REPORT

2024 Annual Groundwater Monitoring and Corrective Action Report

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

January 31, 2025 Project Number: 23009-24

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 SCPC 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 Utility Waste Landfill (UWL) SCPC Surface Impoundment (or Cell 1) at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCPC describes CCR Rule groundwater monitoring activities from January 1, 2024 through December 31, 2024 including verification results related to late 2023 sampling.

Throughout 2024, the SCPC CCR unit has been operating under the Detection Monitoring Program (§257.94), which began October 17, 2017. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values that represent a Statistically Significant Increase (SSI) over background concentrations. SSIs were determined during each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSI Determination Date	ASD Completion Date		
023 Sampling ent	Detection Monitoring, November 10-13, 2023	December 27, 2023	Appendix III, Major Cations and Anions	Boron: UG-2	March 26, 2024	June 24,		
November 2023 Event	Verification Sampling, February 7, 2024	ampling, February 22, Ap bruary 7, 2024 para	Detected Appendix III parameters ^{(See} _{Note 1)}	<u>TDS:</u> DG-4	indion 20, 2024	2024		
May 2024 Sampling Event	Detection Monitoring, May 28-30, 2024	July 9, 2024	Appendix III, Major Cations and Anions	<u>Chloride:</u> DG-3	October 7,	January 3,		
May 2024 Sa	Verification Sampling, July 29-30, 2024	August 12, 2024	Detected Appendix III parameters	Sulfate: DG-3	2024	2025		
November 2024 Sampling Event	Detection Monitoring, November 14-20, 2024	December 23, 2024	Appendix III, Major Cations and Anions	To be determined after statistical analysis and Verification Sampling a completed in 2025.				

Table 1 - Summary of 2024 SCPC Sampling Events, Previous Year Verification, and Statistical Evaluations

Notes:

1) Only analytes/wells that were detected above the prediction limit were tested during Verification Sampling.

- 2) SSI Statistically Significant Increase.
- 3) ASD Alternative Source Demonstration.

4) TDS – Total Dissolved Solids.

As outlined in section 257.94(e)(2) of the CCR Rule, the owner or operator may demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or



resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Alternative Source Demonstrations (ASDs) were prepared for each of these sampling events and are discussed further in this Annual Report.

There were no changes made to the monitoring system in 2024 with no new wells being installed or decommissioned. CCR placement within the SCPC has ceased as of December 14, 2022 and CCR has since been routed to the newly constructed cell east of the SCPC called the SCPD. More information on the SCPD Cell is provided in the SCPD Annual Report. Closure of the SCPC was substantially completed in 2024, with a closure completion date of October 23, 2024. The unit is now closed; therefore, the SCPC has transitioned into the post-closure care requirements of the CCR Rule. As outlined in §257.104 of the CCR Rule, the monitoring system and programs must be maintained for at least 30 years after the completion of closure.



Table of Contents

1.0	Installation or Decomissioning of Monitoring Wells	1
2.0	Groundwater Sampling Results and Discussion	1
2.1	Detection Monitoring Program	1
2.2	Groundwater Elevation, Flow Rate and Direction	2
2.3	Sampling Issues	2
	Activities Planned for 2025	

TABLES

 Table 1 - Summary of 2024 SCPC Sampling Events, Previous Year Verification, and Statistical Evaluations (in text)

Table 2 - Summary of Groundwater Sampling Dates (in text)

 Table 3 - November 2023 Detection Monitoring Results

Table 4 - May 2024 Detection Monitoring Results

Table 5 - November 2024 Detection Monitoring Results

FIGURES

Figure 1 - Sioux Energy Center Groundwater Monitoring Programs and Sample Location Map

APPENDICES

Appendix A - Laboratory Analytical Data

Appendix B - Alternative Source Demonstration – November 2023 Sampling Event

Appendix C - Alternative Source Demonstration - May 2024 Sampling Event

Appendix D - 2024 Potentiometric Surface Maps



1.0 INSTALLATION OR DECOMISSIONING OF MONITORING WELLS

In accordance with the CCR Rule, a groundwater monitoring system has been installed to monitor the SCPC. The groundwater monitoring system consists of 8 groundwater monitoring wells screened in the uppermost aquifer and is displayed in **Figure 1** and is listed on **Table 2**, below. No new monitoring wells were installed or decommissioned in 2024 as a part of the CCR Rule monitoring program for the SCPC. For more information on the groundwater monitoring network, details are provided in the previous Annual Groundwater Monitoring Reports for the SCPC. The SCPC was certified as closed on October 24, 2024; therefore, the unit is now subject to the Post-Closure Requirements of the CCR Rule (§257.104).

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the SCPC CCR Unit in 2024. **Table 2** below provides a summary of the groundwater samples collected in 2024 including the number of samples, the date of sample collection, and the monitoring program for which the samples were collected.

			G	roundwater M	lonitoring We	lls			Monitoring Program
Sampling Event	BMW-1S	BMW-3S	UG-1A	UG-2	DG-1	DG-2	DG-3	DG-4	
				Date of Samp	ole Collection				
February 2024 Verification Sampling	-	-	-	2/7/2024	2/7/2024	-	2/7/2024	-	Detection
May 2024 Sampling Event	5/28/2024	5/28/2024	5/30/2024	5/28/2024	5/30/2024	5/30/2024	5/30/2024	5/30/2024	Detection
July 2024 Verification Sampling	-	-	-	-	7/30/2024	7/30/2024	7/29/2024	-	Detection
November 2024 Sampling Event	11/20/2024	11/20/2024	11/15/2024	11/14/2024	11/15/2024	11/15/2024	11/15/2024	11/15/2024	Detection
Total Number of Samples Collected	2	2	3	3	4	3	4	2	NA

Table 2 – Summary of Groundwater Sampling Dates

Notes:

- 1) Detection Monitoring events tested for Appendix III Parameters.
- 2) Only analytes/wells that were detected above the prediction limit were tested during verification sampling.
- 3) "-" No sample collected.
- 4) NA Not applicable.
- 5) DG-1 and DG-3 were re-sampled in February 2024 following initial exceedances identified in November 2023. This occurred prior to updating prediction limits in March 2024 using data through May 2023. Using updated limits, the November 2023 results were no longer exceedances, and therefore, February 2024 verification results from DG-1 and DG-3 are not included in **Table 3**.

2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 10-13, 2023. Verification sampling and the statistical analysis to evaluate for SSIs for the November 2023 event were not completed until 2024 and are



included in this report. Detections above respective prediction limits for some Appendix III analytes triggered a verification sampling event, which was completed February 7, 2024 and resulted in two SSIs. **Table 3** summarizes the results and statistical analysis of the November 2023 Detection Monitoring event. Laboratory analytical data from the February 2024 verification sampling event are provided in **Appendix A**. Laboratory Analytical data for the November 2023 Detection Monitoring event are provided in the 2023 Groundwater Monitoring and Corrective Action Annual Report for the SCPC.

As outlined in section 257.94(e)(2) of the CCR Rule, the owner or operator may demonstrate that a source other than the CCR unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. An ASD was completed for the SSIs and are provided in **Appendix B**. This ASD demonstrates that the SSIs at monitoring well UG-2 and DG-4 are not caused by the SCPC CCR Unit, and therefore, the SCPC CCR Unit remains in Detection Monitoring.

