAGMPs SAP. 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. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S², LMW-2S², LMW-5S², AM-1D², AM-1S², TP-5D, PZ-1S²

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 SCPA, the Sen's Slope / Mann Kendall test cannot be completed. Therefore, no constituent well pairs were determined to have a

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.

² Based on visual (qualitative) review of the data, these data sets are showing an overall downward trend since April 2020.

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 summary above). 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.

This corrective action statistical report notes exceedances of the GWPS for cobalt, lithium and molybdenum. However, these exceedances are likely due to variability in the initial groundwater sampling results during and directly after the closure of the SCPA. This type of variability 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 after closure, as stabilization occurs and supplemental corrective measures are put into service.

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.



Jeffrey Ingram
Senior Consultant, Geologist



Mark Sandfort
Certified Professional Engineer

JSI/MNH

Attachments: Table 1 – SCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output

**Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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	10	0.6933
Barium	µg/L	2000	2000	699
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	0.403
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	28.86
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
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.
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 up through April 2021 from monitoring wells BMW-1D and BMW-3D.

Prepared by: EMS

Checked by: LMS

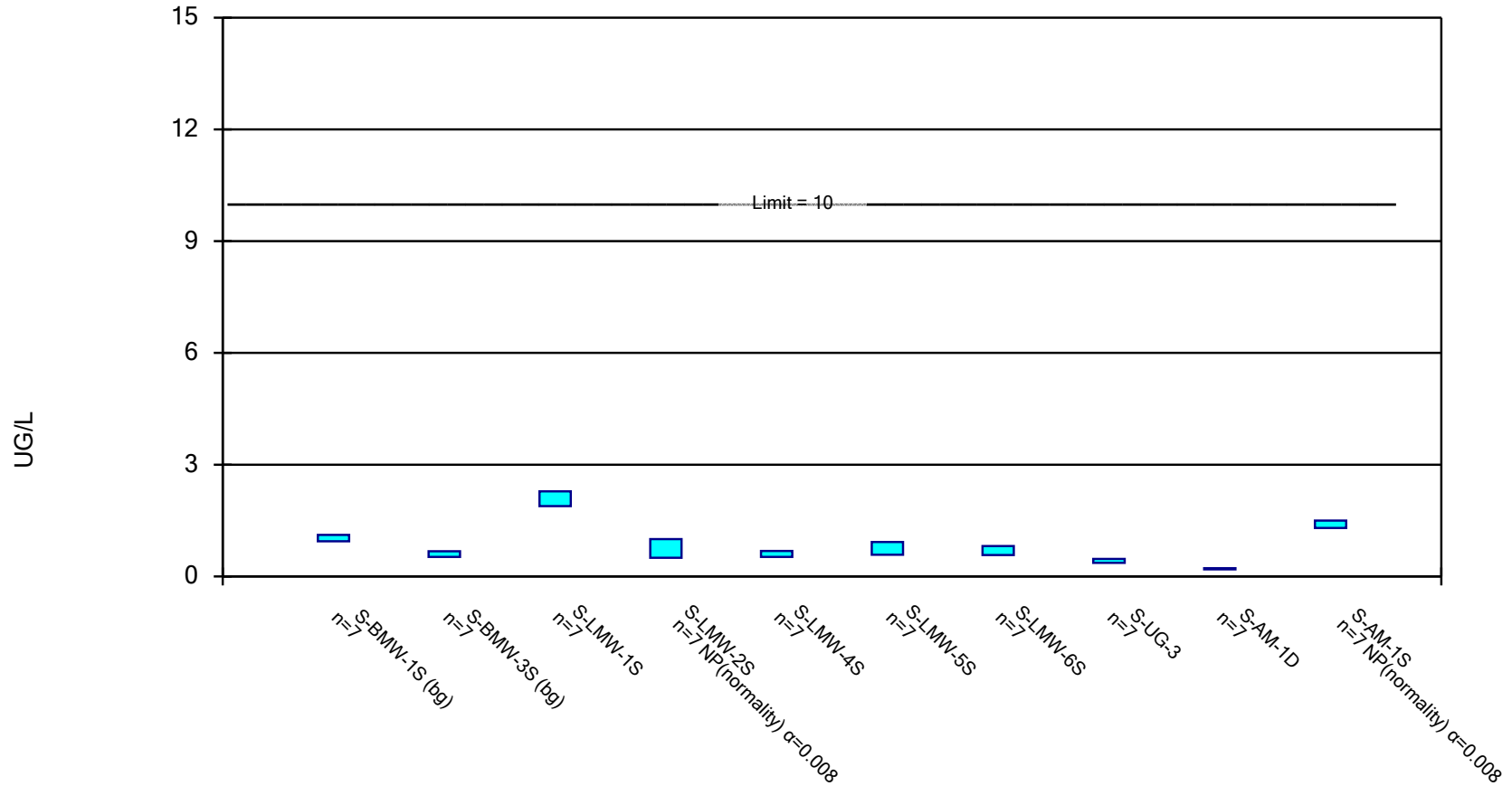
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

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

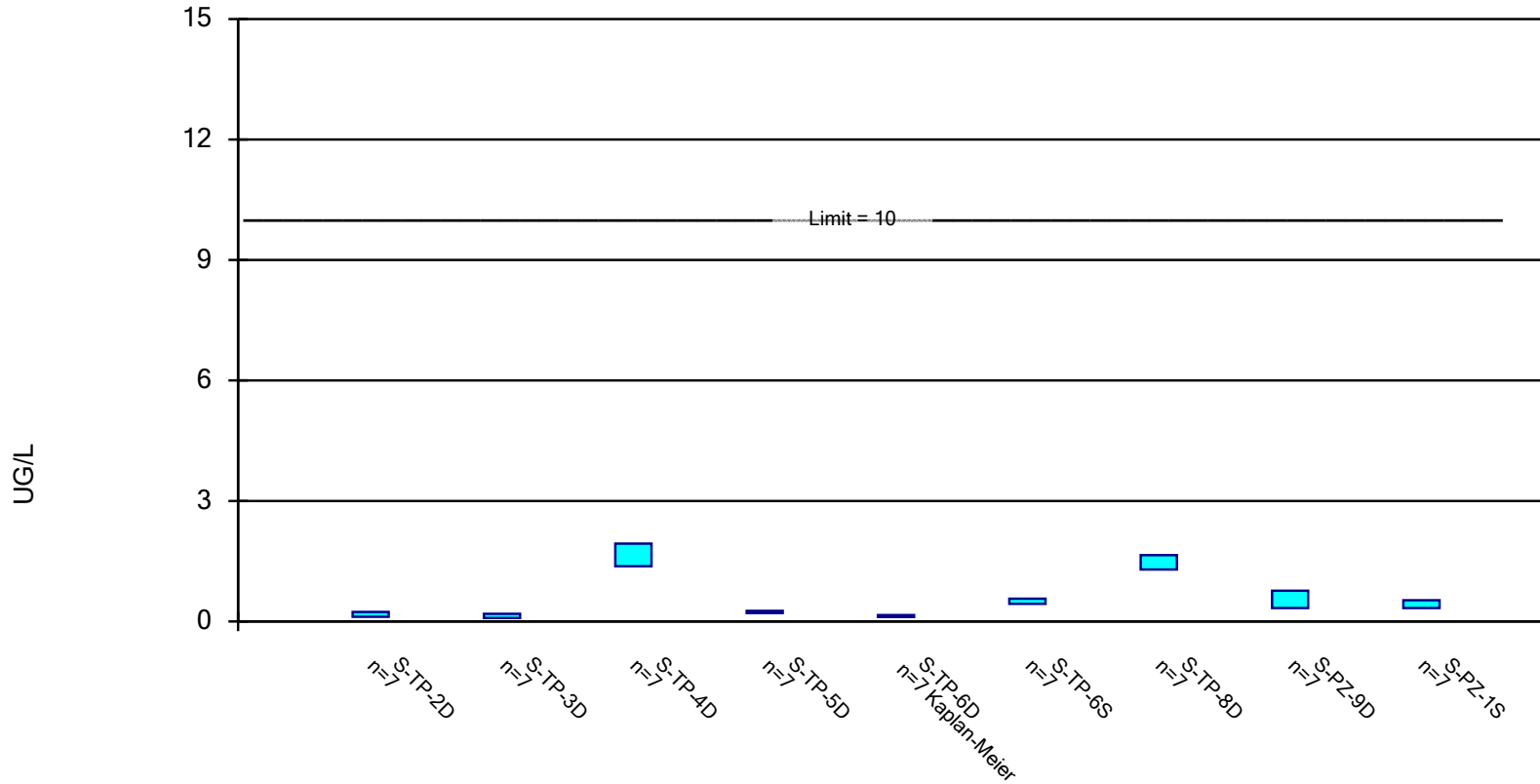


Constituent: ARSENIC, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

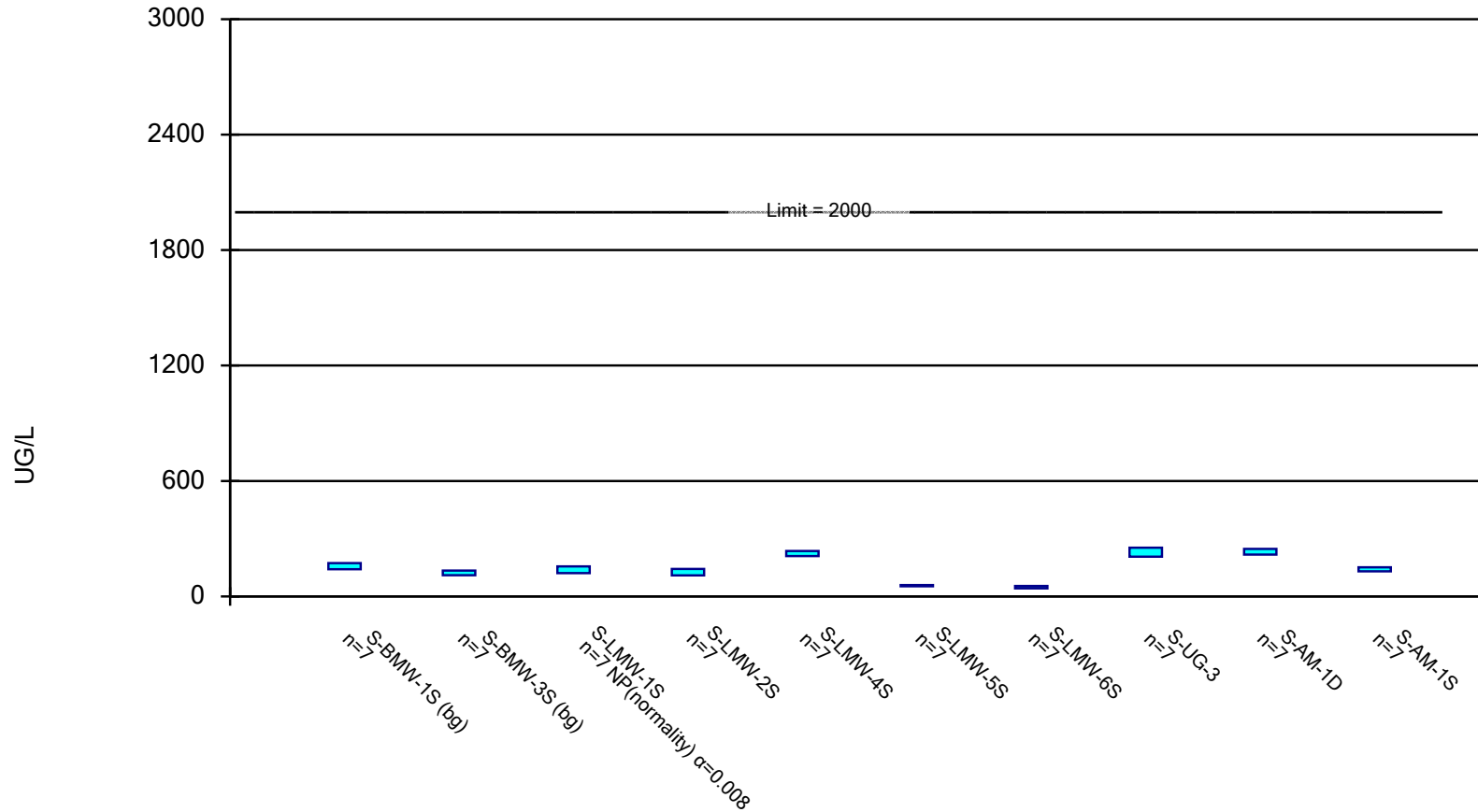


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Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

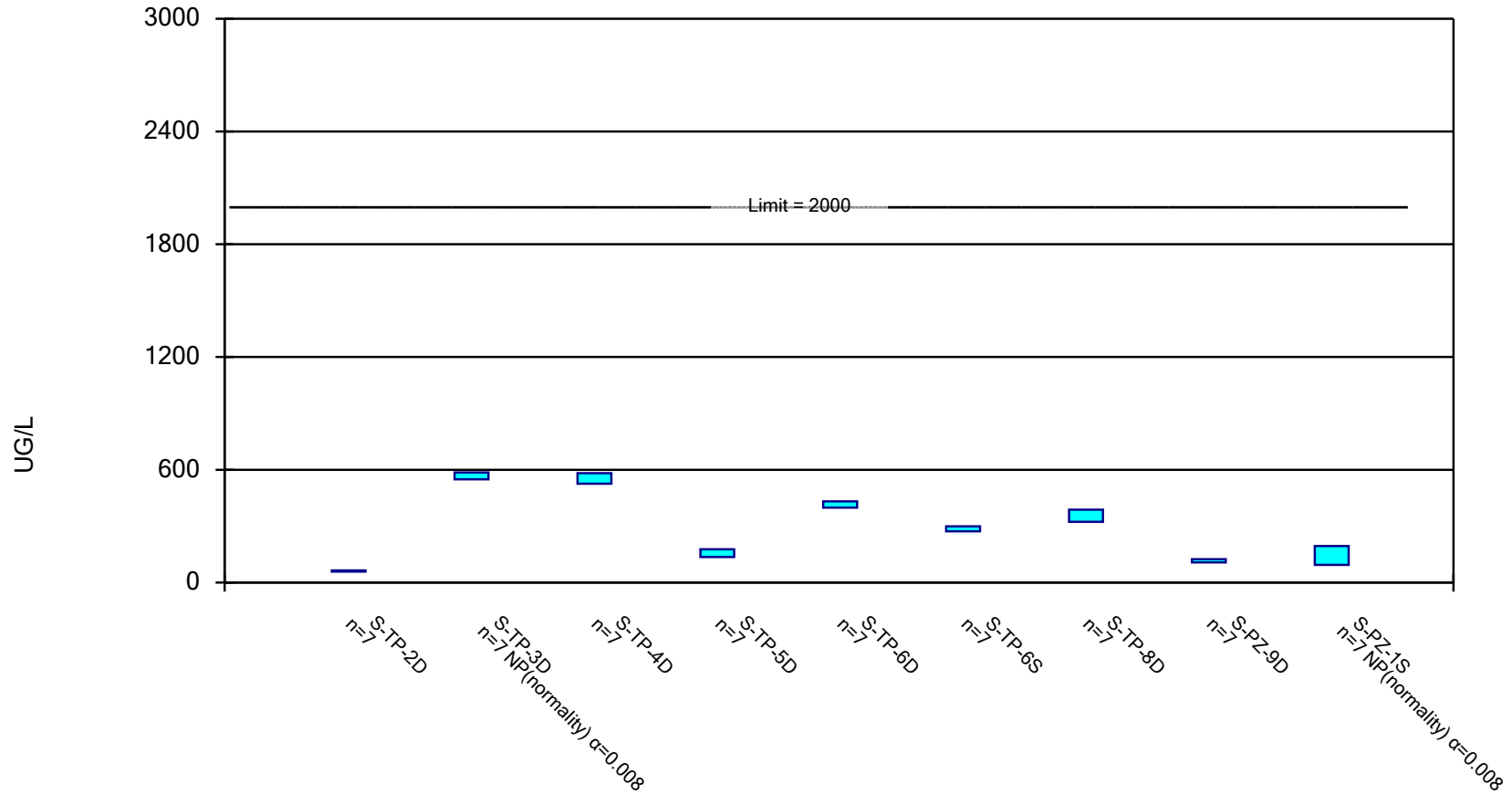


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Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