Detection Monitoring samples were collected May 28-30, 2024, and testing was completed for all Appendix III analytes, as well as major cations and anions. Detections above respective prediction limits for some Appendix III analytes triggered a verification sampling event, which was completed July 29-30, 2024 and verified two SSIs. **Table 4** summarizes the results and statistical analysis of the May 2024 Detection Monitoring event. Laboratory analytical data from this sampling event is included in **Appendix A**. Similar to previous results, SSIs in the monitoring well network are not caused by the SCPC CCR unit, as demonstrated by the ASD provided in **Appendix C**.

A Detection Monitoring sampling event was completed November 14-20, 2024, and testing was completed for all Appendix III analytes, as well as major cations and anions. The statistical analysis to evaluate for SSIs in the November 2024 data was not completed in 2024 and the results will be provided in the 2025 Annual Report. **Table 5** summarizes the results of the November 2024 Detection Monitoring event, and laboratory analytical data from this event are provided in **Appendix A**.

2.2 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 D**. 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 2024 as a result of river levels in the Missouri and Mississippi Rivers. From 2016 through 2022, horizontal gradients 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. From July 2022 to February 2024, due to relatively low Missouri River levels, there was a more prevalent southward flow direction at a rate of approximately 43 feet per year. Based on water levels collected beginning in May 2024 throughout the rest of the year, groundwater flow varied north and south with a net eastward direction, averaging approximately 7 feet per year.

2.3 Sampling Issues

During updates to prediction limits in March 2024, the upper prediction limit for total dissolved solids at DG-4 was lowered below the November 2023 sample result. Because this occurred after the February 2024 verification sampling event, no verification sample was collected. This result was treated as an SSI, and an Alternative



Source Demonstration was produced for the November 2023 total dissolved solids result at well DG-4. No other notable sampling issues were encountered at the SCPC in 2024.

3.0 ACTIVITIES PLANNED FOR 2025

Detection Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2025. Statistical analysis of the November 2024 Detection Monitoring data will be completed in 2025 and will be included in the 2025 Annual Report. 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. After the first semi-annual sampling event in 2025, there will be at least 4 new results for each Appendix III parameter. Therefore, background updates are planned to be completed in 2025.



Tables



Table 3November 2023 Detection Monitoring ResultsSCPC Surface ImpoundmentSioux Energy Center, St. Charles County, MO

		BACKGR	OUND					GROU	NDWATER M	ONITORING W	/ELLS				
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-1A	UG-1A	Prediction Limit UG-2	UG-2	Prediction Limit DG-1	DG-1	Prediction Limit DG-2	DG-2	Prediction Limit DG-3	DG-3	Prediction Limit DG-4	DG-4
					No	ovember 202	3 Detection M	Ionitoring Eve	ent						
DATE	NA	11/10/2023	11/10/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023
рН	SU	7.04	7.14	6.433 - 7.279	6.90	6.29 - 7.5	7.10	6.565 - 7.38	7.00	6.725 - 7.268	7.02	6.66 - 7.227	6.93	6.638 - 7.221	6.88
BORON, TOTAL	μg/L	57.9 J	58.9 J	453.4	165	277.7	1,700	118.3	107	113.2	82.0 J	103.2	81.9 J	114.1	105
CALCIUM, TOTAL	μg/L	136,000	114,000	203,439	157,000	143,772	119,000	174,000	138,000	166,000	133,000 J	169,490	160,000	166,717	154,000
CHLORIDE, TOTAL	mg/L	7.2	13.4	147.8	74.8 J	93.74	12.9 J	10	2.5 J	10.93	2.3 J	17.26	8.2 J	155.7	12.4 J
FLUORIDE, TOTAL	mg/L	ND	ND	0.47	ND	0.34	ND	0.41	ND	0.49	ND	0.49	ND	0.48	ND
SULFATE, TOTAL	mg/L	46.9	12.3	113.4	52.7 J	93.63	0.79 J	69.58	19.4 J	68	35.2 J	74.45	65.1 J	79.91	63.3
TOTAL DISSOLVED SOLIDS	mg/L	475	398	819.5	672	657.3	483	552.3	549	537	505	617.9	594	680.5	732*
					F	ebruary 2024	Verification S	Sampling Ever	nt						
DATE	NA						2/7/2024								
рН	SU														
BORON, TOTAL	μg/L						1,360								
CALCIUM, TOTAL	μg/L														
CHLORIDE, TOTAL	mg/L														
FLUORIDE, TOTAL	mg/L														
SULFATE, TOTAL	mg/L														
TOTAL DISSOLVED SOLIDS	mg/L														

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.

2. J - Result is an estimated value.

3. NA - Not applicable.

4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

5. Prediction Limits calculated using Sanitas Software.

6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).

7. Only analytes/wells that were detected above the prediction limit were tested during Verification Sampling.

8. * - During updates to prediction limits completed in March 2024, the upper prediction limit for Total Dissolved Solids at DG-4 was lowered below the November 2023 sample result. Because this update occured after the February 2024 verification sampling event, no verification sample was collected. This result was treated as an SSI and an Alternative Source Demonstration was produced for Total Dissolved Solids at well DG-4.

Table 4 May 2024 Detection Monitoring Results SCPC Surface Impoundment Sioux Energy Center, St. Charles County, MO

		BACKGR	OUND					GROU	NDWATER M	ONITORING W	ELLS				
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-1A	UG-1A	Prediction Limit UG-2	UG-2	Prediction Limit DG-1	DG-1	Prediction Limit DG-2	DG-2	Prediction Limit DG-3	DG-3	Prediction Limit DG-4	DG-4
						May 2024 De	etection Moni	toring Event							
DATE	NA	5/28/2024	5/28/2024	NA	5/30/2024	NA	5/28/2024	NA	5/30/2024	NA	5/30/2024	NA	5/30/2024	NA	5/30/2024
pН	SU	6.86	6.95	6.433 - 7.279	7.04	6.29 - 7.5	7.04	6.565 - 7.38	7.13	6.725 - 7.268	7.09	6.66 - 7.227	7.06	6.638 - 7.221	6.99
BORON, TOTAL	μg/L	58.1 J	54.1 J	453.4	408	277.7	143	118.3	94.2 J	113.2	102	103.2	102	114.1	94.5 J
CALCIUM, TOTAL	μg/L	133,000	116,000	203,439	124,000	143,772	87,100	174,000	147,000 J	166,000	150,000	169,490	164,000	166,717	152,000
CHLORIDE, TOTAL	mg/L	10.1	11.1	147.8	82.7	93.74	6.7	10.0	11.2 J	10.93	5.6	17.26	26.6	155.7	14.9
FLUORIDE, TOTAL	mg/L	ND	ND	0.47	ND	0.34	ND	0.41	0.16 J	0.49	ND	0.49	ND	0.48	ND
SULFATE, TOTAL	mg/L	37.7	19.7	113.4	92.3	93.63	35.8	69.58	64.7 J	68	95.4 J	74.45	75.8	79.91	65.2
TOTAL DISSOLVED SOLIDS	mg/L	470	529	819.5	667	657.3	335	552.3	531	537	574	617.9	591	680.5	597
						July 2024 Ve	erification San	npling Event						-	
DATE	NA								7/30/2024		7/30/2024		7/29/2024		
рН	SU														
BORON, TOTAL	μg/L														
CALCIUM, TOTAL	μg/L														
CHLORIDE, TOTAL	mg/L								8.9				34.0 J		
FLUORIDE, TOTAL	mg/L														
SULFATE, TOTAL	mg/L										43.9		83.3		
TOTAL DISSOLVED SOLIDS	mg/L										485				

NOTES:

1. Unit Abbreviations: $\mu g/L$ - micrograms per liter, mg/L - milligrams per liter, SU - standard units.

2. J - Result is an estimated value.

3. NA - Not applicable.

4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

5. Prediction Limits calculated using Sanitas Software.

6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).