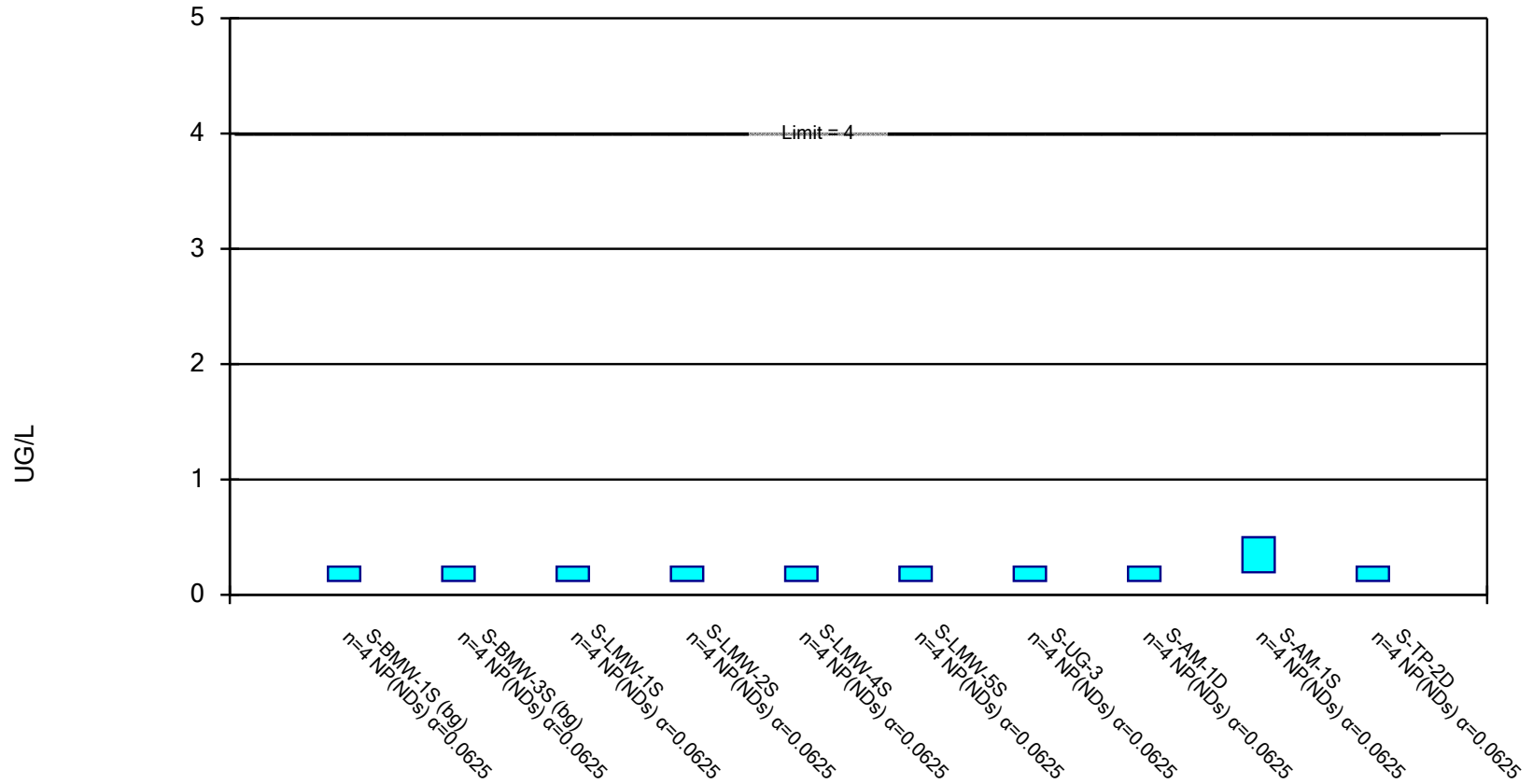


Constituent: BARIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

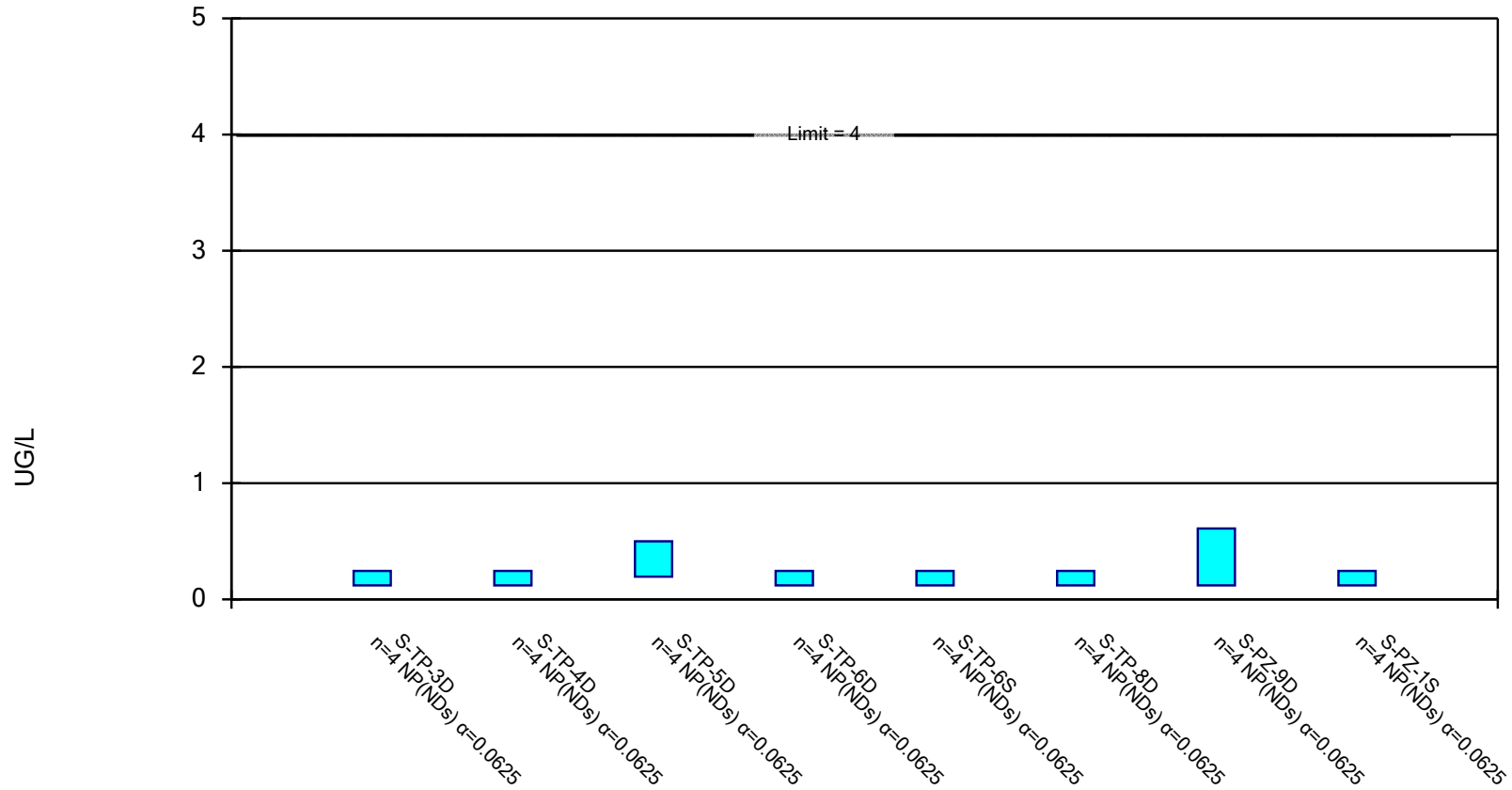


Constituent: BERYLLIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

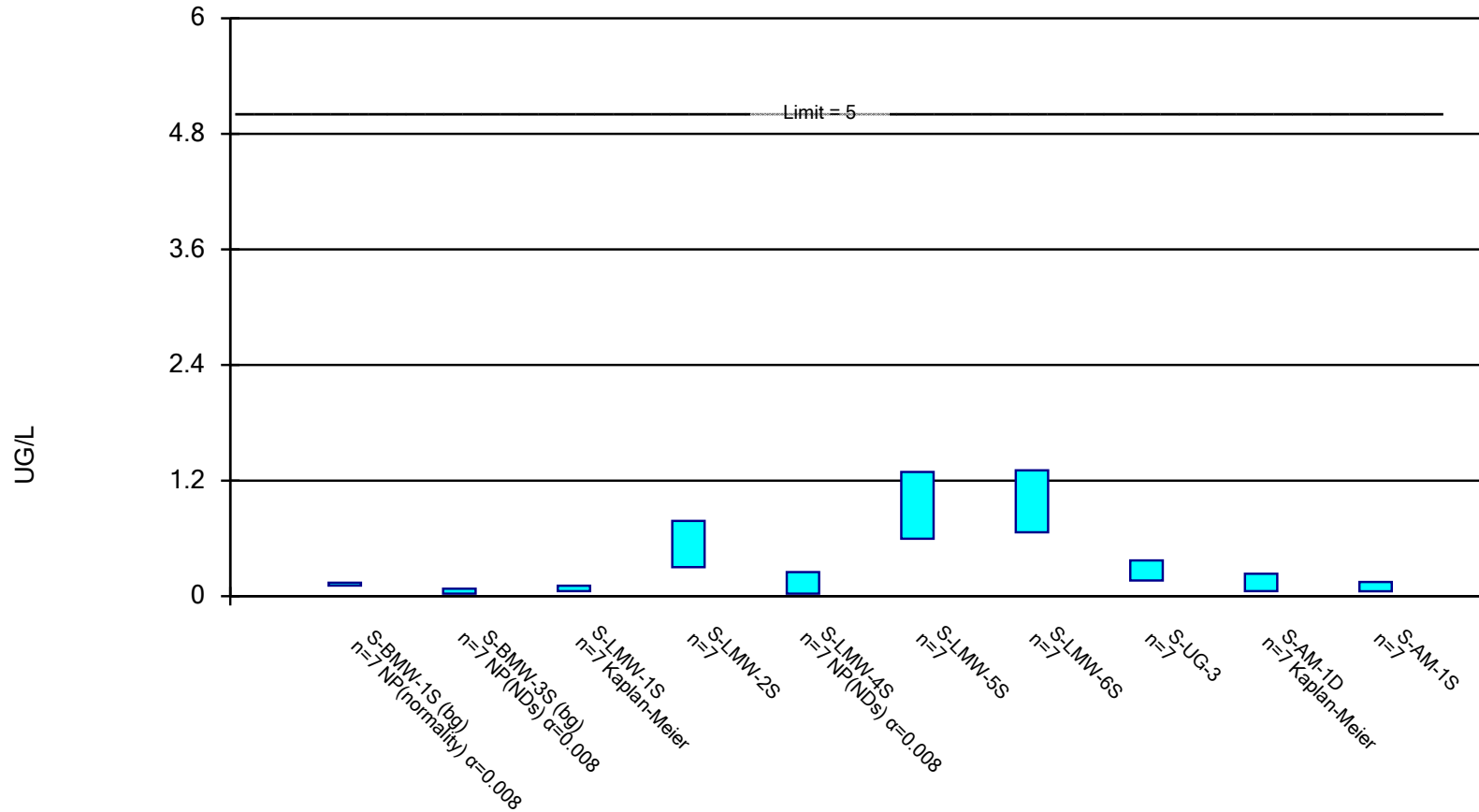


Constituent: BERYLLIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

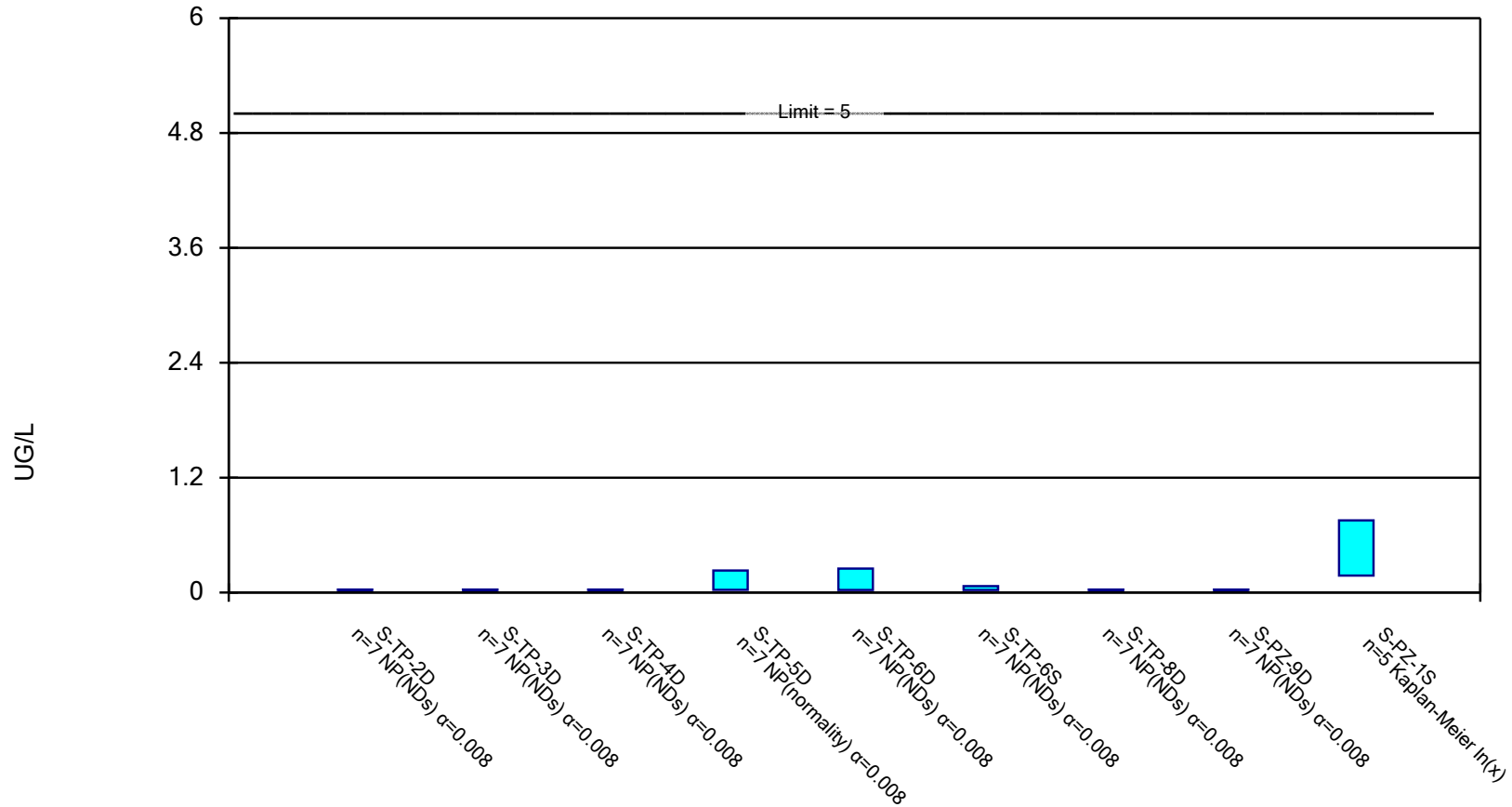


Constituent: CADMIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

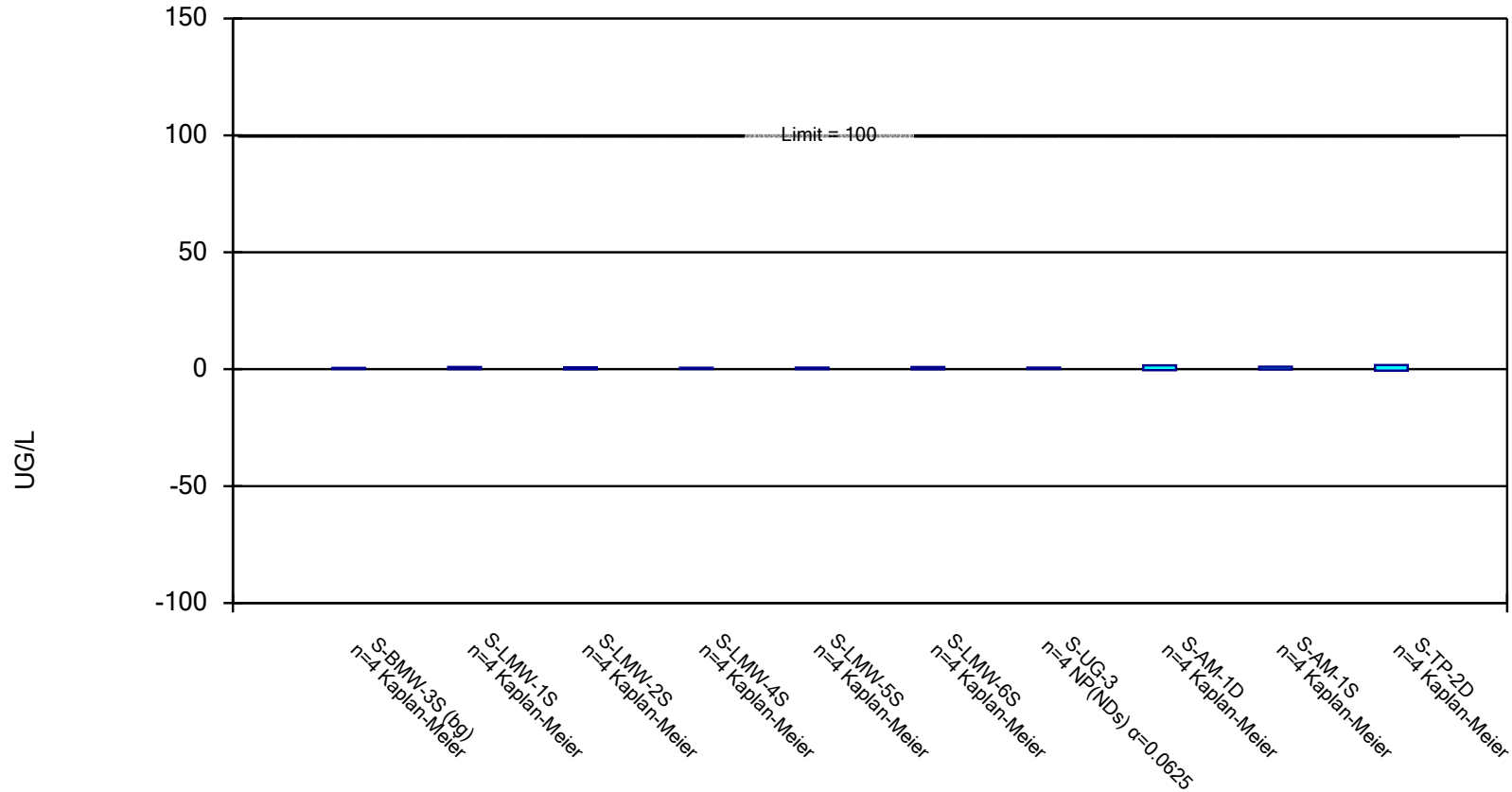


Constituent: CADMIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

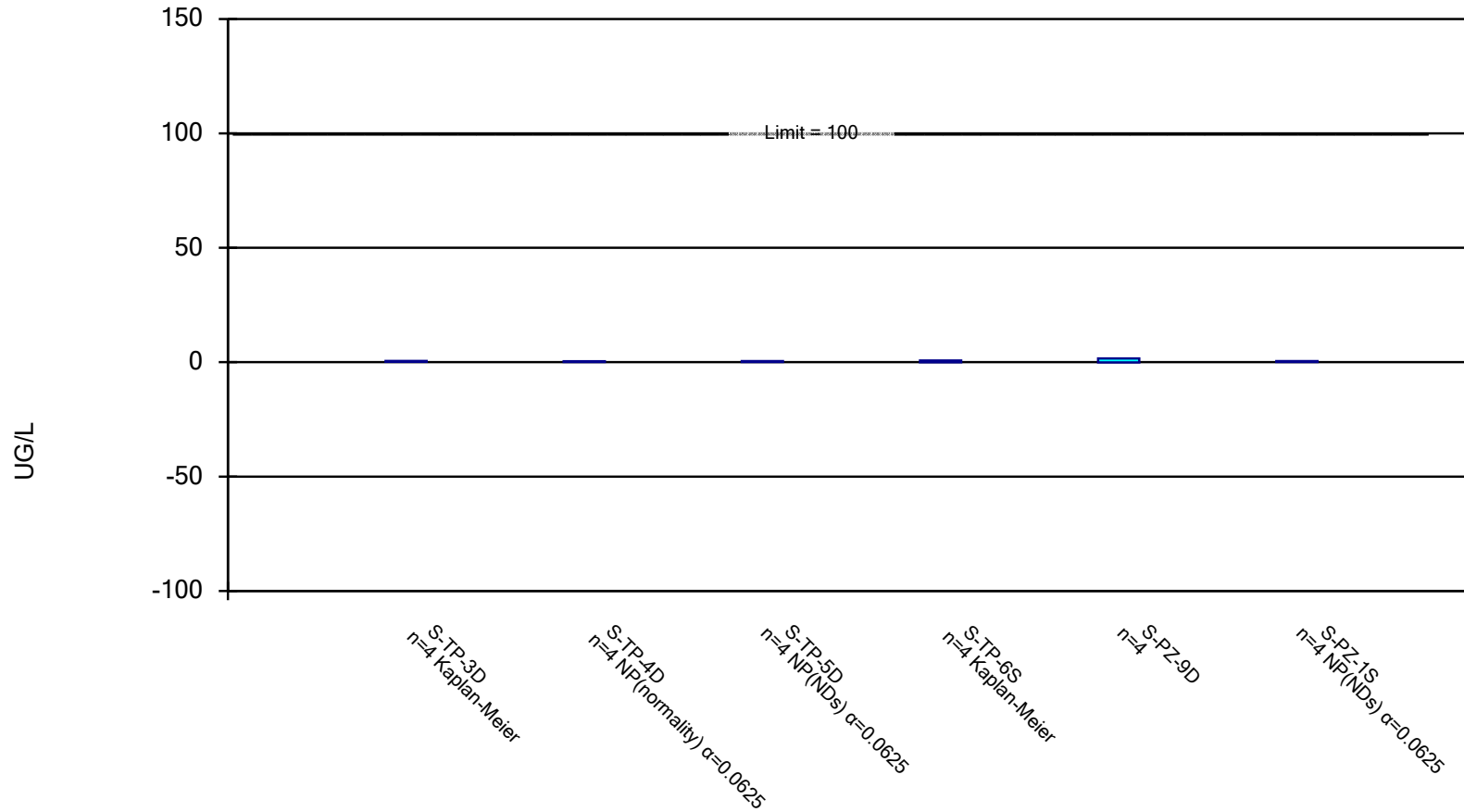


Constituent: CHROMIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

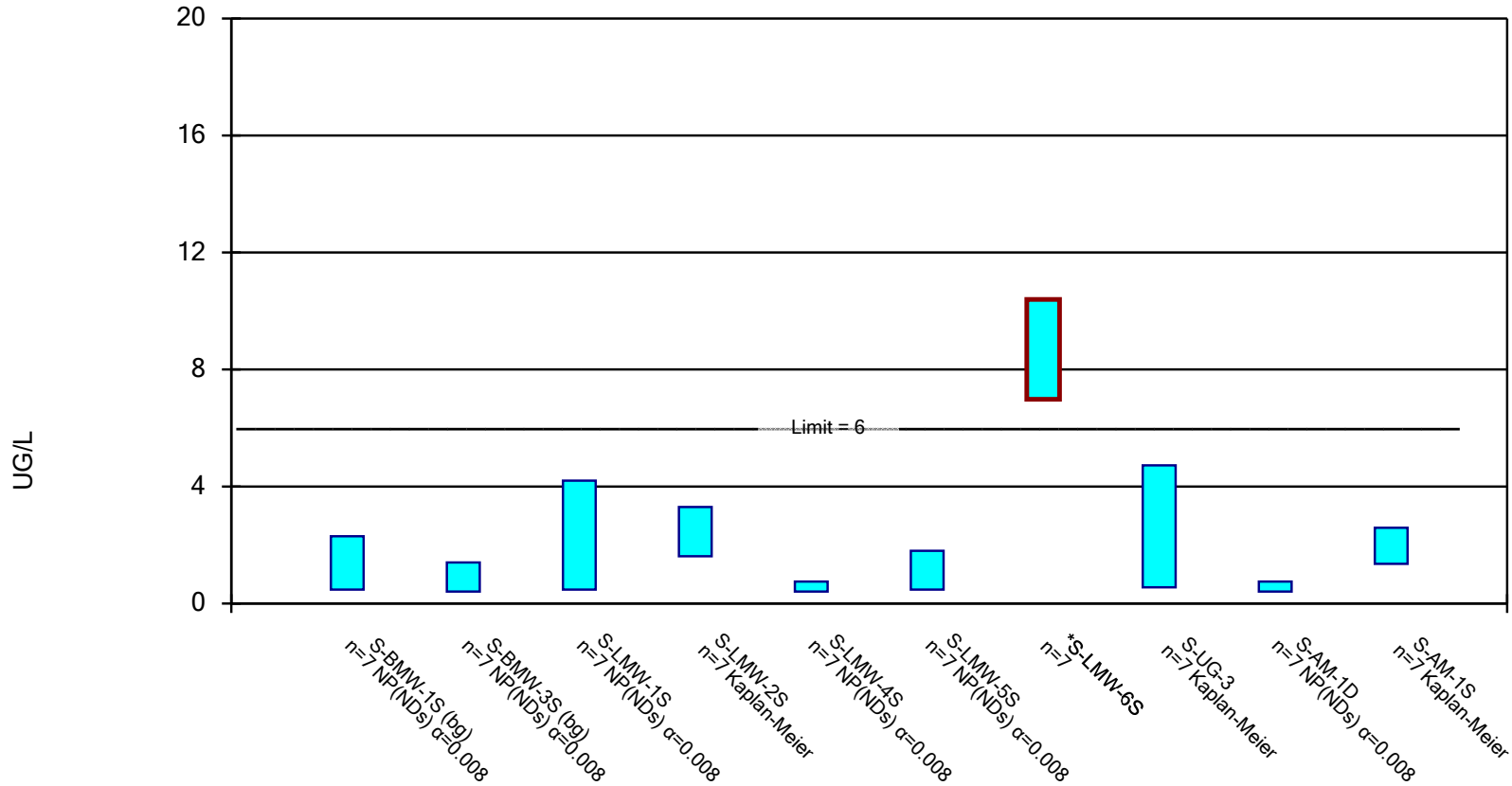


Constituent: CHROMIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

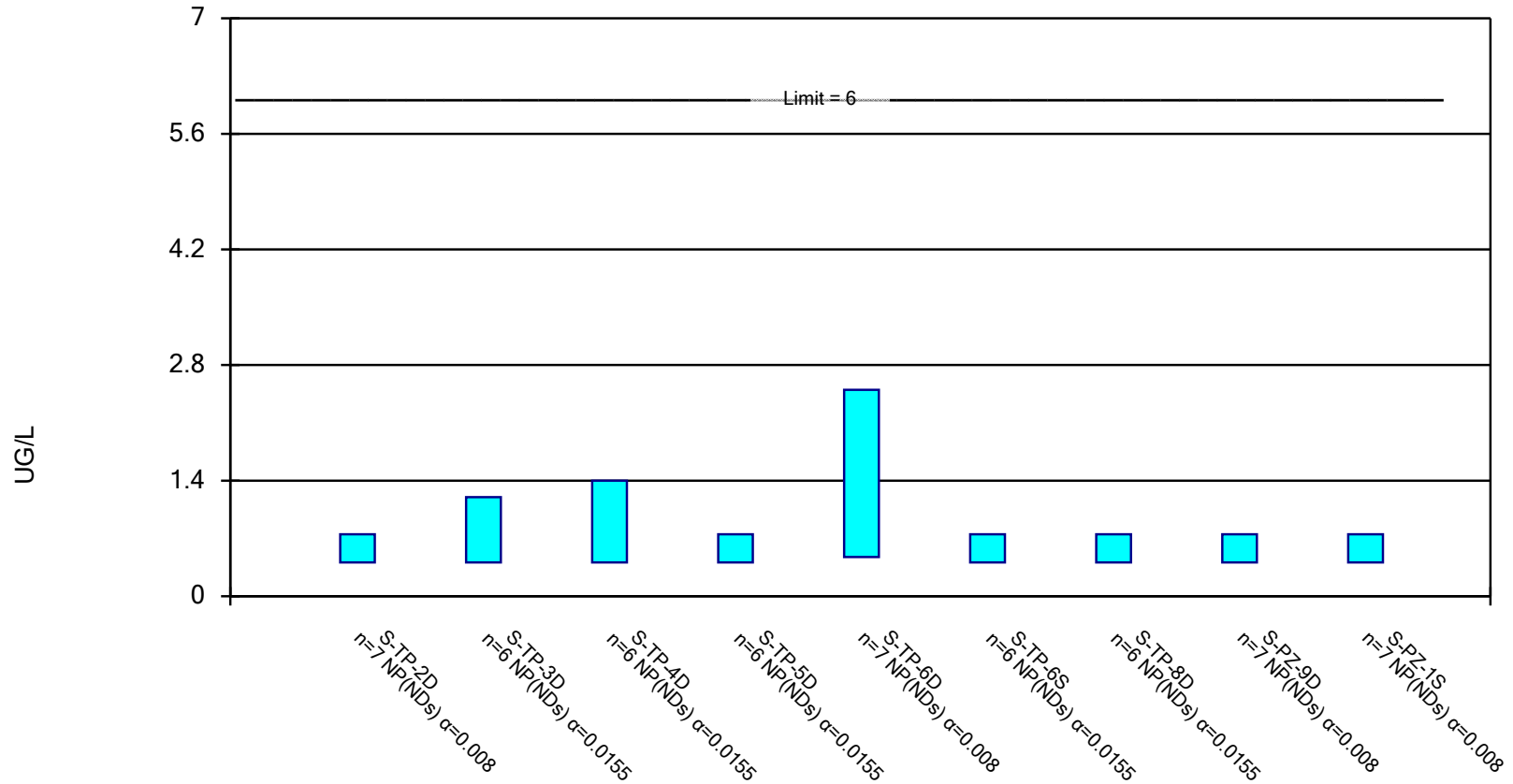


Constituent: COBALT, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

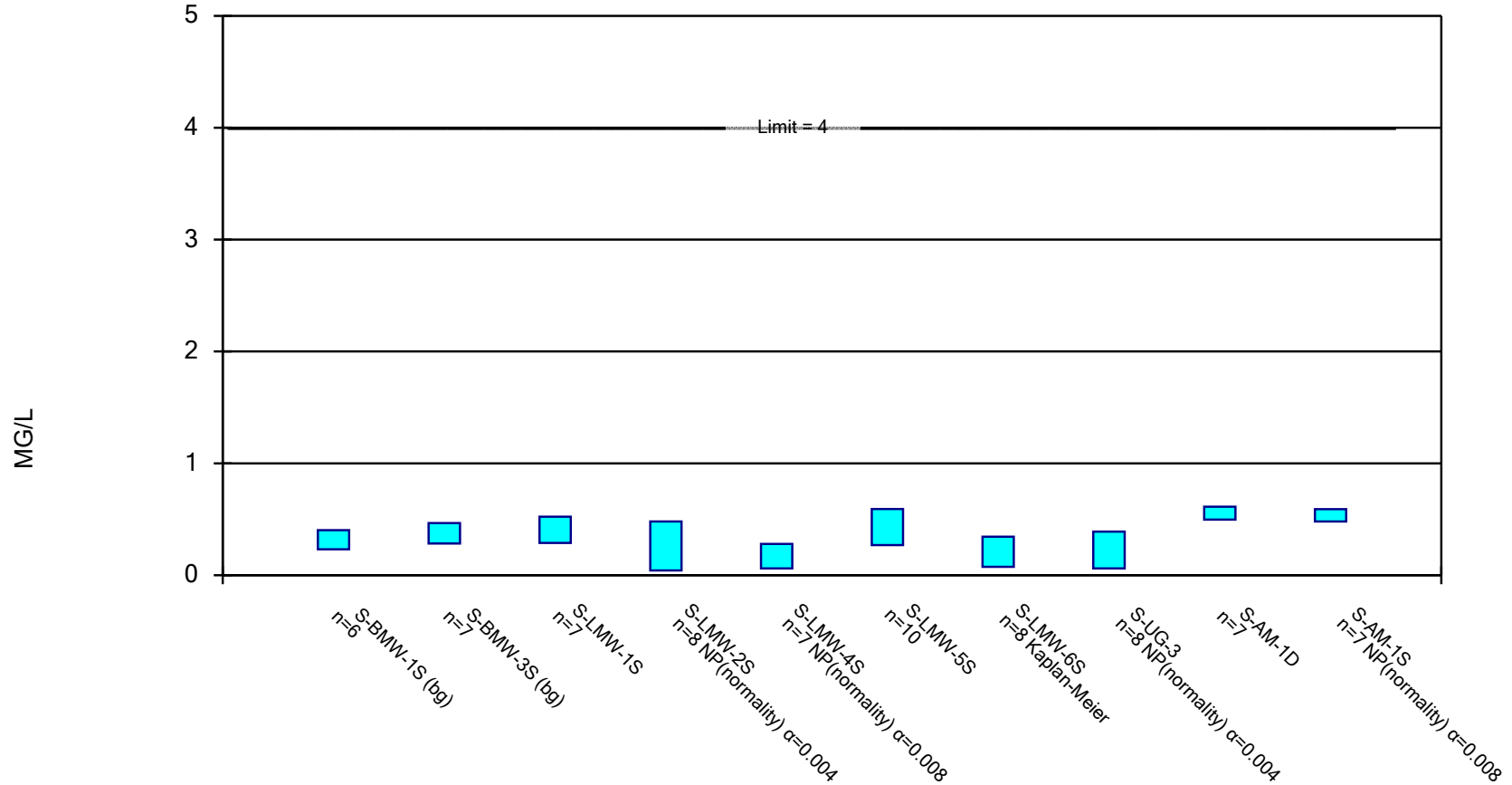


Constituent: COBALT, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

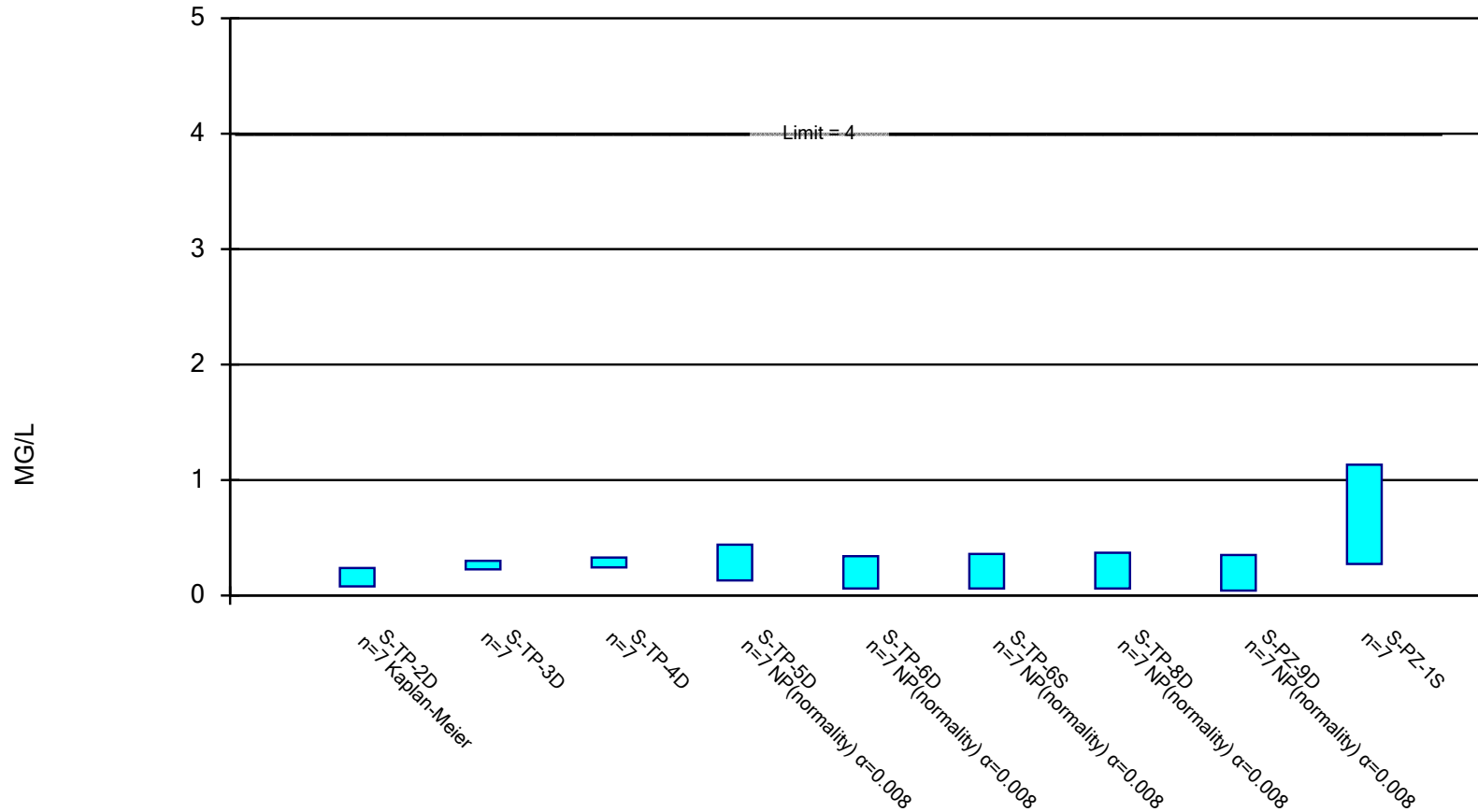


Constituent: FLUORIDE, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

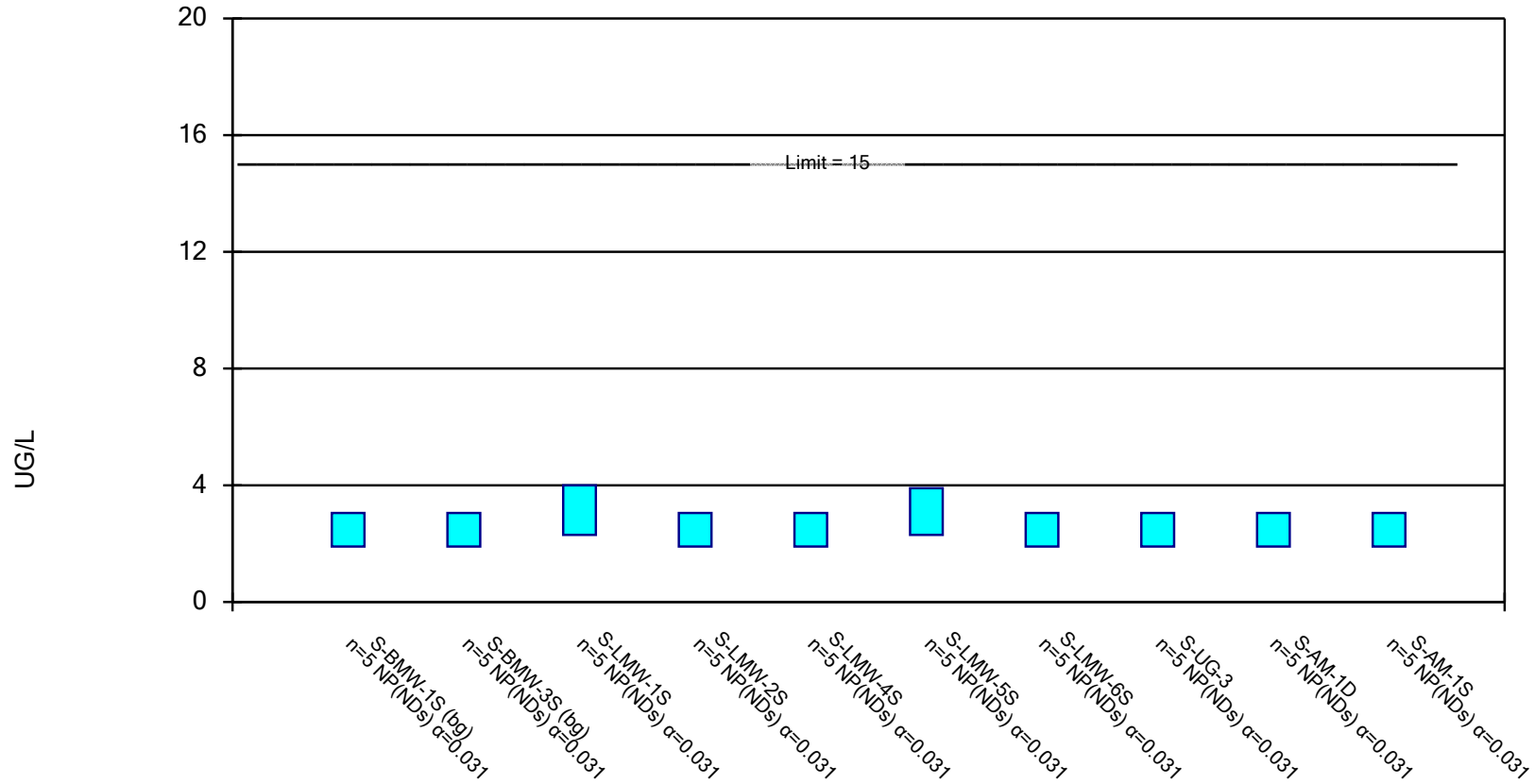


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Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

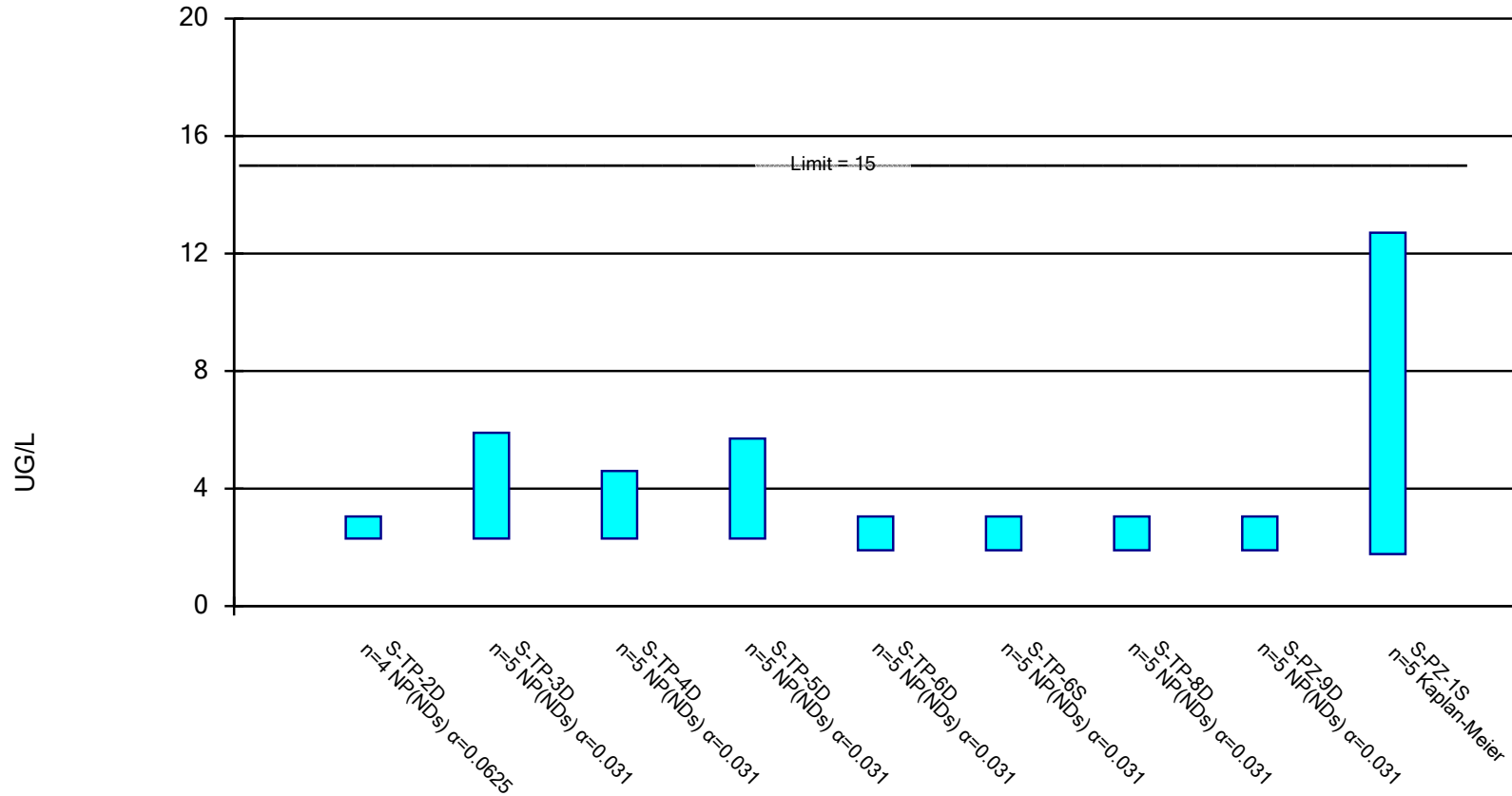


Constituent: LEAD, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

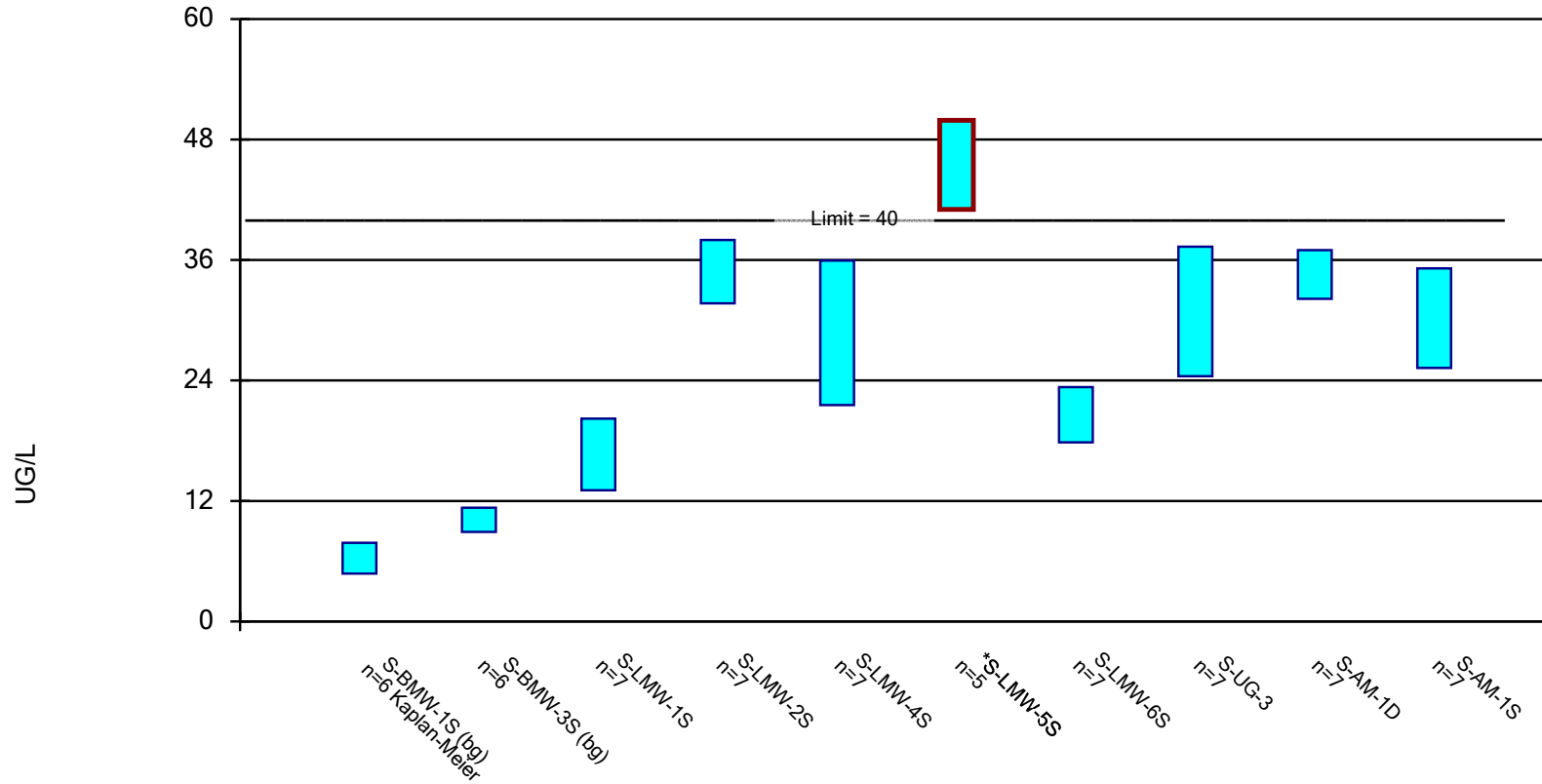


Constituent: LEAD, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

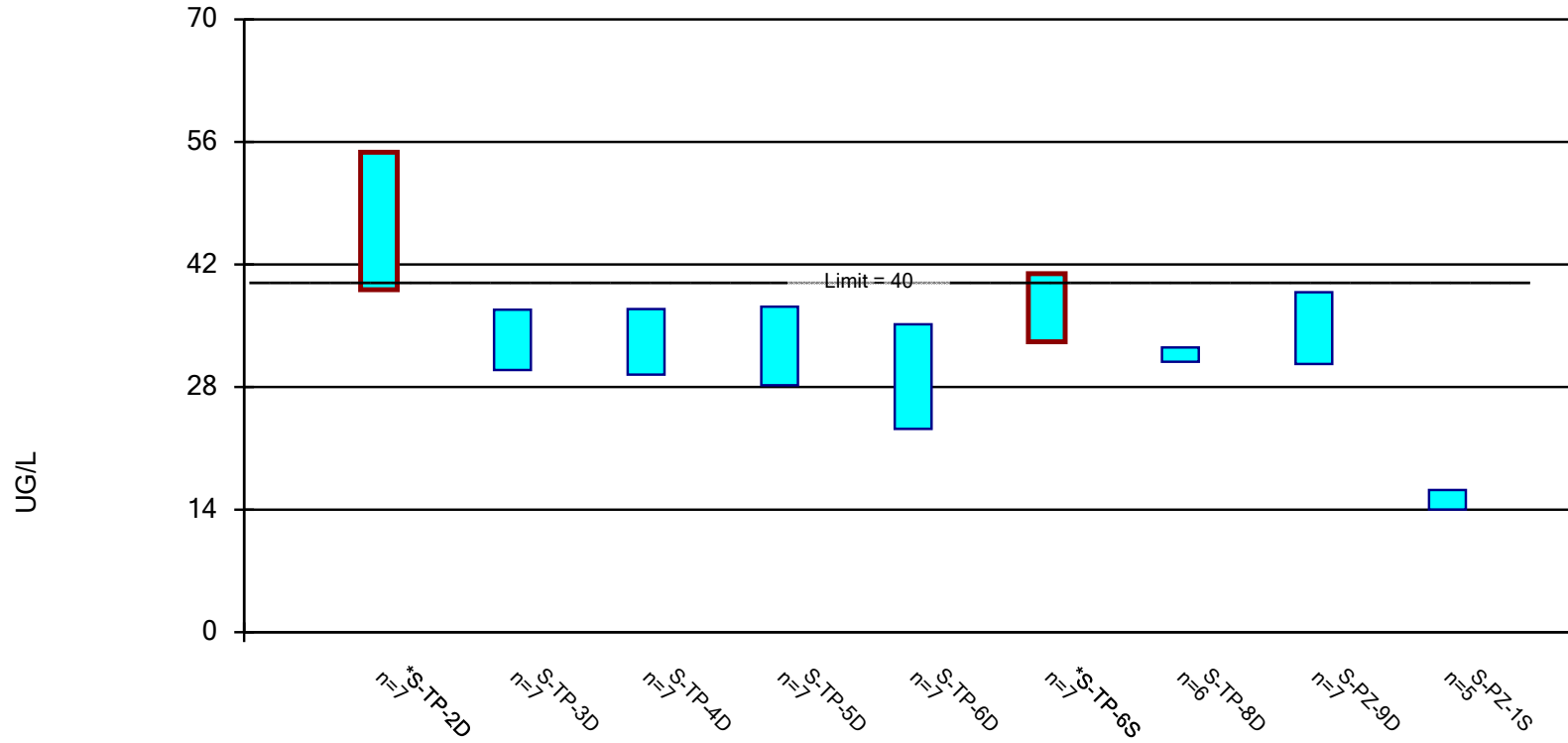


Constituent: LITHIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

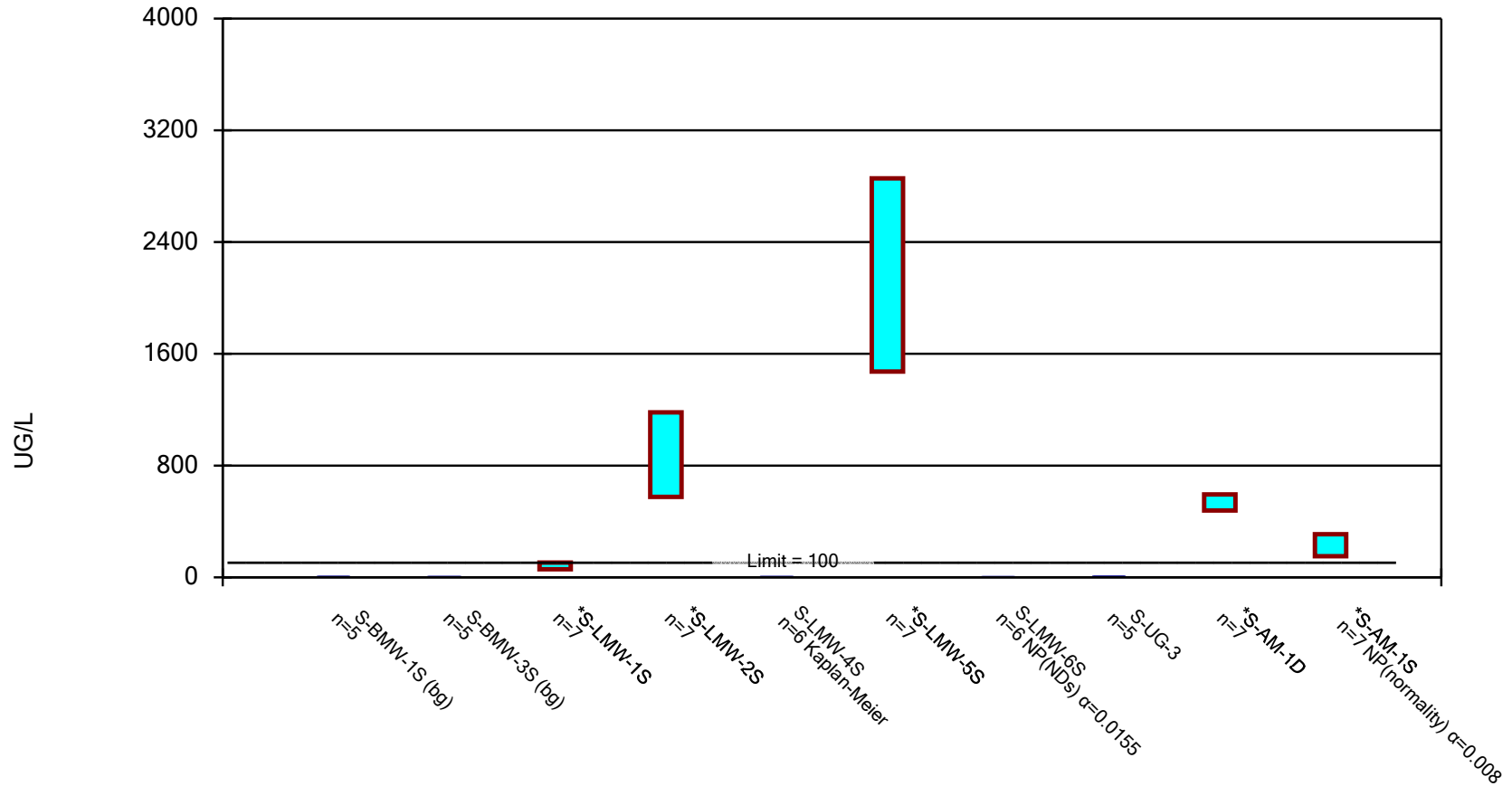


Constituent: LITHIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

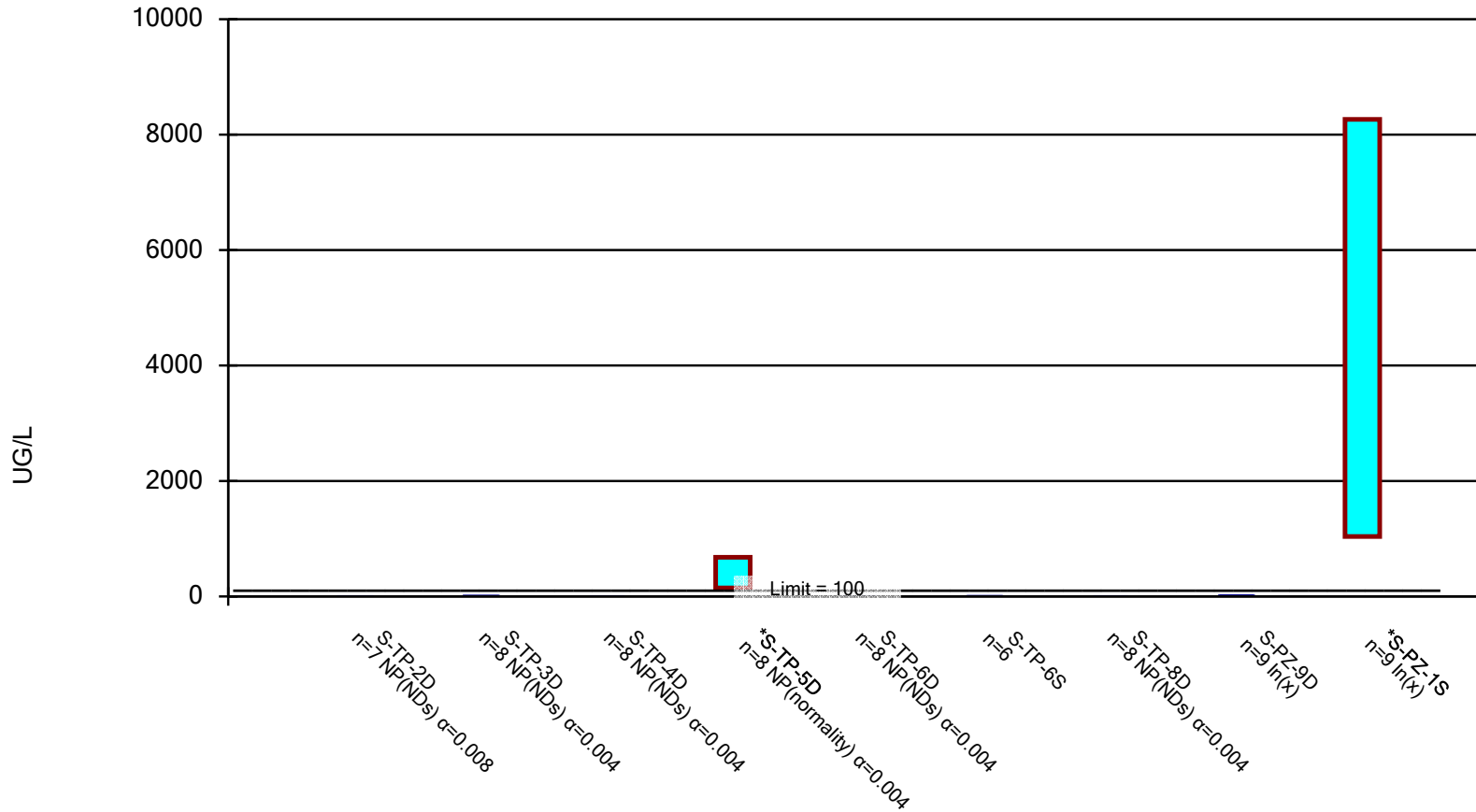


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

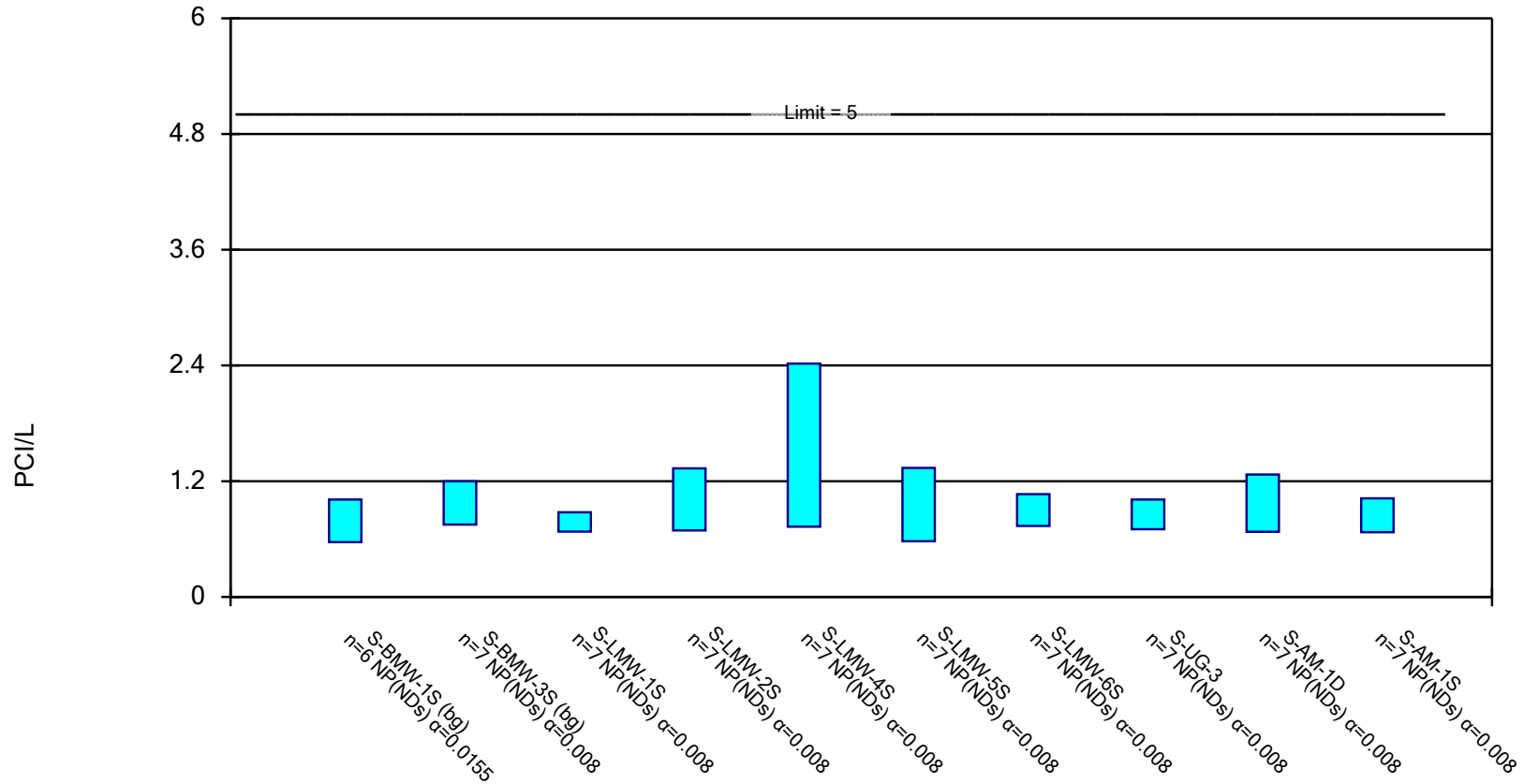


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

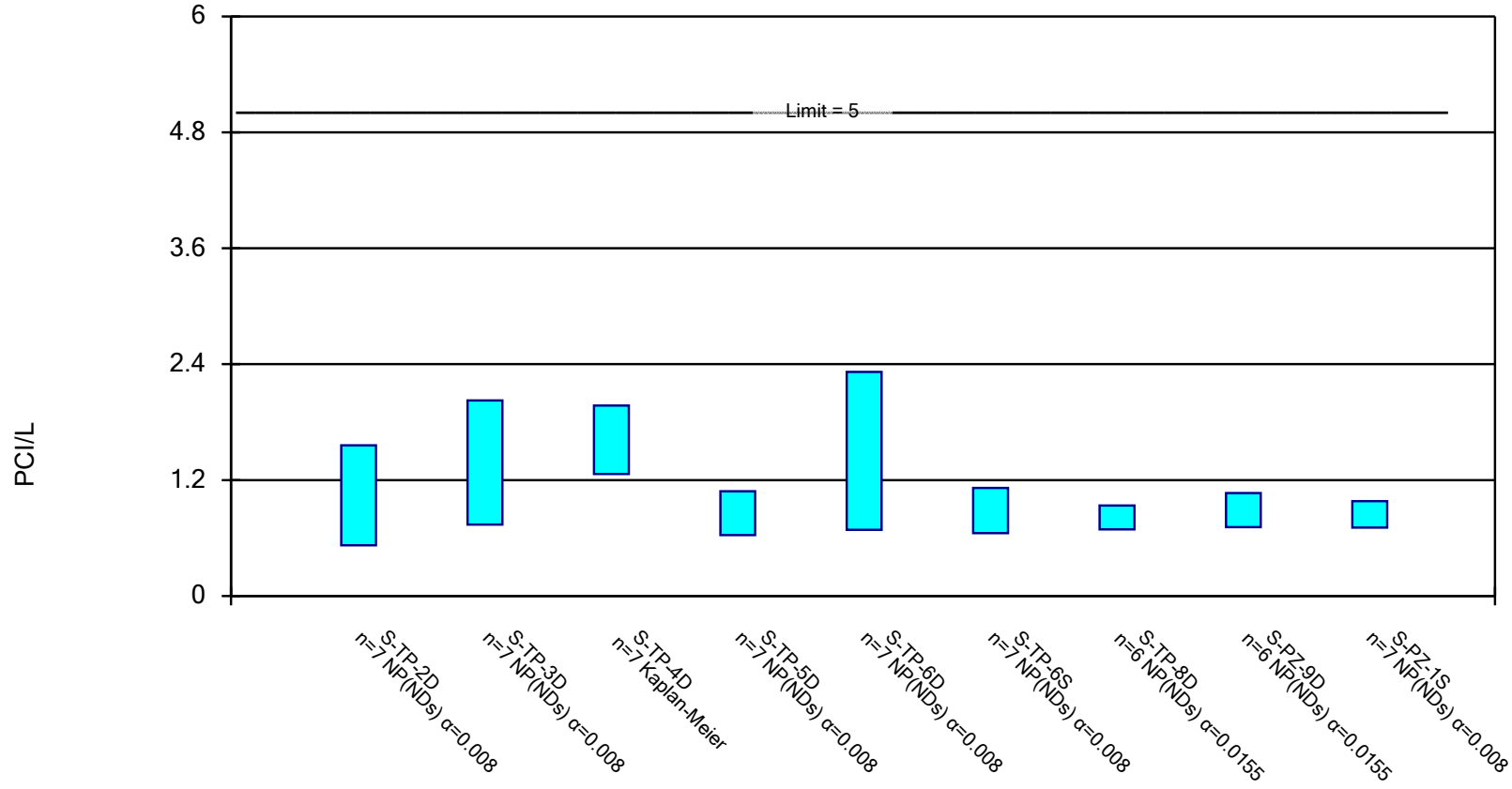


Constituent: RADIUM [226 + 228] Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

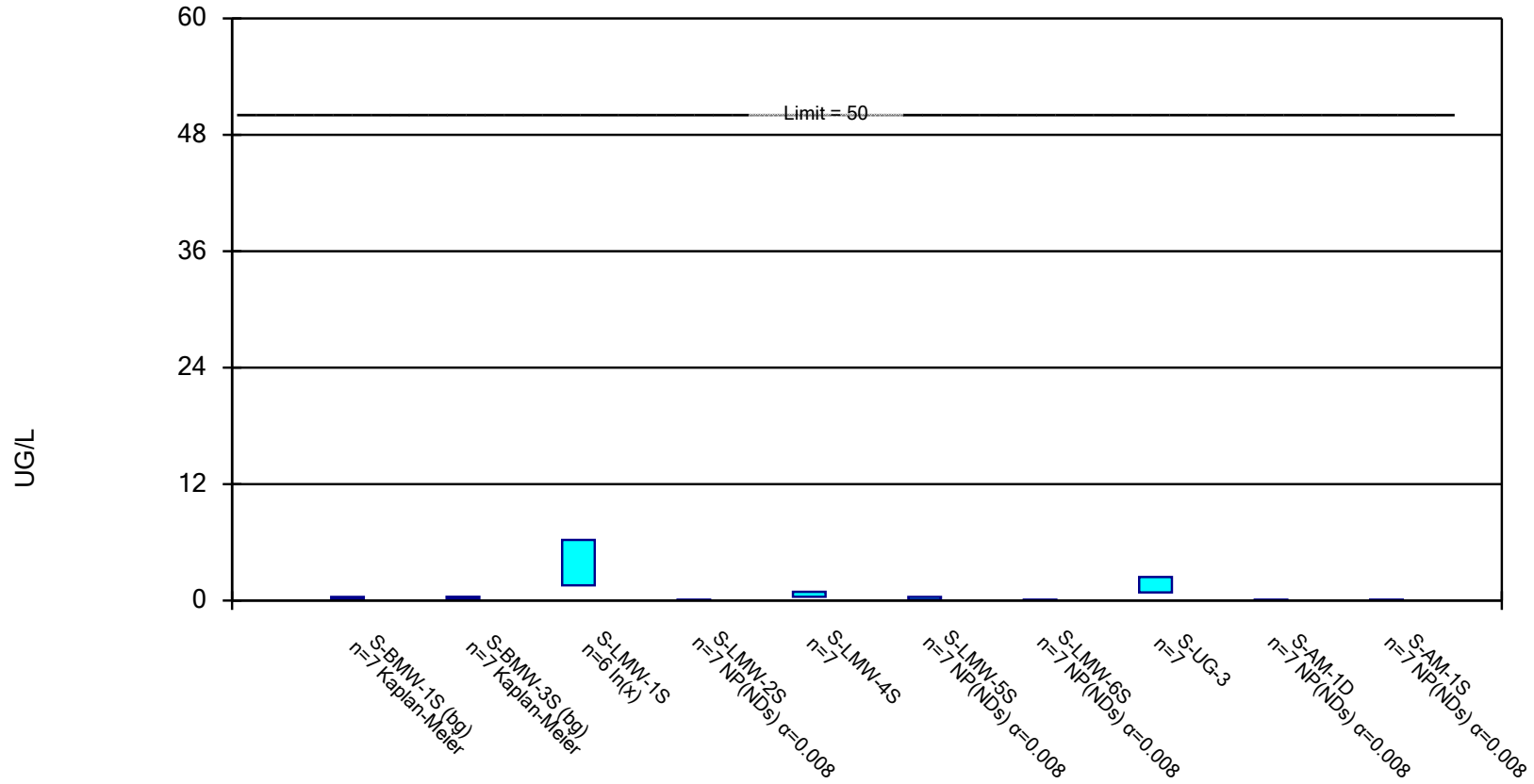


Constituent: RADIUM [226 + 228] Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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

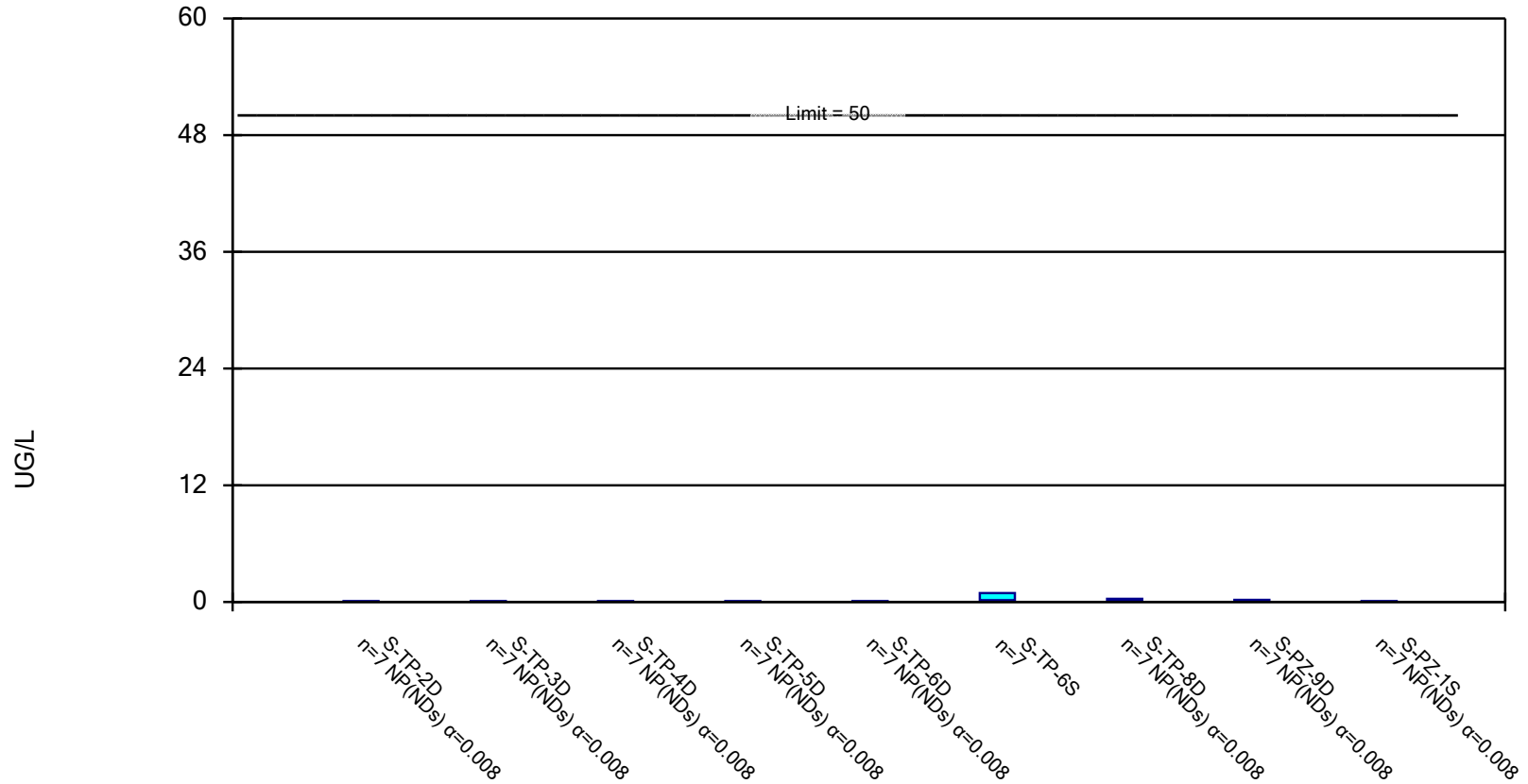


Constituent: SELENIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

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



Constituent: SELENIUM, TOTAL Analysis Run 2/3/2023 8:16 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA.mdb

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 2/3/2023, 8:17 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>
ARSENIC, TOTAL (UG/L)	S-BMW-1S ...	1.114	0.9431	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-BMW-3S ...	0.6748	0.5224	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-1S	2.285	1.887	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-2S	1	0.5	10	No	7	14.29	No	0.008	NP (normality)
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.6816	0.5242	10	No	7	14.29	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.9218	0.581	10	No	7	14.29	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.8148	0.5738	10	No	7	14.29	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UG-3	0.4688	0.3627	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1D	0.2209	0.1877	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1S	1.5	1.3	10	No	7	0	No	0.008	NP (normality)
ARSENIC, TOTAL (UG/L)	S-TP-2D	0.2372	0.1171	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.1892	0.08504	10	No	7	14.29	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-4D	1.939	1.376	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.2616	0.207	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6D	0.1578	0.1122	10	No	7	28.57	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.5656	0.4373	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-8D	1.649	1.294	10	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.7631	0.3341	10	No	7	14.29	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-1S	0.5258	0.3342	10	No	7	14.29	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-BMW-1S ...	172.8	140.9	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-BMW-3S ...	134.6	110.3	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-1S	156	121	2000	No	7	0	No	0.008	NP (normality)
BARIUM, TOTAL (UG/L)	S-LMW-2S	143	109.5	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-4S	236.1	209.9	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-5S	58.81	52.33	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-6S	54.44	41.82	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UG-3	253.1	206.6	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1D	246.5	217.5	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1S	151	130.5	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-2D	64.08	58.38	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-3D	586	549	2000	No	7	0	No	0.008	NP (normality)
BARIUM, TOTAL (UG/L)	S-TP-4D	581.8	525.6	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-5D	177.2	135.6	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6D	432.2	398.6	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6S	299.1	272.3	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-8D	387.9	323	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-PZ-9D	124.3	106.9	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-PZ-1S	194	93.9	2000	No	7	0	No	0.008	NP (normality)
BERYLLIUM, TOTAL (UG/L)	S-BMW-1S ...	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-BMW-3S ...	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-1S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-2S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-4S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-5S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UG-3	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1S	0.5	0.195	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-2D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-3D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-4D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 2/3/2023, 8:17 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>
BERYLLIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.195	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-8D	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-9D	0.61	0.12	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-1S	0.245	0.12	4	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-BMW-1S ...	0.14	0.11	5	No	7	0	No	0.008	NP (normality)
CADMIUM, TOTAL (UG/L)	S-BMW-3S ...	0.077	0.0265	5	No	7	57.14	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.1092	0.05283	5	No	7	28.57	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.7818	0.3011	5	No	7	14.29	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.25	0.0265	5	No	7	57.14	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-LMW-5S	1.29	0.596	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-6S	1.306	0.6624	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UG-3	0.3711	0.1632	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.2333	0.05297	5	No	7	28.57	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.1473	0.05101	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-TP-2D	0.031	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-3D	0.031	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-4D	0.031	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.23	0.028	5	No	7	42.86	No	0.008	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-6D	0.25	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-6S	0.066	0.0265	5	No	7	57.14	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-8D	0.031	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-9D	0.031	0.0265	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-1S	0.7532	0.1762	5	No	5	20	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-BMW-3S ...	0.5459	0.08912	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-1S	0.9401	0.0449	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-2S	0.8237	-0.03868	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-4S	0.5843	0.07566	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-5S	0.6941	0.05087	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-6S	0.9595	-0.0545	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UG-3	0.65	0.11	100	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-AM-1D	1.661	-0.4609	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-AM-1S	1.066	-0.08645	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-2D	1.796	-0.5958	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-3D	0.5301	0.1649	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-4D	0.43	0.11	100	No	4	50	No	0.0625	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.11	100	No	4	100	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-6S	0.7321	-0.01213	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-PZ-9D	1.67	-0.1002	100	No	4	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-PZ-1S	0.5	0.11	100	No	4	75	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	S-BMW-1S ...	2.3	0.475	6	No	7	57.14	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-BMW-3S ...	1.4	0.41	6	No	7	85.71	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-1S	4.2	0.475	6	No	7	57.14	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-2S	3.299	1.615	6	No	7	28.57	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-LMW-4S	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-5S	1.8	0.475	6	No	7	71.43	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-6S	10.39	6.979	6	Yes	7	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-UG-3	4.725	0.5533	6	No	7	28.57	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-AM-1D	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA.mdb Printed 2/3/2023, 8:17 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>
COBALT, TOTAL (UG/L)	S-AM-1S	2.589	1.354	6	No	7	28.57	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-TP-2D	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-3D	1.2	0.41	6	No	6	83.33	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-4D	1.4	0.41	6	No	6	83.33	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-5D	0.75	0.41	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6D	2.5	0.475	6	No	7	85.71	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6S	0.75	0.41	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-8D	0.75	0.41	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-9D	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-1S	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-BMW-1S ...	0.4021	0.2312	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-BMW-3S ...	0.4657	0.2828	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-1S	0.5225	0.289	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	0.48	0.043	4	No	8	50	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	0.28	0.06	4	No	7	28.57	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	0.5915	0.269	4	No	10	10	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	0.3441	0.07469	4	No	8	37.5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UG-3	0.39	0.06	4	No	8	12.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.6116	0.497	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.59	0.48	4	No	7	0	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-2D	0.2385	0.07809	4	No	7	42.86	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-TP-3D	0.2996	0.2261	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-TP-4D	0.3285	0.243	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-TP-5D	0.44	0.13	4	No	7	0	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6D	0.34	0.06	4	No	7	14.29	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6S	0.36	0.06	4	No	7	14.29	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-8D	0.37	0.06	4	No	7	14.29	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	0.35	0.043	4	No	7	42.86	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-1S	1.133	0.2729	4	No	7	14.29	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-BMW-1S ...	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-BMW-3S ...	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-1S	4	2.3	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-2S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-4S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-5S	3.9	2.3	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-6S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-UG-3	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-2D	3.05	2.3	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-3D	5.9	2.3	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-4D	4.6	2.3	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-5D	5.7	2.3	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-8D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-9D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-1S	12.71	1.771	15	No	5	40	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-BMW-1S ...	7.828	4.772	40	No	6	33.33	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-BMW-3S ...	11.32	8.911	40	No	6	0	No	0.01	Param.

Confidence Interval

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LITHIUM, TOTAL (UG/L)	S-LMW-1S	20.2	13.06	40	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-2S	37.99	31.69	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-4S	35.95	21.55	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-5S	49.92	41.04	40	Yes	6	0	No	0.0155	NP (normality)
LITHIUM, TOTAL (UG/L)	S-LMW-6S	23.34	17.84	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UG-3	37.33	24.43	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1D	36.98	32.13	40	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1S	35.16	25.24	40	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-2D	54.81	39.11	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-3D	36.84	29.95	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-4D	36.91	29.42	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-5D	37.19	28.2	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6D	35.17	23.21	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6S	40.95	33.18	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-8D	32.52	30.88	40	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-9D	38.84	30.63	40	No	7	14.29	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-1S	16.23	14.01	40	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-BMW-1S ...	3.007	2.313	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-BMW-3S ...	3.127	1.193	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	105.4	57.7	100	Yes	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-2S	1180	575.6	100	Yes	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	2.728	1.214	100	No	6	50	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-5S	2856	1473	100	Yes	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	1.4	0.85	100	No	6	83.33	No	0.0155	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	3.564	2.076	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-AM-1D	593.6	478.4	100	Yes	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-AM-1S	308	151	100	Yes	7	0	No	0.008	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	1.1	0.45	100	No	7	100	No	0.008	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	10	0.85	100	No	8	75	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	1.3	0.85	100	No	8	87.5	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-5D	677	147	100	Yes	8	0	No	0.004	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	1.1	0.45	100	No	8	100	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	3.581	2.319	100	No	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	2.9	0.85	100	No	8	62.5	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	12.76	4.418	100	No	9	11.11	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-PZ-1S	8264	1037	100	Yes	9	0	ln(x)	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-BMW-1S ...	1.009	0.568	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-BMW-3S ...	1.2	0.7505	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	0.877	0.677	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	1.333	0.689	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	2.419	0.7285	5	No	7	71.43	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	1.337	0.578	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	1.065	0.737	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UG-3	1.01	0.7015	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1D	1.269	0.675	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1S	1.023	0.6705	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-2D	1.56	0.5245	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-3D	2.025	0.739	5	No	7	71.43	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-4D	1.972	1.263	5	No	7	42.86	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-TP-5D	1.084	0.63	5	No	7	100	No	0.008	NP (NDs)

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)	S-TP-6D	2.319	0.6855	5	No	7	57.14	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6S	1.118	0.651	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-8D	0.937	0.689	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	1.066	0.7125	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	0.982	0.7075	5	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-BMW-1S ...	0.3746	0.1854	50	No	7	28.57	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-BMW-3S ...	0.3902	0.1548	50	No	7	28.57	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-1S	6.241	1.564	50	No	6	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-4S	0.9048	0.3838	50	No	7	14.29	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0.37	0.09	50	No	7	85.71	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UG-3	2.425	0.8326	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-AM-1D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-AM-1S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-2D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-3D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-4D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-5D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6D	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6S	0.9148	0.1795	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-TP-8D	0.33	0.09	50	No	7	85.71	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0.21	0.09	50	No	7	85.71	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)

Appendix E

May 2023 Corrective Action Statistical Evaluation



To: Bill Kutosky – Ameren Missouri **Project Number:** 23009

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, SCPA Surface Impoundment, Sioux Energy Center, St. Charles 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 SCPA Surface Impoundment at the Sioux Energy Center (SEC) located in St. Charles County, Missouri. As outlined in the remedy selection report for the SCPA, Corrective Action at the SCPA 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 January 20, 2021, and was substantially completed on April 10, 2022 with the installation of a low permeability cover system. The SCPA unit was certified closed on October 14, 2022 and thus the SCPA has transitioned into the post-closure care requirements of the CCR rule effective October 2022 and Phase 2 of Corrective Action has begun. 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, with a total of eight (8) sampling events completed for the Corrective Action Program at the SCPA to-date. 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 was collected during active conditions of the SCPA, prior to the cessation of CCR disposal in the SCPA 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, chromium, lead, mercury, and thallium. During years when a constituent was reported at concentrations below the PQL in all wells, they were not re-sampled during the subsequent semi-annual sampling event in the fall.

Confidence intervals were calculated in previous Corrective Action statistical evaluations on Appendix IV constituents having at least four independent data points. As of the May 2023 sampling event, there are now at least four results available for each Appendix IV parameter, so this is the first Corrective Action statistical evaluation where confidence intervals could be calculated for antimony, 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 were completed for the following constituents with at least 8 sampling results: arsenic, barium, cadmium, cobalt, 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 SCPA Corrective Action evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Cadmium
 - S-TP-6D at Non-Detect [< 0.5 micrograms per liter ($\mu\text{g/L}$)] on 10/19/2022. The result is statistically higher than other cadmium values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Lead
 - S-TP-3D at $5.9 \text{ J } \mu\text{g/L}$ on 4/14/2021. The result is statistically higher than other lead values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - S-TP-4D at $4.6 \text{ J } \mu\text{g/L}$ on 4/14/2021. The result is statistically higher than other lead values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
 - S-TP-5D at $5.7 \text{ J } \mu\text{g/L}$ 4/13/2021. The result is statistically higher than other lead values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Lithium
 - S-LMW-5S at $62.8 \mu\text{g/L}$ on 4/1/2022. 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.

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:

- Fluoride
 - S-TP-5D at 0.2 J milligrams per liter (mg/L) on 11/9/2021. The result was removed as an outlier in April 2022 because it was statistically lower than other values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in fluoride concentrations than observed with the data available for the April 2022 statistical evaluation. This fluoride 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 CAGMP. As discussed previously, antimony, beryllium, chromium, 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, as of May 2023, the wells with constituents exceeding the GWPS are as follows:

- Cobalt at S-LMW-6S
- Lithium at S-LMW-5S, S-TP-2D, and S-TP-6S
- Molybdenum at S-LMW-2S, S-LMW-5S, S-AM-1D, S-AM-1S, S-TP-5D, and S-PZ-1S

Molybdenum at S-LMW-1S is no longer an exceedance as of May 2023, as the results are present at a statistically significant slope and upper confidence limit is below the GWPS using the Sen's Slope trend analysis. All other 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 SCPA 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

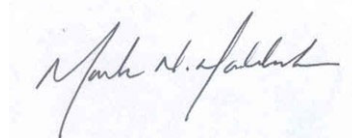
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

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 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

**Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles 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	10	0.6556
Barium	µg/L	2000	2000	699
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	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
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-3D.



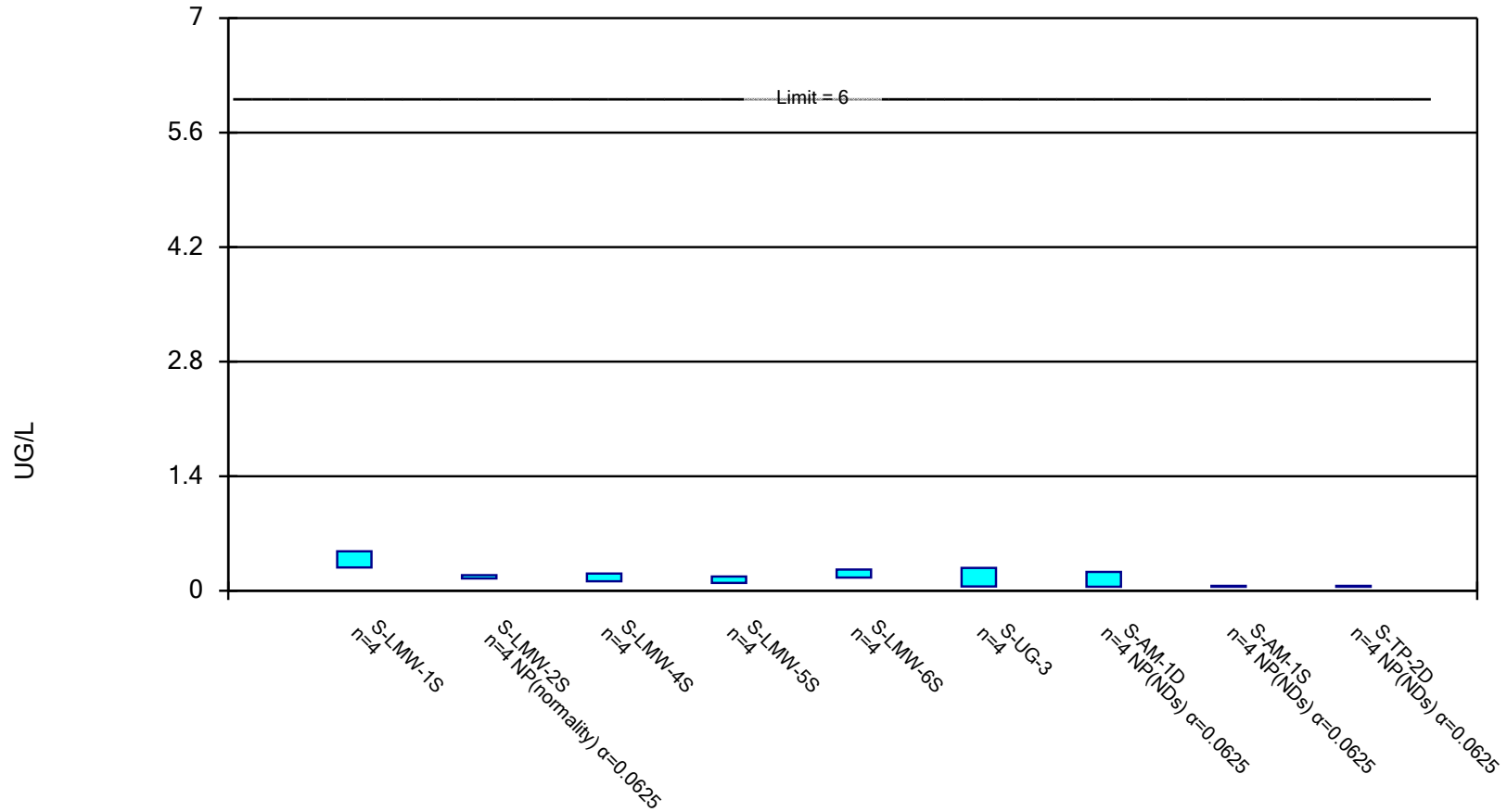
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A

Sanitas Confidence Interval Statistical Output

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.