7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).

8. Only analytes/wells that were detected above the prediction limit were tested during Verification Sampling.

Prepared By: JTR Checked By: JTA Reviewed By: MNH

Table 5November 2024 Detection Monitoring ResultsSCPC Surface ImpoundmentSioux Energy Center, St. Charles County, MO

		BACKGI	ROUND	GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	BMW-1S	BMW-3S	UG-1A	UG-2	DG-1	DG-2	DG-3	DG-4
			Novemb	er 2024 Detectio	n Monitoring Ev	ent			
DATE	NA	11/20/2024	11/20/2024	11/15/2024	11/14/2024	11/15/2024	11/15/2024	11/15/2024	11/15/2024
рН	SU	6.57	6.72	6.75	7.08	7.12	6.96	6.90	6.75
BORON, TOTAL	μg/L	61.9 J	57.3 J	307	112	101	103	105	109
CALCIUM, TOTAL	μg/L	175,000	113,000	160,000	90,800	144,000	141,000	172,000	168,000
CHLORIDE, TOTAL	mg/L	14.2	13.1	116	26.5	7.5 J	4.5	14.7	13.0
FLUORIDE, TOTAL	mg/L	ND	ND	0.27	0.29	0.31	0.51	0.39 J	0.38
SULFATE, TOTAL	mg/L	37.1	17.1	60.0	29.4	50.5 J	41.5	85.5	70.4
TOTAL DISSOLVED SOLIDS	mg/L	613	413	711	409	541	522	627	665

NOTES:

1. Unit Abbreviations: $\mu g/L$ - micrograms per liter, mg/L - milligrams per liter, SU - standard units.

2. J - Result is an estimated value.

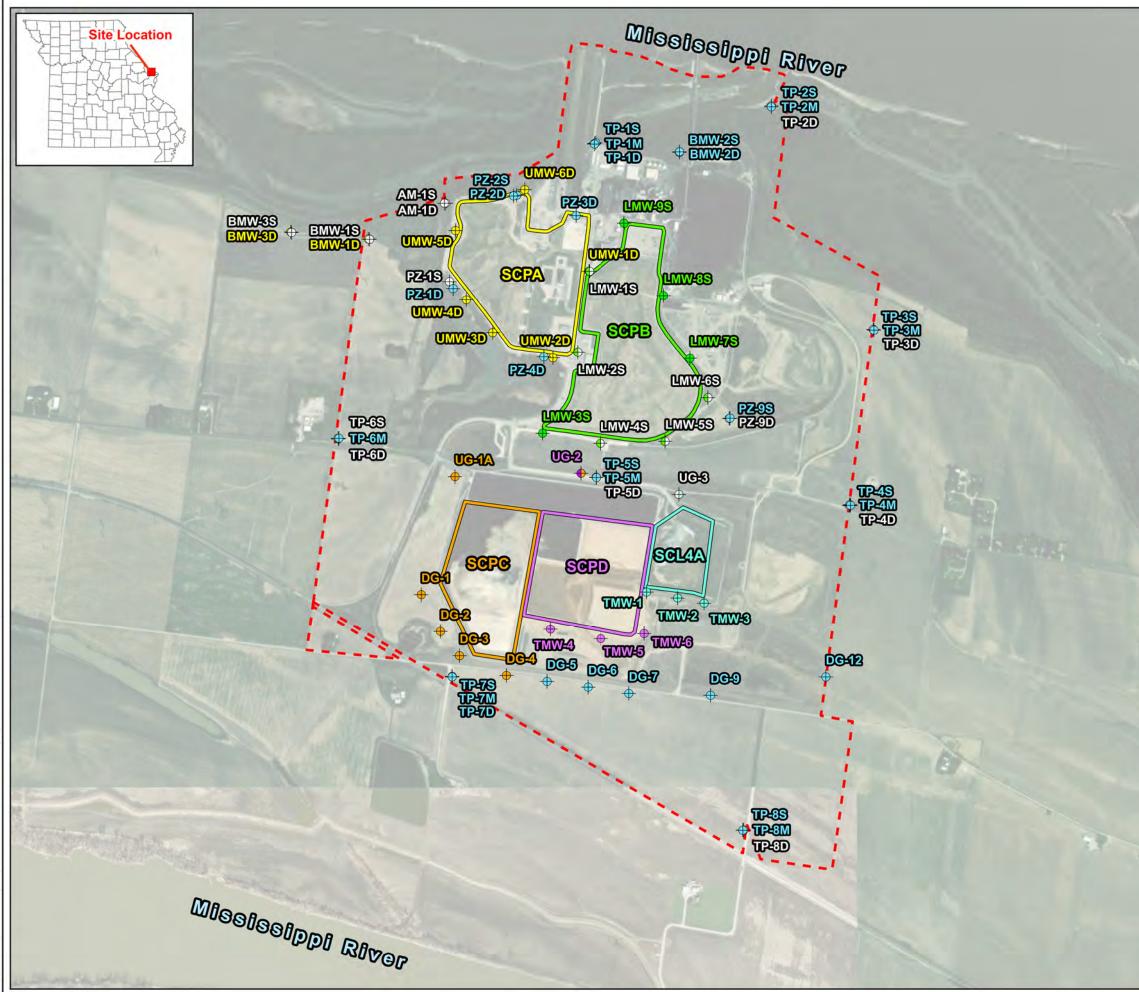
3. NA - Not applicable.

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: JTR Checked By: VAH Reviewed By: MNH

Figures





SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

C Sioux Energy Center Property Boundary
CCR Units
SCPA - Bottom Ash Surface Impoundment (Closed)
SCPB - Fly Ash Surface Impoundment (Closed)
Utility Waste Landfill Cells
SCPC - FGD Surface Impoundment (Closed)
SCL4A - Dry CCR Disposal Area
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

- \oplus SCL4A and Corrective Action Monitoring Well
- \$ SCL4A Detection Monitoring Well
- ¢ Monitoring Well Used for Water Level Elevation Measurements Only

NOTES

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

REFERENCES

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



PROJEC

CCR RULE GROUNDWATER MONITORI	NG PROGRAM
CLIENT AMEREN MISSOURI SIOUX ENERGY CENTER	Ameren

SIOUX ENERGY GEI	NIER	Autor on
	DESIGN JSI	YYYY-MM-DD 2024-12-04
	PREPARED JSI	PROJECT No 23009-24
	REVIEW GTM	FIOLIDE 4
ROCKSMITH	APPROVED MNH	FIGURE 1

Appendix A Laboratory Analytical Data





Pace Analytical Services, LLC 9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665

February 22, 2024

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

RE: Project: AMEREN SCPC-VERIFICATION SAMP. Pace Project No.: 60446937

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2024. 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,

Jame Church

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

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC. Lisa Meyer, Ameren Grant Morey, Rocksmith Geoengineering, LLC.





CERTIFICATIONS

Project: AMEREN SCPC-VERIFICATION SAMP.