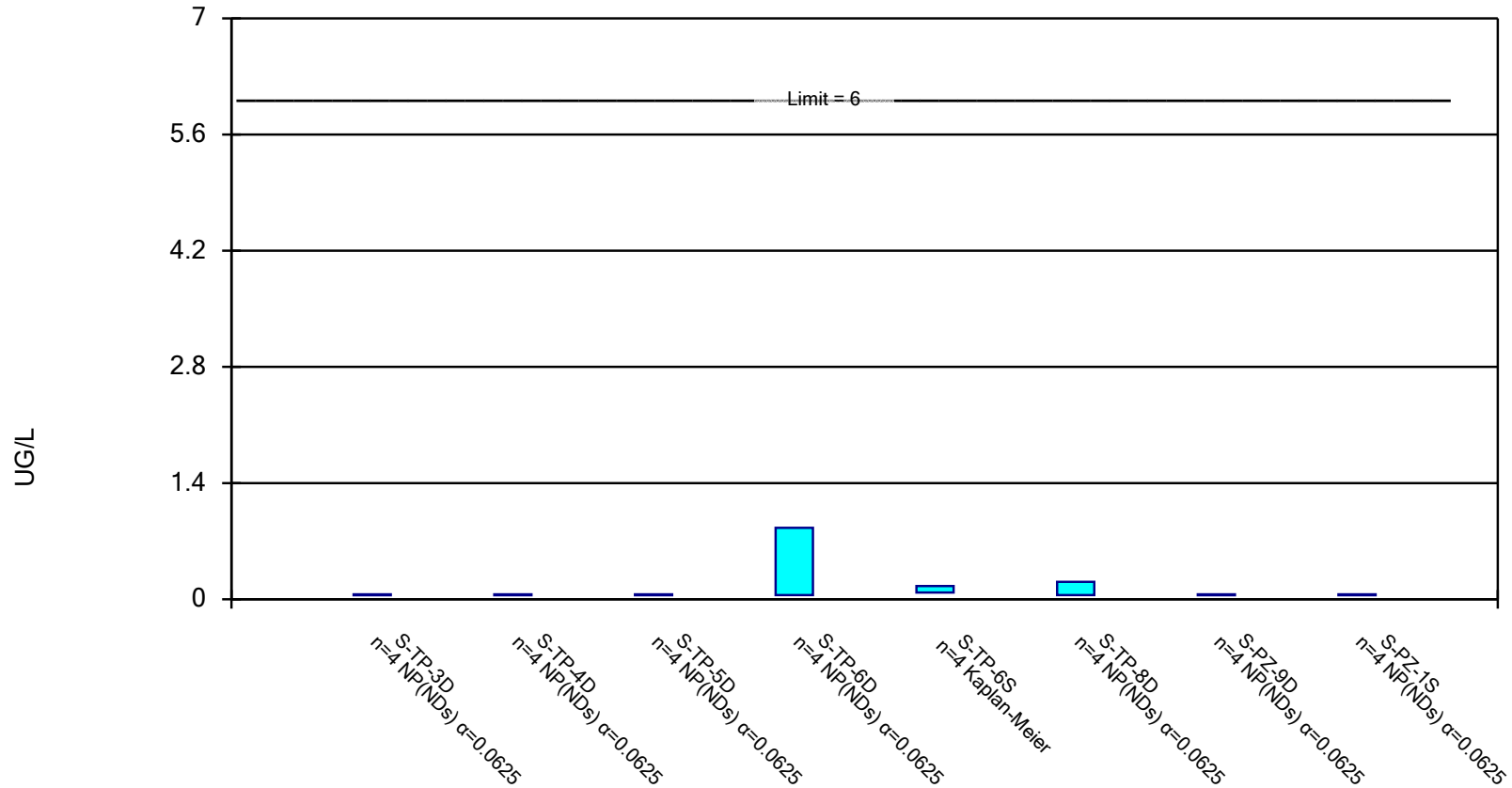


Constituent: ANTIMONY, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

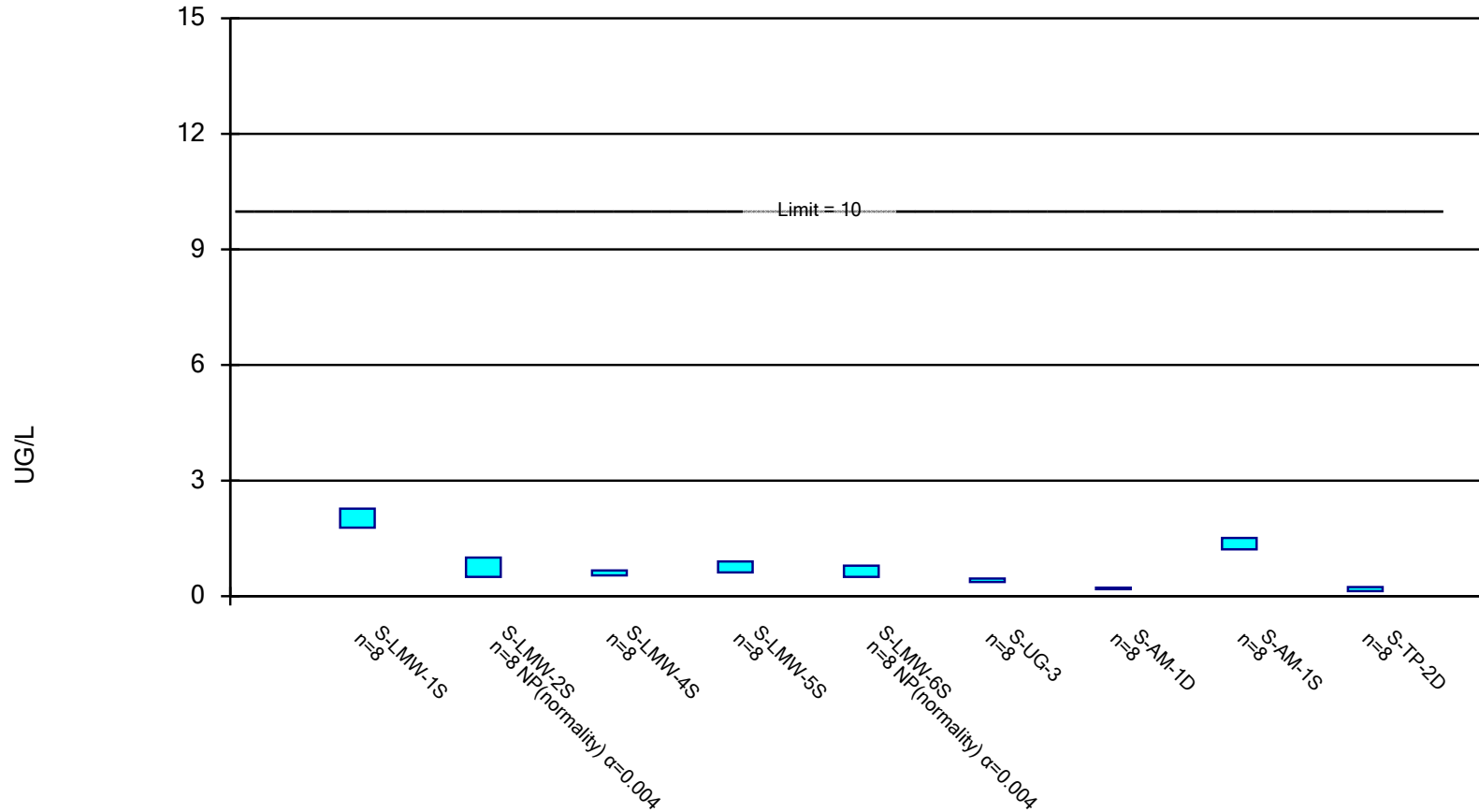


Constituent: ANTIMONY, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

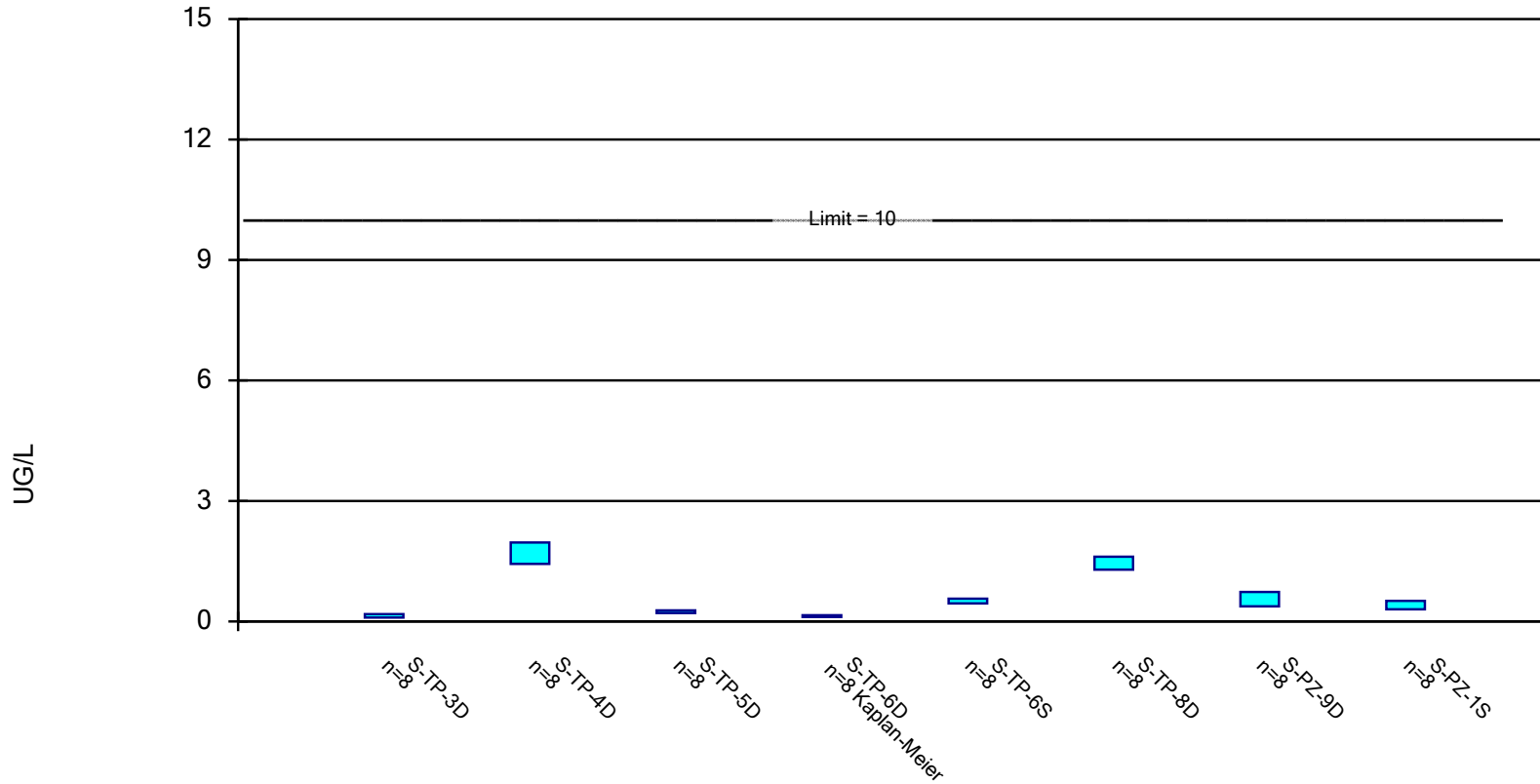


Constituent: ARSENIC, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

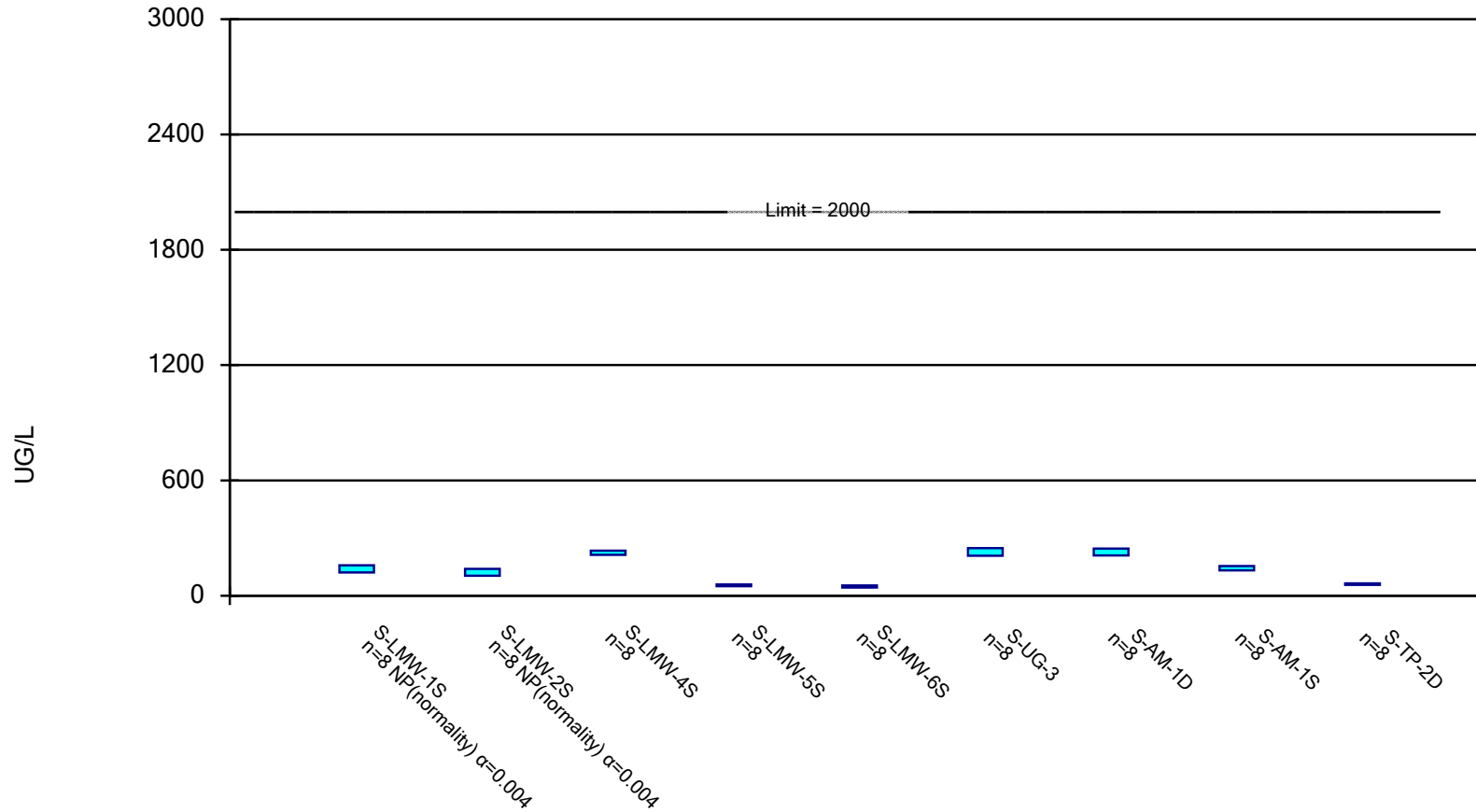


Constituent: ARSENIC, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

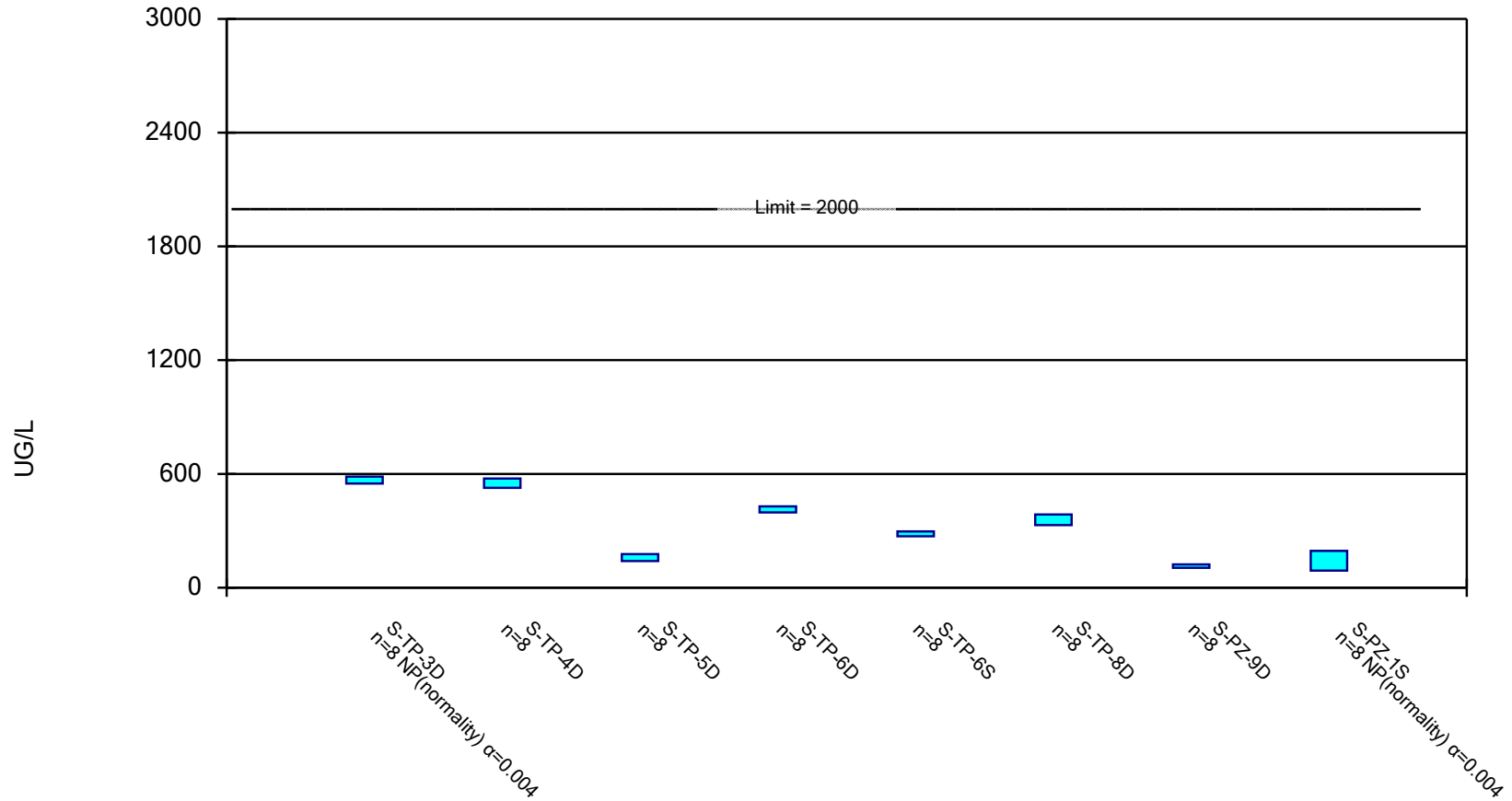


Constituent: BARIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

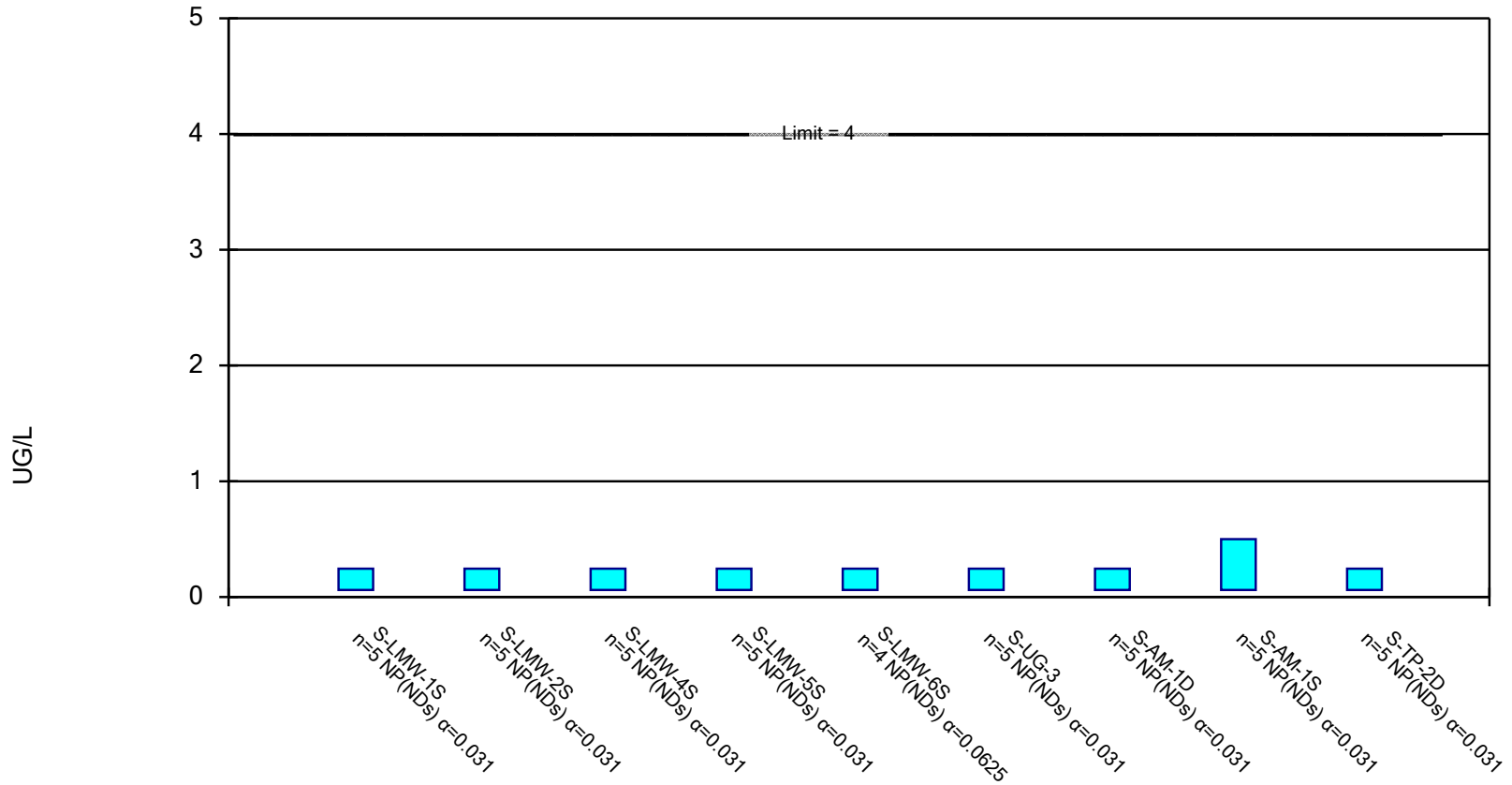


Constituent: BARIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

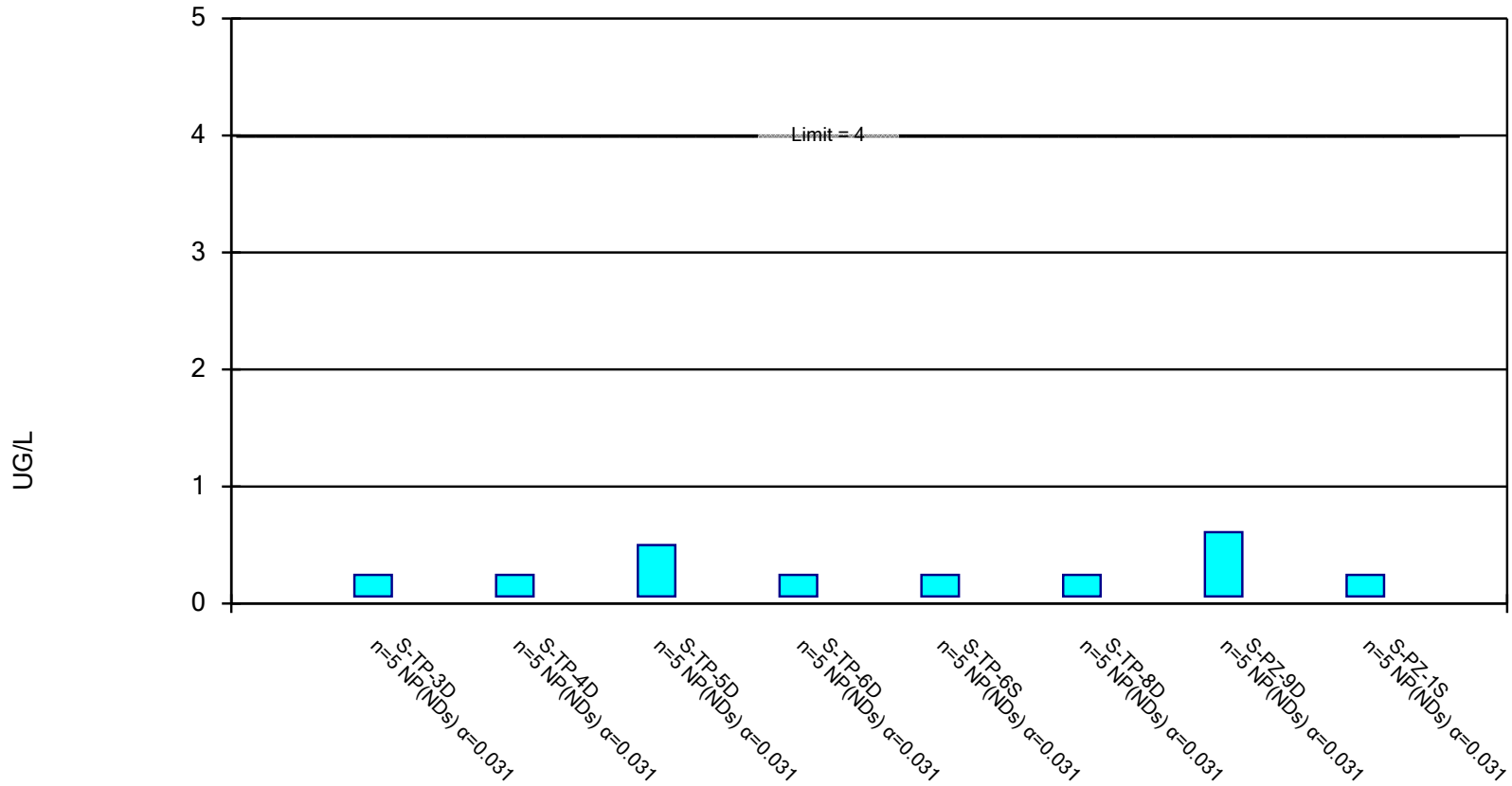


Constituent: BERYLLIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

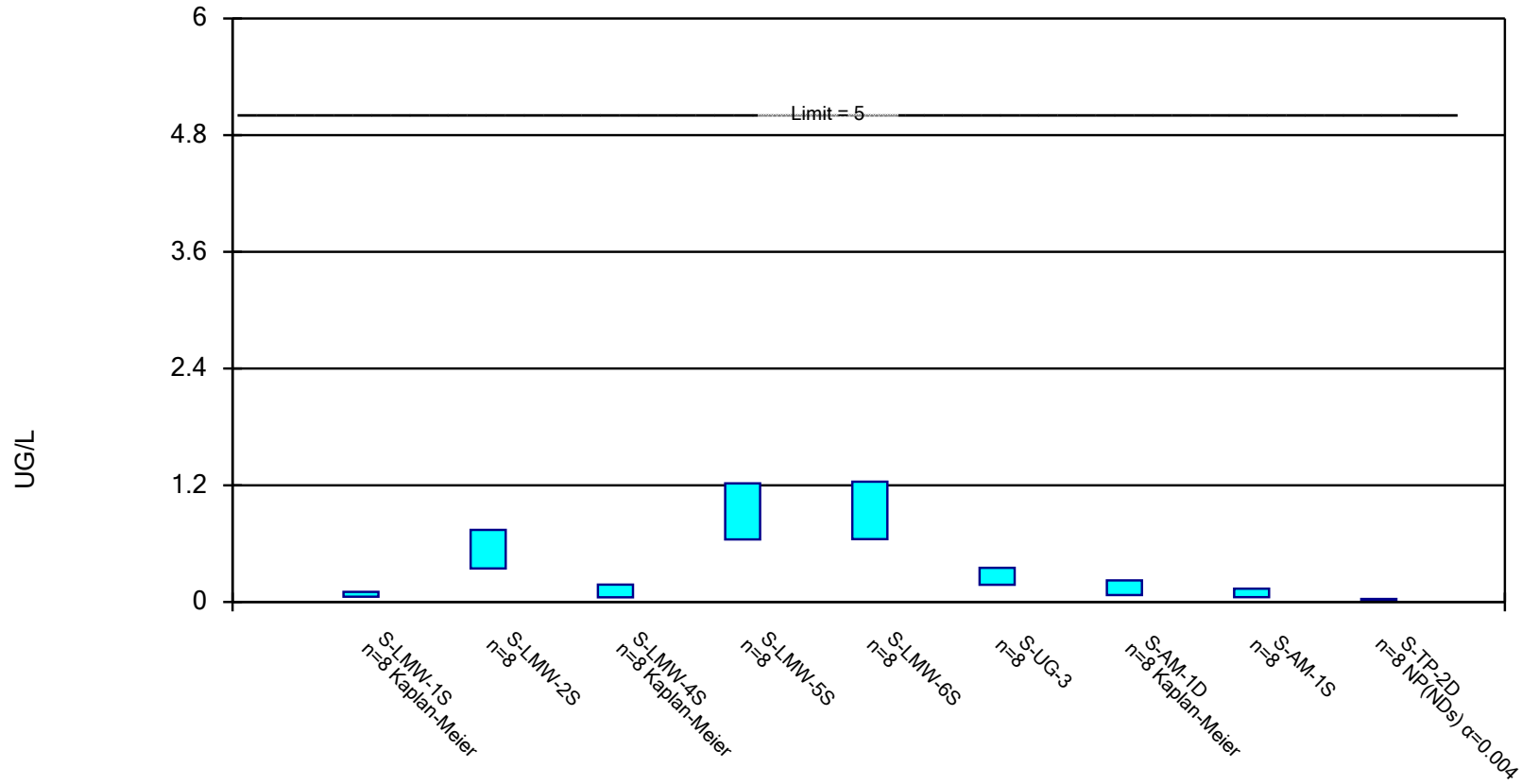


Constituent: BERYLLIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

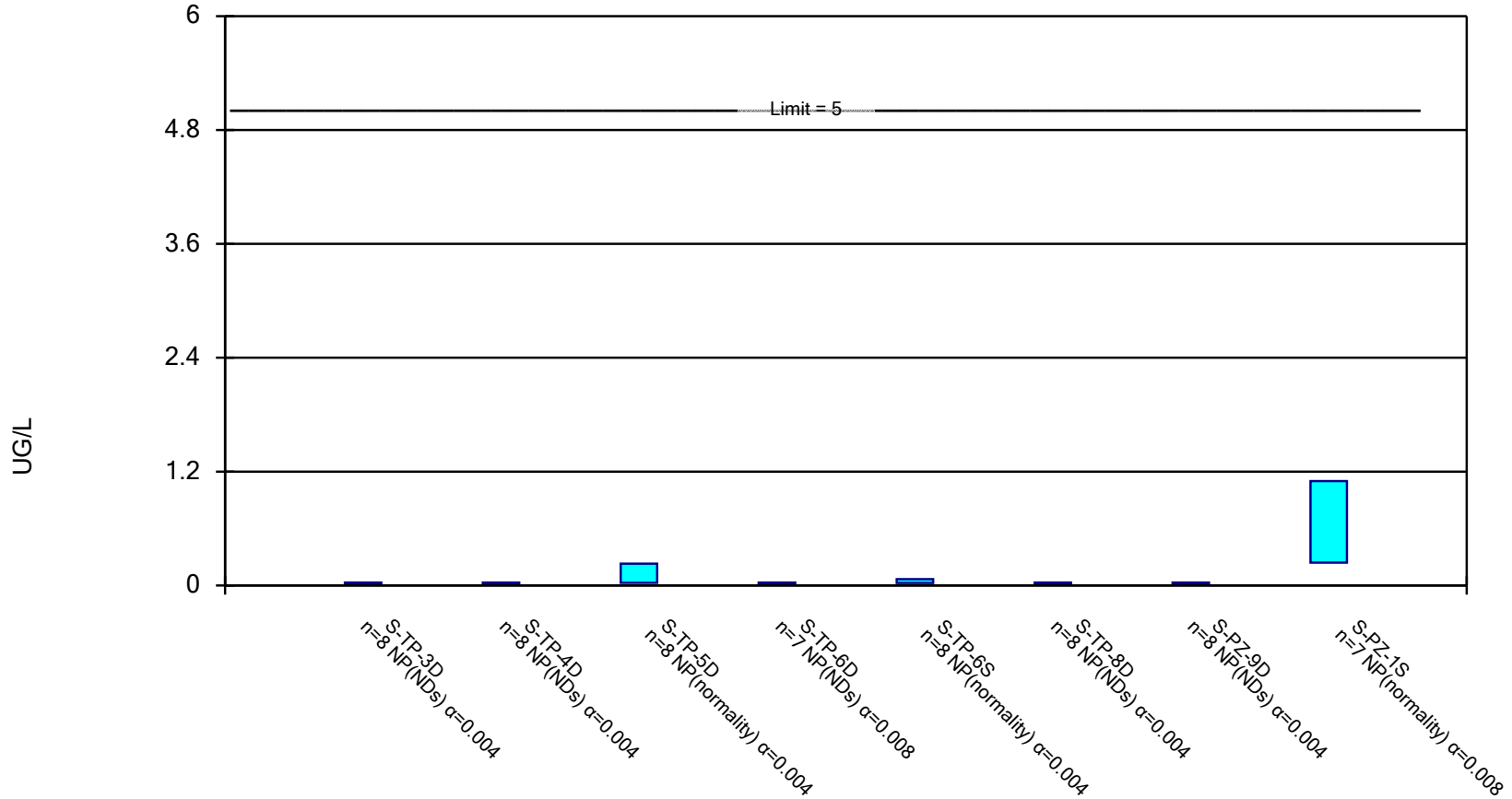


Constituent: CADMIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

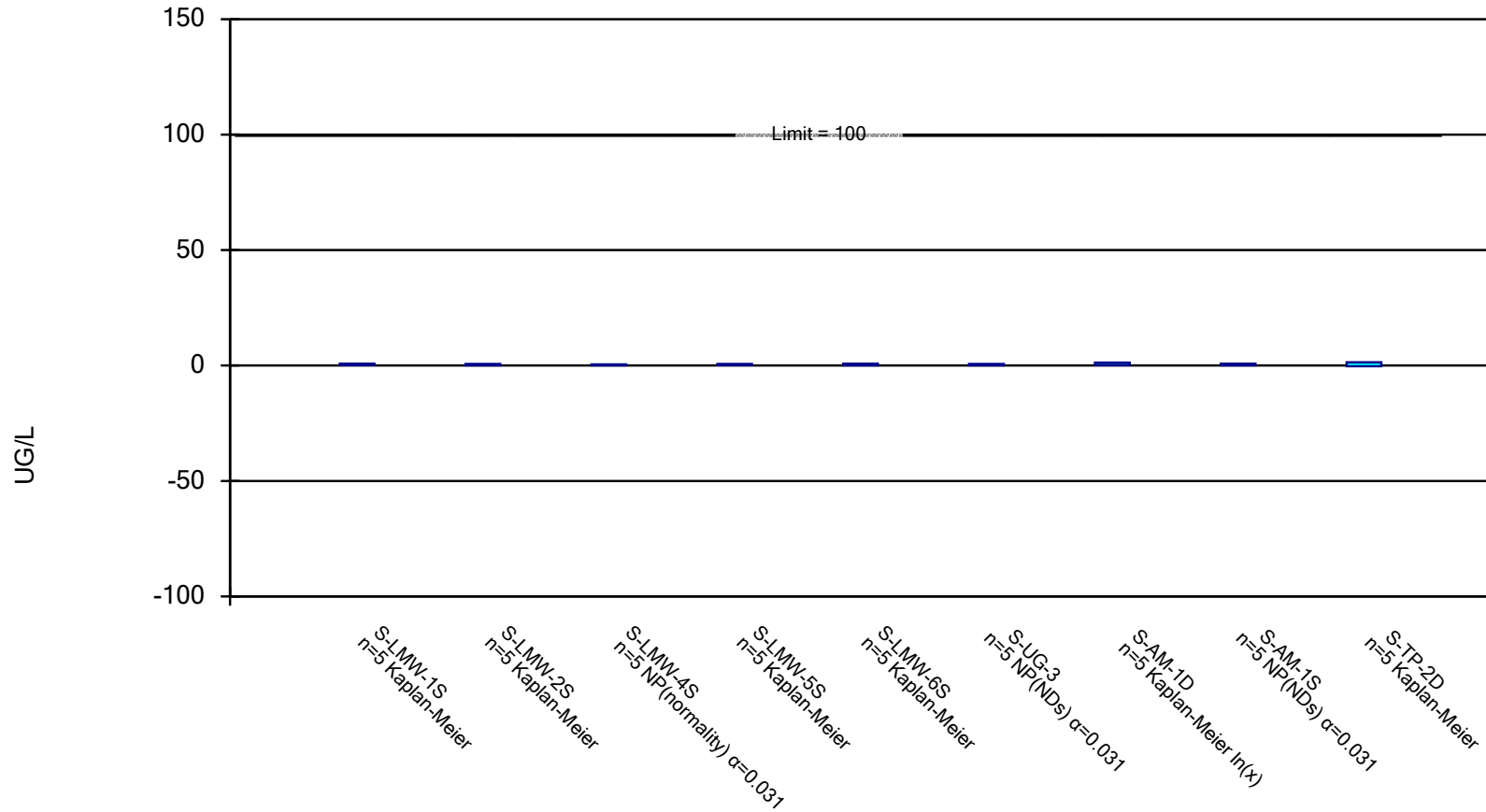


Constituent: CADMIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

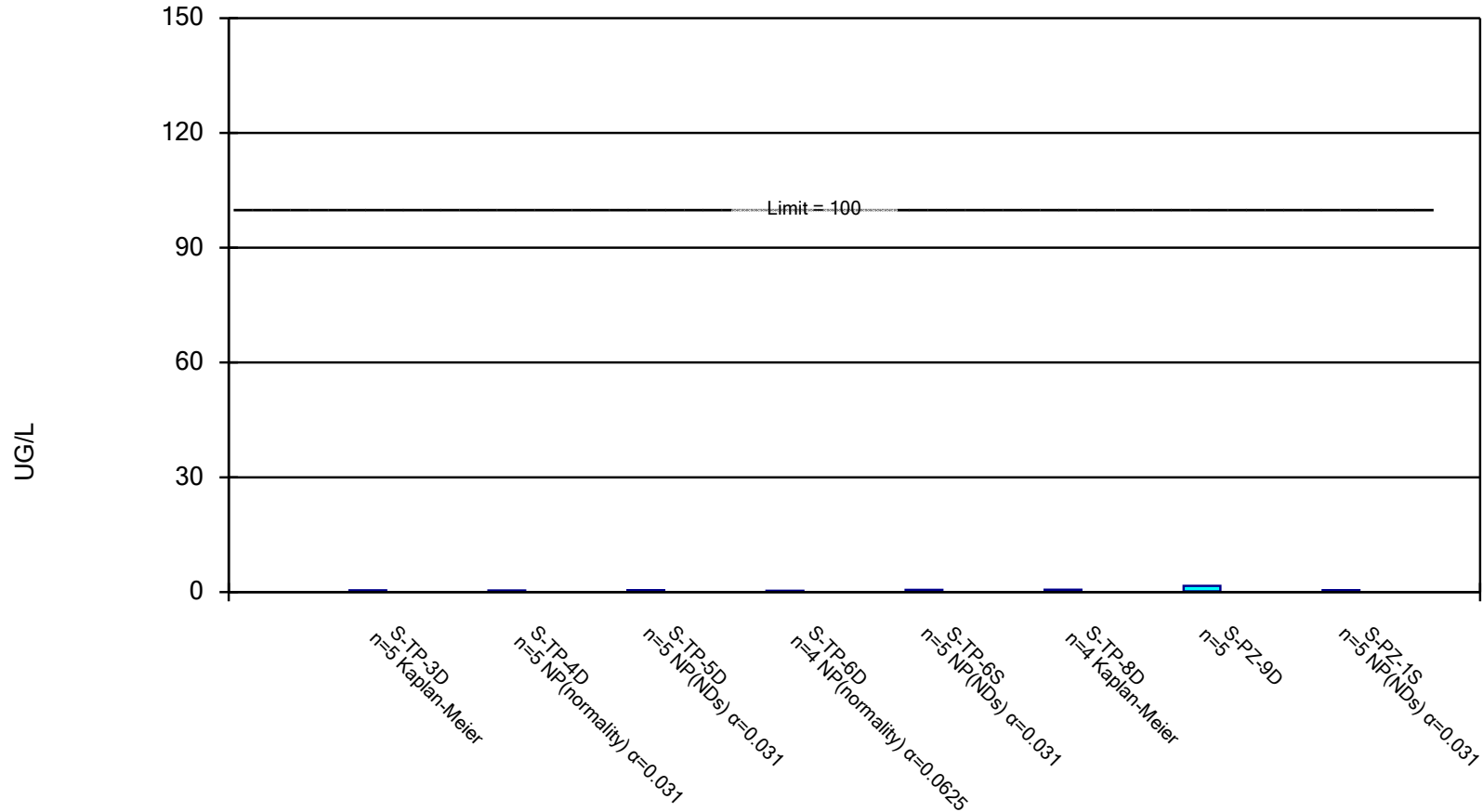


Constituent: CHROMIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

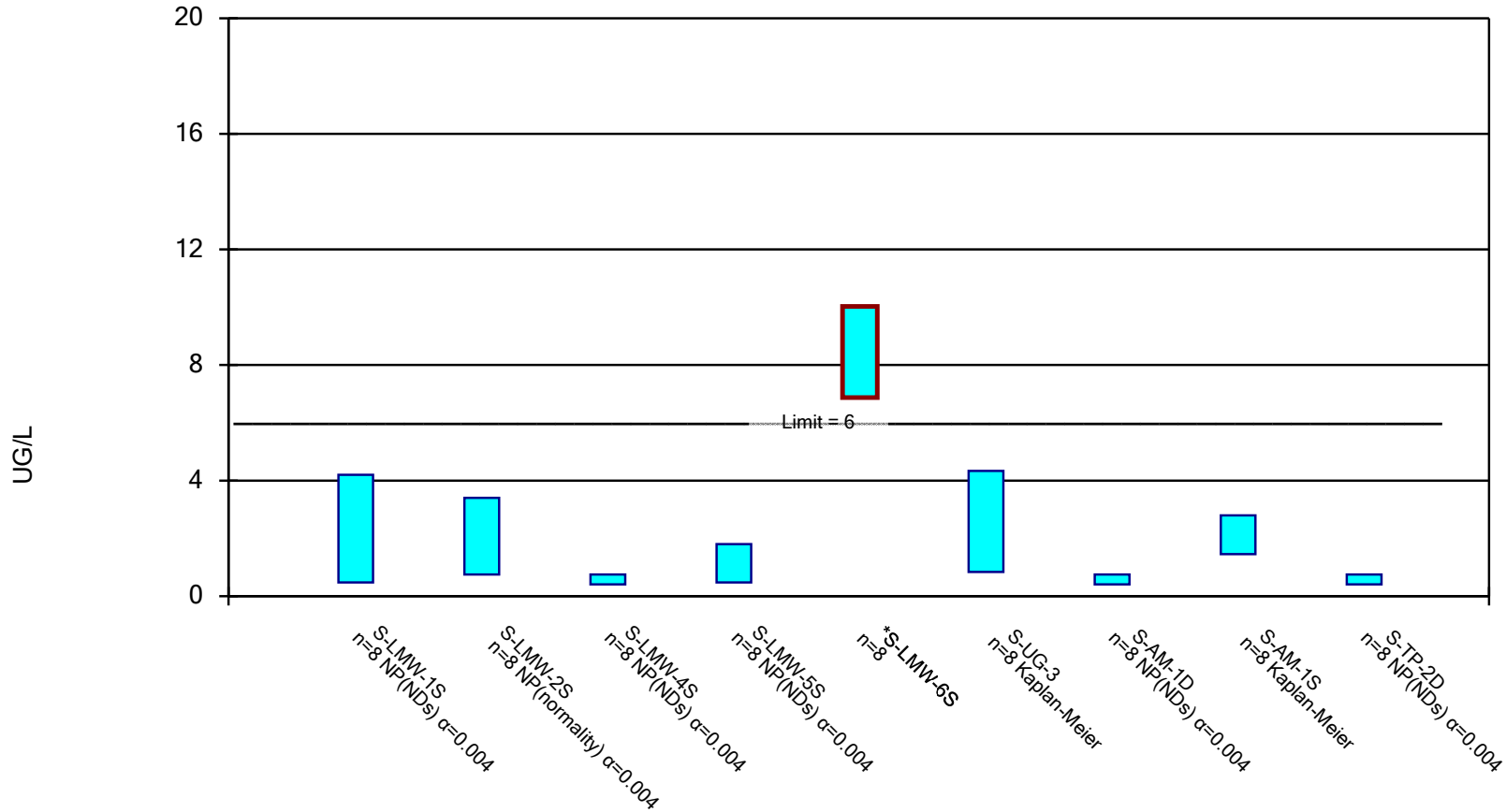


Constituent: CHROMIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

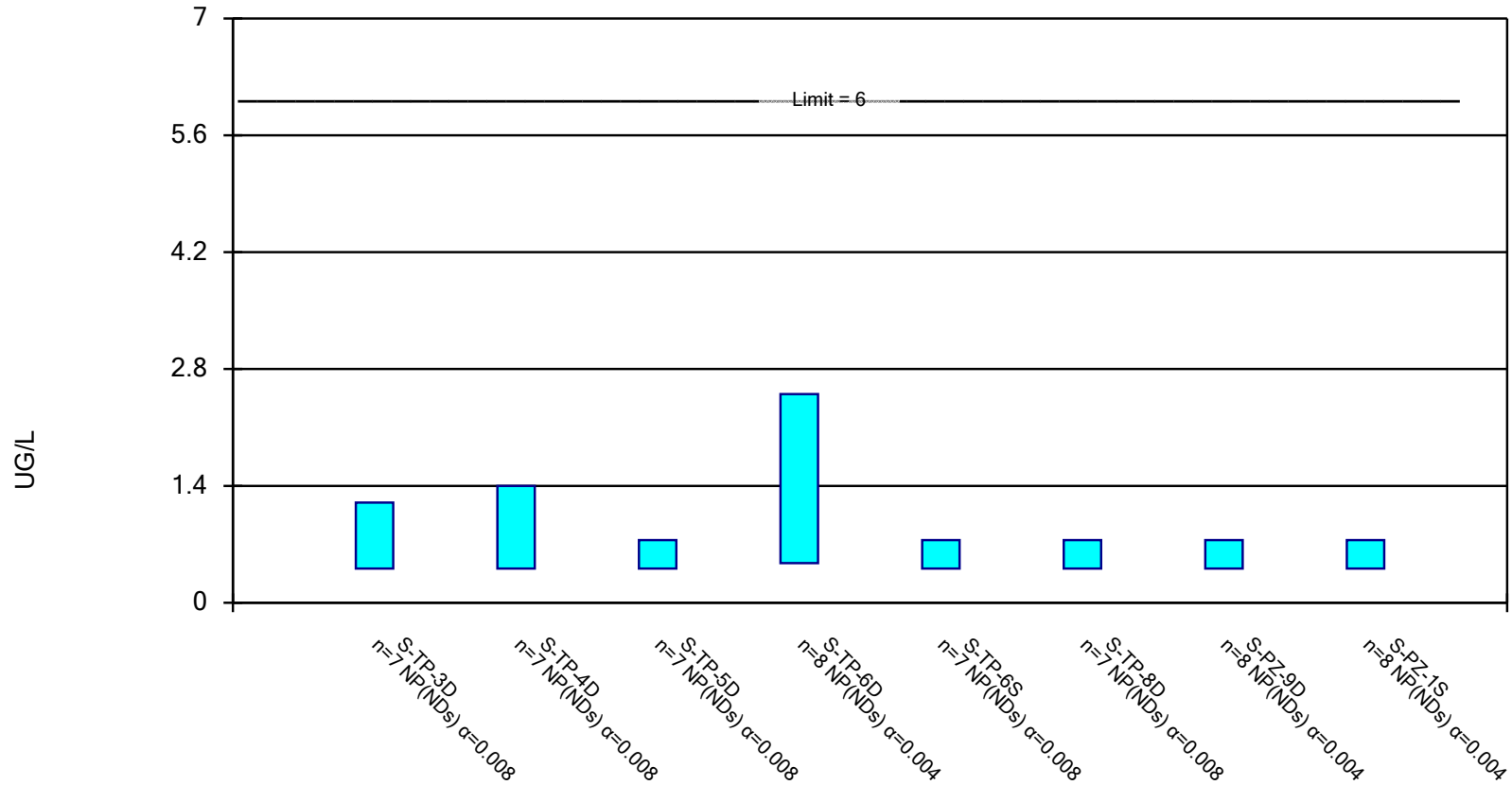


Constituent: COBALT, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

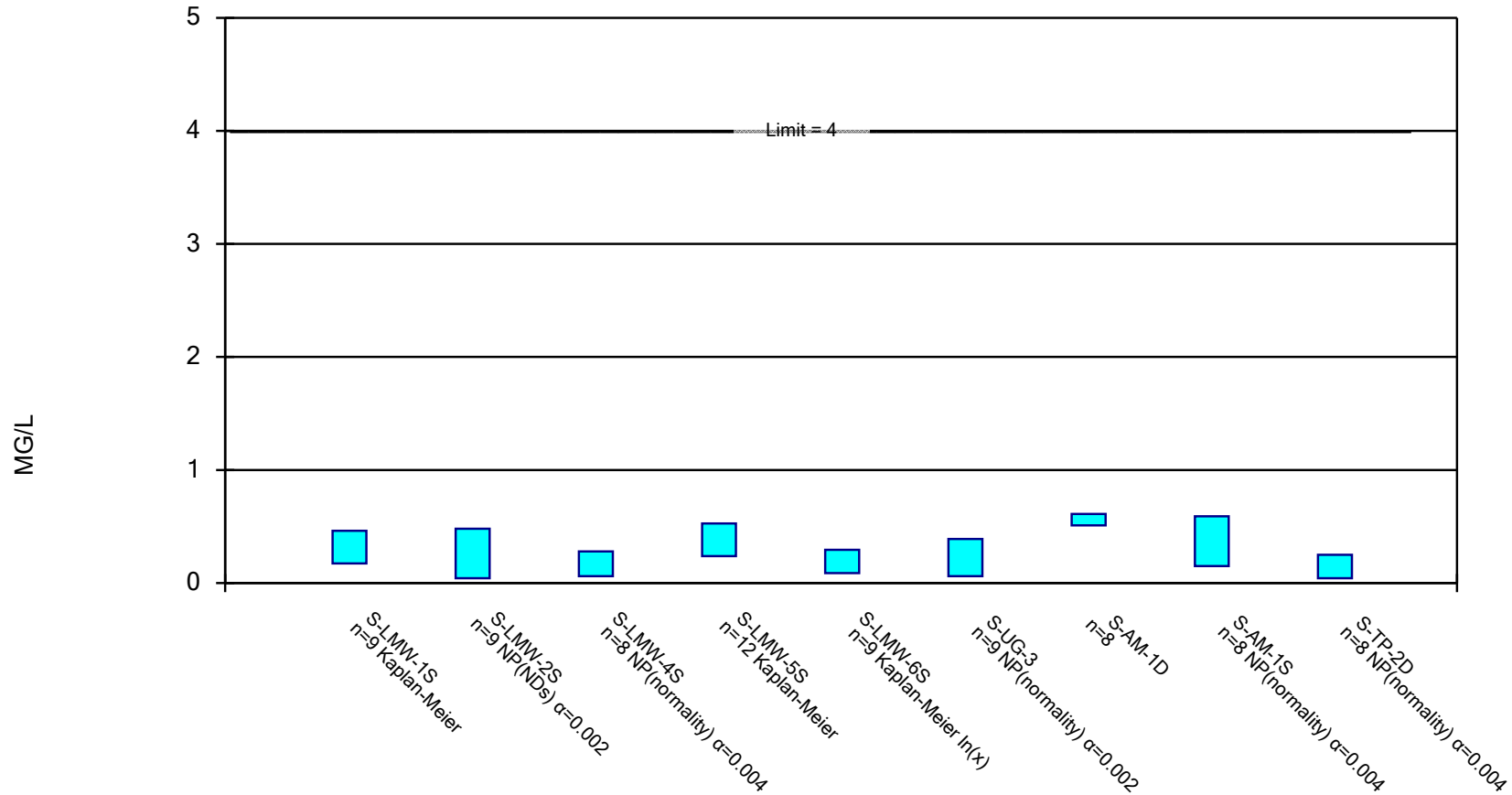


Constituent: COBALT, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

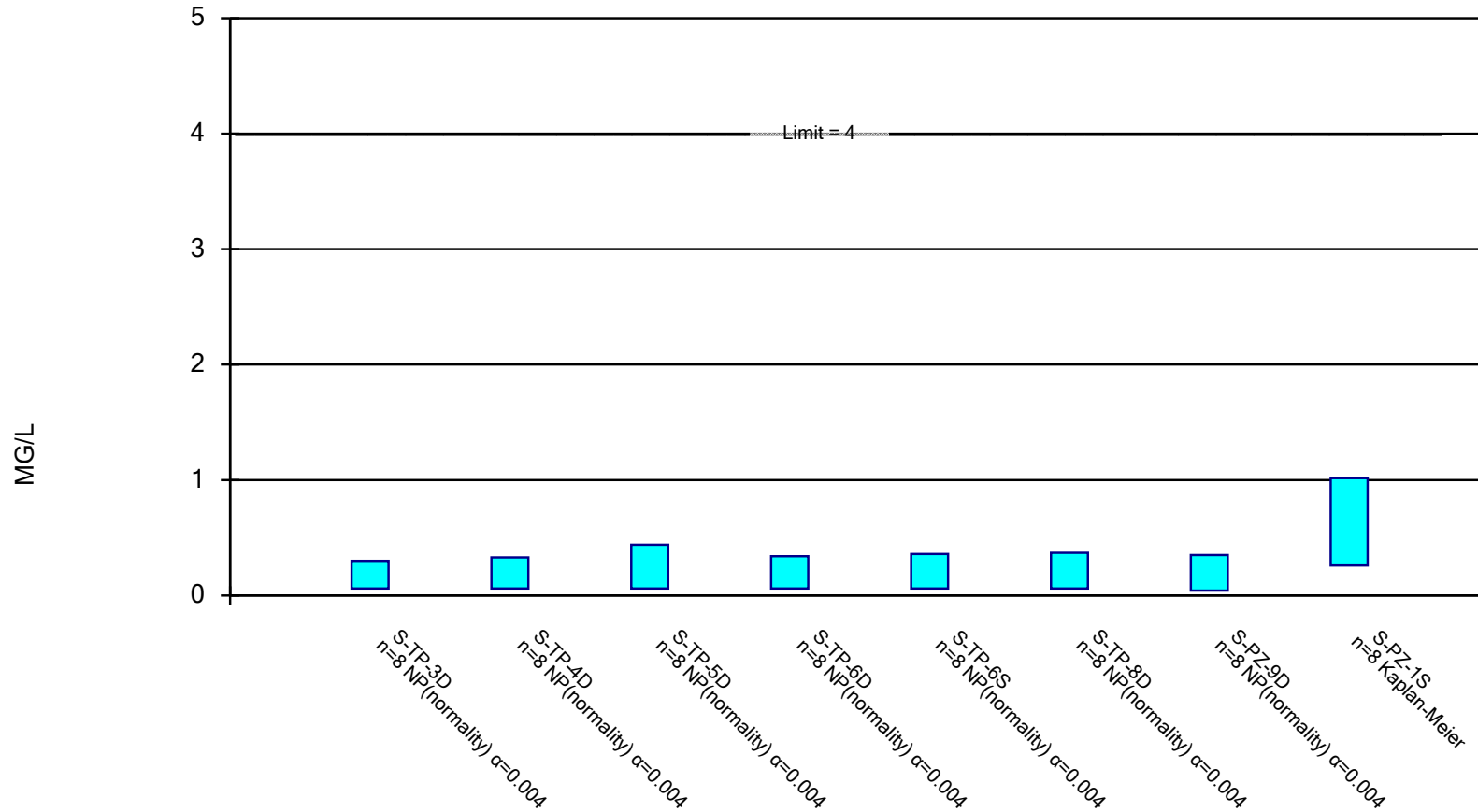


Constituent: FLUORIDE, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

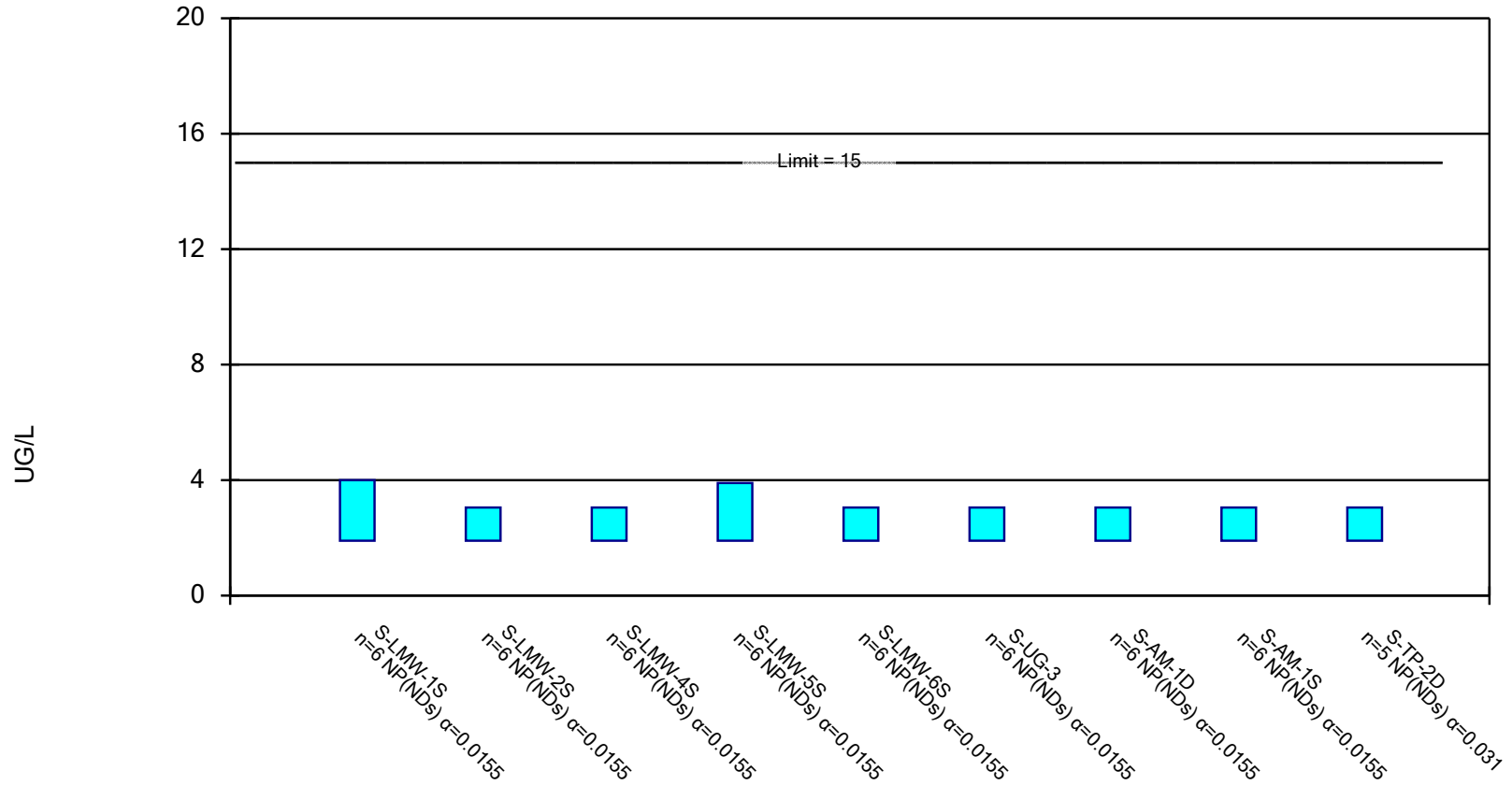


Constituent: FLUORIDE, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

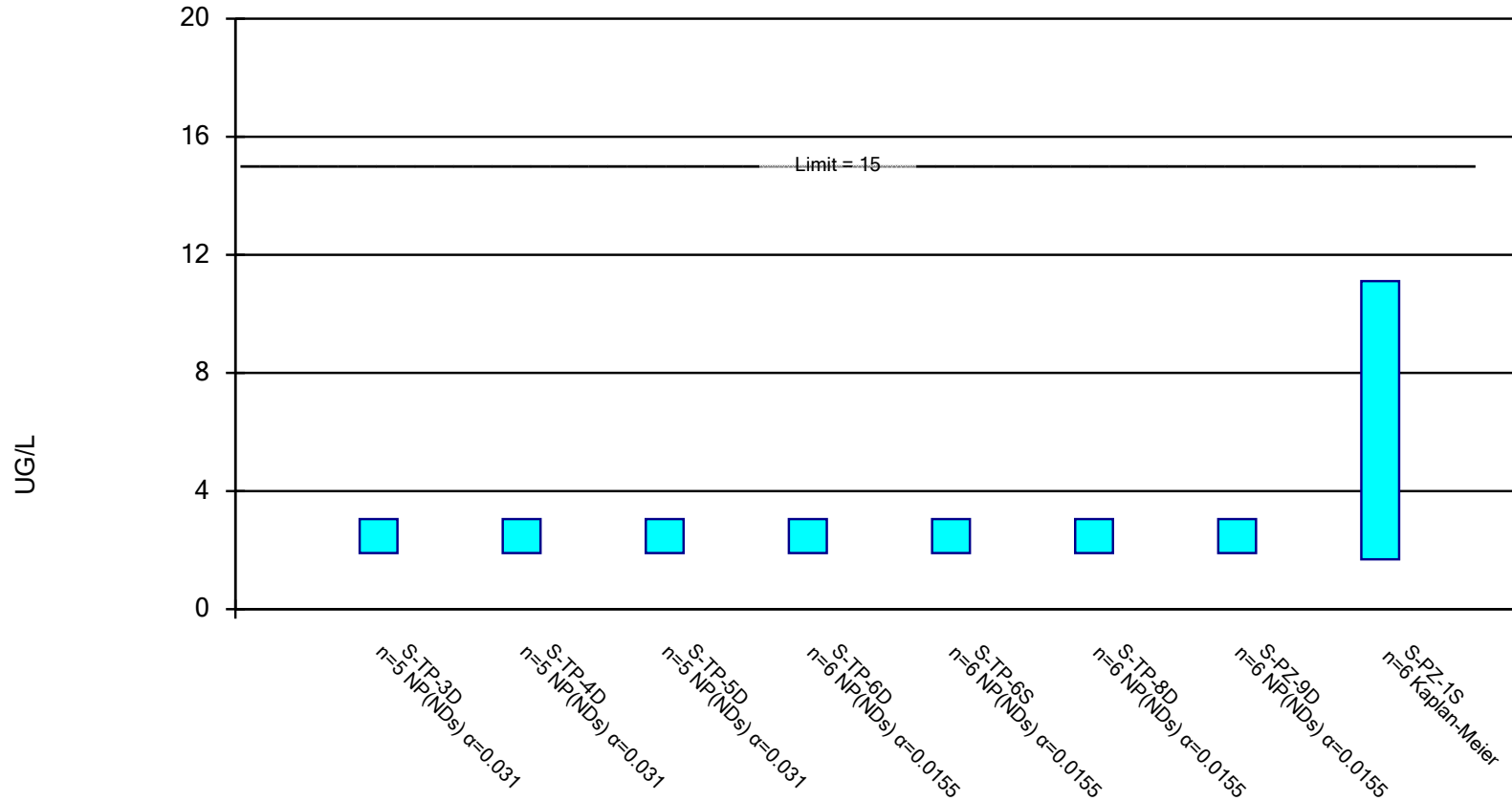


Constituent: LEAD, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

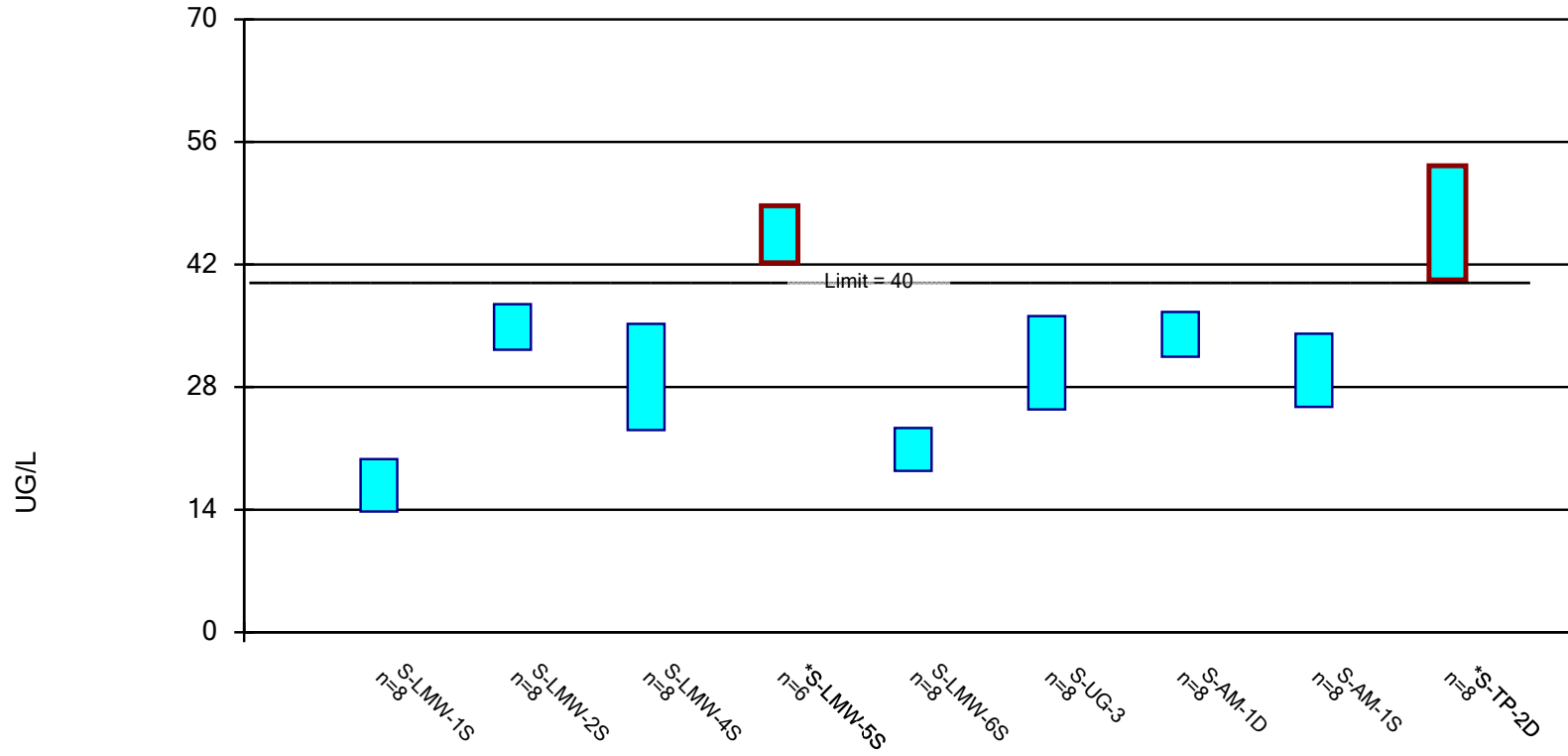


Constituent: LEAD, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

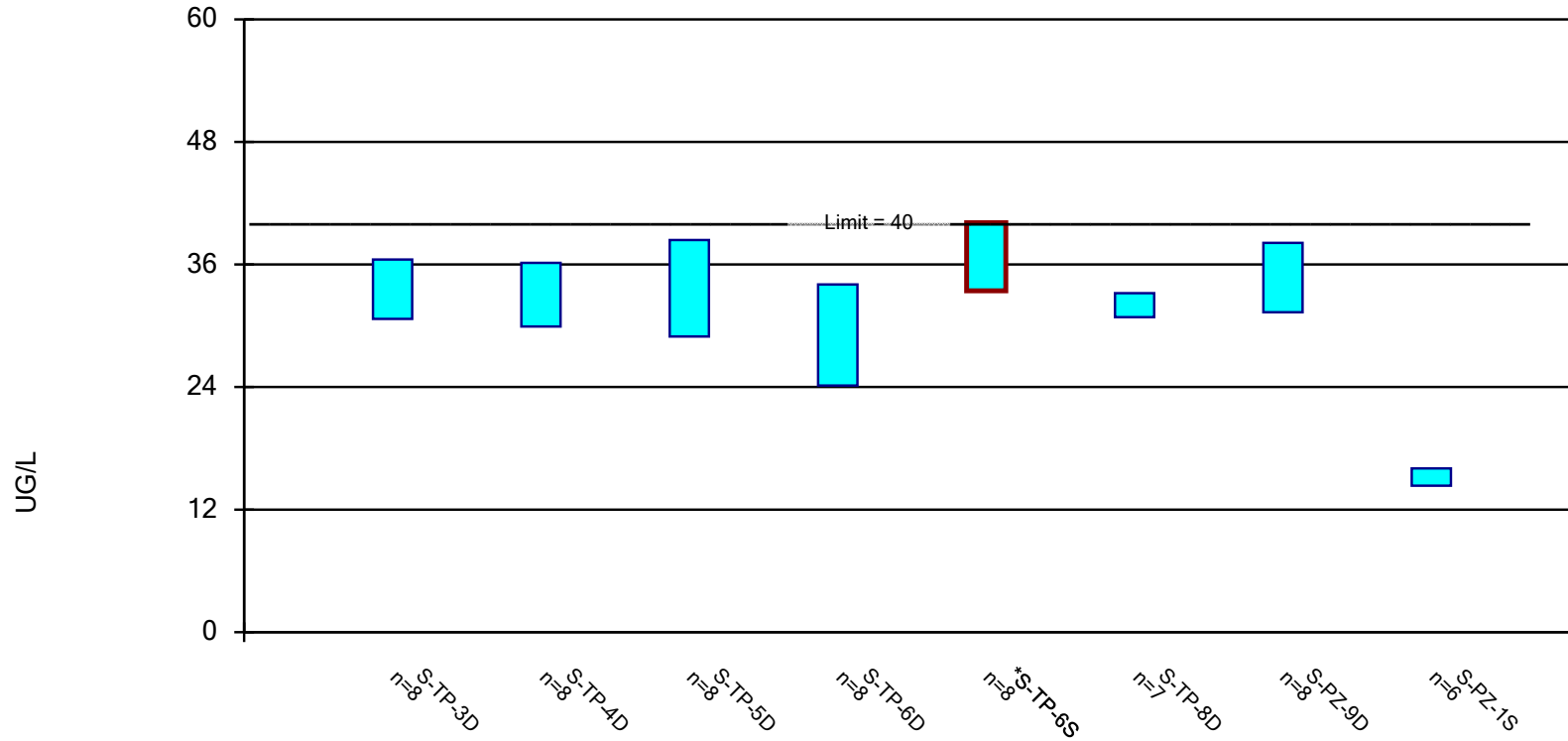


Constituent: LITHIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

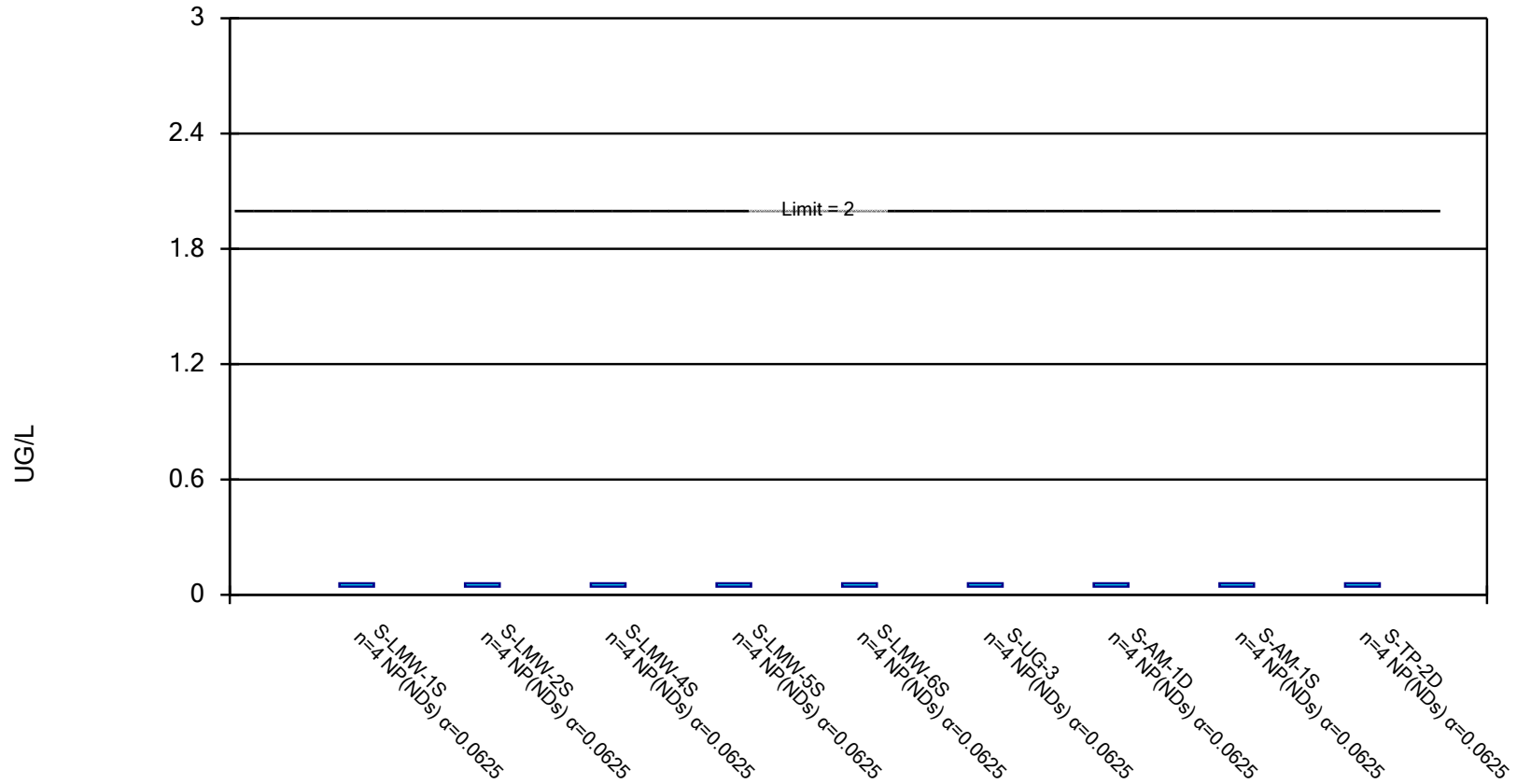


Constituent: LITHIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

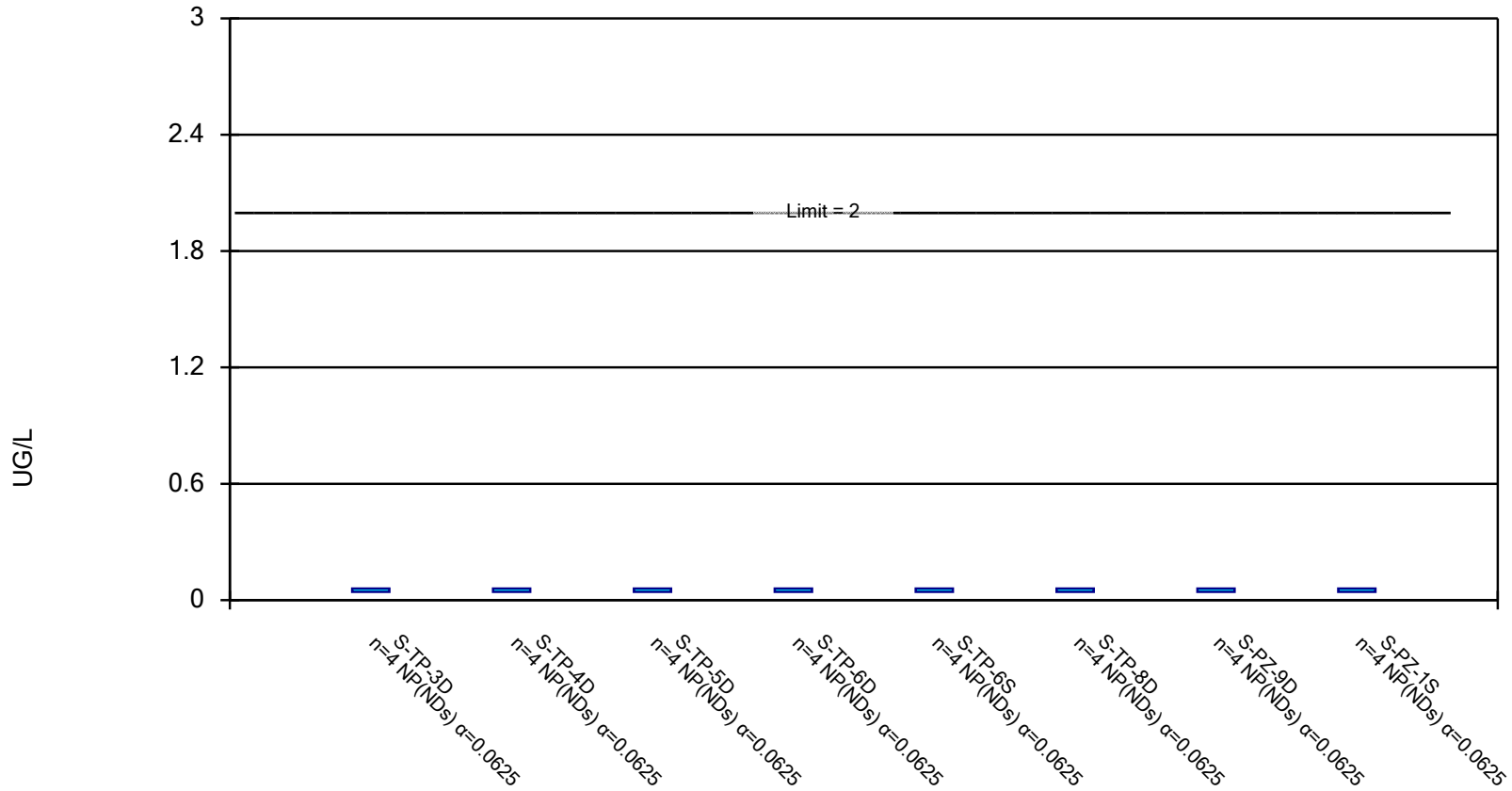


Constituent: MERCURY, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

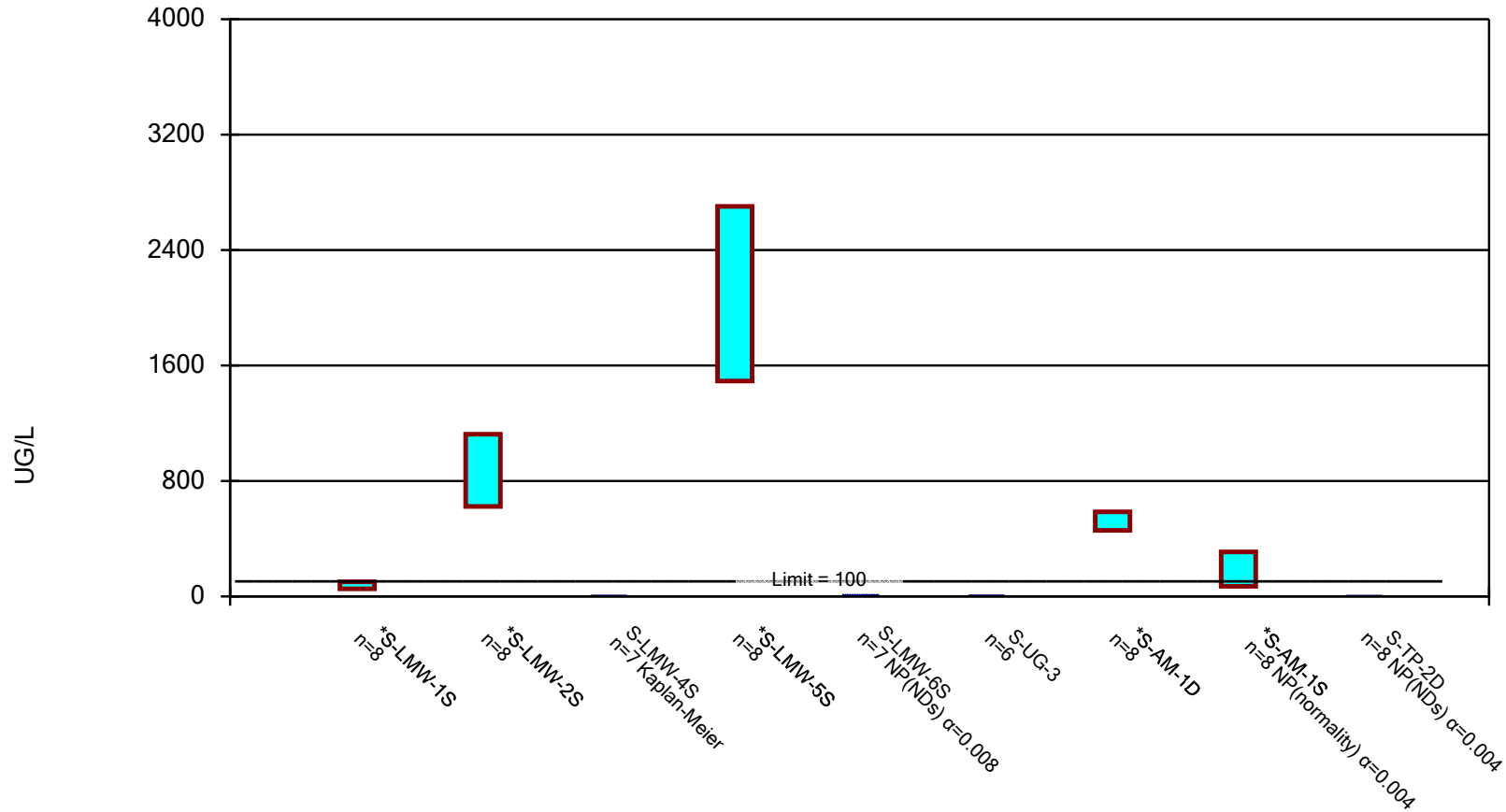


Constituent: MERCURY, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

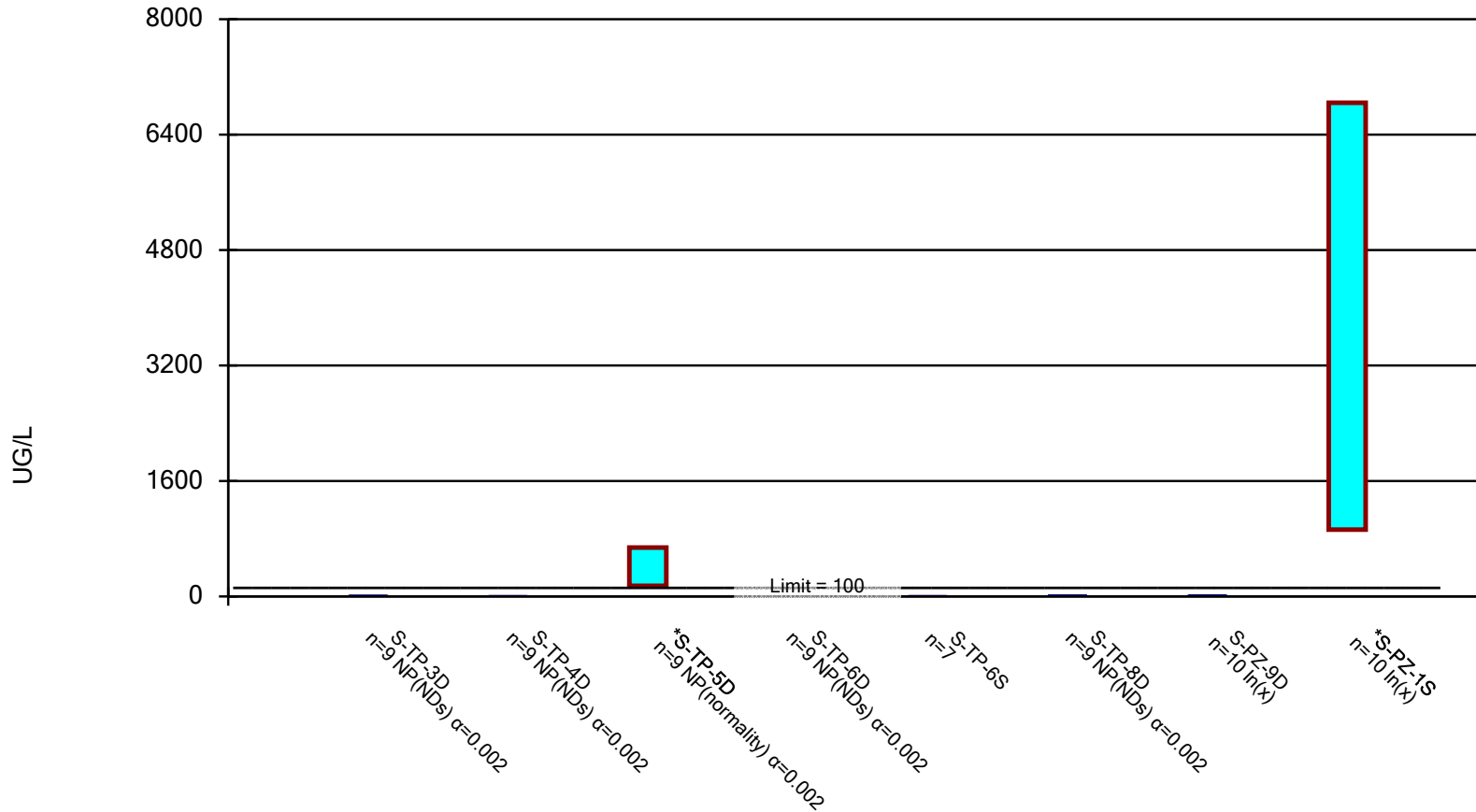


Constituent: MOLYBDENUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

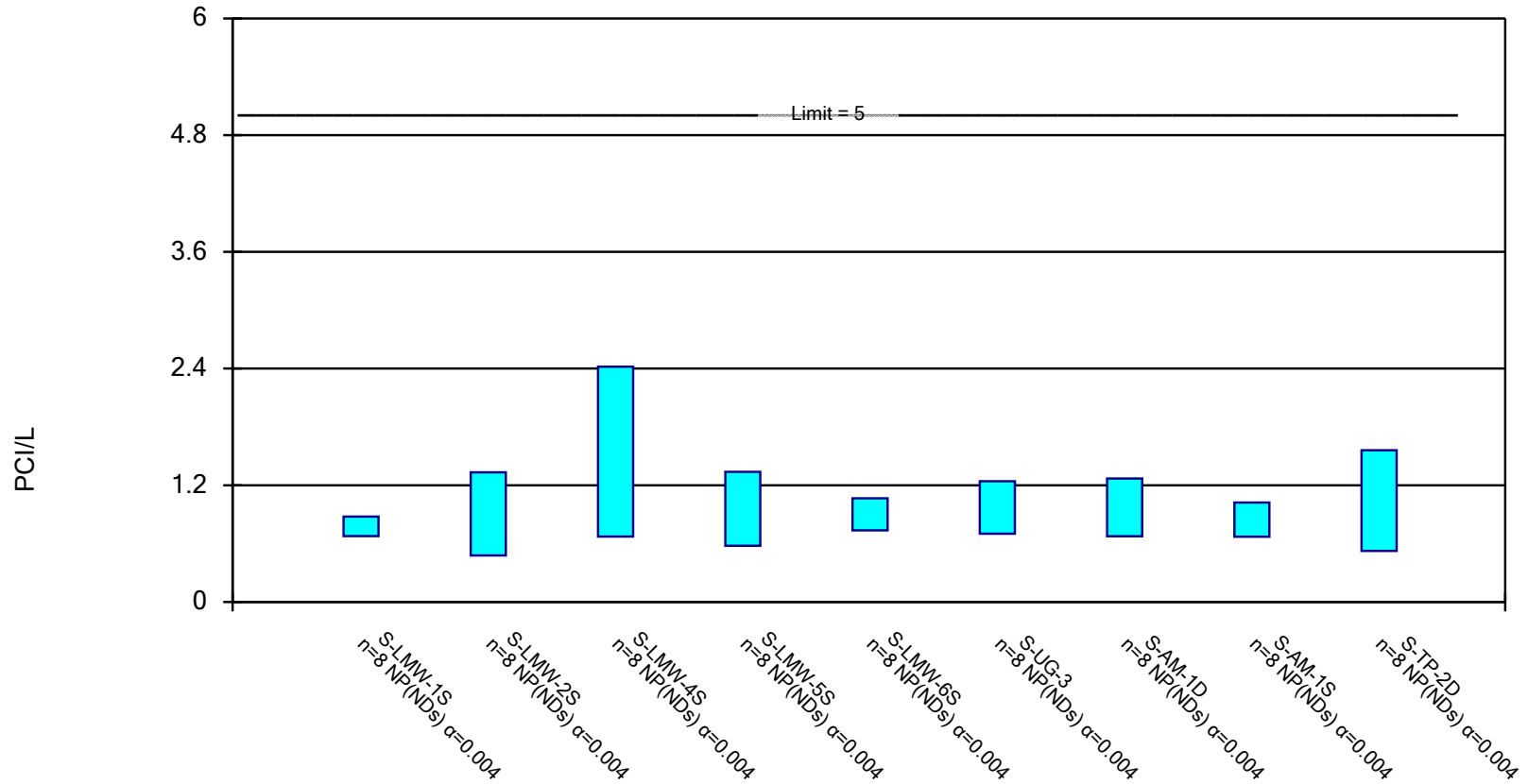


Constituent: MOLYBDENUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

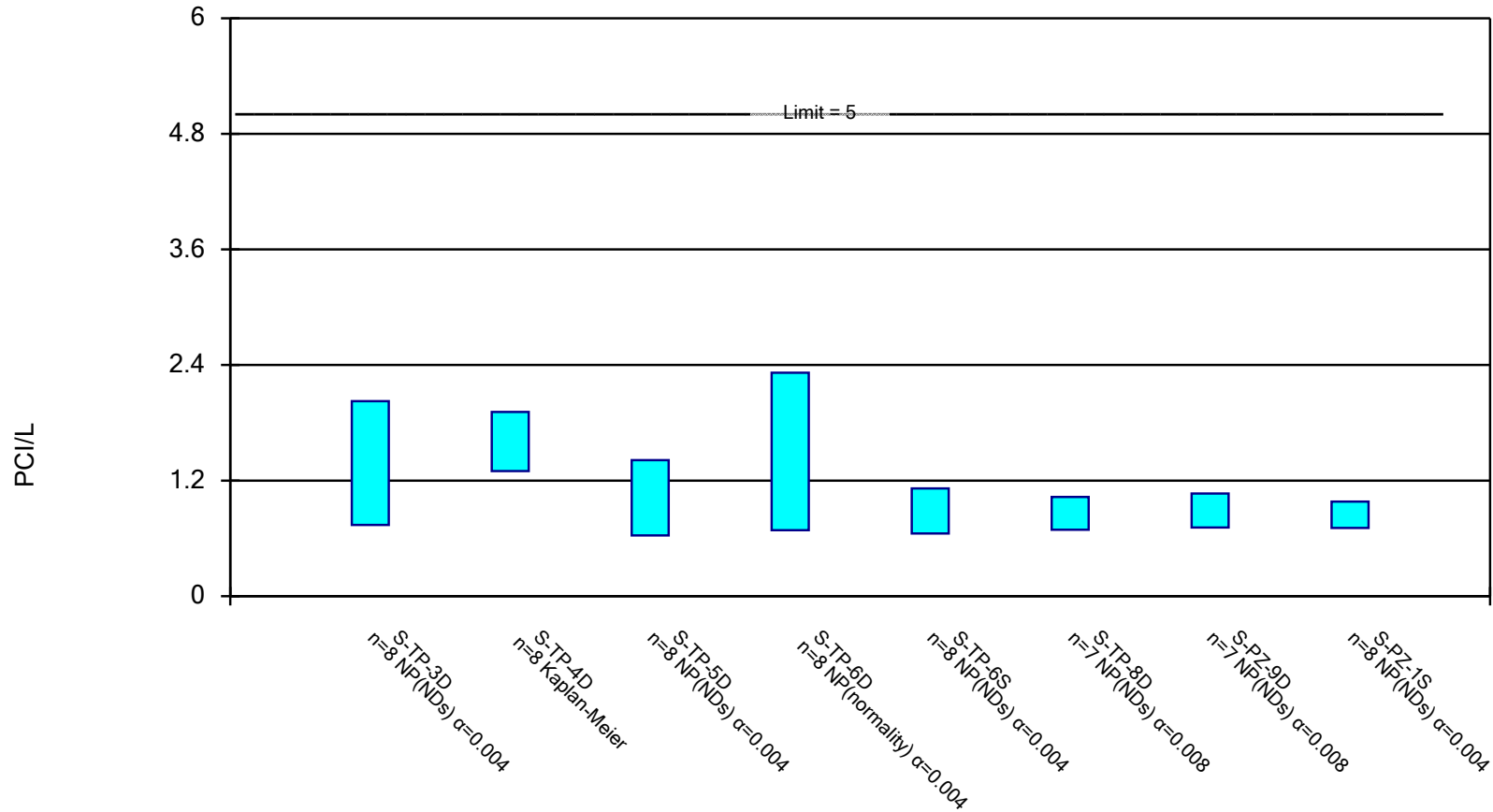


Constituent: RADIUM [226 + 228] Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

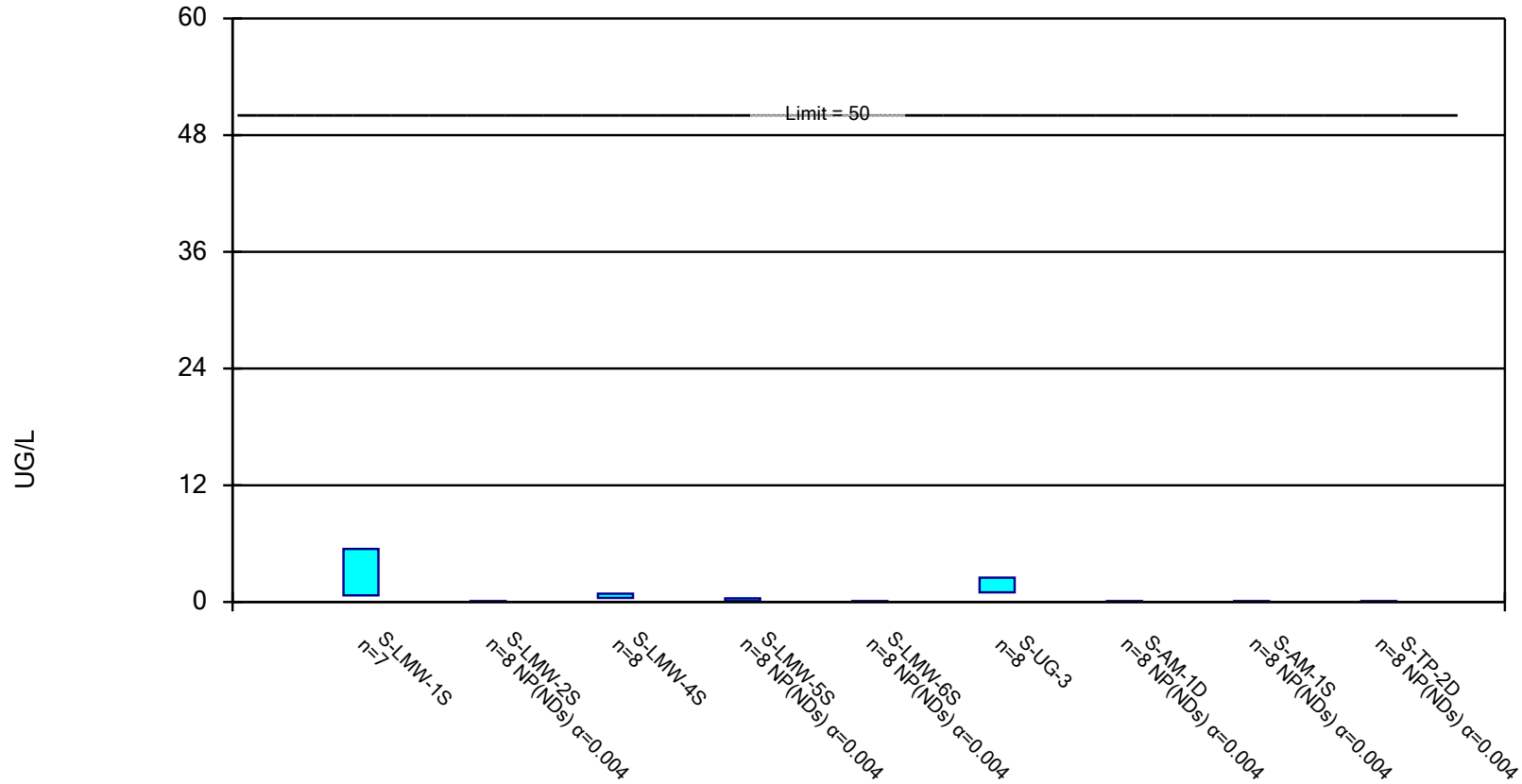


Constituent: RADIUM [226 + 228] Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

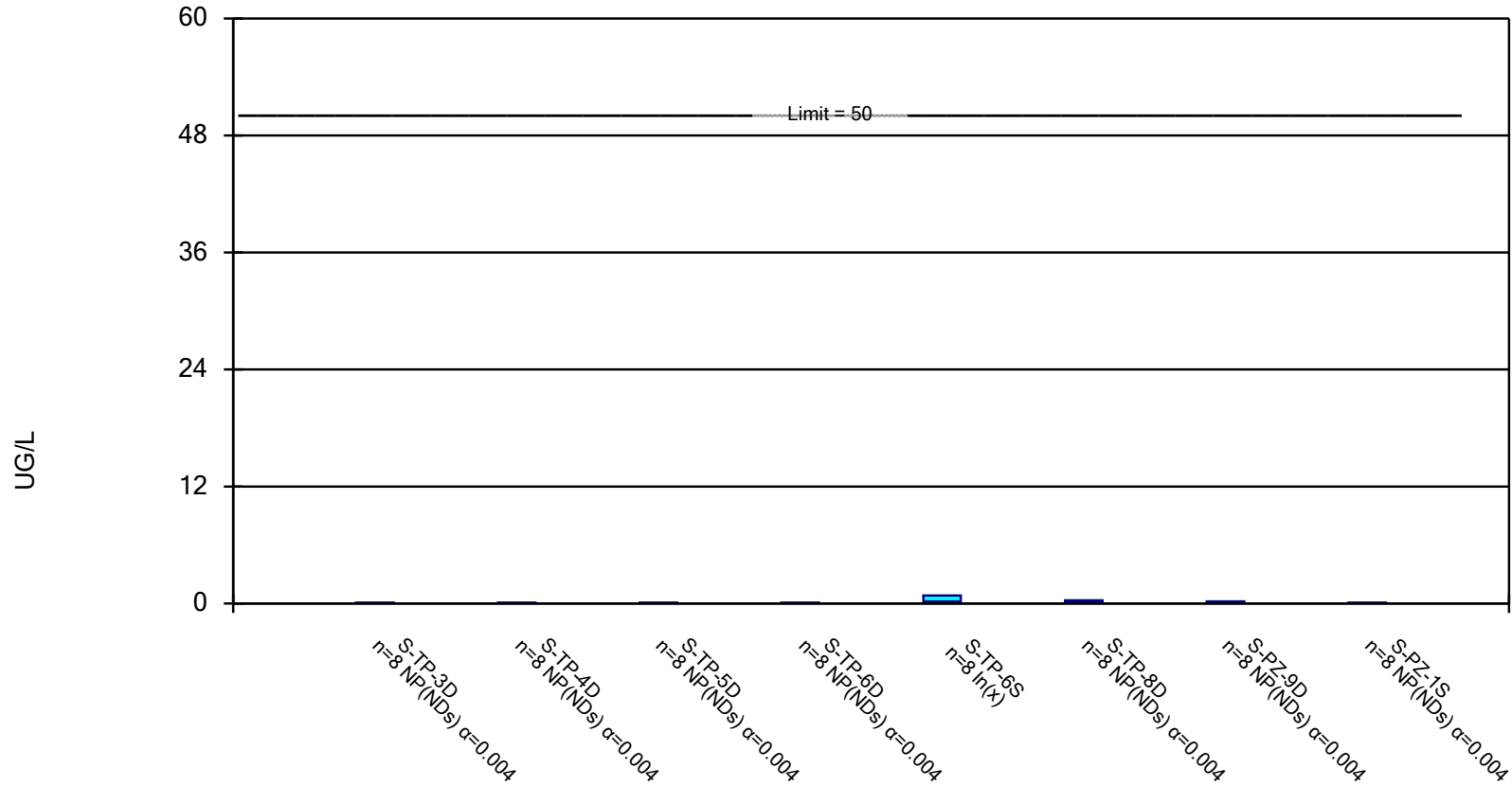


Constituent: SELENIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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.

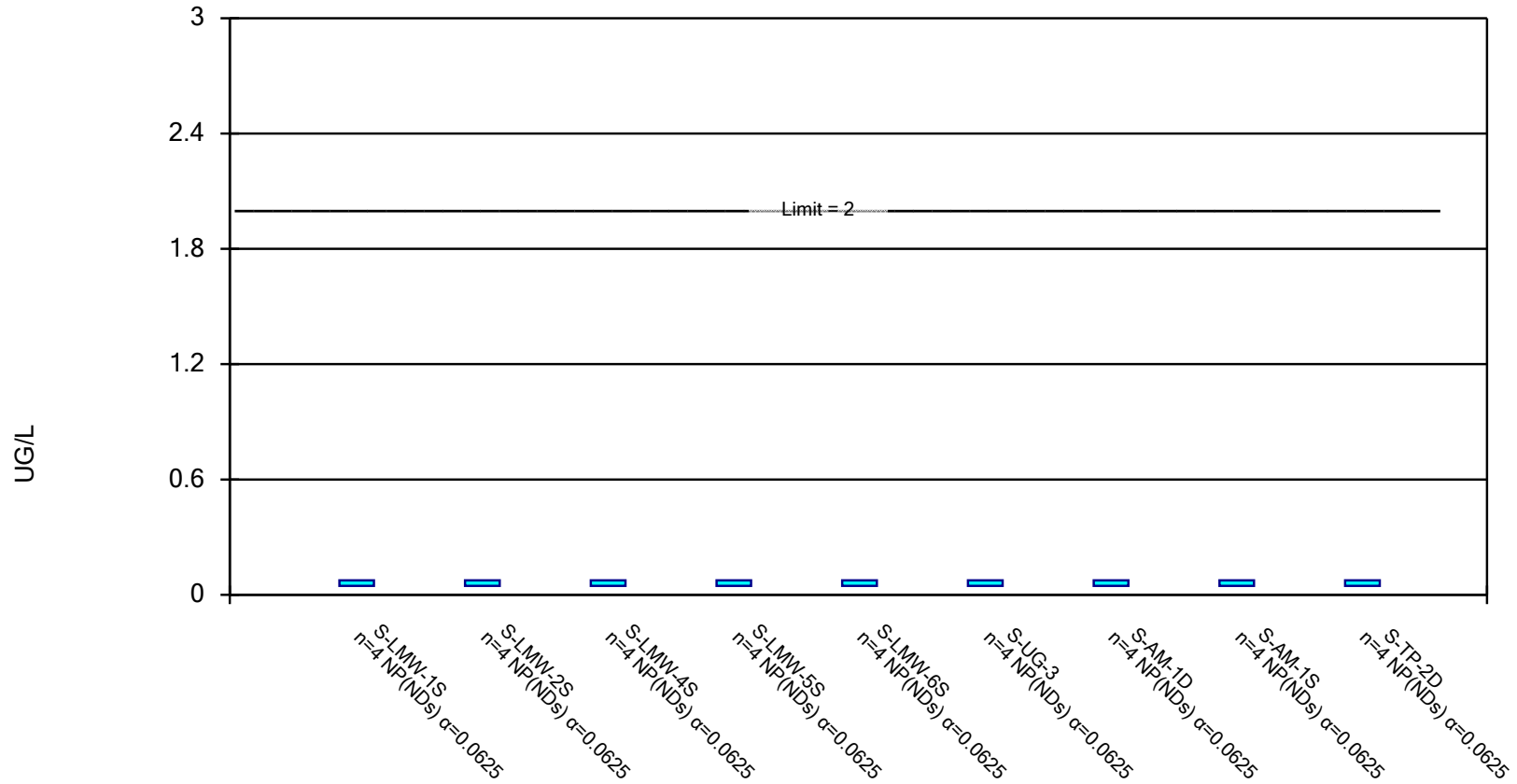


Constituent: SELENIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

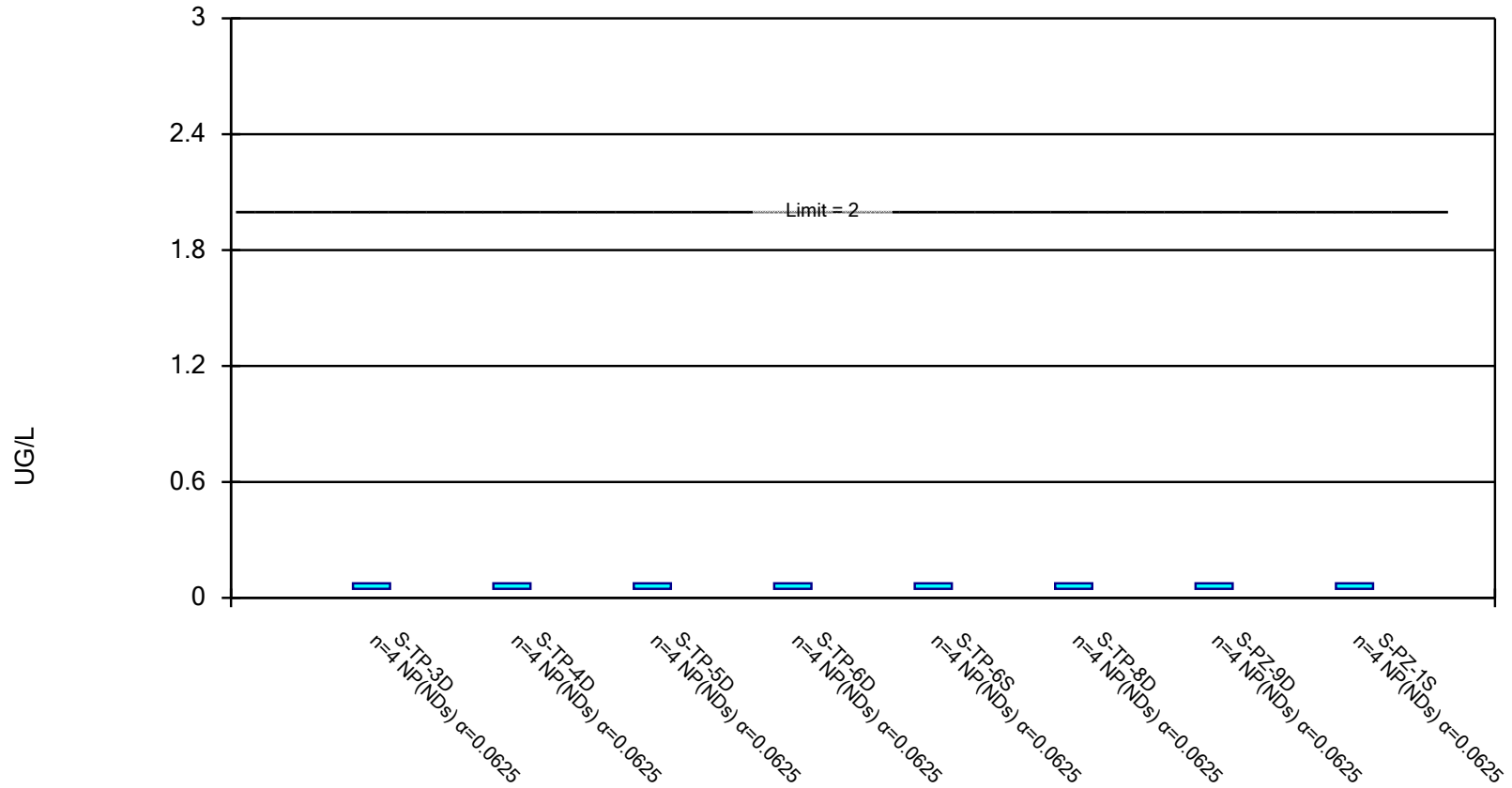


Constituent: THALLIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 8/2/2023 7:24 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/2/2023, 7:25 PM

<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)	S-LMW-1S	0.4812	0.2838	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-2S	0.19	0.15	6	No	4	0	No	0.0625	NP (normality)
ANTIMONY, TOTAL (UG/L)	S-LMW-4S	0.2093	0.1157	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-5S	0.1743	0.09568	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-6S	0.259	0.161	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UG-3	0.2785	0.05148	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-AM-1D	0.23	0.0485	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-AM-1S	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-2D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-3D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-4D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-5D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6D	0.86	0.05	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6S	0.1593	0.08068	6	No	4	50	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-TP-8D	0.21	0.05	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-1S	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-LMW-1S	2.27	1.78	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-2S	1	0.5	10	No	8	12.5	No	0.004	NP (normality)
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.6675	0.5375	10	No	8	12.5	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.9012	0.6163	10	No	8	12.5	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.79	0.5	10	No	8	12.5	No	0.004	NP (normality)
ARSENIC, TOTAL (UG/L)	S-UG-3	0.458	0.3695	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1D	0.2188	0.1812	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1S	1.512	1.213	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-2D	0.2347	0.1303	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.1821	0.09544	10	No	8	12.5	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-4D	1.966	1.434	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.2759	0.2091	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6D	0.1527	0.1118	10	No	8	25	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.5661	0.4514	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-8D	1.61	1.29	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.7333	0.3767	10	No	8	12.5	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-1S	0.5115	0.3035	10	No	8	12.5	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-1S	158	121	2000	No	8	0	No	0.004	NP (normality)
BARIUM, TOTAL (UG/L)	S-LMW-2S	140	104	2000	No	8	0	No	0.004	NP (normality)
BARIUM, TOTAL (UG/L)	S-LMW-4S	234.8	212.7	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-5S	58.92	49.73	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-6S	53.06	42.31	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UG-3	248	208.2	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1D	245.6	209.4	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1S	154.6	131.9	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-2D	63.93	56.69	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-3D	586	549	2000	No	8	0	No	0.004	NP (normality)
BARIUM, TOTAL (UG/L)	S-TP-4D	575.6	526.4	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-5D	177.3	140.2	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6D	428.7	397	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6S	296.4	270.6	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-8D	386.1	330.1	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-PZ-9D	122.9	104.3	2000	No	8	0	No	0.01	Param.

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/2/2023, 7:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
BARIUM, TOTAL (UG/L)	S-PZ-1S	194	89.8	2000	No	8	0	No	0.004	NP (normality)
BERYLLIUM, TOTAL (UG/L)	S-LMW-1S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-2S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-4S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-5S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-6S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UG-3	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1S	0.5	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-2D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-3D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-4D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-8D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-9D	0.61	0.06	4	No	5	80	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-1S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.103	0.05422	5	No	8	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.7411	0.3439	5	No	8	12.5	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.1778	0.04763	5	No	8	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-5S	1.22	0.6426	5	No	8	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-6S	1.237	0.6457	5	No	8	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UG-3	0.3502	0.1773	5	No	8	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.2224	0.07064	5	No	8	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.1368	0.04918	5	No	8	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-TP-2D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-3D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-4D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.23	0.028	5	No	8	37.5	No	0.004	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-6D	0.031	0.025	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-6S	0.066	0.0265	5	No	8	50	No	0.004	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-8D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-9D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-1S	1.1	0.24	5	No	7	14.29	No	0.008	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-LMW-1S	0.7749	0.1451	100	No	5	20	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-2S	0.6651	0.06292	100	No	5	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-4S	0.5	0.11	100	No	5	40	No	0.031	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-LMW-5S	0.6411	0.1669	100	No	5	20	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-6S	0.7731	0.08691	100	No	5	20	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UG-3	0.65	0.11	100	No	5	80	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-AM-1D	1.244	0.1288	100	No	5	40	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-AM-1S	0.83	0.11	100	No	5	60	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-2D	1.358	-0.278	100	No	5	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-3D	0.4698	0.1742	100	No	5	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-4D	0.43	0.11	100	No	5	40	No	0.031	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.11	100	No	5	80	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-6D	0.35	0.15	100	No	4	25	No	0.0625	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-6S	0.59	0.11	100	No	5	60	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-8D	0.5964	0.1386	100	No	4	25	No	0.01	Param.

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	S-PZ-9D	1.638	0.1782	100	No	5	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-PZ-1S	0.5	0.11	100	No	5	80	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-1S	4.2	0.475	6	No	8	62.5	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-2S	3.4	0.75	6	No	8	25	No	0.004	NP (normality)
COBALT, TOTAL (UG/L)	S-LMW-4S	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-5S	1.8	0.475	6	No	8	75	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-6S	10.03	6.873	6	Yes	8	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-UG-3	4.332	0.8364	6	No	8	25	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-AM-1D	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-AM-1S	2.797	1.453	6	No	8	25	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-TP-2D	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-3D	1.2	0.41	6	No	7	85.71	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-4D	1.4	0.41	6	No	7	85.71	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-5D	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6D	2.5	0.475	6	No	8	87.5	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6S	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-8D	0.75	0.41	6	No	7	100	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-9D	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-1S	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-1S	0.4616	0.1734	4	No	9	22.22	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	0.48	0.043	4	No	9	55.56	No	0.002	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	0.28	0.06	4	No	8	37.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	0.5265	0.2382	4	No	12	16.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	0.2932	0.08757	4	No	9	44.44	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UG-3	0.39	0.06	4	No	9	22.22	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.6104	0.5096	4	No	8	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.59	0.15	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-2D	0.25	0.043	4	No	8	50	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-3D	0.3	0.06	4	No	8	12.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-4D	0.33	0.06	4	No	8	12.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-5D	0.44	0.06	4	No	8	12.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6D	0.34	0.06	4	No	8	25	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6S	0.36	0.06	4	No	8	25	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-8D	0.37	0.06	4	No	8	25	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	0.35	0.043	4	No	8	50	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-1S	1.016	0.2594	4	No	8	25	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-LMW-1S	4	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-2S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-4S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-5S	3.9	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-6S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-UG-3	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-2D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-3D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-4D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-5D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LEAD, TOTAL (UG/L)	S-TP-8D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-9D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-1S	11.11	1.688	15	No	6	50	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-1S	19.77	13.8	40	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-2S	37.47	32.26	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-4S	35.23	23.09	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-5S	48.71	42.19	40	Yes	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-6S	23.33	18.44	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UG-3	36.12	25.45	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1D	36.59	31.46	40	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1S	34.1	25.75	40	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-2D	53.27	40.24	40	Yes	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-3D	36.48	30.68	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-4D	36.16	29.93	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-5D	38.4	28.94	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6D	34.04	24.14	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6S	40.1	33.42	40	Yes	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-8D	33.19	30.84	40	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-9D	38.11	31.33	40	No	8	12.5	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-1S	16.03	14.34	40	No	6	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	S-LMW-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-2S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-4S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-5S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-6S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UG-3	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-2D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-3D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-4D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-5D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-8D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	101	53.02	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-2S	1124	623.3	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	2.548	1.315	100	No	7	42.86	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-5S	2703	1492	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	12.1	0.85	100	No	7	71.43	No	0.008	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	4.189	2.011	100	No	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-AM-1D	585.7	457.8	100	Yes	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-AM-1S	308	70.7	100	Yes	8	0	No	0.004	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	3.1	0.45	100	No	8	87.5	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	10	0.85	100	No	9	66.67	No	0.002	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	2.8	0.85	100	No	9	77.78	No	0.002	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-5D	677	147	100	Yes	9	0	No	0.002	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	1.1	0.45	100	No	9	100	No	0.002	NP (NDs)

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	3.879	2.378	100	No	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	11.5	0.85	100	No	9	55.56	No	0.002	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	12.28	4.822	100	No	10	10	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-PZ-1S	6841	924.9	100	Yes	10	0	ln(x)	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	0.877	0.677	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	1.333	0.478	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	2.419	0.673	5	No	8	75	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	1.337	0.578	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	1.065	0.737	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UG-3	1.24	0.7015	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1D	1.269	0.675	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1S	1.023	0.6705	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-2D	1.56	0.5245	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-3D	2.025	0.739	5	No	8	75	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-4D	1.913	1.298	5	No	8	50	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-TP-5D	1.412	0.63	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6D	2.319	0.6855	5	No	8	50	No	0.004	NP (normality)
RADIUM [226 + 228] (PCI/L)	S-TP-6S	1.118	0.651	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-8D	1.031	0.689	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	1.066	0.7125	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	0.982	0.7075	5	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-1S	5.443	0.6767	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-4S	0.85	0.4125	50	No	8	12.5	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0.37	0.09	50	No	8	87.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UG-3	2.502	0.9984	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-AM-1D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-AM-1S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-2D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-3D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-4D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-5D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6D	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6S	0.8257	0.2187	50	No	8	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-TP-8D	0.33	0.09	50	No	8	87.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0.21	0.09	50	No	8	87.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-2S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-4S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-5S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-6S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UG-3	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-2D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-3D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-4D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-5D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/2/2023, 7:25 PM

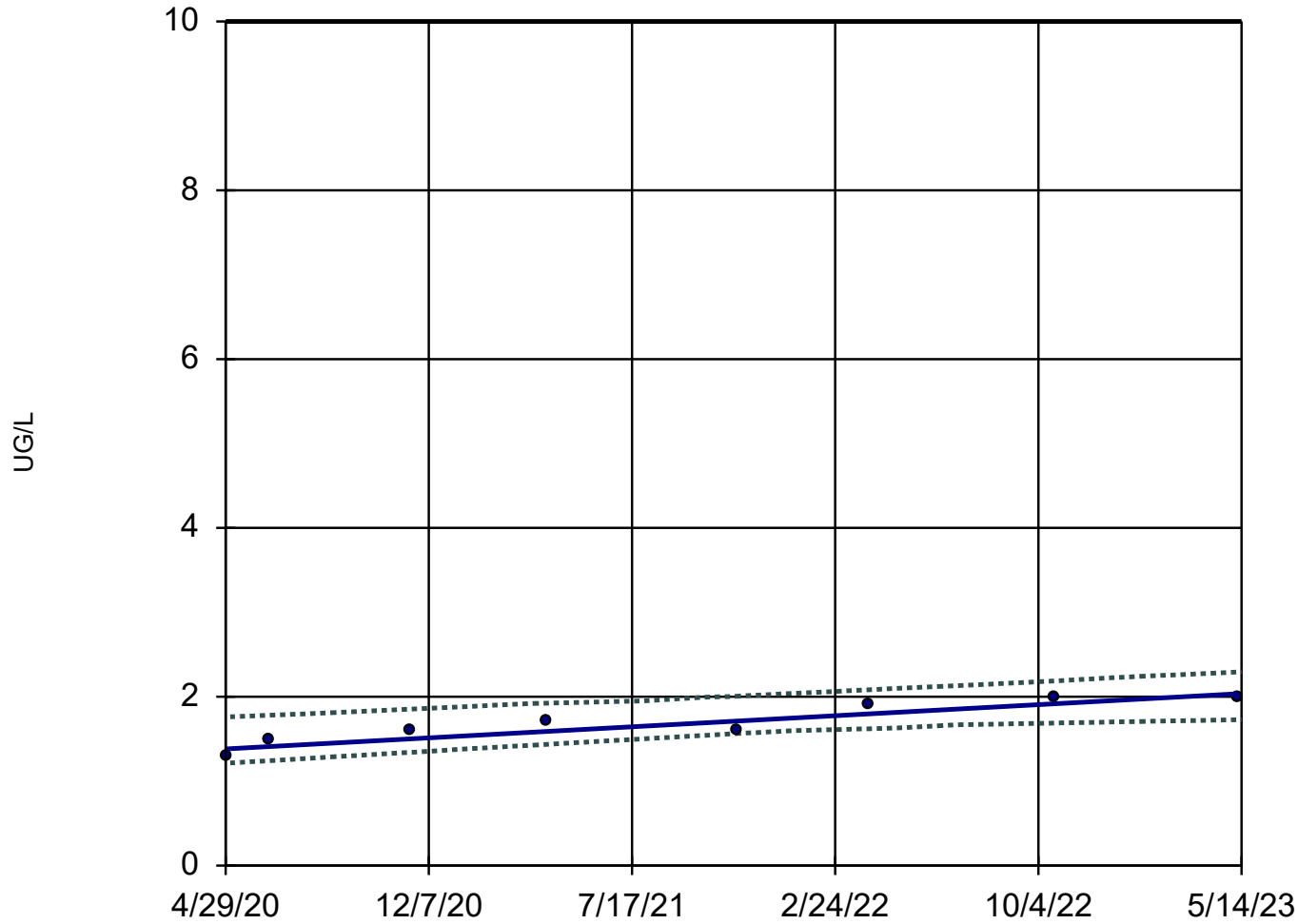
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	S-TP-6D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-6S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-8D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-9D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-1S	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