Pace Project No.: 60446937

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



SAMPLE SUMMARY

Project: AMEREN SCPC-VERIFICATION SAMP.

Pace Project No.: 60446937

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60446937001	S-UG-2	Water	02/07/24 09:10	02/09/24 05:30
60446937002	S-DG-1	Water	02/07/24 11:30	02/09/24 05:30
60446937003	S-DG-3	Water	02/07/24 10:31	02/09/24 05:30
60446937004	S-SCPC-DUP-1	Water	02/07/24 00:00	02/09/24 05:30
60446937005	S-SCPC-FB-1	Water	02/07/24 09:08	02/09/24 05:30



SAMPLE ANALYTE COUNT

Project:	AMEREN SCPC-VERIFICATION SAMP.
Pace Project No.:	60446937

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60446937001	S-UG-2	EPA 200.7	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
60446937002	S-DG-1	EPA 200.7	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
60446937003	S-DG-3	EPA 200.7	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
60446937004	S-SCPC-DUP-1	EPA 200.7	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
60446937005	S-SCPC-FB-1	EPA 200.7	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City



AMEREN SCPC-VERIFICATION SAMP.

Project:

ANALYTICAL RESULTS

Pace Project No.: 60446937									
Sample: S-UG-2	Lab ID:	60446937001	Collected	l: 02/07/24	09:10	Received: 02/	09/24 05:30 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2	•		od: EP	A 200.7			
Boron	1360	ug/L	100	6.4	1	02/16/24 12:01	02/20/24 09:32	7440-42-8	
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ty					
Total Dissolved Solids	511	mg/L	10.0	10.0	1		02/12/24 11:06		AB



AMEREN SCPC-VERIFICATION SAMP.

Project:

ANALYTICAL RESULTS

Pace Project No.: 60446937									
Sample: S-DG-1	Lab ID:	60446937002	Collected	l: 02/07/24	11:30	Received: 02	/09/24 05:30 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	,	Method: EPA 2 ytical Services			od: EP/	A 200.7			
Boron	95.5J	ug/L	100	6.4	1	02/16/24 12:01	02/20/24 09:34	7440-42-8	
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ty					
Total Dissolved Solids	517	mg/L	10.0	10.0	1		02/12/24 11:06		AB



AMEREN SCPC-VERIFICATION SAMP.

Project:

ANALYTICAL RESULTS

Pace Project No.: 60446937									
Sample: S-DG-3	Lab ID:	60446937003	Collected	d: 02/07/24	10:31	Received: 02/	/09/24 05:30 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	2	Method: EPA 2 ytical Services	•		od: EP	A 200.7			
Boron	95.2J	ug/L	100	6.4	1	02/16/24 12:01	02/20/24 09:36	7440-42-8	
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ity					
Total Dissolved Solids	543	mg/L	10.0	10.0	1		02/14/24 11:27		



ANALYTICAL RESULTS

Project: AMEREN SCPC-VERIFICATION SAMP.

Pace Project No.: 60446937

Sample: S-SCPC-DUP-1	Lab ID:	60446937004	Collecte	d: 02/07/24	4 00:00	Received: 02/	09/24 05:30 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	-	Method: EPA 2 lytical Services			nod: EP/	A 200.7			
Boron	98.6J	ug/L	100	6.4	1	02/16/24 12:01	02/20/24 09:43	7440-42-8	
2540C Total Dissolved Solids		Method: SM 25 lytical Services		ity					
Total Dissolved Solids	492	mg/L	10.0	10.0	1		02/14/24 11:28		



ANALYTICAL RESULTS

Project: AMEREN SCPC-VERIFICATION SAMP.

Pace Project No.: 60446937

Sample: S-SCPC-FB-1	Lab ID:	60446937005	Collecte	d: 02/07/24	4 09:08	Received: 02/	09/24 05:30 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	-	Method: EPA 2 ytical Services			nod: EP	A 200.7			
Boron	<6.4	ug/L	100	6.4	1	02/16/24 12:01	02/20/24 09:45	7440-42-8	
2540C Total Dissolved Solids		Method: SM 25 ytical Services		ity					
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		02/14/24 11:29		



QUALITY CONTROL DATA

,	AMEREN SCPC-\ 60446937	ERIFICATION S	amp.									
QC Batch:	883490		Analy	sis Metho	d: E	EPA 200.7						
QC Batch Method:	EPA 200.7		Analy	/sis Descri	ption: 2	200.7 Metal	s, Total					
			Labo	ratory:	F	Pace Analyt	ical Serv	ices - Kansa	s City			
Associated Lab Sam	ples: 60446937	001, 6044693700	02, 6044693	37003, 604	46937004,	6044693700	05		·			
METHOD BLANK:	3497213			Matrix: W	ater							
Associated Lab Sam	ples: 60446937	001, 6044693700	2, 6044693	37003, 604	46937004, (6044693700	05					
			Blar	nk	Reporting							
Param	eter	Units	Res	ult	Limit	MDI	-	Analyzed	Qı	ualifiers		
Boron		ug/L		<6.4	10	0	6.4	02/20/24 09:	.05			
LABORATORY CON	TROL SAMPLE:	3497214										
			Spike	LC	S	LCS	%	Rec				
Param	eter	Units	Conc.	Res	sult	% Rec	Lir	mits	Qualifiers			
Boron		ug/L	100	00	970	97	7	85-115				
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 3497	215 MS	MSD	3497216							
		60446917001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units		Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	9030	1000	1000	9840	9900	8	1 87	70-130	1	20	
MATRIX SPIKE & M/	ATRIX SPIKE DUP	LICATE: 3497	217		3497218							
			MS	MSD								
		60446937003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	95.2J	1000	1000	1090	1080	9	9 98	70-130	1	20	
MATRIX SPIKE SAM	IPLE:	3497219										
Param	otor	Units		937005 sult	Spike	MS Result		MS % Rec	% Rec Limits		Qualif	ioro
	elei		Ke		Conc.						Qualli	IEIS
Boron		ug/L		<6.4	1000		973	97	70	-130		

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.



QUALITY CONTROL DATA

Project: AMEREN SCPC-V	ERIFICATION SAM	/IP.						
Pace Project No.: 60446937								
QC Batch: 882943		Analysis Me	ethod:	SM 2540C				
QC Batch Method: SM 2540C		Analysis De	escription:	2540C Total	Dissol	ved Solids		
		Laboratory:	:	Pace Analyti	cal Se	rvices - Kai	nsas Ci	ity
Associated Lab Samples: 60446937	001, 60446937002							
METHOD BLANK: 3495313		Matrix	: Water					
Associated Lab Samples: 60446937	001, 60446937002							
		Blank	Reporting					
Parameter	Units	Result	Limit	MDL	-	Analyz	zed	Qualifiers
Total Dissolved Solids	mg/L	31.5	5 (5.0	5.0	02/12/24	10:58	AB,MW
LABORATORY CONTROL SAMPLE:	3495314							
		Spike	LCS	LCS	%	% Rec		
Parameter	Units	Conc.	Result	% Rec	l	_imits	Qua	lifiers
Total Dissolved Solids	mg/L	1000	1080	108		80-120	AB	
SAMPLE DUPLICATE: 3495315			_					
	11-16-	60446838002	Dup	000		Max		Qualifiant
Parameter	Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solids	mg/L	288	3 2	98	3		10 A	В
SAMPLE DUPLICATE: 3495316		00440047004	Dur			Maria		
SAMPLE DUPLICATE: 3495316 Parameter	Units	60446917001 Result	Dup Result	RPD		Max RPD		Qualifiers

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.



QUALITY CONTROL DATA

Project: Pace Project No.:	AMEREN SCPC-V 60446937	VERIFICATION S	AMP.					
QC Batch:	883190		Analysis Met	hod: S	M 2540C			
QC Batch Method:	SM 2540C		Analysis Des	cription: 2	540C Total D	issolved Solids	3	
			Laboratory:	Р	ace Analytica	al Services - Ka	ansas C	ity
Associated Lab San	nples: 60446937	003, 6044693700	4, 60446937005					
METHOD BLANK:	3496105		Matrix:	Water				
Associated Lab San	nples: 60446937	003, 6044693700	4, 60446937005					
			Blank	Reporting				
Paran	neter	Units	Result	Limit	MDL	Analy	/zed	Qualifiers
Total Dissolved Solie	ds	mg/L	<5.0	5.0)	5.0 02/14/24	4 11:27	
LABORATORY COM	NTROL SAMPLE:	3496106						
			Spike	LCS	LCS	% Rec		
Paran	neter	Units	Conc. F	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Solie	ds	mg/L	1000	925	92	80-120)	
SAMPLE DUPLICA	TE: 3496107							
Dama		11-1-	60446937003	Dup	000	Max		Qualifiant
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solie	ds	mg/L	543	566	i	4	10	
SAMPLE DUPLICA	TE: 3496108							
Deve		Linita	60447045001	Dup	200	Max		Qualifiana
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solie	ds	mg/L	58.0	50.5		14	10 D	6

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.



QUALIFIERS

Project: AMEREN SCPC-VERIFICATION SAMP.

Pace Project No.: 60446937

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- AB Analyte was detected in an associated instrument blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- MW Due to matrix interference, achieving a constant weight is not possible.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AMEREN SCPC-VERIFICATION SAMP.Pace Project No.:60446937

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60446937001	 S-UG-2	EPA 200.7	883490	EPA 200.7	883506
60446937002	S-DG-1	EPA 200.7	883490	EPA 200.7	883506
60446937003	S-DG-3	EPA 200.7	883490	EPA 200.7	883506
60446937004	S-SCPC-DUP-1	EPA 200.7	883490	EPA 200.7	883506
60446937005	S-SCPC-FB-1	EPA 200.7	883490	EPA 200.7	883506
60446937001	S-UG-2	SM 2540C	882943		
60446937002	S-DG-1	SM 2540C	882943		
60446937003	S-DG-3	SM 2540C	883190		
60446937004	S-SCPC-DUP-1	SM 2540C	883190		
60446937005	S-SCPC-FB-1	SM 2540C	883190		