S-TP-4D



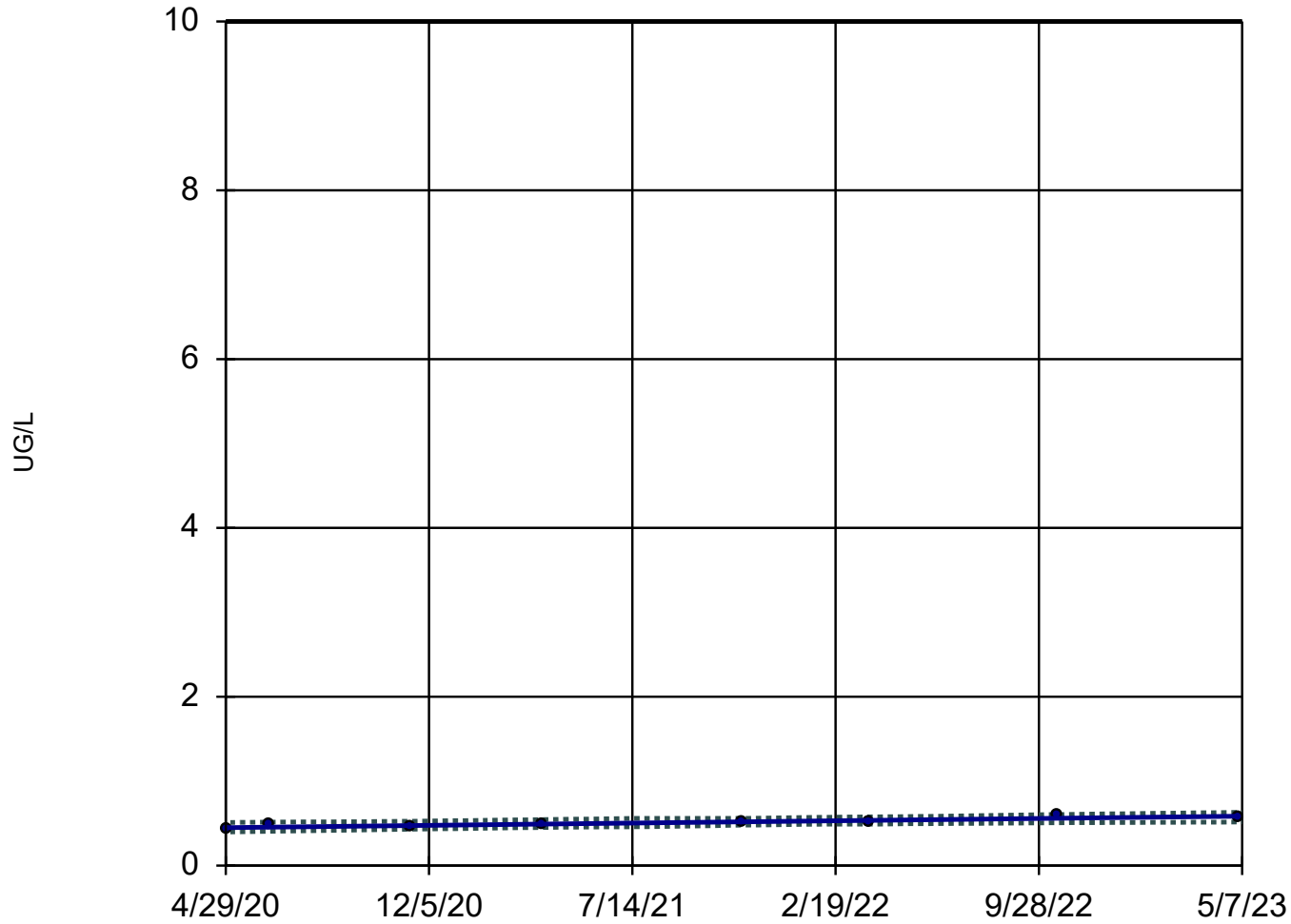
n = 8
Slope = 0.216 units per year.
Mann-Kendall statistic = 24
critical = 20
Increasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 8/3/2023 8:49 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-6S



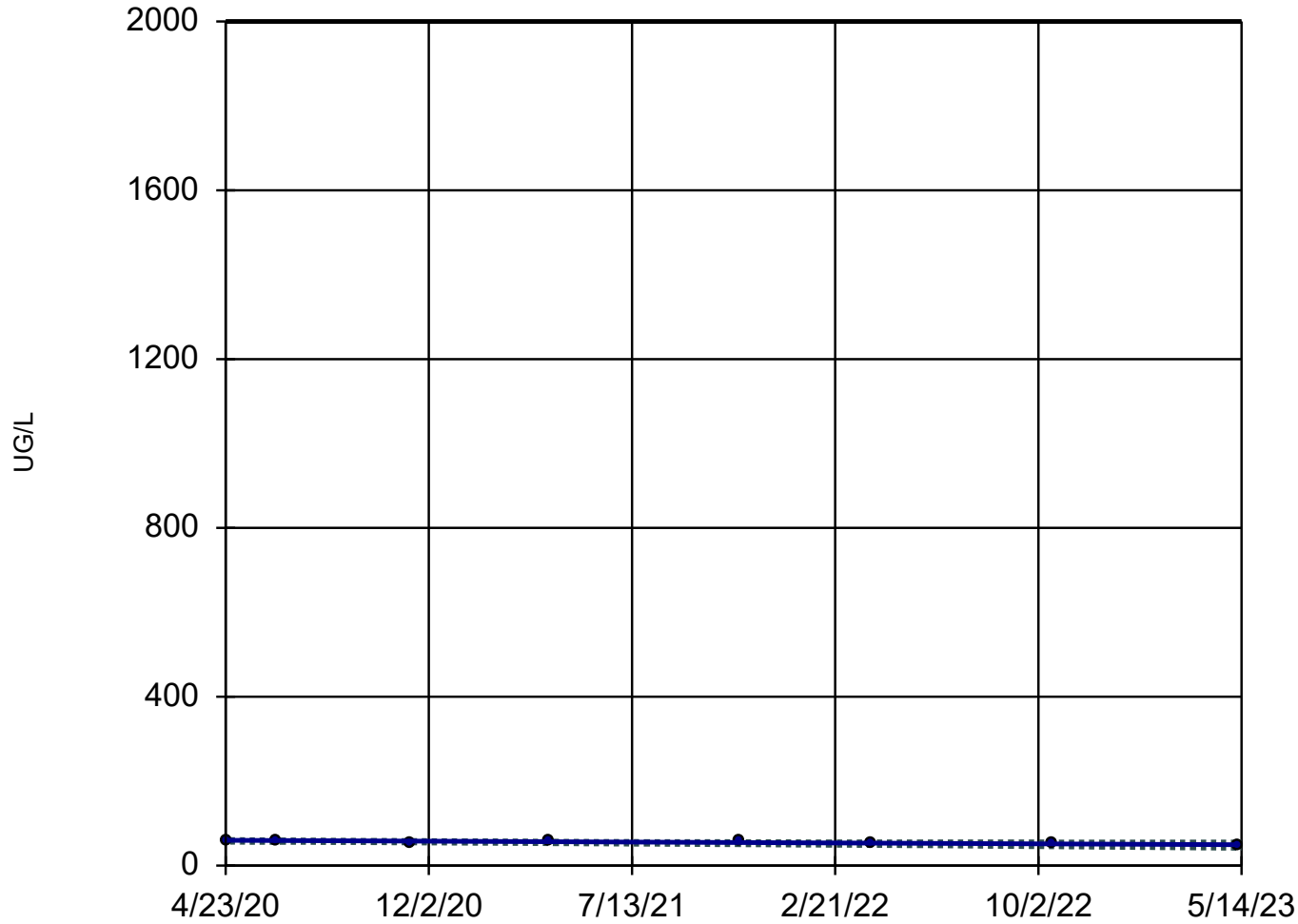
n = 8
Slope = 0.04547 units per year.
Mann-Kendall statistic = 22
critical = 20
Increasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (10).

Constituent: ARSENIC, TOTAL Analysis Run 8/3/2023 8:49 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-LMW-5S



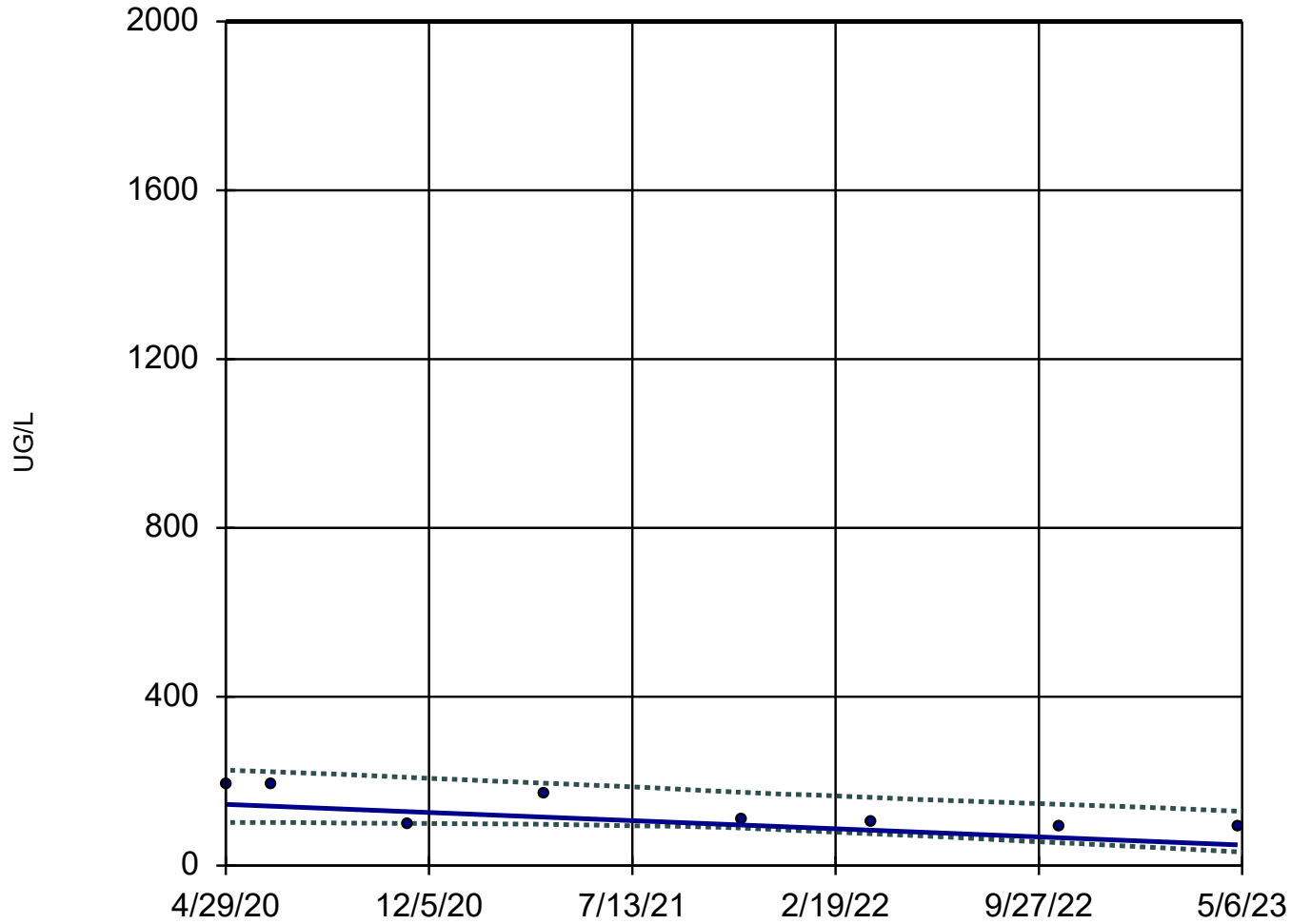
n = 8
Slope = -3.455
units per year.
Mann-Kendall
statistic = -22
critical = -20
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/3/2023 8:49 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-PZ-1S



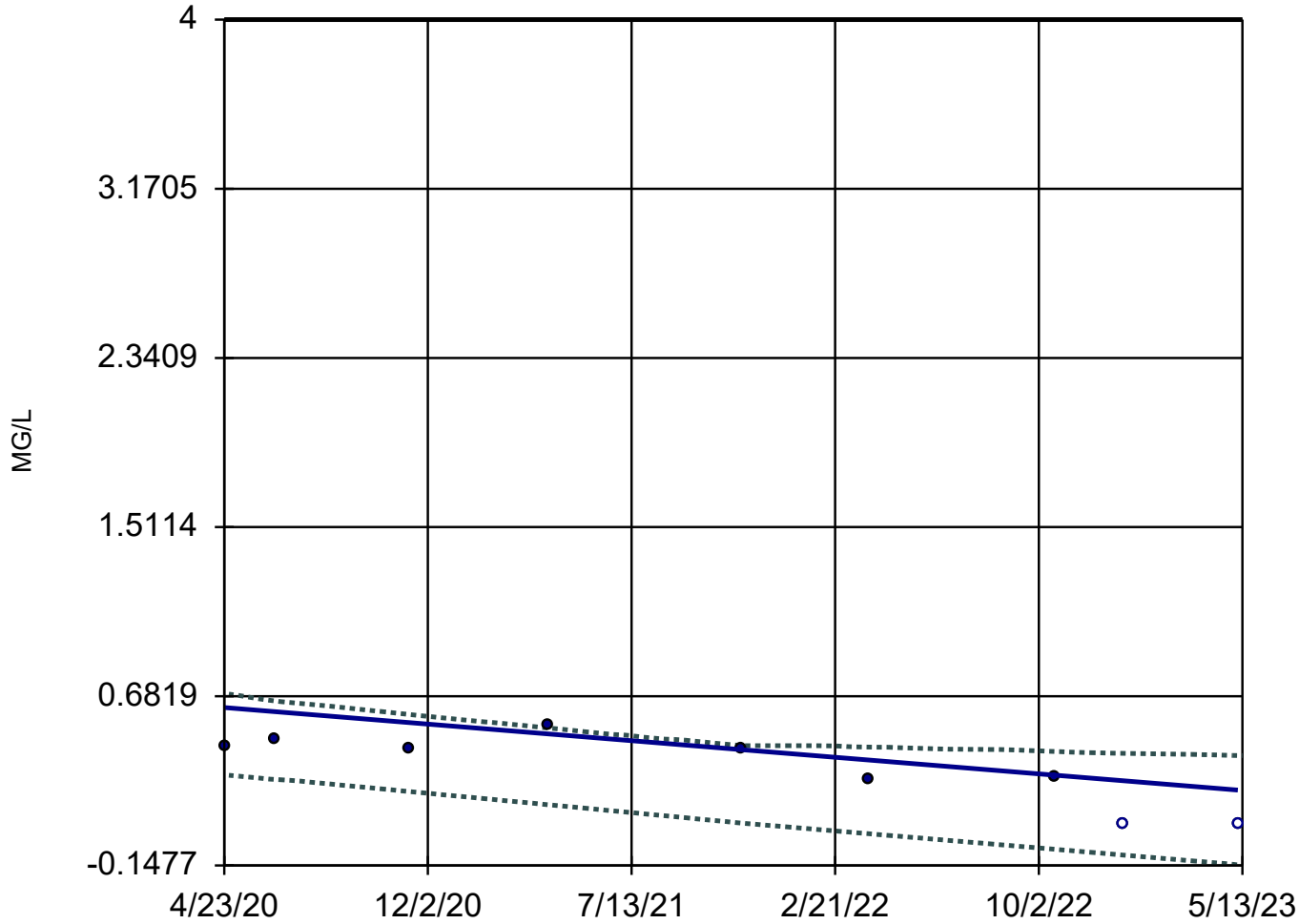
n = 8
Slope = -31.94 units per year.
Mann-Kendall statistic = -22
critical = -20
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-LMW-1S



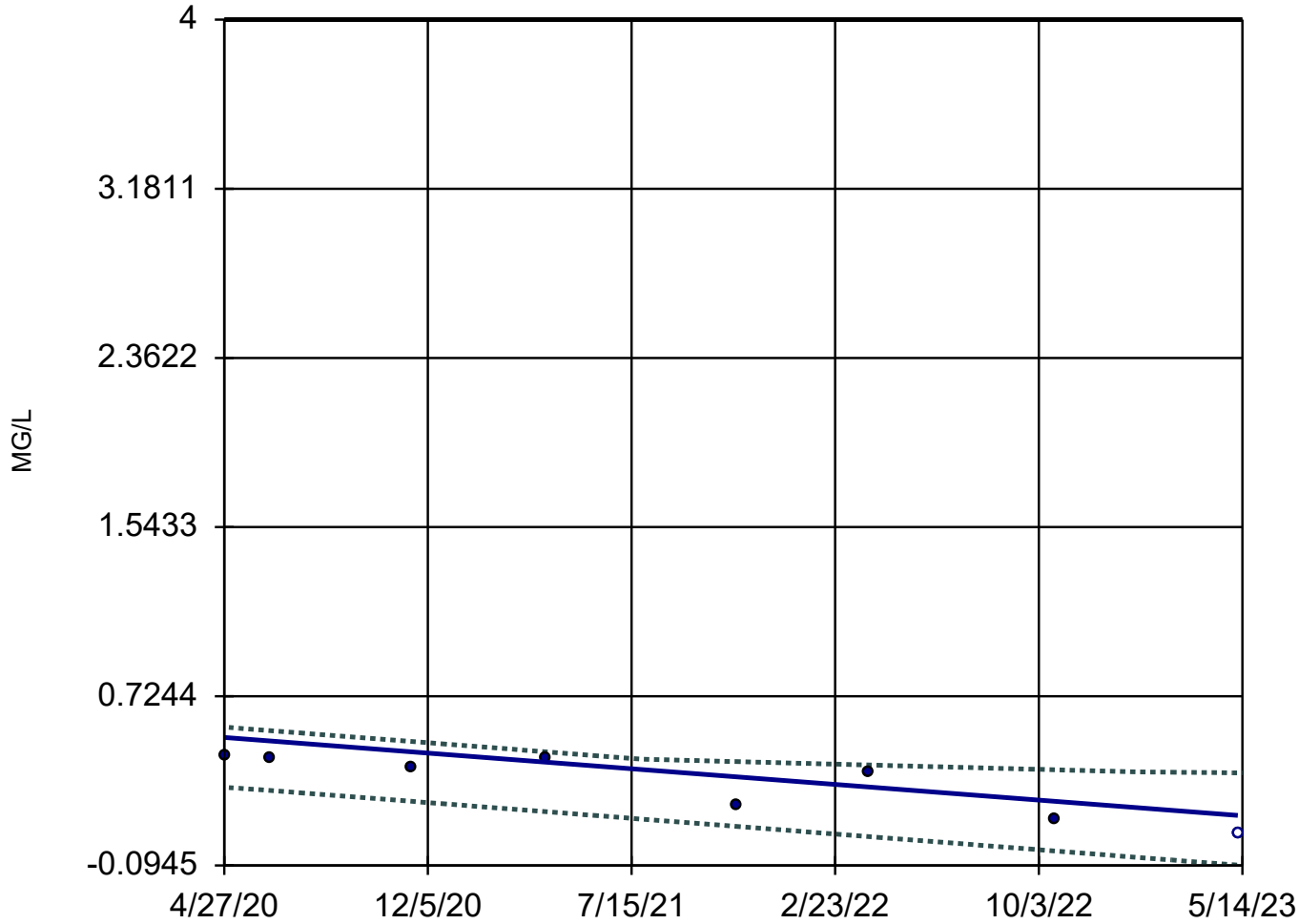
n = 9
Slope = -0.1329 units per year.
Mann-Kendall statistic = -24
critical = -23
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-5D



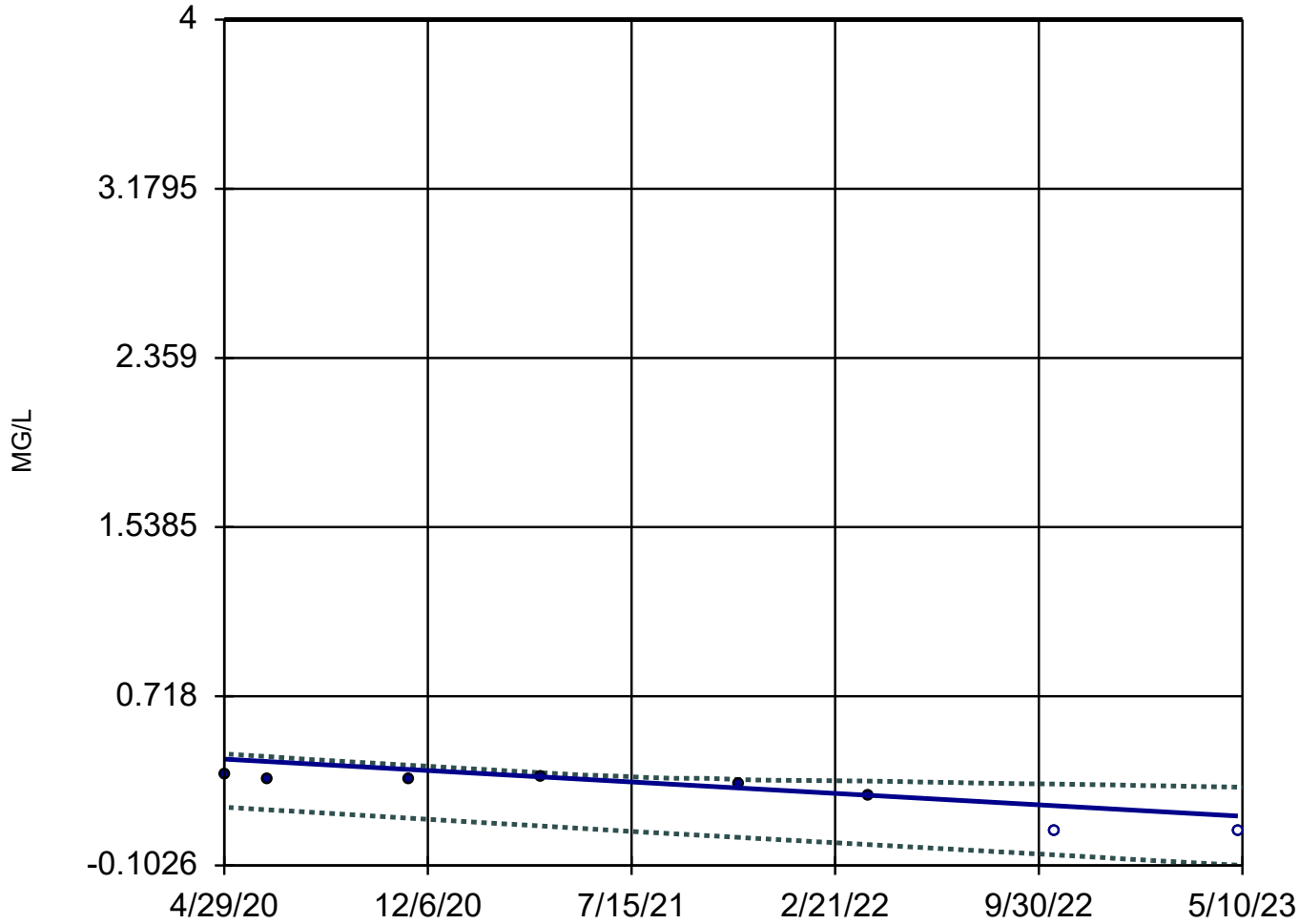
n = 8
Slope = -0.1245 units per year.
Mann-Kendall statistic = -23
critical = -20
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-6D



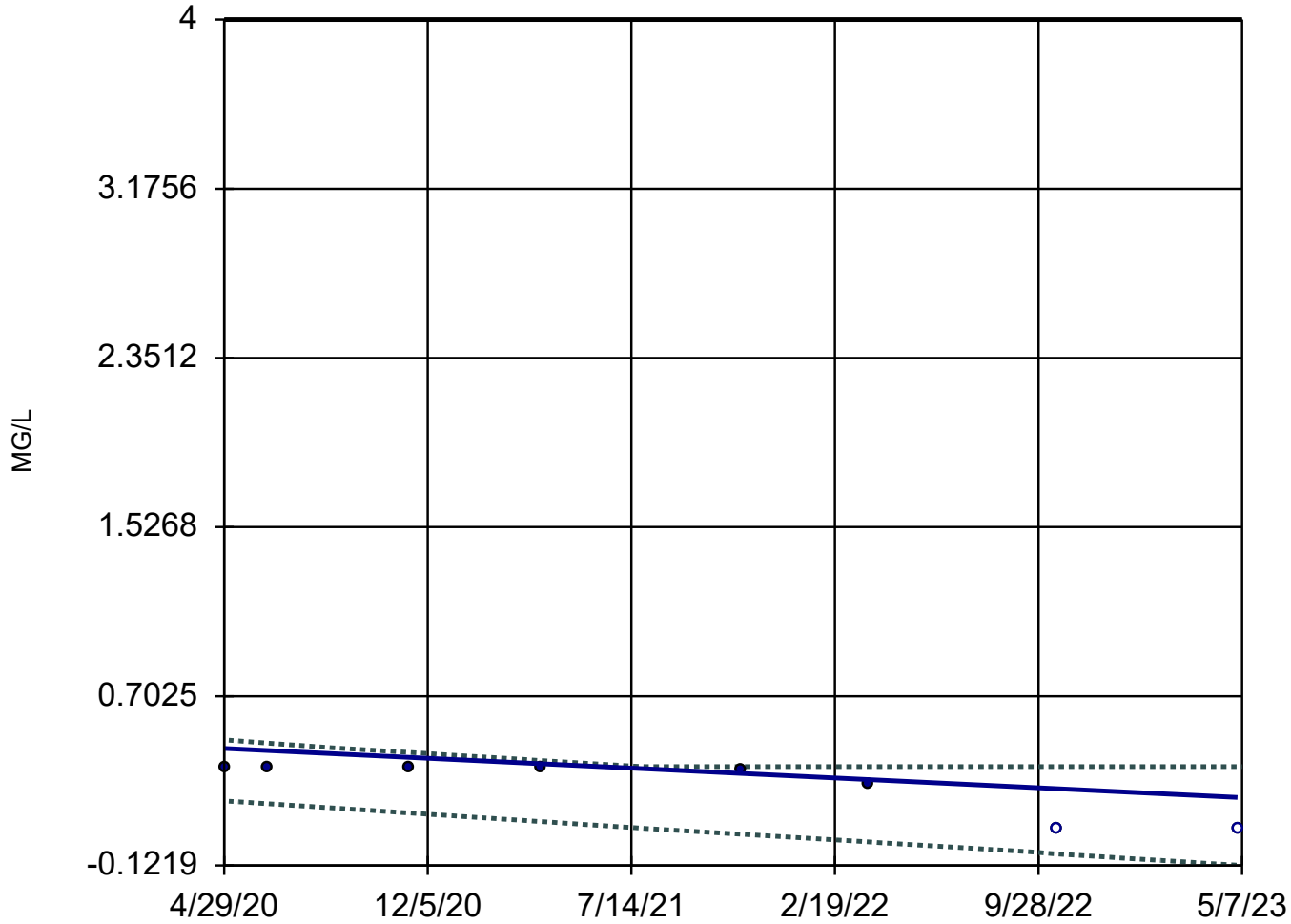
n = 8
Slope = -0.09133 units per year.
Mann-Kendall statistic = -23
critical = -20
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-6S



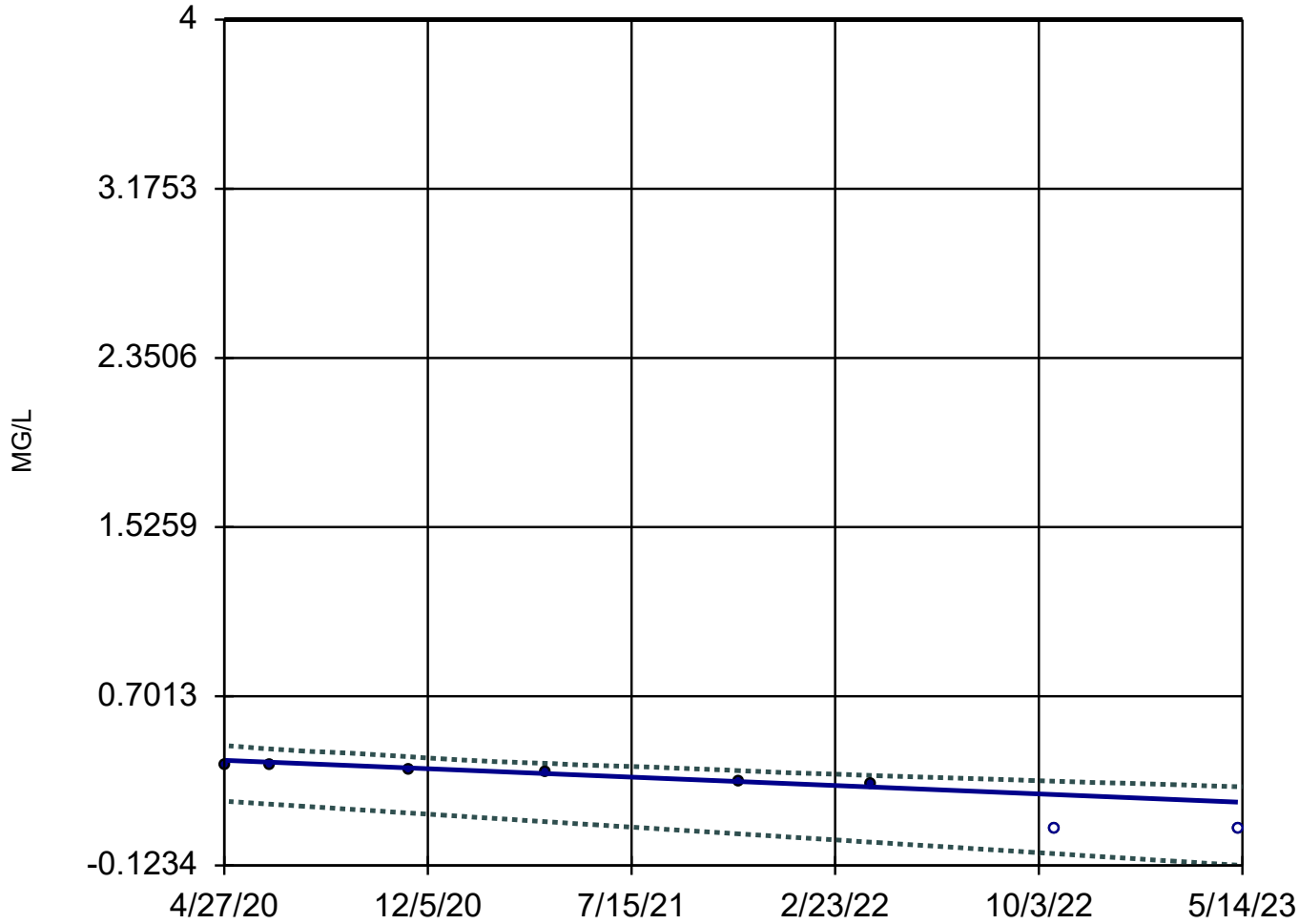
n = 8
Slope = -0.07925 units per year.
Mann-Kendall statistic = -21
critical = -20
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-8D



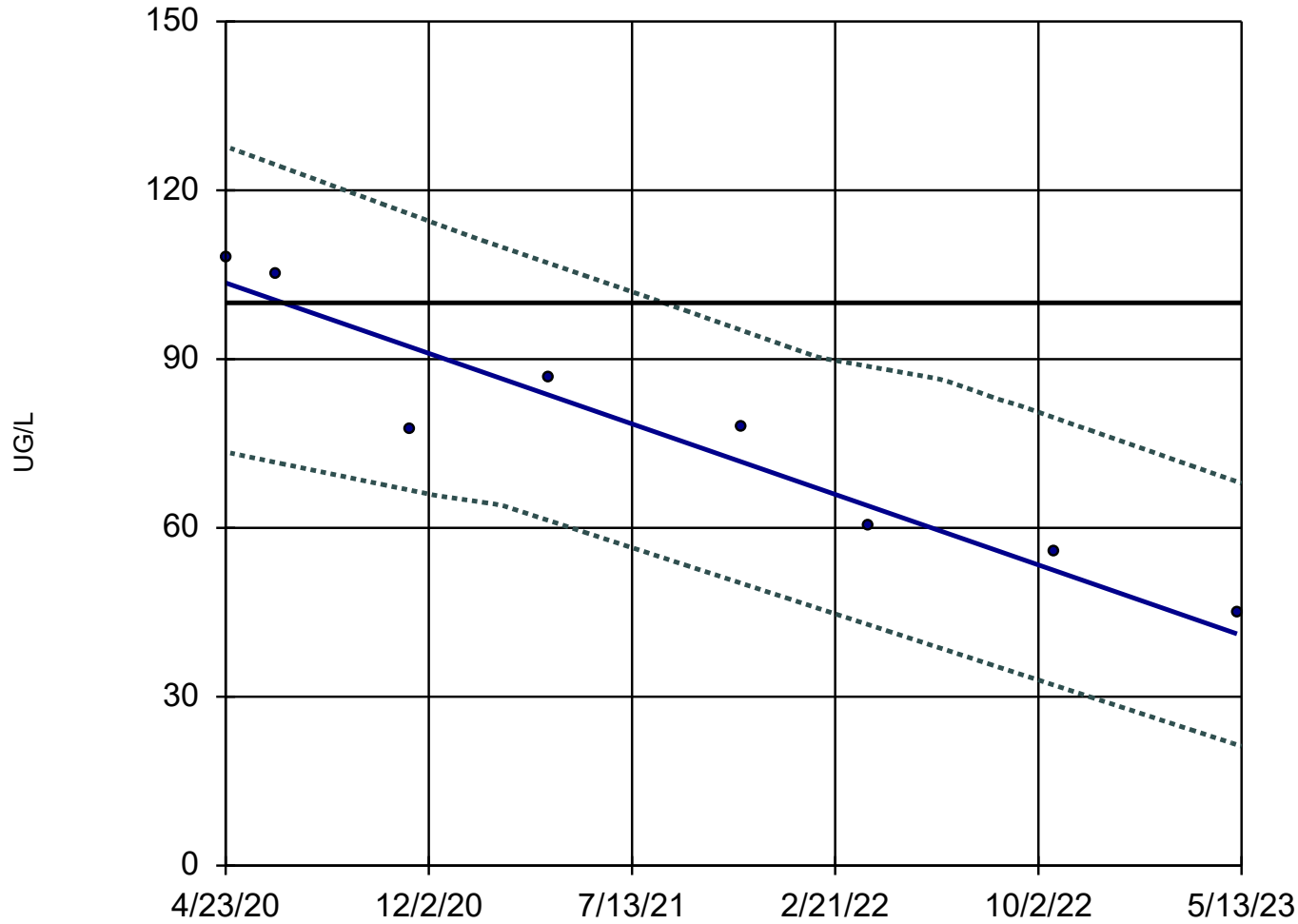
n = 8
Slope = -0.06735 units per year.
Mann-Kendall statistic = -27
critical = -20
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band is below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 8/3/2023 8:50 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-LMW-1S



n = 8

Slope = -20.51
units per year.

Mann-Kendall
statistic = -24
critical = -20

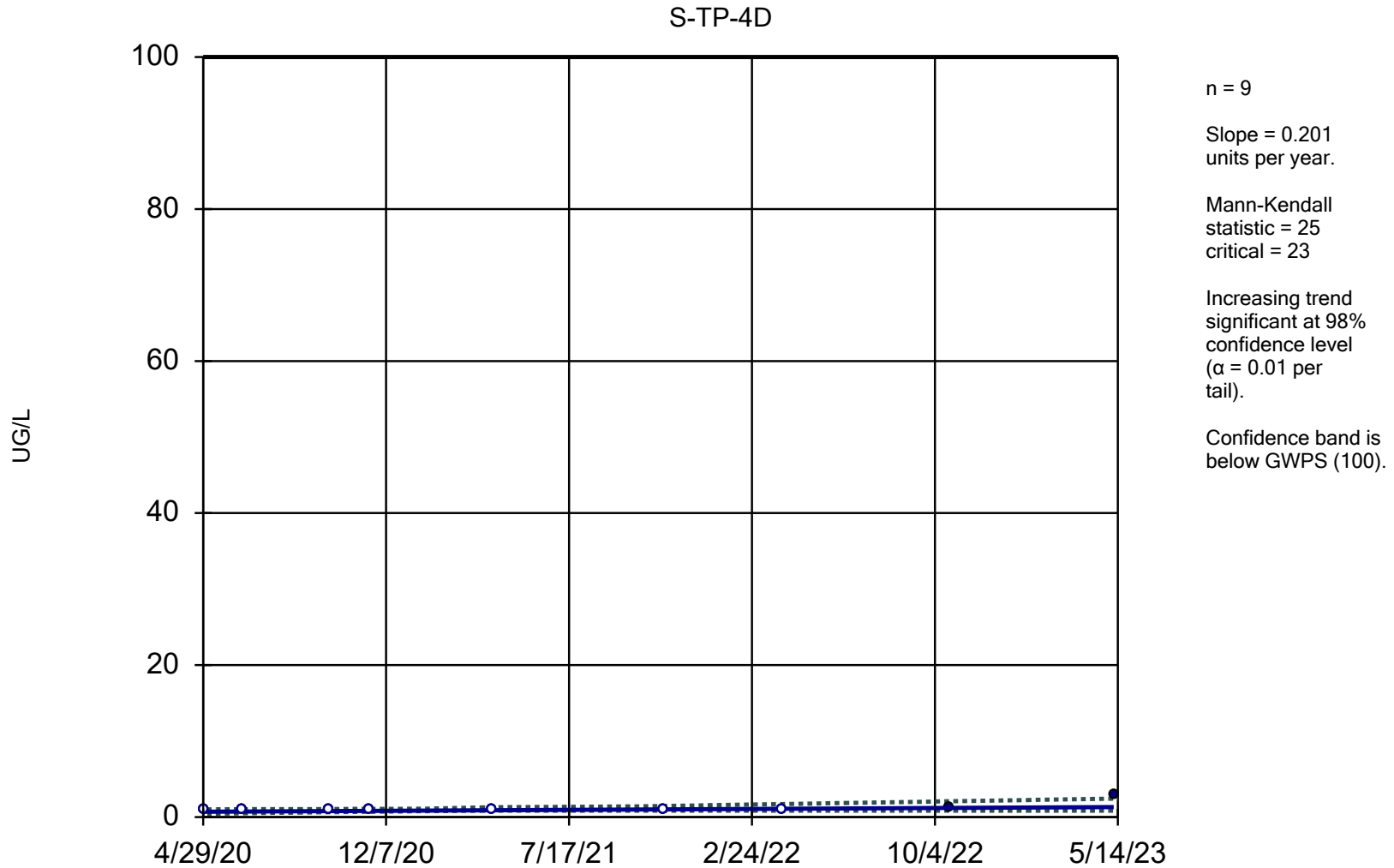
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 08/18/21.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 9:02 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

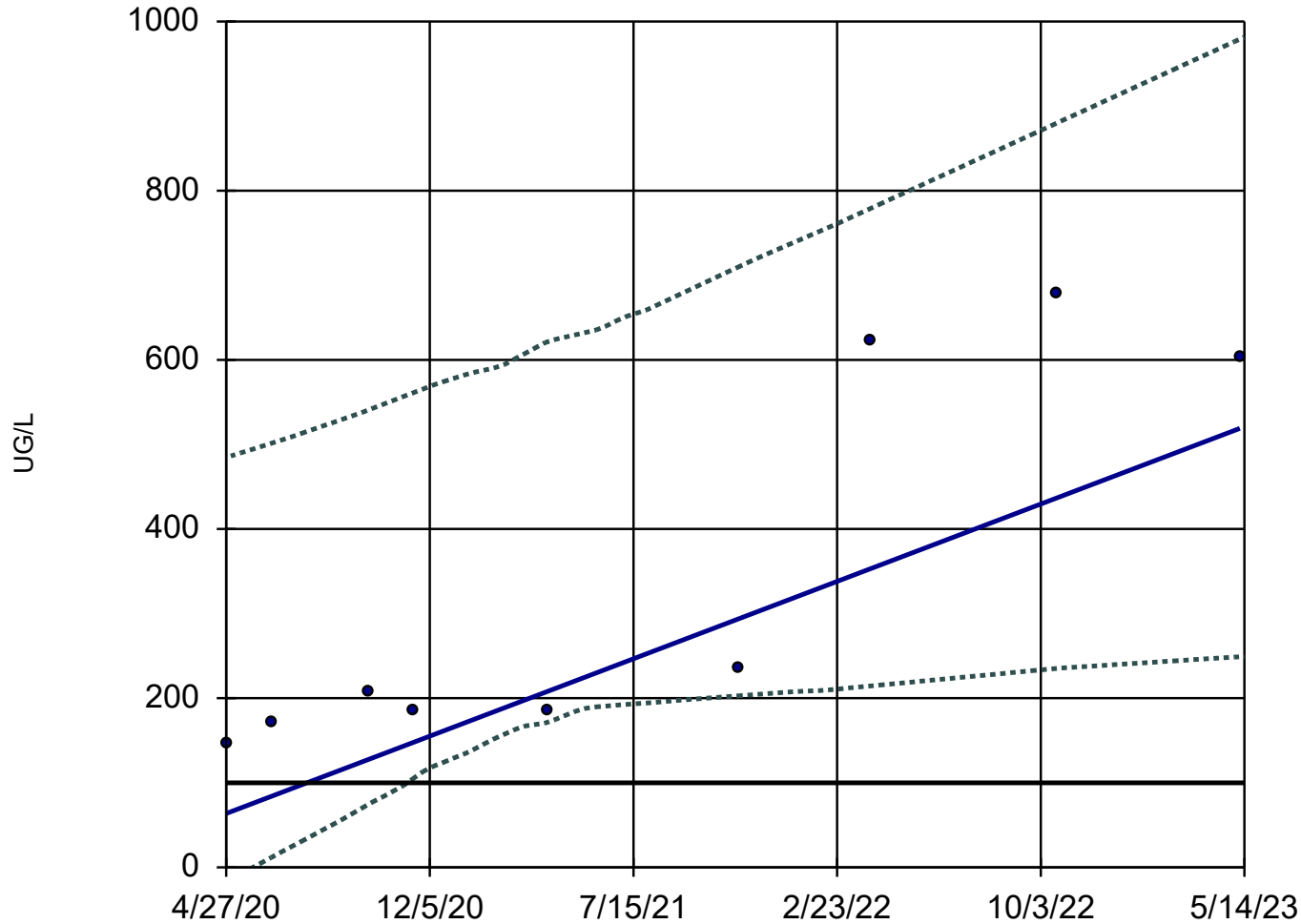


Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 8:51 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-5D



n = 9

Slope = 150.1
units per year.