otassium iodide test strip turns blue/purple? (Preserve) Imp Blank present: <	6 () () () () () () () () () (W0#:60446937
Client Name: Packts mith. Scenn Pack Direction Courier: FedEx UPS VIA Clay PEX ECI Pace Xroade Client Other Tracking #: Pace Shipping Label Used? Yes No No Seals intact: Yes No No Packing Material: Bubble Wrap Pace Shipping Label Used? Yes No No Seals intact: Yes No No Packing Material: Bubble Wrap Pace Shipping Label Used? Yes No No No Date and initials of person Packing Material: Bubble Wrap Pace Shipping Label Used? Yes No No Date and initials of person Packing Material: Bubble Wrap Pace Shipping Label Used? Yes No No Date and initials of person Packing Material: Bubble Wrap Pace Shipping Label Used? Yes No No Date and initials of person Cooler Temporature (*C): A read Pace No NiA Date and initials of person Date and initials of person Cooler Temporature should be above freezing to fife Pres No NiA Date and initials of person Date and initials of person Chain of Custody relinquished: Pres No NiA NiA Date and initials of person	Pace	DC#_Title: ENV-F	FRM-LENE-0009_Sample (60446937
Courier: FedEx UPS VIA Clay PEXL ECI Pace Xroade Client Other Tracking #: Pace Shipping Label Used? Yes No Packing Material: Bubble Wrap Bubble Bags Foam No Other Difference Packing Material: Bubble Wrap Bubble Bags Foam No No Difference Diff	ASHERICAL SPRINGS	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa
Courier: FedEx UPS VIA Clay PEX ECI Pace Xroady Client Other Cliand #: Pace Shipping Label Used Yes No Seals intact: Yes No Seals intact: Yes No Sustody Saal on Cooler/Box Present: Bubble Bags Foam No Other District Status: Di	Client Name:	OCKSMith 6.	even 9	
Dustody Seal on Cooler/Box Present: Yes No Packling Material: Bubble Wrap Bubble Bags Foam Nome Other Parkling Material: Bubble Wrap Bubble Bags Foam Nome Other Parkling Material: Bubble Bags Foam Nome Nome Other Date and initials of person parkling of Custody present: Presenter should be above freezing to 6°C Phain of Custody present: Presenter should be above freezing to 6°C Phain of Custody present: Presenter should be above freezing to 6°C Phain of Custody present: Presenter should be above freezing to 6°C Phain of Custody present: Presenter should be above freezing to 6°C Phain of Custody relinquished: Presenter Should be above freezing to 6°C Presenter should be above freezing to 6°C Phain of Custody present: Presenter Should be above freezing to 6°C Presenter Should be above freezing to 6°C Phain of Custody present: Presenter Should be above freezing to 6°C Presenter Should be above freezing to 6°C Phain of Custody present: Presenter Should be above freezing to 6°C Presenta Should be above freezing to 6°C Presenta Should be above freezing to 6°C Pr				e 🗆 Xroade 🗅 Client 🗆 Other 🗆
Packing Material: Bubble Wrap Bubble Bags Foam Nope Other Type of Ice: Web Blue None Other Date and initials of person Pooler Temperature (*C): As-read 1-2 Corr. Factor -0.3 Corrected 0.9 1/-2 Date and initials of person emperature should be above freezing to 6*C Press No INA INA INA whan of Custody present: Press No INA INA amples arrived within holding time: Press No INA wash Turn Around Time requested: Press No INA ufficient volume: Press No INA orrect containers used: Press No INA ace containers used: Press No INA imple labels match COC: Date / time / ID / analyses Press No meter somple contain multiple phases? Matrix: T Ves No, hipSo, HCi-2, NoOH-96 Suifide, NaOH-110 Cyanide) Copins: On Na andide strip turns dark? (Record only) Ves No and acetate strip turns durk? (Record only) Ves No pBlank present: Ives No Ma opeland: Ves No Ma models attached to 5035A / TX1005 vials in the fiel? Ves No pBlank present: Copy Cock C Cleint? Y No	Fracking #:		Pace Shipping Label Used?	
Thermometer Used: 12.93 Type of Ice: Mark Cooler Temperature (*C): As-read As-read 12.17 Corr. Factor -0.3 Corrected 0.91/1-2 Date and initials of person Emperature should be above freezing to 6*C Chain of Custody present: Date and initials of person Press Phan of Custody present: Press Phan of Custody relinquished: Press Press Press Phan of Custody relinquished: Press	Custody Seal on Cooler/Box	Present: Yes 🖉 No	Seals intact: Yes 1	No 🗆
Cooler Temperature (*C): As read 1.2 http://corr.Factor			0	None Other
Contribution Corr. Factor Corr. Factor <td< td=""><td>1</td><td></td><td></td><td>Data and initials of your</td></td<>	1			Data and initials of your
Chain of Custody present: Yres No NvA Chain of Custody relinquished: Yres No NvA Samples arrived within holding time: Yres No NvA Short Hold Time analyses (<72hr):		1.	. Factor <u>~03</u> Corrected	0.9/1-2 examining contents:
Chain of Custody relinquished: Yes No N/A Samples arrived within holding time: Yes No N/A Short Hold Time analyses (<72hr):	Temperature should be above freez	zing to 6°C		pr 4/9hy
Samples arrived within holding time: Ives Ive	Chain of Custody present:		Øres □No □N/A	7
Short Hold Time analyses (<72hr):	Chain of Custody relinquished:		Yes No N/A	
Rush Turn Around Time requested: Yes No NVA Sufficient volume: Yes No NVA Correct containers used: Yes No NVA Pace containers used: Yes No NVA Containers used: Yes No NVA Containers used: Yes No NVA Containers intact: Yes No NVA Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No NVA Intered volume received for dissolved tests? Yes No NVA ample labels match COC: Date / time / ID / analyses Yes No NVA amples contain multiple phases? Matrix: Ves No NVA ontainers requiring PH preservation in compliance? Yes No NVA variations withing water sample checks: State: Yes No Ni/A passium iodide test strip turns blue/purple? (Preserve) Yes No Ni/A passium iodide test strip turns blue/purple? (Preserve) Yes No Ni/A passium iodide test strip turns blue/purple? (Preserve) Yes <td>Samples arrived within holding t</td> <td>time;</td> <td></td> <td></td>	Samples arrived within holding t	time;		
Sufficient volume: Yes Correct containers used: Pace c	Short Hold Time analyses (<7	2hr):		
Correct containers used: Yes No N/A Pace containers used: Yes No N/A Containers intact: Yes No N/A Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A Intered volume received for dissolved tests? Yes No N/A ample labels match COC: Date / time / ID / analyses Yes No N/A amples contain multiple phases? Matrix: T Yes No INO3, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Yes No IN/A containers requiring pH preservation in compliance? Yes No IN/A iNO3, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Yes No Ist sample IDs, volumes, lot #'s of preservative and the date/time added. veceptions: VOA, Micro, OkG, KS TPH, OK-DRO) LOT#: GIIIID List sample IDs, volumes, lot #'s of preservative and the date/time added. variate strip turns dark? (Record only) IVes No NiA padspace in VOA vials (>6mm): IVes No NiA inples from USDA Regulated Area: State: IVes No NiA	Rush Turn Around Time requ	ested:		
Pace containers used: Yes No N/A Sontainers intact: Yes No N/A Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A Ittered volume received for dissolved tests? Yes No N/A ample labels match COC: Date / time / ID / analyses IVes No N/A ample labels match COC: Date / time / ID / analyses IVes No N/A ample scontain multiple phases? Matrix: IVes No N/A amples contain multiple phases? Matrix: IVes No N/A ontainers requiring PH preservation in compliance? IVes No N/A No3, H2SO4, HCI<2; NAOH>9 Sulfide, NAOH>10 Cyanide) Yes No N/A veetions: VOA, Micro, OsG, KS TPH, OK-DRO) LOT#: 61111/1 date/time added. vanide water sample checks: aad acetate strip turns dark? (Record only) IVes No N/A padspace in VOA vials (>6mm): IVes No M/A Imples from USDA Regulated Area: State: IVes No M/A inples from USDA Regulated Area: State: <td>Sufficient volume:</td> <td></td> <td></td> <td></td>	Sufficient volume:			
Pres No N/A Containers used: Yes No N/A Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A iltered volume received for dissolved tests? Yes No N/A ample labels match COC: Date / time / ID / analyses Yes No N/A amples contain multiple phases? Matrix: Yes No N/A ontainers requiring pH preservation in compliance? Yes No N/A No3, H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Yes No N/A vacetions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 6////1///1//1//1//1//1//1//1//1//1//1//1	orrect containers used:			
Containers intact: Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Intered volume received for dissolved tests? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Intered volume received for dissolved tests? Impreserved 5035A / TX1005/1006 soils frozen in 48hrs? Impreserved 5035A / TX1005 volumes, intered for dissolved tests? Intered volume received for dissolved tests? Impreserved 5035A / TX1005 volumes, intered for dissolved tests? Impreserved for dissolved tests? Intered volume received for dissolved tests? Impreserved for dissolved tests? Impreserved for dissolved tests? Interest requiring pH preservation in compliance? Impreserves into in compliance? Impreserves into into into the distored test for the field into into the distored test for the field into into the distored test for the distored only. Impreserves into into into the distored test for the distored only. Interest and acetate strip turns dark? (Record only) Impreserves into into the distored only. Impreserves into into into into into into into into	ace containers used:			
Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A Intered volume received for dissolved tests? Yes No N/A Ist sample IDS, volumes, lot #'s of preservative and the date/time added. Xeeptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: Differed atervise in the field? If Yes No Th/A Ist sample checks: If Blank present: If Yes No Th/A Ist sample checks: If Yes Sample checks: If Yes Sample checks: If Yes Sample checks: If Yes	ontainers intact:			
iltered volume received for dissolved tests? Image of the states in the field? Image of the state of		006 soils frozen in 48bre	/	
ample labels match COC: Date / time / ID / analyses IVes INo IN/A amples contain multiple phases? Matrix: IV IVes INo IN/A ontainers requiring pH preservation in compliance? IVes INo IN/A List sample IDs, volumes, lot #'s of preservative and the date/time added. INO3, H2SO4, HCI<2; NAOH>9 Sulfide, NAOH>10 Cyanide) INO4 Inotations: VOA, Micro, O&G, KS TPH, OK-DRO) IOT#: IIII/IIII yanide water sample checks: bad acetate strip turns dark? (Record only) IVes INo Inotation obtassium iodide test strip turns blue/purple? (Preserve) IYes INo IN/A adspace in VOA vials (>6mm): IYes INo IN/A amples from USDA Regulated Area: State: IYes INo IN/A Iditional labels attached to 5035A / TX1005 vials in the field? IYes INo IN/A ient Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y Y N			11	
amples contain multiple phases? Matrix: Image: Contain multiple phases? Matrix: Matrix: Image: Contain multiple phases? Matrix: Image: Contain multiple phases?<			, , , , , , , , , , , , , , , , , , , ,	
ontainers requiring pH preservation in compliance? Yes No N/A List sample IDs, volumes, lot #'s of preservative and the date/time added. iNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) LOT#: 6/11/10 List sample IDs, volumes, lot #'s of preservative and the date/time added. ixceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 6/11/10 List sample IDs, volumes, lot #'s of preservative and the date/time added. wanide water sample checks: ead acetate strip turns dark? (Record only) IYes No otassium iodide test strip turns blue/purple? (Preserve) IYes No ip Blank present: IYes No IN/A eadspace in VOA vials (>6mm): IYes No IN/A amples from USDA Regulated Area: State: IYes No IN/A ient Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y N			1	
INO3, H ₂ SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) date/time added. ixceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 671/67 yanide water sample checks: ead acetate strip turns dark? (Record only) IYes yanide test strip turns blue/purple? (Preserve) IYes INo ip Blank present: IYes I				
ead acetate strip turns dark? (Record only) Image: Yes image: No otassium iodide test strip turns blue/purple? (Preserve) Image: Yes image: No rip Blank present: Image: Yes image: No eadspace in VOA vials (>6mm): Image: Yes image: No amples from USDA Regulated Area: State: State: Image: Yes image: No dditional labels attached to 5035A / TX1005 vials in the field? Image: Yes image: No ient Notification/ Resolution: Copy COC to Client? Y N Field Data Required?	HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfi Exceptions: VOA, Micro, O&G, KS	ide, NaOH>10 Cyanide)	date/f	ample IDs, volumes, lot #'s of preservative and the time added.
ip Blank present: Image: Present in VOA vials (>6mm): eadspace in VOA vials (>6mm): Image: Present in VOA vials (>6mm): amples from USDA Regulated Area: State: Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present in VOA vials (>6mm): Image: Present	ead acetate strip turns dark? (R		□Yes □No	
Padspace in VOA vials (>6mm): Image: State: <	otassium iodide test strip turns	blue/purple? (Preserve)	□Yes □No	
Inditional labels attached to 5035A / TX1005 vials in the field? Imples INO Imples INO<	ip Blank present:			
Iditional labels attached to 5035A / TX1005 vials in the field? Image: Prescription Prescriptin Prescription Prescription Prescriptin Prescri	eadspace in VOA vials (>6mm)):	TYes No Phyla	
Iditional labels attached to 5035A / TX1005 vials in the field? Image: Prescription Prescripti Prescription Prescription Prescription Prescri	amples from USDA Regulated A	Area: State:		
ent Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N	ditional labels attached to 5035	5A / TX1005 vials in the		
rson Contacted: Date/Time:				ield Data Required? Y / N
	rson Contacted:	Da	ate/Time:	