Mann-Kendall
statistic = 27
critical = 23

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

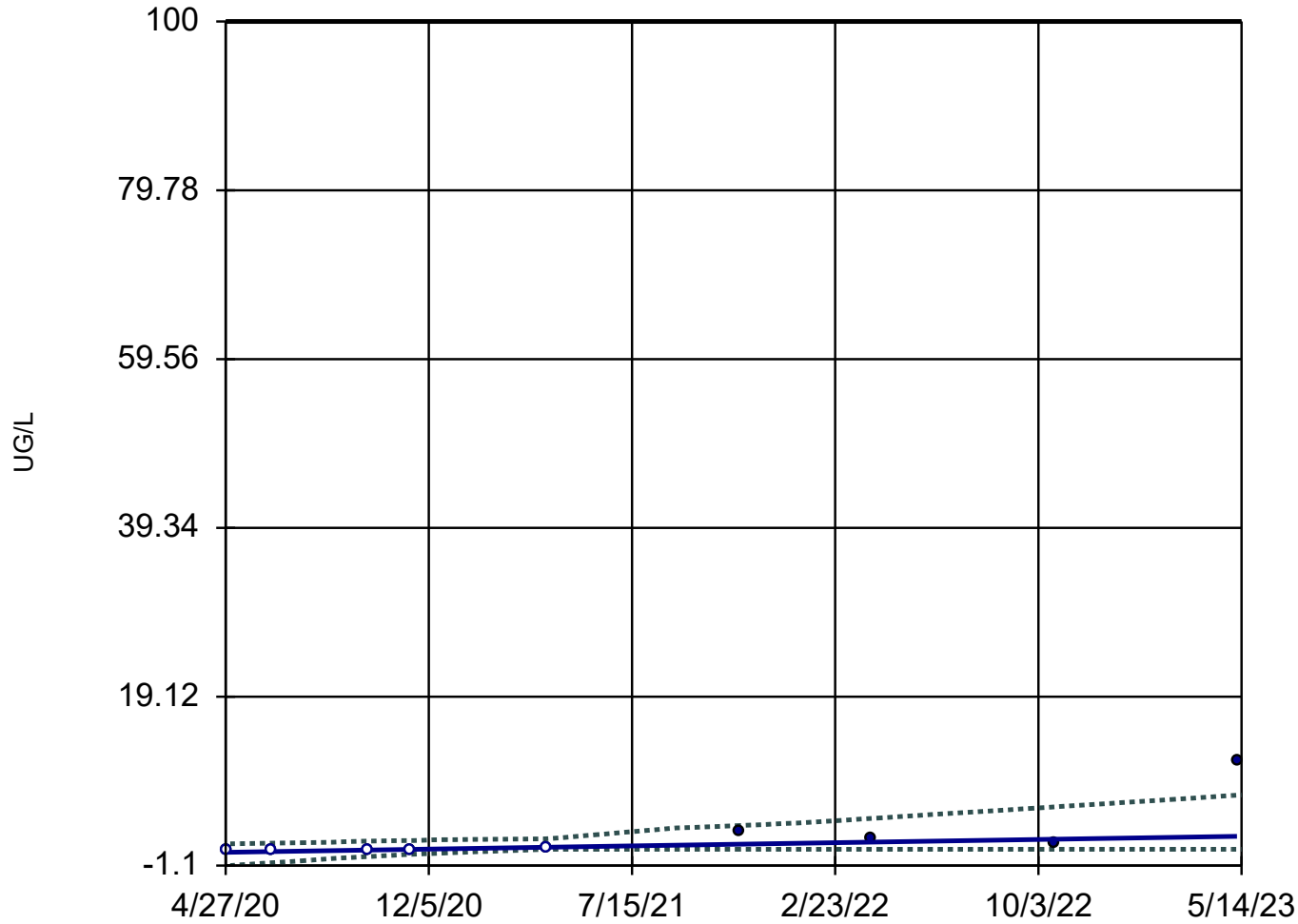
Confidence band intersects
GWPS (100) on 11/17/20.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 9:00 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-TP-8D



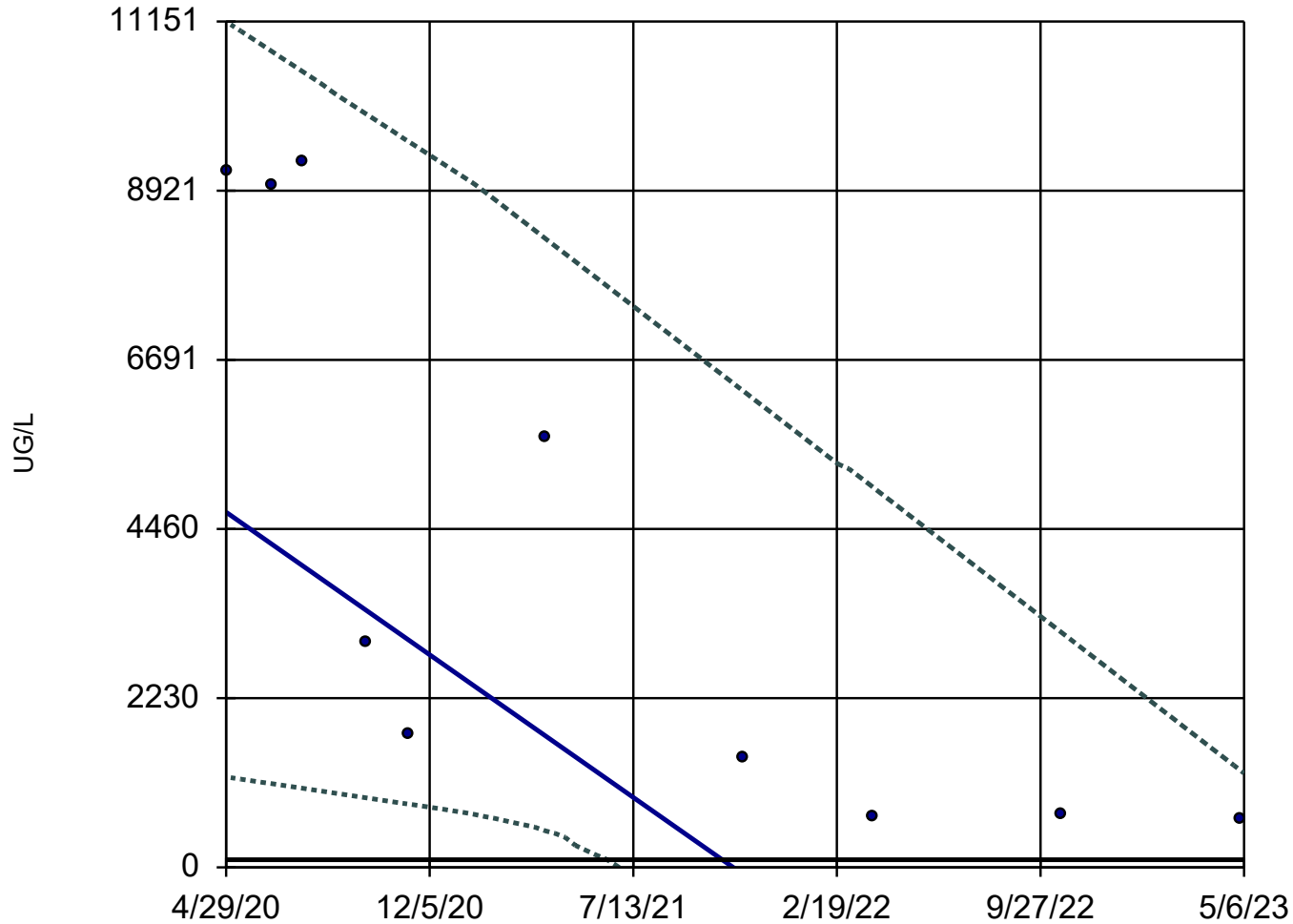
n = 9
Slope = 0.6289
units per year.
Mann-Kendall
statistic = 24
critical = 23
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
Confidence band is
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 8:51 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 10

Slope = -3113
units per year.

Mann-Kendall
statistic = -35
critical = -27

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band intersects
GWPS (100) on 06/25/21.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/3/2023 8:51 AM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 8:56 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ARSENIC, TOTAL (UG/L)	S-LMW-1S	-0.04145	-5	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-2S	0.02054	4	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.007891	3	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.003578	1	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.007252	4	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UG-3	-0.01349	-4	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-AM-1D	-0.01321	-19	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-AM-1S	-0.103	-14	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-2D	0.0263	17	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.00856	7	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-4D	0.216	24	20	Yes	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.01454	8	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-6D	-0.00...	-5	-20	No	8	25	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.04547	22	20	Yes	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-8D	-0.06646	-10	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.1098	14	20	No	8	12.5	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-1S	-0.07164	-15	-20	No	8	12.5	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-1S	0.8952	3	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-2S	2.488	3	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-4S	8.181	20	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-5S	-3.455	-22	-20	Yes	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-6S	-3.115	-16	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UG-3	-2.863	-2	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1D	-12.03	-19	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1S	6.626	6	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-2D	-0.8459	-8	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-3D	-3.983	-3	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-4D	0.5342	0	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-5D	2.435	4	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6D	-1.678	-4	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6S	0.3476	1	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-8D	18.38	16	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-PZ-9D	-4.559	-10	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-PZ-1S	-31.94	-22	-20	Yes	8	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.007615	4	20	No	8	25	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.05421	5	20	No	8	12.5	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.0254	4	20	No	8	50	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-5S	0.01387	0	20	No	8	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-6S	-0.1293	-12	-20	No	8	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UG-3	-0.00...	-2	-20	No	8	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.03026	7	20	No	8	25	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1S	-0.01374	-8	-20	No	8	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-2D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-3D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-4D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.06353	14	20	No	8	37.5	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6D	-0.00...	-5	-17	No	7	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6S	-0.00...	-5	-20	No	8	50	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-8D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-PZ-9D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 8:56 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CADMIUM, TOTAL (UG/L)	S-PZ-1S	-0.1638	-8	-17	No	7	14.29	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-1S	0.03026	3	20	No	8	62.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-2S	0.753	18	20	No	8	25	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-4S	-0.05073	-14	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-5S	0	0	20	No	8	75	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-6S	-1.166	-16	-20	No	8	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UG-3	0.8793	12	20	No	8	25	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-AM-1D	-0.05085	-14	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-AM-1S	0.6882	14	20	No	8	25	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-2D	-0.0511	-14	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-3D	-0.04982	-6	-17	No	7	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-4D	-0.04955	-6	-17	No	7	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-5D	-0.06063	-11	-17	No	7	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6D	0	2	20	No	8	87.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6S	-0.06104	-11	-17	No	7	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-8D	-0.06056	-11	-17	No	7	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-9D	-0.05091	-14	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-1S	-0.0511	-14	-20	No	8	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-1S	-0.1329	-24	-23	Yes	9	22.22	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	-0.1364	-10	-23	No	9	55.56	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	-0.06426	-16	-20	No	8	37.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	-0.04112	-13	-35	No	12	16.67	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	-0.054	-9	-23	No	9	44.44	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UG-3	-0.07479	-22	-23	No	9	22.22	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1D	-0.00...	-1	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1S	-0.01113	-4	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-2D	-0.06637	-13	-20	No	8	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-3D	-0.04299	-17	-20	No	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-4D	-0.05092	-16	-20	No	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-5D	-0.1245	-23	-20	Yes	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-6D	-0.09133	-23	-20	Yes	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-6S	-0.07925	-21	-20	Yes	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-8D	-0.06735	-27	-20	Yes	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	-0.09887	-10	-20	No	8	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-PZ-1S	-0.3334	-19	-20	No	8	25	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-1S	-0.0725	0	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-2S	1.137	9	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-4S	1.349	6	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-5S	-0.4351	-3	-13	No	6	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-6S	0.6764	9	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UG-3	0.728	4	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1D	-1.463	-16	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1S	-2.76	-14	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-2D	0.07792	0	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-3D	1.503	14	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-4D	-0.1862	-2	-20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-5D	3.126	18	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6D	0.1565	0	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6S	-1.475	-14	-20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-8D	0.4148	4	17	No	7	0	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 8:56 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
LITHIUM, TOTAL (UG/L)	S-PZ-9D	0.6952	6	20	No	8	12.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-PZ-1S	0.3883	6	13	No	6	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	-20.51	-24	-20	Yes	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-2S	-227	-16	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	0	0	17	No	7	42.86	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-5S	-390.2	-14	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	0.2348	15	17	No	7	71.43	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	0.2425	5	13	No	6	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-AM-1D	-43.06	-16	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-AM-1S	-65.8	-18	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	0.03487	8	20	No	8	87.5	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	0.8331	19	23	No	9	66.67	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	0.201	25	23	Yes	9	77.78	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-5D	150.1	27	23	Yes	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	0	-3	-23	No	9	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	0.3342	6	17	No	7	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	0.6289	24	23	Yes	9	55.56	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	1.714	13	27	No	10	10	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-PZ-1S	-3113	-35	-27	Yes	10	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-LMW-1S	-0.01143	-2	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-LMW-2S	-0.1769	-12	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-LMW-4S	-0.02648	-2	-20	No	8	75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-LMW-5S	-0.011	-8	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-LMW-6S	0.04491	6	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-UG-3	0.0806	10	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-AM-1D	0.004299	2	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-AM-1S	0.06014	8	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-2D	-0.04487	-2	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-3D	0.1505	12	20	No	8	75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-4D	-0.1037	-6	-20	No	8	50	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-5D	0.08858	10	20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-6D	-0.05236	-4	-20	No	8	50	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-6S	-0.01757	-2	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-TP-8D	0.03229	3	17	No	7	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-PZ-9D	0.03143	7	17	No	7	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	S-PZ-1S	0.01197	4	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-1S	-1.652	-15	-17	No	7	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-4S	0.07168	8	20	No	8	12.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0	1	20	No	8	87.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UG-3	0.545	19	20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-AM-1D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-AM-1S	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-2D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-3D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-4D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-5D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-6D	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-6S	-0.1764	-15	-20	No	8	0	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/3/2023, 8:56 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>
SELENIUM, TOTAL (UG/L)	S-TP-8D	0	1	20	No	8	87.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0	-1	-20	No	8	87.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0	0	20	No	8	100	n/a	n/a	0.02	NP

Appendix F

May 2023 Corrective Action Alternative Source Demonstration

REPORT

SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells

Sioux Energy Center, St. Charles County, Missouri, USA

December 14, 2023

Project Number: 23009

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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1.0 CERTIFICATION STATEMENT

This *SCPA Corrective Action – Alternative Source Demonstration, Sioux Energy Center, St. Charles 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 *SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells, Sioux Energy Center, St. Charles County, Missouri, USA* located at 8501 Missouri 94, West Alton, Missouri 63386 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, PE, RG
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, USEPA 2015), Rocksmith Geoengineering, LLC (Rocksmith) has prepared this Technical Memorandum to document an Alternative Source Demonstration (ASD) for a statistical exceedance of the Groundwater Protection Standard (GWPS) calculated for Ameren Missouri's (Ameren) Sioux Energy Center (SEC) Bottom Ash Surface Impoundment (referred to as the SCPA) 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 the requirements 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 SEC (or Facility) is located approximately 12 miles west-northwest of the confluence of the Mississippi and Missouri Rivers in St. Charles County, Missouri. **Figure 1** depicts the location of the Facility and property boundaries referenced to local features as well as the Mississippi and Missouri Rivers. The Facility encompasses approximately 1,100 acres and is located within the floodplain between the Mississippi and Missouri Rivers. The Facility is bounded to the north by wooded areas associated with the Mississippi River. The property is bounded to the south by a railroad. The Facility is bounded to the east and west by agricultural fields.

3.1 Geological and Hydrogeological Setting

Hydrogeologically, the SCPA lies between the Mississippi River to the north and the Missouri River to the south. Flow and deposition from these rivers have resulted in thick alluvial deposits that lie unconformably on top of bedrock. These alluvial deposits, which can range from approximately 100 to 130 feet in thickness, make up the uppermost aquifer called the alluvial aquifer. Overall, this aquifer is described as a fining upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Drilling in the alluvial aquifer identified different 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 highly variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region includes Mississippian-aged rocks of the Meramecian Series. Formations include primarily limestone, dolomite, and shale and are comprised of the Salem Formation overlying the Warsaw Formation and the Burlington-Keokuk Formation.

3.2 Coal Combustion Residuals (CCR) SCPA Surface Impoundment

The SCPA is located in the floodplain between the Mississippi and Missouri Rivers and is constructed with perimeter berms at an elevation of approximately 446 feet above mean sea level (feet MSL), which is above the 100-year flood elevation of 437.4 feet MSL. Both fly ash and bottom ash have historically been managed and stored in this CCR unit. Borings completed in the SCPA indicate a CCR thickness of up to approximately 75 feet below ground surface (bgs) around 370 feet MSL in the center of the unit and thinning out towards the edges.

The SCPA is located to the southwest of the SEC plant facilities. The boundary of SCPA extends to within approximately 200 feet of the SEC and is approximately 47 acres in size, as shown in **Figure 1**. Directly to the east of the SCPA is a lined CCR unit called the Fly Ash Surface Impoundment (SCPB). Directly to the south of the SCPA is Highway 94 followed by the Utility Waste Landfill (UWL) and eventually the Missouri River. There are three CCR units currently in the UWL which are Cell 1 (SCPC), Cell 2 (SCPD) and Cell 4A (SCL4A). West of the SCPA lies miles of agricultural land. North of SCPA there are side channels from the adjacent Mississippi River.

3.3 CCR Rule Groundwater Monitoring

The CCR Rule published in the Federal Register on April 17, 2015. This rule required CCR surface impoundments and landfills to monitor groundwater around these CCR units. Prior to the first major deadline of October 17, 2017, Ameren completed the following tasks: (1) installation of a groundwater monitoring well system;

(2) a Statistical Method Certification; (3) a Groundwater Monitoring Plan (GMP) that details design, installation, development, sampling procedures, as well as statistical methods; and (4) eight baseline groundwater sampling events for all Appendix III and Appendix IV parameters of the CCR Rule. In November 2017, the first Detection Monitoring event was completed.

The groundwater monitoring system for the SCPA consists of eight monitoring wells screened within the uppermost aquifer (alluvial aquifer), as shown on **Figure 1**. These wells were installed by Golder Associates Inc. (Golder) in 2015 and 2016 for CCR Rule groundwater monitoring purposes. More information regarding the design and installation of the monitoring wells is provided in the SCPA GMP (Golder, 2017) and the SCPA 2017 Annual Report (Golder, 2018).

Between March 2016 and June 2017, eight baseline sampling events were completed for the SCPA. After baseline sampling, Detection Monitoring events have been completed twice a year generally in the second and fourth quarters. In January 2018, background results from the eight baseline sampling events were used to calculate statistical upper prediction limits (UPL). These UPLs were then compared to the Detection Monitoring results. The results of the analysis indicated that there were Statistically Significant Increases (SSIs), and Assessment Monitoring was initiated.

The Assessment monitoring program was established at the SCPA 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 at several wells (UMW-2D, UMW-3D, UMW-4D, UMW-5D). The SSLs determined in Assessment Monitoring have remained the same since that time, and no new SSLs have been determined.

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 31, 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, Ameren 2019) 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.

As required by the CCR Rule, the following was completed within 90 days of selecting the remedy (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 owners operating record. The Corrective Action Monitoring Well Network consists of 19 groundwater monitoring wells, installed within the shallow, intermediate, and deep zones of the alluvial aquifer as shown on **Figure 1**.

In January 2021, Ameren commenced Phase 1 by initiating closure at the SCPA. Closure of the SCPA has been substantially completed with the completion of the liner cover system on December 21, 2021, and the first Corrective Action sampling event associated with Phase 2 of the Corrective Measures Remedial Plan was

completed in April 2022. On August 3, 2022, corrective action statistical methods¹ were used to determine the following statistical exceedances of the GWPS:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

Monitoring wells LMW-5S and LMW-6S were installed in December 2015 as part of the CCR Rule monitoring program for the SCPB fly ash surface impoundment. These wells are currently used for both CCR Rule monitoring for the SCPB, as well as Corrective Action monitoring wells. Monitoring wells TP-2D and TP-6S were installed in July 2018 as part of the nature and extent evaluation completed under Assessment Monitoring and they are currently used as Corrective Action monitoring wells.

3.4 May 2023 Sampling Event

Following the May 2023 corrective action sampling event, on September 15, 2023, corrective action statistical methods were used to determine these statistical exceedances of the GWPS:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, TP-6S
- Molybdenum at LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

This report further discusses the cobalt and lithium exceedances at the site, and documents why these exceedances are naturally occurring and not caused by impacts originating from the SCPA.

4.0 EVIDENCE THAT STATISTICAL EXCEEDANCES OVER GWPS ORIGINATES FROM DIFFERENT SOURCE

Several different lines of evidence indicate that the statistical exceedance(s) over the GWPS at monitoring wells LMW-5S, LMW-6S, TP-2D, and TP-6S is not a result of a release from the SCPA but is rather 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 SCPA.
- The presence of naturally occurring cobalt and lithium in sediments in background locations at the SCPA.
- 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.

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].

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 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. Testing for bromide has not been completed at the site.

Table 2 provides a snapshot of the concentrations present onsite in the background, Mississippi River, Missouri River, and SCPA porewater for each of the constituents sampled on the key indicator list.

Table 2 – Summary of Potential CCR Impact Indicator Parameters at the Sioux Energy Center

Constituent (Units)		Back-ground	Mississippi River ²	Missouri River	SCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Boron (µg/L)	Minimum	ND (<50)	27.1	110	348	Typically present in leachate, non-reactive and mobile in common hydrogeologic environments, and not a common anthropogenic contaminant.
	Average	93.99	36.4	112.3	53,266	
	Maximum	240	59.9	117	111,000	
Sulfate (mg/L)	Minimum	20.0	29.9	188	48.5	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	31.52	34.08	192.1	1,088	
	Maximum	61.1	40.5	196	2,080	
Molybdenum (µg/L)	Minimum	ND (<0.52)	ND<0.9	2.6	26.5	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	1.798	1.406	2.97	22,085	
	Maximum	9.3	2.3	3.6	56,600	
Lithium (µg/L)	Minimum	ND (<2.9)	ND<2.9	42.0	16.7	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	12.59	6.694	43.17	56.16	
	Maximum	25.4	10.4	44.9	170	
Potassium (µg/L)	Minimum	ND (<500)	Not Sampled	Not Sampled	4,350	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	1,791			34,350	
	Maximum	3,840			60,300	
Sodium (mg/L)	Minimum	4.58	Not Sampled	Not Sampled	13.9	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	5.782			59.36	
	Maximum	7.39			116	
Fluoride (mg/L)	Minimum	ND (<0.086)	0.16	0.43	0.22	Mobile and non-reactive in common hydrogeologic environments. Assume that leachate concentration is higher than background.
	Average	0.2938	0.196	0.4435	1.142	
	Maximum	0.46	0.24	0.46	2.9	

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 appears to be the best indicator parameter for impacts from the SCPA because it has a much higher concentration in the CCR porewater than the background concentrations and it is

² Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren's public website at <https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center>.

non-reactive and highly mobile at the site. Sulfate and molybdenum also appear to be good indicators, however, the distinction between background and porewater for sulfate is not as distinct as that for boron, and molybdenum is typically not as mobile as boron (EPRI, 2012). Fluoride may be a good indicator as well, 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 major roadways (highway 94) or located within the many agricultural fields around the plant, which may display elevated concentrations caused from anthropogenic sources (road salt, fertilizers, etc.).

Therefore, boron appears to be the best indicator parameter for CCR impacts at the SEC. Molybdenum also appears to be a good indicator but may not be present at the furthest extents of the plume. Boron and molybdenum concentrations are above background concentrations at each of the six monitoring wells used for Detection and Assessment monitoring wells adjacent to the SCPA (WSP 2023).

4.2.1 Lithium Concentrations

As indicated in **Table 1**, 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 CCR impact indicator parameters than lithium for the SEC, as most porewater samples are not significantly higher than background concentrations. Four of the five CCR porewater samples collected in 2018 as a part of the SCPB ASD (available in the 2018 Annual Report for the SCPB, Golder 2019b) have lithium concentrations below that of those found naturally occurring in the Missouri River and the site- specific Groundwater Protection Standard (GWPS) for lithium (40 µg/L), and at levels only 2x to 3x above background monitoring wells located closer to the Mississippi River (BMW-1S/D and BMW-3S/D). Additionally, lithium concentrations are below Missouri River levels in each of the six perimeter wells adjacent to the SCPA used for Detection and Assessment Monitoring. This further establishes that lithium is not a useful CCR impact indicator parameter for the SCPA and the SEC area.

Table 3 – May 2023 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Lithium Exceedance

Well ID	Lithium (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-5S	45.3	16,200	1,630
TP-2D	45.3	87.8 J	3.1 J
TP-6S	34.6	101	4.2 J
BMW-1S (background)	5.8 J	64.8 J	5.3 J
BMW-3S (background)	9.9 J	67.1 J	4.7 J
BMW-1D (background)	14.3	132	6.9 J
BMW-3D (background)	22.8	63.5 J	1.7 J

Notes:

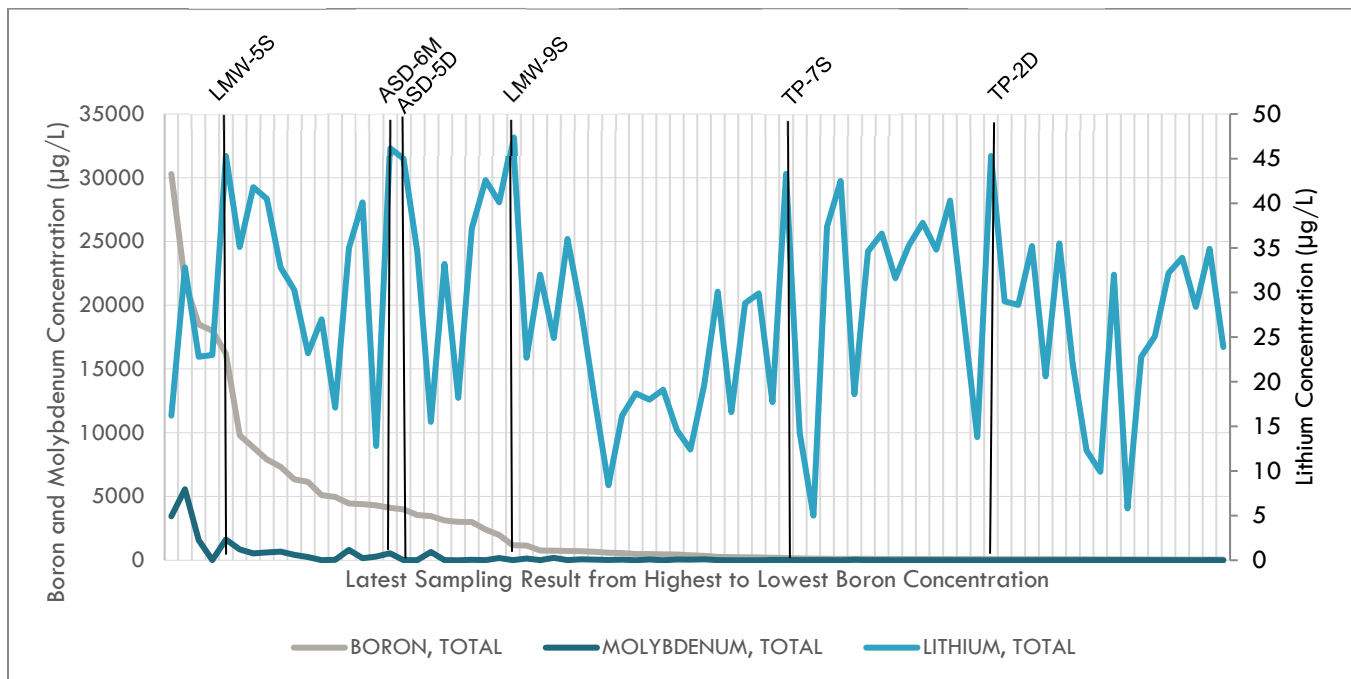
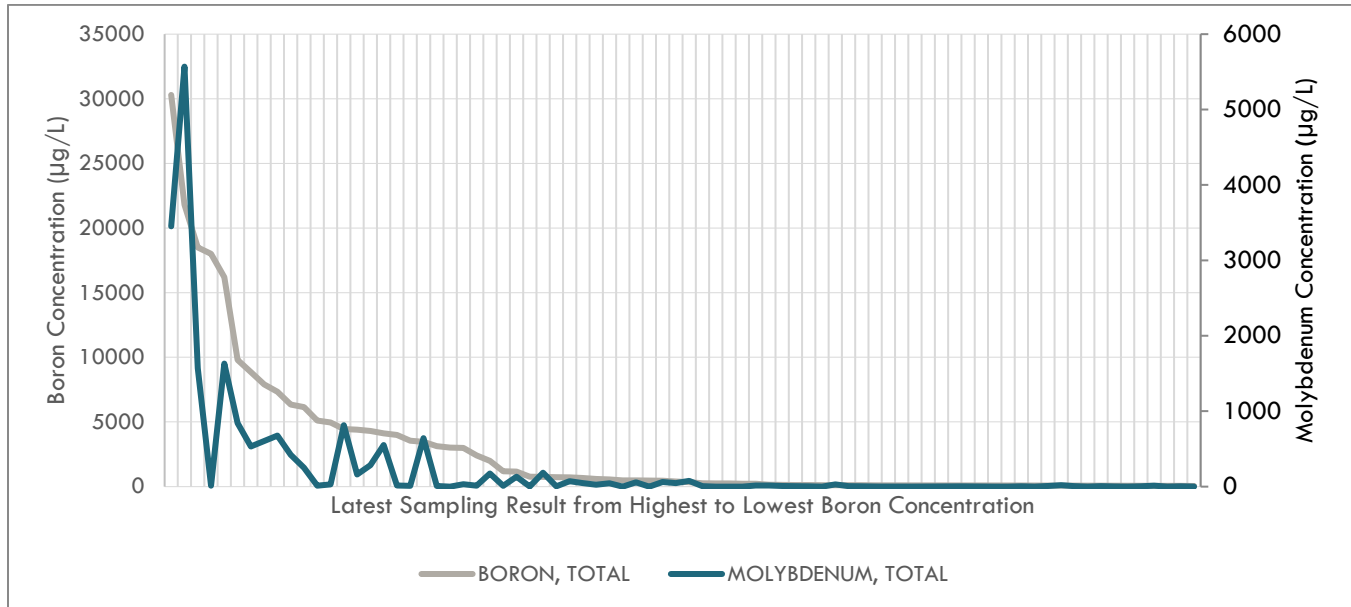
- 1) µg/L – micrograms per liter.
- 2) J - Result is an estimated value.

As displayed in **Table 3**, of the three wells with a statistical exceedance for lithium, only LMW-5S has boron and molybdenum concentrations at a level above background levels for these constituents. This lack of correlation between key CCR Indicator parameters and elevated lithium concentrations indicates that elevated lithium concentrations are not associated with CCR impacts that contain elevated boron and molybdenum.

To further 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 first 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, but rather range between 5 – 50 µg/L, indicating that lithium concentrations are not linked to impacts from the SCPA.

Figure 2 – Comparison of Boron, Molybdenum, and Lithium Concentrations



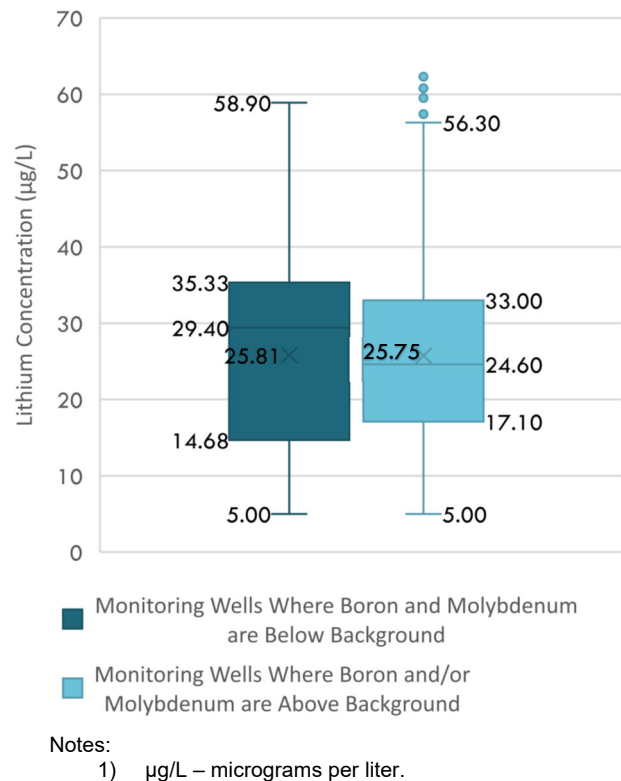
Notes:

- 1) µg/L – micrograms per liter.
- 2) Values displayed in order from highest to lowest boron concentrations. Data used in 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 35 monitoring wells onsite where boron and/or molybdenum concentrations are below background limits and 43 monitoring wells onsite where boron and/or molybdenum are above background limits. Background limits are based on the most recent updated statistical limits for the SCPA (Rocksmith, 2023). **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 (43 monitoring wells) and 2) monitoring wells where there is not a corresponding boron or molybdenum exceedance (35 monitoring wells). 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 minimum, lower quartile, median, upper quartile, and maximum values all within 5 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 58.9 µg/L was calculated, which is higher than the current Site GWPS of 40 µg/L.

Figure 3 – Distribution of Lithium Concentrations in Monitoring Wells With and Without Key CCR Indicators



4.2.2 Sequential Extraction Data

Confirms Presence of Naturally Occurring Lithium in Alluvial Sediments

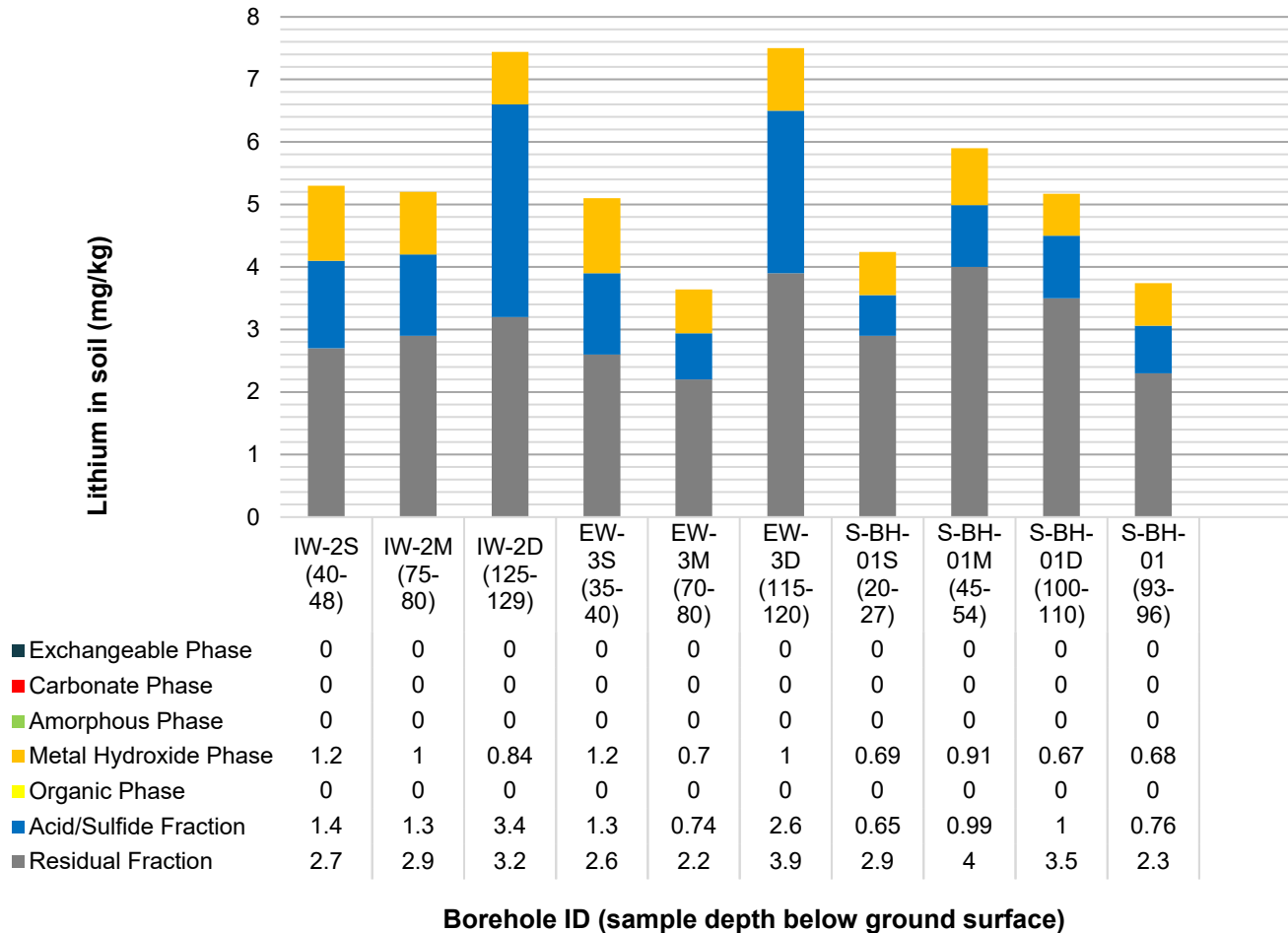
A seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of lithium in soils (i.e., the operationally defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all 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 4 – Sequential Extraction Procedure

SEQUENTIAL EXTRACTION PROCEDURE				
ENVIRONMENTALLY AVAILABLE ↑ Increasing Availability	Step 1	↑ Increasing Extraction Strength ↓	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

In 2021, samples were collected by Golder from three soil borings across the SEC for sequential extraction testing. The locations of the sequential extraction sample borings are provided in **Figure 1**. Results of the sequential extraction testing as displayed in **Figure 5** indicate the presence of naturally occurring lithium in soils at the SEC in fractions 6 and 7 in each of the soil borings, regardless of if the locations were directly adjacent to the SCPA or at background locations. Lithium is reported in soils at concentrations ranging from 3.6 to 7.4 milligrams per kilogram (mg/kg, from the SEP) and is predominantly (76 to 87%) 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) indicate a general lack of lithium transport and attenuation (e.g., through sorption and/or co-precipitation).

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 while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

4.2.3 Leachability Testing

In a previous study completed by Haley & Aldrich in 2018, several leachability tests were completed at the site for the CCR materials in the SCPA and the SCPB. First, the Shake Extraction Test (method ASTM D3987) was completed. This test consists of shaking the waste (CCR) with water to determine what constituents would be leached from the material. For this test, both the SCPA bottom ash and the SCPB fly ash had a result of non-detect for lithium (<0.018 mg/L). Secondly, a Synthetic Precipitation Leaching Procedure (SPLP) test was completed for both the SCPA bottom ash and the SCPB fly ash. This method is used to determine if constituents of concern are able to leach into groundwater from the waste (CCR). For this test, the bottom ash/boiler slag in SCPA was again at a non-detect level for lithium, while the fly ash in SCPB had a lithium concentration of 0.0087 mg/L. The lithium, concentration of 0.0087 mg/L (8.7 µg/L) is at a similar level as background groundwater, and well below the site GWPS of 40 µg/L. This indicates that there is little leachable lithium present in the SCPA or SCPB CCR units.

4.2.4 Lithium at TP-6S

TP-6S is located approximately 2,500 feet southwest of the SCPA and approximately 2,500 feet south of background wells BMW-1S and BMW-1D. Located on the western side of the property, TP-6S is considered upgradient or cross-gradient of the SCPA, as groundwater flow at the site ranges from north to south, with a net groundwater flow toward the east. During the statistical evaluation of the May 2023 sampling event, a lower confidence limit (LCL) of 33.42 µg/L and upper confidence limit (UCL) of 40.1 µg/L were calculated for lithium. When compared to the UPL of 58.9 µg/L for lithium as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts, indicates that the elevated lithium at TP-6S is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.5 Lithium at TP-2D

TP-2D is located approximately 3,000 feet to the northeast of the SCPA on the southern bank of the Mississippi River. Like TP-6S, boron and molybdenum concentrations at this monitoring well are below background, indicating that CCR impacts are unlikely at this monitoring well. During the statistical evaluation of the May 2023 sampling event, a LCL of 40.24 µg/L and UCL of 53.27 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at TP-2D is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.6 Lithium at LMW-5S

LMW-5S is located approximately 2,000 feet to the southeast of the SCPA, near the southeastern perimeter of the SCPB. Unlike TP-2D and TP-6S, boron concentrations are elevated at LMW-5S while molybdenum concentrations are typically below background. During the statistical evaluation of the May 2023 sampling event, a LCL of 42.19 µg/L and UCL of 48.71 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at LMW-5S is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.7 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 SEC.

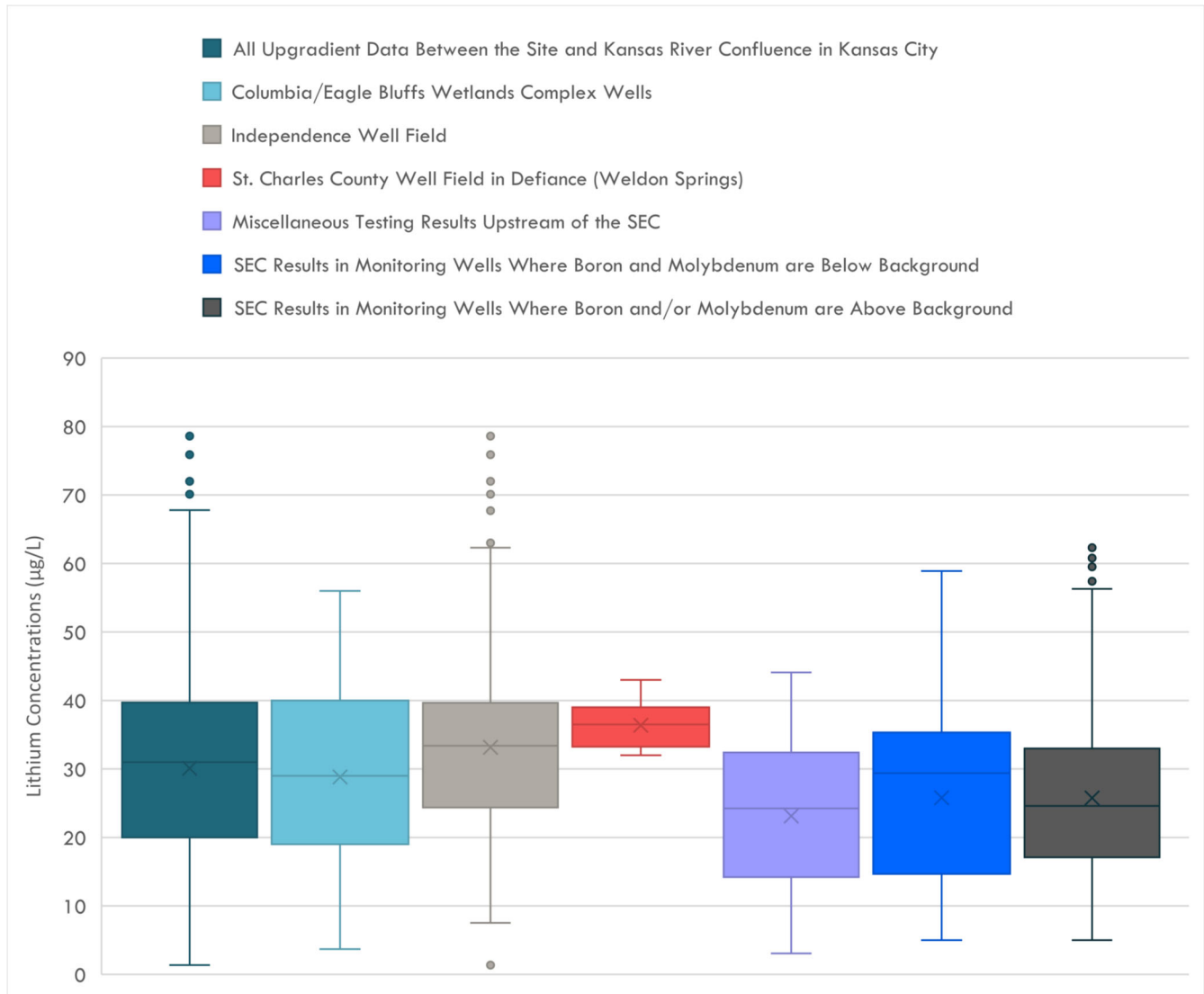
The National Water Quality Monitoring Council's (NWQMC) Water Quality Portal (available at <https://www.waterqualitydata.us/>) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of lithium results from within the Missouri and Mississippi River Alluvial Aquifer from the NWQMC database includes lithium results from a total of 1,347 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC within the Mississippi 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 410 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 851 results.
- Weldon Spring Well Field (Kleeschulte, 1993) – Total of 32 results.
- Miscellaneous testing results upstream of the SEC – Total of 54 results

- Only 1 result available within the Mississippi River alluvium upgradient of the SEC which is a result of 14.7 µg/L near Wayland Missouri.

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 SEC as displayed in Figure 4.

Figure 6 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and SEC Results



Note:

- 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, and Weldon Spring. This consistency with upgradient alluvial aquifer samples demonstrates that the lithium concentrations onsite are not from the SCPA, but rather are naturally occurring within the alluvial aquifer.

4.3 Cobalt Evaluation

Cobalt is present at a level that is statistically above the GWPS of 6 µg/L using corrective action statistical evaluations at LMW-6S. LMW-6S is located approximately 1,800 feet southeast of the SCPA, on the eastern perimeter of the SCPB, approximately 750 feet northeast of LMW-5S discussed above. As displayed in **Table 5**, boron is present at LMW-6S at a concentration above background, while molybdenum is detected below the Practical Quantitation Limit (PQL), similar to molybdenum concentrations at background wells.

Table 5 – May 2023 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Cobalt Exceedance

Well ID	Cobalt (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-6S	6.8	18,000	12.1 J
BMW-1S (background)	ND (<1.2)	64.8 J	5.3 J
BMW-3S (background)	ND (<1.2)	67.1 J	4.7 J
BMW-1D (background)	ND (<1.2)	132	6.9 J
BMW-3D (background)	ND (<1.2)	63.5 J	1.7 J

Notes:

- 1) µg/L – micrograms per liter.
- 2) J - Result is an estimated value.

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). Based on the results of the initial Corrective Action Statistical Evaluation completed in May 2023, Cobalt was present a level statistically above the GWPS with a LCL of 6.873 µg/L and a UCL of 10.03 µg/L. Since its installation in 2016, cobalt concentrations have ranged from 5.9 to 10.7 µg/L.

Table 6 provides a summary of cobalt minimum, average, and maximum concentrations in the different potential source areas including background, porewater, Missouri River, and Mississippi River. As displayed on **Table 6**, concentrations in LMW-6S are above those present in background, nearby rivers, and porewater.

Table 6 – Summary of Cobalt Concentrations

Constituent (Units)		LMW-6S	Background	Assessment Monitoring Wells Adjacent to SCPA (UMW 1D-6D)	Mississippi River ³	Missouri River	SCPA Porewater	SCPB Porewater
Cobalt (µg/L)	Minimum	5.9	ND (<0.72)	ND (<0.72)	ND (<0.73)	ND (<0.73)	ND (<0.73)	ND (<0.73)
	Average	7.759	0.8064	0.4726	1.217	0.5065	0.652	ND (<0.73)
	Maximum	10.7	4.2 J	1.7 J	2.3 J	0.87 J	1.8	ND (<0.73)

Notes:

- 1) µg/L – micrograms per liter.
- 2) J - Result is an estimated value.

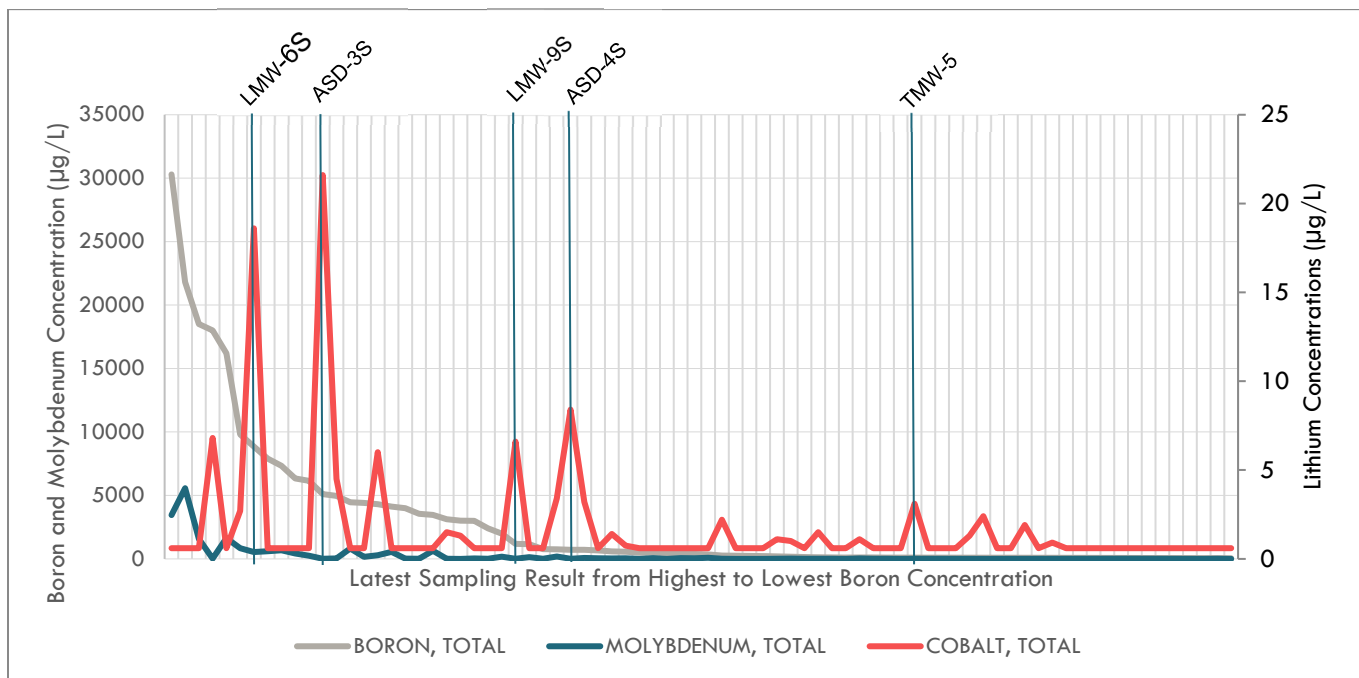
³ Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren’s public website at <https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center>.