Project Manager Review:

Date:

Qualtrax Document ID: 30468

Pace Analytical 0

CHAIN-OF-CUSTODY / Analytical Request Document

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

Clien	ï																				
Company. Rocksmi	Rocksmith Geoengineering, LLC	Report To: Mark Haddock	Mark H	addock					Attention:	F					-						
Address: 5233 Roa	5233 Roanoke Drive	Copy To:	Jeffery .	Jeffery Ingram, Grant Morey	Grant M	lorey			Compar	Company Name:	Rocksmith	nith			REG	ULATOR	REGULATORY AGENCY	\ \			
St. Charl	St. Charles, MO 63304								Address:	.,					L	NPDES	GRO	GROUND WATER	L R	DRINKING WATER	3 WATER
Email To: <u>mark.hac</u>	mark.haddock@rocksmithgeo.com	Purchase Order No :	rder No.:	COC #2	5				Pace Qui Referenci	te.					L	UST		4	- L-	OTHER	
Phone: 314-974-5678	B Fax	Project Name:	ie: An	Ameren SCPC - Verification Sam	PC - V	erificatio	n Sampling	Đ,	Pace Project Manager		Jamie Church	Irch			Site	Site Location			and a		0.000
Requested Due Date/TAT:	: Standard	Project Number: COC#2	ber. CC)C#2					Pace Profile #:	1	15856, line 1	1			T	STATE:	1	MO			
														Request	ed Analy	'sis Filte	Requested Analysis Filtered (Y/N)	188	and and a	and a second	
Section D Required Client Information		Codes			8	COLLECTED	Ð			Pre	Preservatives	es	Z 1 N /A	z z	z	z z z	z				
	WATER WATER WATER WATER PRODUCT SOLLSOLID OLL	M M M M M M M M M M M M M M M M M M M	=GKAB C=C		COMPOSITE START		COMPOSITE END/GRAB	COLLECTION					t					(N/A) (2011102	7
AAW (A-Z Sample IDs M	SAMPLEE IU (A-Z, 0-97, -) Sample IDS MUST BE UNIQUE	AR TS						TA 9MPLE TEMP AT (SOF CONTAINER	INO ³ I ⁵ 20 [¢] Jubieseived	ISI IaOH	la ₂ S ₂ O3 lethanol)ther	tesT eisylenA oron	bevlozziQ Isto				esidual Chlorine	Š		
-	S-UG-2			+	-		0 hC-2-0		* 12	+	1	V	t	-	-					Pace Project No./ Lab I.D.	No./ Lab I.
2	S-DG-1		-			1-2	-	30	d				12	1				1			
6	S-DG-3		-		1	à	12	31	d				1,7	7				-			
4	S-SCPC-DUP-1		WT G		1	HE-7-6	1		9				2	2	-						
5	S-SCPC-FB-1		MT G		_	5	2-7-24 0703	33	6				2	15							
9	S-SCPC-MS-1		MT G		V	p-2-24	-	31	2	-			7	2		-			Collocked	0-5-D	06-3
7	S-SCPC-MSD-1		WT G	1		2-7	2-7-24 1031	31	7				13	2						=	
8			WT G	/				-													
6			MT G	-		-												_			
10			MT G	-		_		_													
11			м Т	_		-				-											
12			MT G	-	_	_		-		_	_	C									
ADDIT	ADDITIONAL COMMENTS		RELINGI	RELINGUISHED BY / AFFILATION	Y / AFFIL	IATION		DATE	BMLT	w	n	CCEPTE	D BY / AI	CCEPTED BY / AFFILIATION		DATE	TIME	_	SAM	SAMPLE CONDITIONS	SNOL
		2	- J	N/	3		3	HE-8-C	1340	0	1h.	why	M2		-	219	0530	5-10	×	X	2
					-													6-0	X	X	×
Page					SAM	PLER NA	SAMPLER NAMÉ AND SIGNATURE	IGNATUR	w									э.	1) ou	oler y	toeJr
- 41						PRIN.	PRINT Name of 3	of SAMPLER:	3	さご	N.	20						u a	Devi	(N) 0 C 0 (po):	(N/. 1) Se
,									2		-								ļ) p s)