In January 2018, as part of the initial SCPB ASD, porewater was sampled in the SCPA and SCPB CCR units. Eight (8) of the nine (9) results from this analysis were non-detect (<0.73 µg/L) and one result at SCPA-2 was 1.8 J µg/L. This lack of cobalt in the CCR materials has been confirmed in other studies as well, including the current NPDES permit (#MO-0000353) where cobalt is not listed as a Pollutant of Concern (POC) since the results collected from the SCPA and SCPB outfalls were at a non-detect level. Lack of cobalt within the pore-water of the SCPA and SCPB, coupled with the lack of cobalt at a statistically significant level above the GWPS in any other monitoring well onsite, indicates that cobalt is likely not from the SCPA, but rather, an alternative source.

Further evidence that the SCPA 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 and UMW-6D, 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 108 testing results for these six (6) monitoring wells, only one result has a value over the method detection limit (MDL) at 1.7 J µg/L (below the PQL). Therefore, 99.1% of all cobalt results in monitoring wells located directly adjacent to the SCPA are present at a non-detect level.

Like lithium, 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**). As displayed previously in **Figure 2** and below in **Figure 7**, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Cobalt concentrations do not track closely with either boron or molybdenum concentrations, but rather range from non-detect (<0.73 µg/L) to (20 µg/L).

Figure 7 – 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 in Figure 7 are provided in Table 4.
- 3) Cobalt concentrations displayed on secondary axis, with values on the right side of the graph.

As displayed in **Table 4**, there are 35 monitoring wells onsite where boron and molybdenum concentrations are below background and 43 monitoring wells onsite where boron or molybdenum are above background

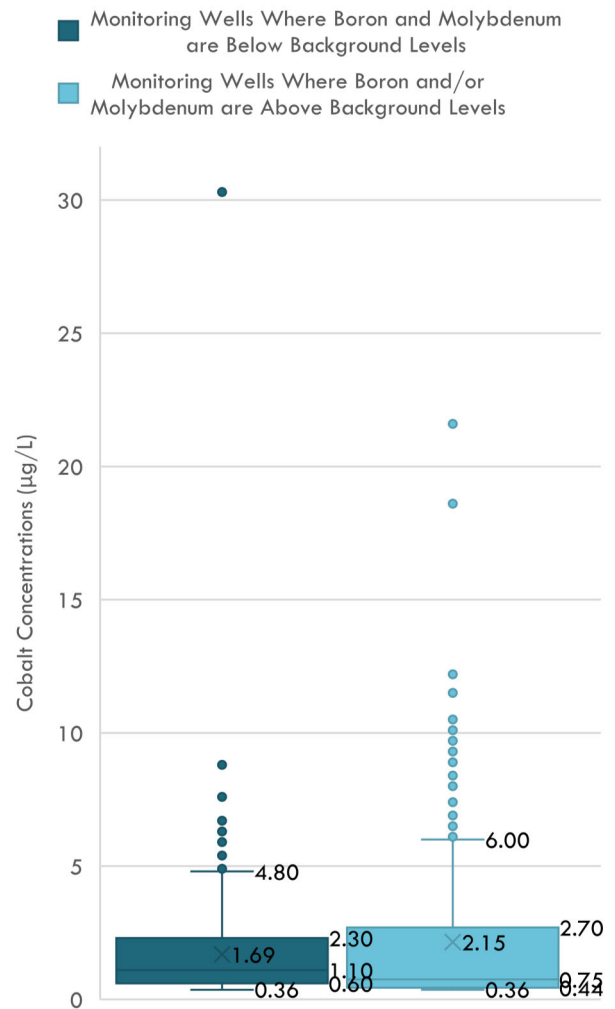
concentrations. **Figure 8** displays the distribution of cobalt concentrations between these two datasets (with and without boron or molybdenum exceedances). For this figure, historical data for each of the wells identified above were used to generate the distribution. The results of this box and whisker plot display a very similar distribution between the two datasets including mean concentrations within 0.5 µg/L and median concentrations within 0.4 µg/L. 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.

4.3.1 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**.

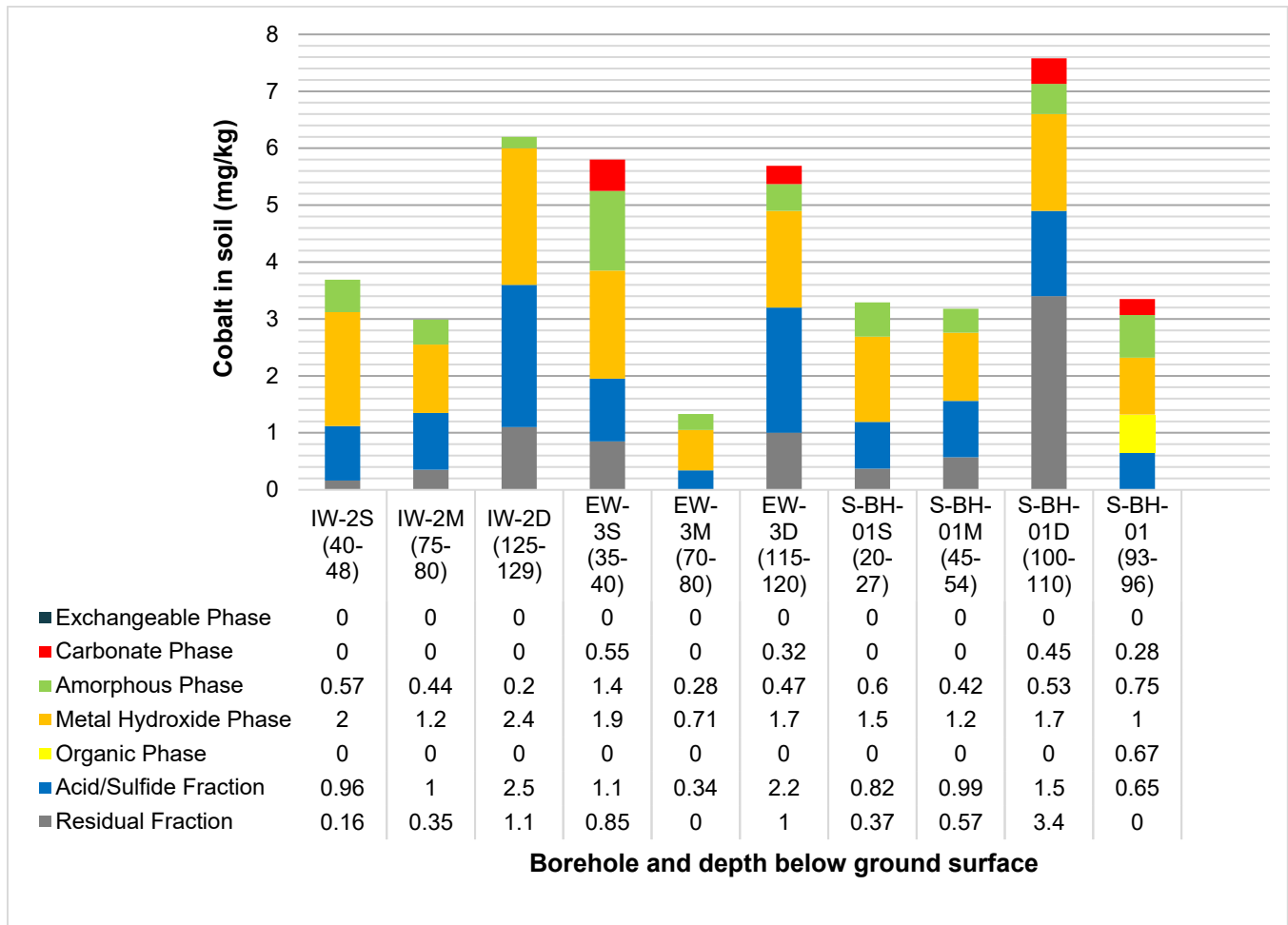
Results of the sequential extraction testing indicate naturally occurring cobalt is present in soils at the SEC in fractions 6 and 7 of each of the soil borings, regardless of if the location is directly adjacent to the SCPA or at background locations. Cobalt is reported at concentrations ranging from 1.3 to 7.6 milligrams per kilogram (mg/kg, from the SEP) and is present in the residual and sulfide component of the soil (35 to 81%), i.e., the non-environmentally available fractions. Background soil samples, outside of the impacts from the SCPA, 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



Notes:
2) µg/L – micrograms per liter.

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 while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

4.3.2 Leachability Testing

As with lithium, several leachability tests were completed at the site by Haley & Aldrich in 2018 for the CCR materials in the SCPA and the SCPB. For the Shake Extraction Test (method ASTM D3987), both the SCPA bottom ash and the SCPB fly ash results were non-detect (<0.0068 mg/L) for cobalt. For the SPLP test, both the SCPA bottom ash and the SCPB fly ash were non-detect (<0.0027 mg/L) for cobalt. This confirms the results of the porewater testing and indicate that little to no leachable cobalt is present in the SCPA or SCPB CCR units and they are not significant sources of cobalt in the alluvial aquifer groundwater.

4.3.3 Naturally Occurring Cobalt Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

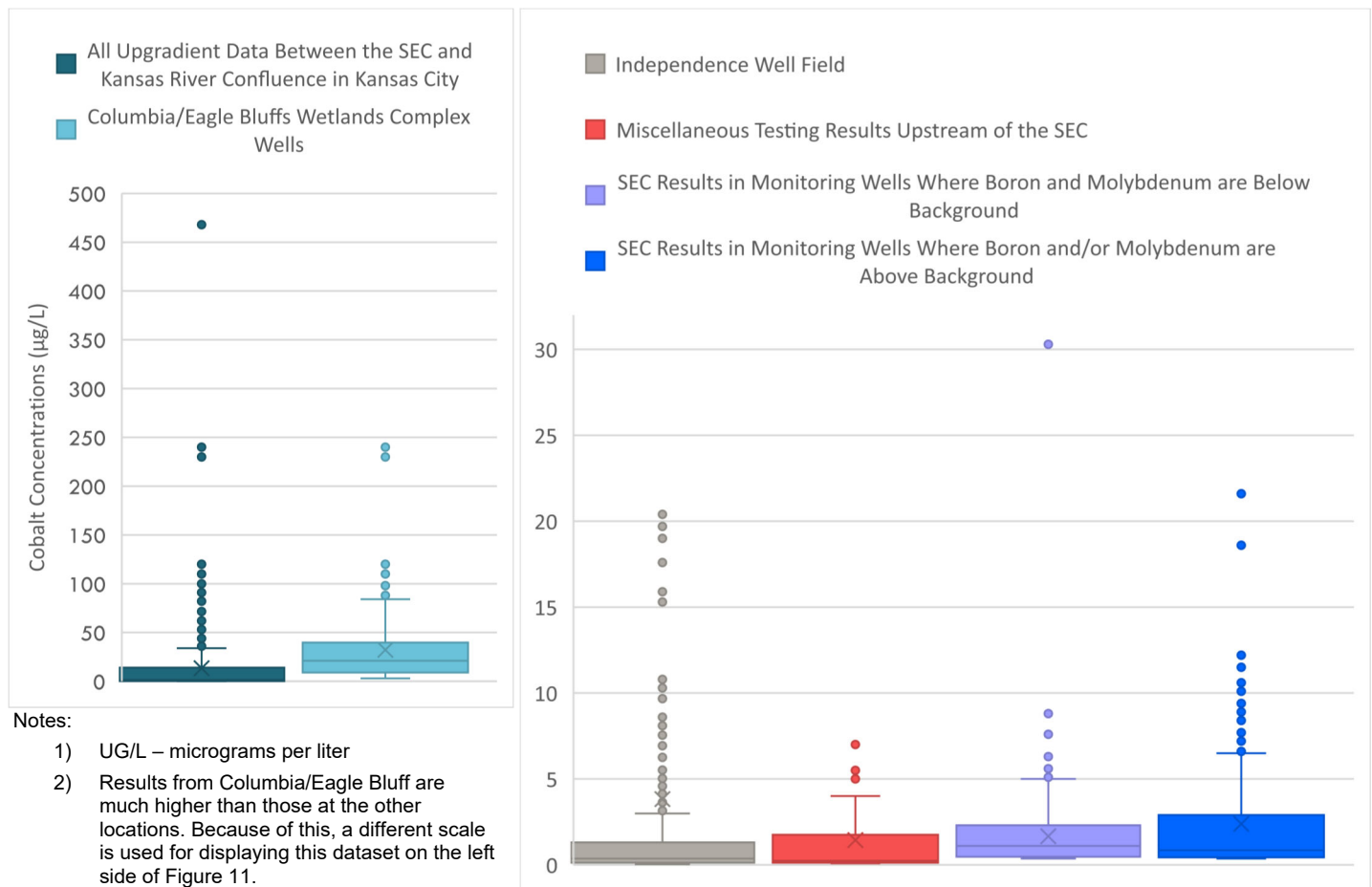
Cobalt may be present in mineral form as arsenides, carbonates, sulfides and oxides (Hem, 1989; Smith and Carson, 1981). During weathering of these minerals (i.e., dissolution and/or oxidation), any cobalt is typically released and redistributed to iron or manganese (hydr)oxides (Butt et al., 2000) or 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 and Mississippi River Alluvial Aquifer from the NWQMC database includes Cobalt results from a total of 515 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC within the Mississippi 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 306 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 176 results.
- Miscellaneous testing results upstream of the SEC – Total of 33 results.
- Only 1 result available within the Mississippi River alluvium upgradient of the SEC which is a result of 0.079 µg/L near Wayland Missouri.

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 9.

Figure 10 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and Sioux 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 LMW-6S (as well as other various locations within the Missouri River Alluvium) likely include localized zones of increased cobalt concentrations, and are likely the cause of the elevated concentrations observed at the SEC.

This inconsistency of upgradient alluvial aquifer samples and their origins indicates that the cobalt concentrations onsite, namely the exceedance at LMW-6S, are not influenced by the SCPA, but rather are naturally occurring within the aquifer groundwater.

5.0 SUMMARY

Based on the information presented in **Section 4.0**, the statistical exceedances for lithium and cobalt at the site using Corrective Action statistical methods are not the result of impacts from the SCPA, 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 exceedances of lithium and cobalt, (2) the presence of lithium and cobalt at similar levels in upgradient alluvial aquifer samples, (3) the presence of naturally occurring cobalt and lithium in sediments upgradient of the SCPA, and (4) cobalt and lithium have been shown to be naturally occurring elements in soils and alluvial aquifer sediments that are derived from geologic sources within the Missouri River watershed.

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Tables

**Table 4
Summary of Corrective Action Groundwater Network Sampling Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO**

Constituent	Boron		Molybdenum		Lithium		Cobalt	
Background Limit	240 µg/L		DQR (20 µg/L)		27.91 µg/L		DQR (5 µg/L)	
Groundwater Monitoring Wells	Date	µg/L	Date	µg/L	Date	µg/L	Date	µg/L
UMW-3D	5/1/2023	30,300	5/1/2023	3,450	5/1/2023	16.2	5/1/2023	ND
UMW-4D	5/1/2023	21,800	5/1/2023	5,570	5/1/2023	32.8	5/1/2023	ND
UMW-2D	5/1/2023	18,500	5/1/2023	1,570	5/1/2023	22.8	5/1/2023	ND
LMW-6S	5/9/2023	18,000	5/9/2023	12.1 J	5/9/2023	23.0	5/9/2023	6.8
LMW-5S	5/9/2023	16,200	5/9/2023	1,630	5/9/2023	45.3	5/9/2023	ND
LMW-2S	5/8/2023	9,800	5/8/2023	842	5/8/2023	35.1	5/8/2023	2.7 J
ASD-3S	1/25/2018	8,850	1/25/2018	532	1/25/2018	41.8	1/25/2018	18.6
TP-5D	5/9/2023	7,900	5/9/2023	604	5/9/2023	40.5	5/9/2023	ND
ASD-3M	1/25/2018	7,330	1/25/2018	675	1/25/2018	32.8	1/25/2018	ND
AM-1D	5/2/2023	6,340	5/2/2023	422	5/2/2023	30.3	5/2/2023	ND
UMW-5D	5/8/2023	6,150	5/8/2023	250	5/8/2023	23.2	5/8/2023	ND
ASD-6S	2/2/2018	5,100	2/2/2018	10.8 J	2/2/2018	27.0	2/2/2018	21.6
ASD-5S	2/8/2018	4,960	2/8/2018	27.7	2/8/2018	17.1	2/8/2018	4.5 J
ASD-3D	1/25/2018	4,450	1/25/2018	814	1/25/2018	35.0	1/25/2018	ND
ASD-4D	2/9/2018	4,400	2/9/2018	161	2/9/2018	40.1	2/9/2018	ND
LMW-8S	5/8/2023	4,300	8/6/2019	282	8/6/2019	12.8	5/16/2018	6.0
ASD-6M	2/5/2018	4,110	2/5/2018	551	2/5/2018	46.2	2/5/2018	ND
ASD-5D	2/8/2018	3,990	2/8/2018	12.9 J	2/8/2018	45.0	2/8/2018	ND
PZ-9D	5/5/2023	3,550	5/5/2023	9.6 J	5/5/2023	34.6	5/5/2023	ND
PZ-1S	5/1/2023	3,460	5/1/2023	641	5/1/2023	15.5	5/1/2023	ND
TP-5M	8/2/2019	3,120	8/2/2019	7.6 J	8/2/2019	33.2	8/2/2019	1.5 J
LMW-7S	5/8/2023	3,010	8/5/2019	ND	8/5/2019	18.2	5/16/2018	1.3 J
ASD-4M	2/9/2018	2,990	2/9/2018	30.5	2/9/2018	37.2	2/9/2018	ND
ASD-5M	2/8/2018	2,400	2/8/2018	10.9 J	2/8/2018	42.6	2/8/2018	ND
ASD-6D	2/5/2018	1,980	2/5/2018	172	2/5/2018	40.1	2/5/2018	ND
LMW-9S	5/8/2023	1,180	8/9/2019	8.7 J	8/9/2019	47.4	5/16/2018	6.6
ASD-1D	1/31/2018	1,150	1/31/2018	131	1/31/2018	22.7	1/31/2018	ND
LMW-4S	5/5/2023	758	5/5/2023	1.7 J	5/5/2023	32.0	5/5/2023	ND
ASD-2S	1/30/2018	744	1/30/2018	184	1/30/2018	24.9	1/30/2018	3.4 J
ASD-4S	2/9/2018	717	2/9/2018	3.0 J	2/9/2018	36.0	2/9/2018	8.4
AM-1S	5/2/2023	708	5/2/2023	70.7	5/2/2023	28.0	5/2/2023	3.2 J
LMW-1S	5/8/2023	659	5/8/2023	45.1	5/8/2023	17.9	5/8/2023	ND
ASD-1S	1/31/2018	588	1/31/2018	24.8	1/31/2018	8.4 J	1/31/2018	1.4 J
ASD-1M	1/31/2018	555	1/31/2018	43.3	1/31/2018	16.2	1/31/2018	0.74 J
TP-1D	8/6/2019	481	8/6/2019	ND	8/6/2019	18.7	8/6/2019	ND
UMW-6D	5/8/2023	480	5/8/2023	55.5	5/8/2023	18.0	5/8/2023	ND
UG-2	5/3/2023	458	8/19/2019	ND	8/19/2019	19.1	11/13/2019	ND
ASD-2M	1/30/2018	451	1/30/2018	59.9	1/30/2018	14.6	1/30/2018	ND
ASD-2D	1/30/2018	385	1/30/2018	46.3	1/30/2018	12.4	1/30/2018	ND
UMW-1D	5/8/2023	340	5/8/2023	75.3	5/8/2023	19.6	5/8/2023	ND
UG-3	5/4/2023	258	5/4/2023	4.5 J	5/4/2023	30.1	5/4/2023	2.2 J
TP-1M	8/5/2019	246	8/5/2019	ND	8/5/2019	16.6	8/5/2019	ND
TP-2M	8/5/2019	238	8/5/2019	ND	8/5/2019	28.8	8/5/2019	ND
LMW-3S	5/5/2023	215	8/5/2019	ND	8/5/2019	29.9	5/16/2018	ND
TP-5S	8/2/2019	211	8/2/2019	13.1 J	8/2/2019	17.7	8/2/2019	1.1 J
TP-7S	8/6/2019	144	8/6/2019	14.1 J	8/6/2019	43.3	8/6/2019	1.0 J
BMW-1D	5/2/2023	132	5/2/2023	6.9 J	5/2/2023	14.3	5/2/2023	ND
TP-1S	8/5/2019	120	8/5/2019	5.4 J	8/5/2019	ND	8/5/2019	1.5 J
TMW-6	5/4/2023	120	7/25/2022	3.2 J	7/25/2022	37.4	7/25/2022	ND
TP-7D	8/6/2019	110	8/6/2019	ND	8/6/2019	42.5	8/6/2019	ND
TP-4S	8/6/2019	101	8/6/2019	28.6	8/6/2019	18.6	8/6/2019	1.1 J
TP-6S	5/2/2023	101	5/2/2023	4.2 J	5/2/2023	34.6	5/2/2023	ND
TMW-4	5/4/2023	99.5 J	7/25/2022	4.0 J	7/25/2022	36.6	7/25/2022	ND
DG-1	5/3/2023	96.9 J	8/19/2019	ND	8/19/2019	31.6	11/13/2019	ND
TMW-5	5/4/2023	95.7 J	7/25/2022	2.1 J	7/25/2022	35.3	7/25/2022	3.1 J
TP-7M	8/6/2019	93.5 J	8/6/2019	ND	8/6/2019	37.8	8/6/2019	ND
DG-4	5/3/2023	91.4 J	8/19/2019	ND	8/19/2019	34.8	11/13/2019	ND
UG-1A	5/3/2023	89.9 J	8/19/2019	ND	8/19/2019	40.3	11/13/2019	ND
TMW-3	5/4/2023	89.1 J	8/19/2019	ND	8/19/2019	27.2	6/6/2017	1.3 J
TP-2S	8/5/2019	88.5 J	8/5/2019	4.3 J	8/5/2019	13.8	8/5/2019	2.4 J
TP-2D	5/1/2023	87.8 J	5/1/2023	3.1 J	5/1/2023	45.3	5/1/2023	ND
TP-8M	8/5/2019	85.1 J	8/5/2019	ND	8/5/2019	29.0	8/5/2019	ND
TMW-2	5/4/2023	84.9 J	8/19/2019	ND	8/19/2019	28.6	6/6/2017	1.9 J
DG-3	5/3/2023	83.6 J	8/19/2019	ND	8/19/2019	35.2	11/13/2019	ND
TMW-1	5/4/2023	76.9 J	8/19/2019	3.1 J	8/19/2019	20.6	6/6/2017	0.91 J
DG-2	5/3/2023	75.5 J	8/19/2019	ND	8/19/2019	35.5	11/13/2019	ND
TP-8S	8/5/2019	72.6 J	8/5/2019	6.5 J	8/5/2019	21.8	8/5/2019	ND
TP-3S	8/7/2019	71.3 J	8/7/2019	16.8 J	8/7/2019	12.3	8/7/2019	ND
BMW-3S	5/2/2023	67.1 J	5/2/2023	4.7 J	5/2/2023	9.9 J	5/2/2023	ND
TP-4M	8/6/2019	66.8 J	8/6/2019	ND	8/6/2019	32.0	8/6/2019	ND
BMW-1S	5/2/2023	64.8 J	5/2/2023	5.3 J	5/2/2023	5.8 J	5/2/2023	ND
BMW-3D	5/2/2023	63.5 J	5/2/2023	1.7 J	5/2/2023	22.8	5/2/2023	ND
TP-6M	8/6/2019	53.1 J	8/6/2019	ND	8/6/2019	25.1	8/6/2019	ND
TP-3M	8/7/2019	44.3 J	8/7/2019	ND	8/7/2019	23.9	8/7/2019	ND
TP-4D	5/9/2023	ND	5/9/2023	2.8 J	5/9/2023	32.2	5/9/2023	ND
TP-8D	5/9/2023	ND	5/9/2023	11.5 J	5/9/2023	33.9	5/9/2023	ND
TP-6D	5/5/2023	ND	5/5/2023	ND	5/5/2023	28.4	5/5/2023	ND
TP-3D	5/3/2023	ND	5/3/2023	3.3 J	5/3/2023	34.9	5/3/2023	ND

Notes:

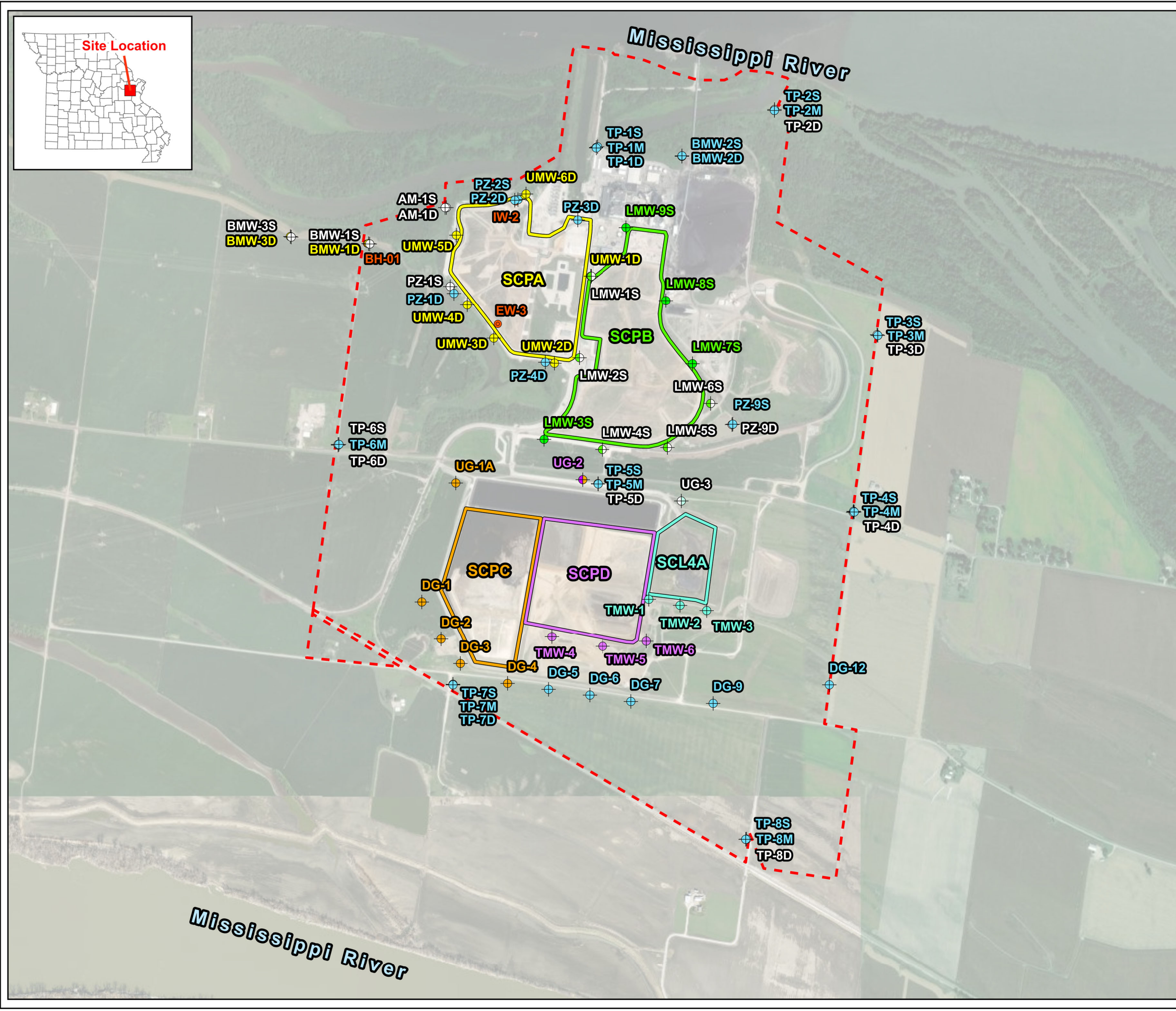
- Unit Abbreviations: µg/L.
- ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- J - Result is an estimated value.
- Date corresponds with most recent result for each analyte.
- Well ID's highlighted in light red have values above the background limit for boron or molybdenum. These values are used in the "concentrations with a boron or molybdenum value over background" for the box and whisker plots provided in Figure 3 and Figure 8. Well ID's in blue do not have a molybdenum or boron value above background, and these wells are used in the "concentrations without a boron or molybdenum value over background" column for the box and whisker plots provided in Figures 3 and 9.
- If all background results are less than the PQL, the Double Quantification Rule (DQR) is used. In cases where DQR is the background value, the latest PQL is used for the background limit.

Figures



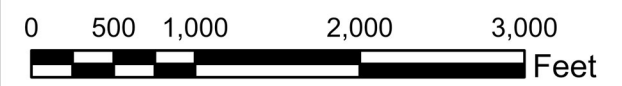
TITLE
SIoux ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

- Legend**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - Utility Waste Landfill Cells**
 - SCL4A - Dry CCR Disposal Area
 - SCPC - Inactive FGD Surface Impoundment
 - SCPD - FGD Surface Impoundment
 - Monitoring Well Networks**
 - + Corrective Action Monitoring Well
 - + SCPA Detection and Assessment Monitoring Well
 - + SCPB and Corrective Action Monitoring Well
 - + SCPB Detection Monitoring Well
 - + SCPC Detection Monitoring Well
 - + SCPD and SCPC Detection Monitoring Well
 - + SCPD Detection Monitoring Well
 - + SCL4A and Corrective Action Monitoring Well
 - + SCL4A Detection Monitoring Well
 - + Monitoring Well Used for Water Level Elevation Measurements Only
 - Soil Boring Location for Sequential Extraction Samples



- NOTES**
- All boundaries and locations are approximate.
 - FGD - Flue Gas Desulfurization.
 - CCR - Coal Combustion Residuals.

- REFERENCES**
- Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER

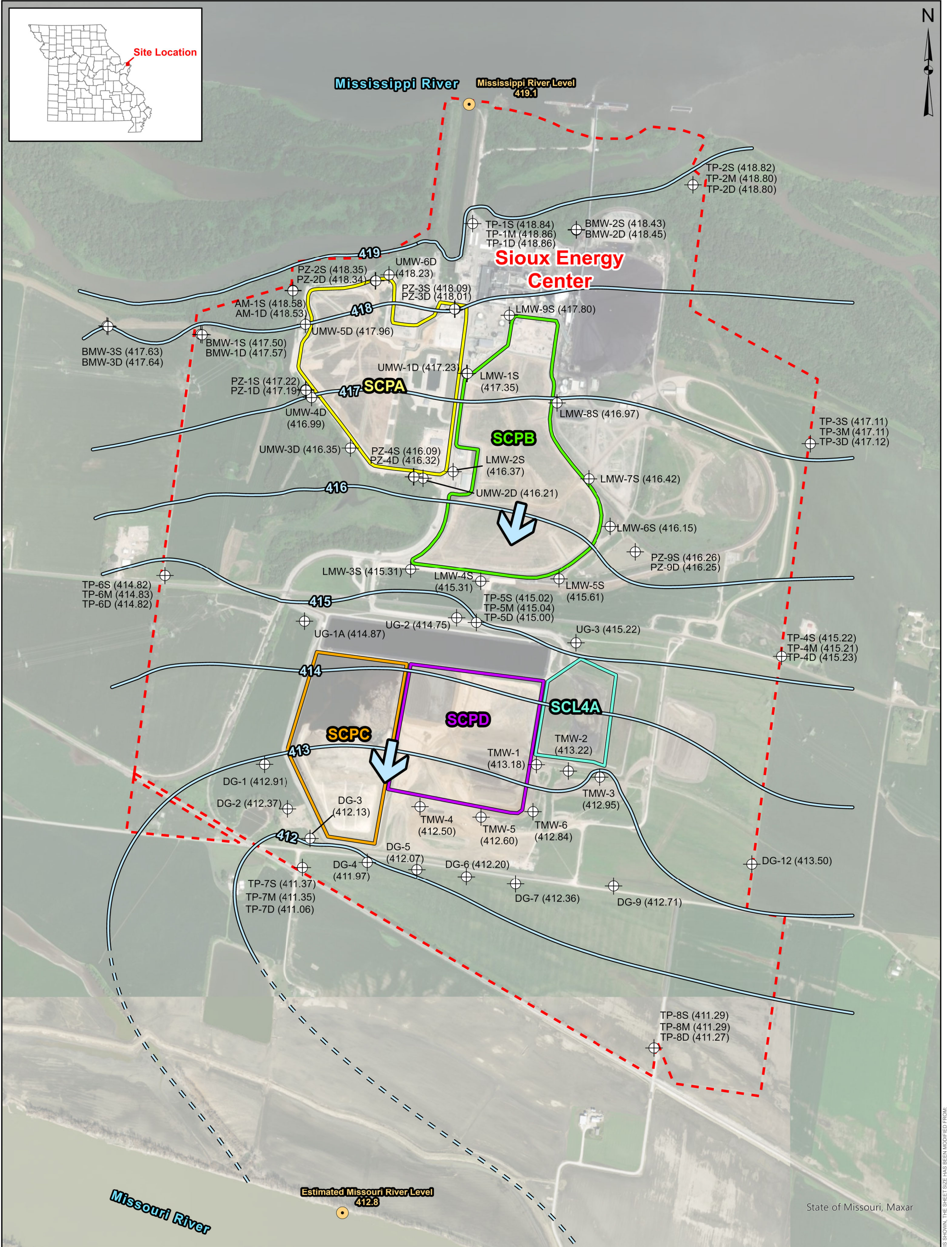
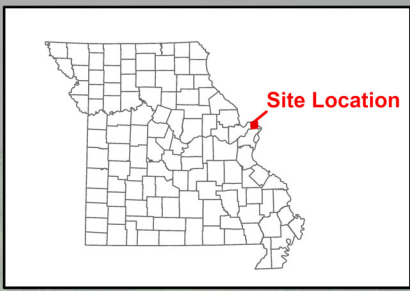
	DESIGN	JSI	YYYY-MM-DD	2023-03-29
	PREPARED	JSI	PROJECT No.	23009
	REVIEW	GTM	FIGURE 1	
	APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geoenvironmenting\LLC\202007 - Ameren GMT - Document\400 - Drawings - Figures\4.3-SEC\4.3.2 - Production\2023\CD\Figure 1-Well locations.aprx

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

Appendix G

2023 Potentiometric Surface Maps



LEGEND

CCR Units

- Sioux Energy Center Property Boundary
- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)
- SCPC - WFGD Surface Impoundment (Closure in Progress)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Groundwater Elevation Contour (FT MSL)

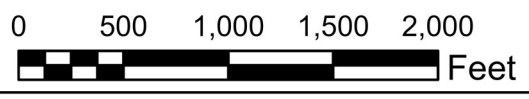
- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- River Gauge Location
- Monitoring Well or Piezometer
- Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY WSP.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.

- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).



TITLE

JANUARY 3, 2023 POTENTIOMETRIC SURFACE MAP

PROJECT

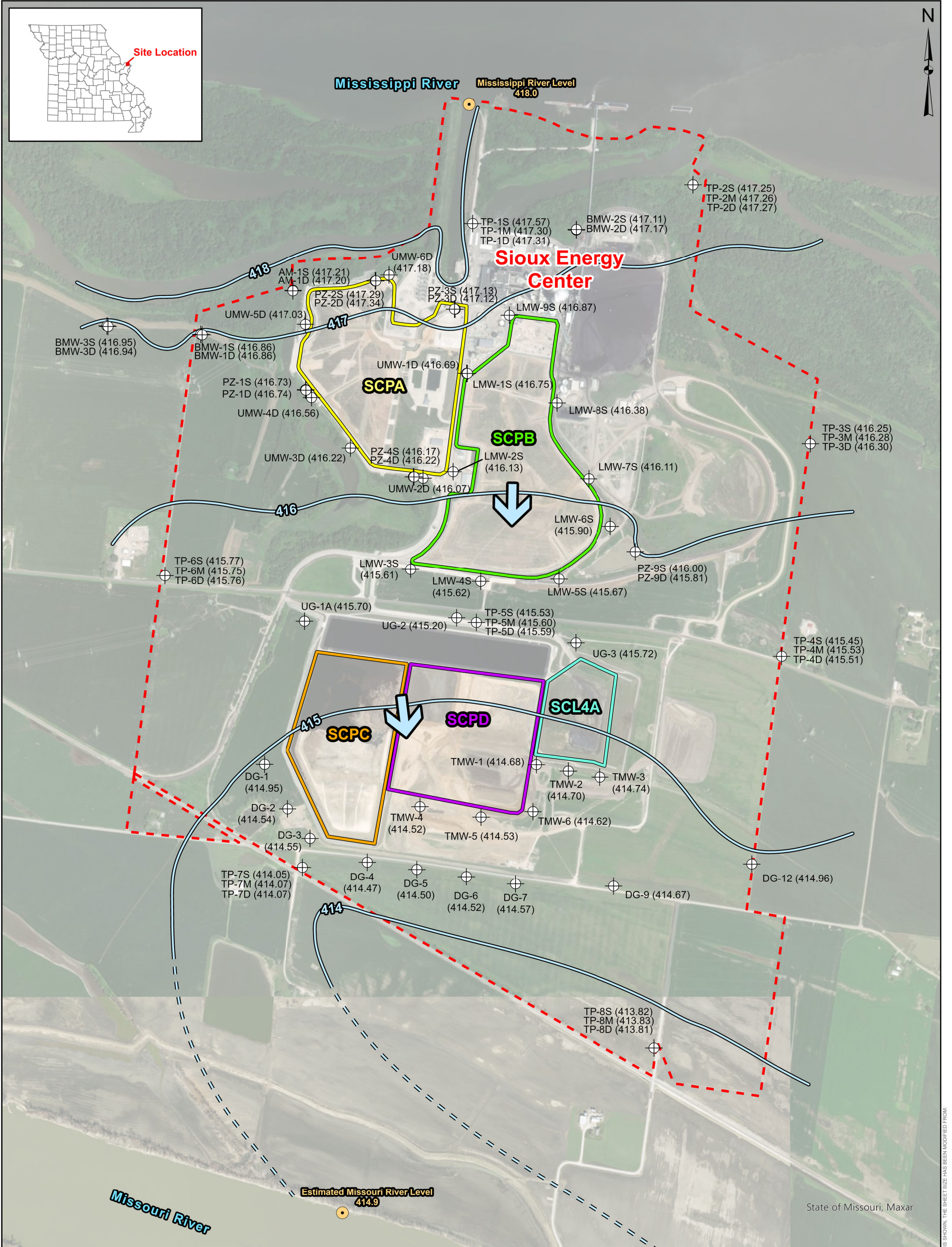
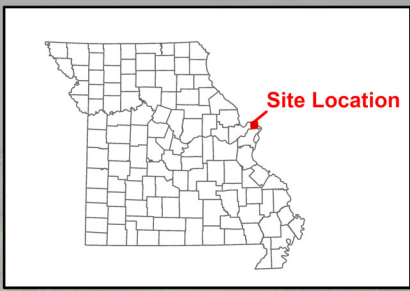
CCR GROUNDWATER MONITORING PROGRAM

CLIENT

AMEREN MISSOURI
SIOUX ENERGY CENTER

	DESIGN	GTM	YYYY-MM-DD	2023-08-21
	PREPARED	GTM	PROJECT No.	23009
	REVIEW	JSI	FIGURE G1	
	APPROVED	MNH		

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- Ground/Surface Water Measurement Locations**

 - River Gauge Location
 - ⊕ Monitoring Well or Piezometer
 - ➔ Groundwater Flow Direction

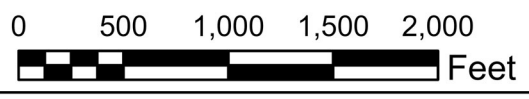
- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.

- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

TITLE
APRIL 28, 2023 POTENTIOMETRIC SURFACE MAP

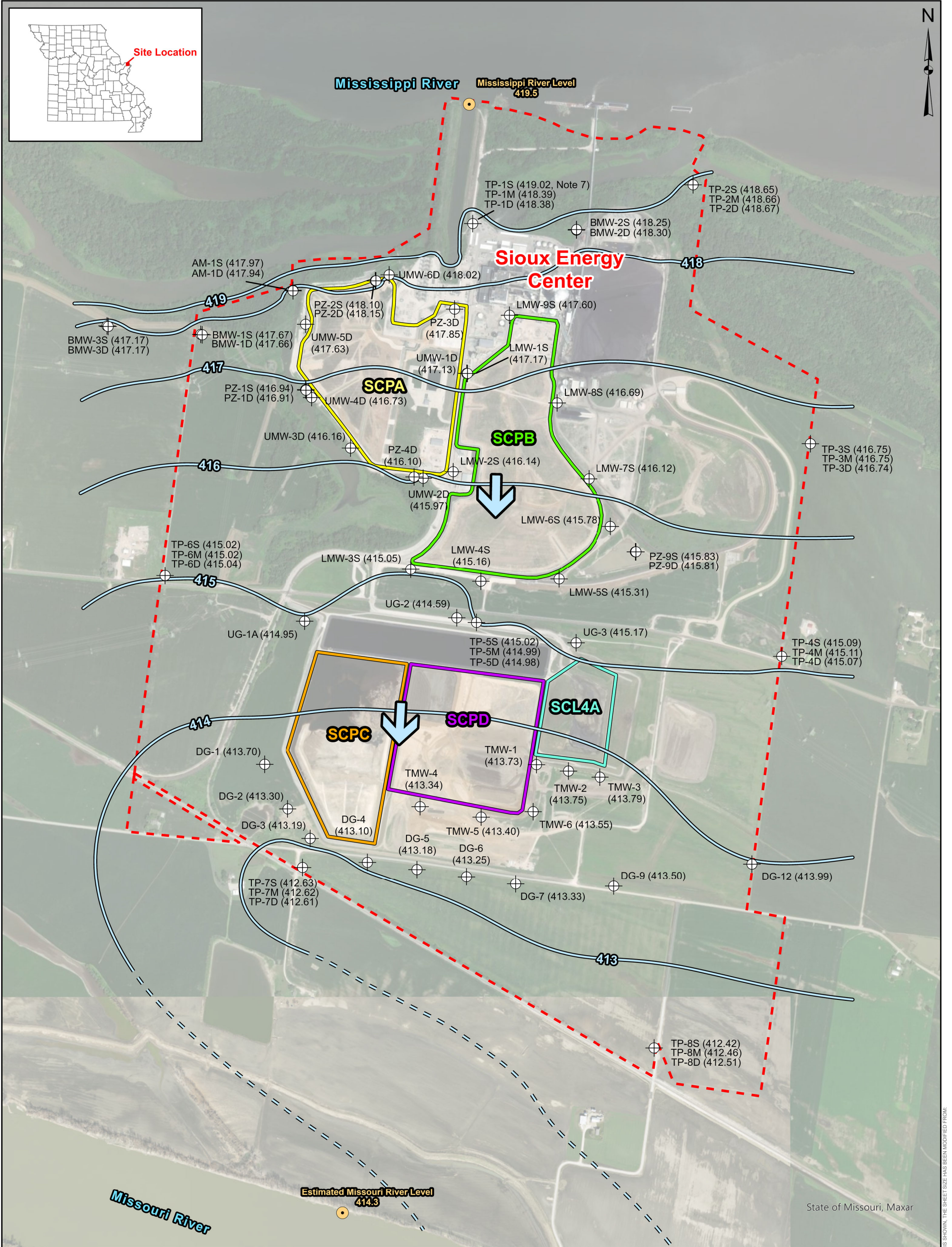
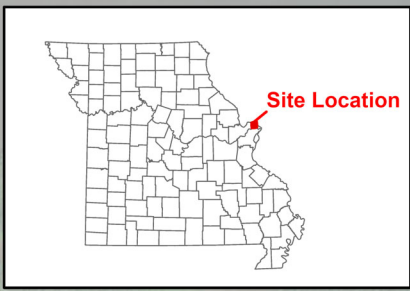
PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-08-23
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE G2	
APPROVED	MNH		

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
 - Ground/Surface Water Measurement Locations**
 - River Gauge Location
 - ⊕ Monitoring Well or Piezometer
 - ➔ Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.
 - 7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.

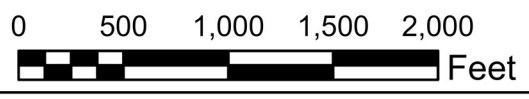
- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

TITLE
JULY 10, 2023 POTENTIOMETRIC SURFACE MAP

PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER

DESIGN	GTM	YYYY-MM-DD	2023-08-23
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE G3	
APPROVED	MNH		



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
 - Ground/Surface Water Measurement Locations**
 - River Gauge Location
 - ⊕ Monitoring Well or Piezometer
 - ➔ Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.
 - 7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.

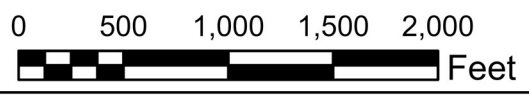
- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

TITLE
NOVEMBER 9, 2023 POTENTIOMETRIC SURFACE MAP

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

DESIGN	GTM	YYYY-MM-DD	2023-12-29
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE G4	
APPROVED	MNH		



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11m