F-ALL-Q-020rev.08, 12-Oct-2007

7

"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

AG91	-	iii		R		1	tw	WEREN		101-		51-	\$ -	rato	2	Notes			-	1			_			
	DG90	169A	DG91	N690	8690	BG10	нгәА	UIÐA	NZÐA	SEDA	NG5AU	1GEU	мекп	Medu	U198	BP2U	BP3U	NLd9-	BP36	BP35	Bb3C	Bb3Z	MPDU	ZPLC	Other	
									-	1	1	-					8-	-	T	-	-	-	-	-		-
											-	-				1			+	-	-	-	-	-		+
-									-	-	-	-							1	-	-	-	-	-		-
									1	-	-	-						-	1	-	-	-	-	-		-
									-	1	-						1	T	+	+	1	-	-	-		+
								-	-	-		-					L	-	+	+	+	+	+	+	1	+
									1	1	-							+	+	+	+	+	-	-	1	+
								T	1	-	-	-			1	1	1	+	+	+	+	+	-	-		+
								1	T	-	-	-				T	t	t	+	ł	+	-	-	-		+
								T	-	-	-					1	1	1	+	+	+	+	-	-		+
							T	T		+	-	-				1	1	+	+	1	+	-	-			-
Container Codes																		1			-	-	-	_		-
					Glass	SS										Plactic				-						
DG9H 2	40mL bisulfate clear vial	ulfate cle	ar vial		-	WGKU		8oz clear soil jar	r soil ja	L			BP1C		1L NAC	1L NAOH plastic	0			+		Win	Action P	MISC.		
	40ml MeOH clear vial	OH Clear	vial			WGFU		4oz clear soll jar	r soil ja	-			IBP1N		1T HN	1L HNO3 plastic	2		h	SP51	10	120	mL Col	form N	120mL Coliform Na Thiosulfate	e
	40mL TSP amber vial	amber	vial			JGFU	14	202 clear soli jar 407 linnreserved amher wide	S IIOS T	d ambe	or wide		BP1S		1L H2S	1L H2SO4 plastic	stic			ZPLC	Q	Zipl	Ziploc Bag			
	40mL H2SO4 amber vial	SO4 amb	er vial		T	AGOU	-	100mL unores amber plass	Inores	amber	olass olass		BP17	T	1 Nac	11 NaOH 7r Actato	Diasti	0		4 d		Air	Air Filter			
	40mL Na Thio amber vial	Thio am	ber vial		ł	AG1H	-	1L HCI amber glass	umber c	lass			BP2C		500mL	500mL NAOH plastic	plastic					AIL	Air Cassettes	es t		
1030	4umL amber unpreserved	per unpr	served		*	AG1S	-	1L H2SO4 amber	04 amb	ter glass	s		BP2N		500mL	500mL HNO3 plastic	plastic		Ľ	=			Summa Can			I
T	40mL No This close wiel	This do	ar wind			AG11		1L Na Thiosulfate	hiosulfa	ate clea	clear/amber glass	glass	BP2S		500mL	500mL H2SO4 plastic	plastic			-						
	40ml Inpreserved clear vial	recenter	Clear VI	lei.	Ť		- 4	From the samper glass	pres ar	nber gl.	ass.		BP2U		500mL	500mL unpreserved plastic	erved p	olastic		17						
	1liter H2SO4 clear glass	04 clear	glass	B		AG2S		500ml H2SO4 amber glass	10204	amber	lass		BP2Z		500mL	500mL NaOH, Zn Acetate	Zn Ace	etate		1			Σ	Matriv		
	1 liter unpres glass	es glass			V	AG3S	2	250mL H2SO4 amber plass	12504	amber	glass		RP3F		250ml	250ml HNOP plastic	DIASTIC	Eald C	the state	14/1						
	250mL HCL Clear glass	CL Clear	glass		4	AG2U	5	500mL unpres amber glass	Inpres	amber	glass		BP3N		250ml	250mL HNO3 plastic - iteld intered	alastic a	III Diali -	lered	30		Vater	er			
	250mL Unpres Clear glass	pres Cle	ar glas	5	ł	AG3U	2	250mL unpres amber glass	inpres	amber	glass		BP3U		250mL	250mL unpreserved plastic	n pana	lastic		NAI		Non	Non-addante 1 iouid	ino 1 ion	1	
אעפחת	TOOZ CLEAR SOIL JAR	r soil jar			4	AG4U	-	125mL unpres amber glass	inpres.	amber	glass		BP3S		250mL	250mL H2SO4 plastic	plastic			c	ľ		adaco	hin en	2	
					-	AG5U	-	100mL unpres amber glass	inpres	amber	glass		BP3Z		250mL	250mL NaOH, Zn Acetate	Zn Ace	etate		4M		Wipe				
													BP4U		125mL	125mL unpreserved plastic	erved p	lastic		DW		Drin	Drinking Water	ater		
													BP4N BD4S		125mL	125mL HNO3 plastic	plastic	+		-						
													WPDI I		125mL	125mL H2SO4 plastic	plastic	- New		Т						

60446977 Work Order Number:

Page 1 of 1

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by Lenexa

.

Page 17 of 17

Qualtrax Document ID: 30422



Memorandum March 19, 2024

То:	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 – SCPC Verification – Data Package 60446937			

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

 When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering	Project Manager: <u>J. Ingram</u>				
Project Name: Ameren SCPC Verification	Project Number: 23009				
Reviewer: <u>G. Morey</u>	Validation Date: 3/19/2024				
Laboratory: Pace Analytical Analytical Method (type and no.): EPA 200.7 (Boron); SM 2540C (To	SDG #: <u>60446937</u> otal Dissolved Solids)				
Matrix: Air Soil/Sed. Water Waste					
Sample Names S-UG-2, S-DG-1, S-DG-3, S-SCPC-DUP-1, S-SCPC-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?	х			2/7/2024
b)	Sampling team indicated?	х			ANT/GTM
c)	Sample location noted?	х			
d)	Sample depth indicated (Soils)?			X	
e)	Sample type indicated (grab/composite)?	х			Grab
f)	Field QC noted?	х			See Notes
g)	Field parameters collected (note types)?	х			pH, Spec Cond, Turb, Temp, DO, ORP
h)	Field Calibration within control limits?	х			
i) Notations of unacceptable field conditions/performances from field logs or field notes?					
			X		
j)	Does the laboratory narrative indicate deficiencies?			x	No lab narrative.
	Note Deficiencies:				
Chain-of-Custody (COC)		YES	NO	NA	COMMENTS
a)	Was the COC properly completed?	x			
b)	Was the COC signed by both field			_	
	and laboratory personnel?	х			
c)	Were samples received in good condition?	х			
-					
Genera	al (reference QAPP or Method)	YES	NO	NA	COMMENTS
a)	Were hold times met for sample pretreatment?	X			
b)	Were hold times met for sample analysis?	x			
c)	Were the correct preservatives used?	х			
d)	Was the correct method used?	х			
e)	Were appropriate reporting limits achieved?	х			
f)	Were any sample dilutions noted?		x		
g)	Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks		YES	NO	NA	COMMENTS
a)	Were analytes detected in the method blank(s)?	х			See notes
b)	Were analytes detected in the field blank(s)?		X		
c)	Were analytes detected in the equipment blank(s)?			х	
d)	Were analytes detected in the trip blank(s)?			X	
Laboratory Control Sample (LCS)		YES	NO	NA	COMMENTS
a)	Was a LCS analyzed once per SDG?	×			
b)	Were the proper analytes included in the LCS?	×			
c)	Was the LCS accuracy criteria met?	х			
Duplica	ates	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du	plicate	sample n	ames)?	
		×			S-SCPC-DUP-1 @ S-DG-1
b)	Were field dup. precision criteria met (note RPD)?	×			
c)	Were lab duplicates analyzed (note original and dup	olicate s	amples)?		
		х			See notes
d)	Were lab dup. precision criteria met (note RPD)?		X		See notes
Blind Standards		YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			X	
	analytes included and concentrations)?				
b)	Was the %D within control limits?			x	
Matrix	Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a)	Was MS accuracy criteria met?	х			
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
b)	Was MSD accuracy criteria met?	х			
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
c)	Were MS/MSD precision criteria met?	х			

Comments/Notes:

Blanks:

3495313: TDS detected in method/instrument blank (31.5). Associated with all samples -001 and -002. Results > RL and 10x

blank, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Duplicates:

3495316: Lab duplicate RPD (23%) exceeds control limit for TDS, associated with unrelated sample, result qualified

as estimate.

Lob duplicate may BDD: 100/ ; TDS
Lab duplicate max RPD: 10%: TDS
<u>_</u>
\mathbf{h}

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
	Y M		1	Date: 3/19/2024
Signature:	Grant Mor	y		Date:



Pace Analytical Services, LLC 9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665

July 09, 2024

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

RE: Project: AMEREN SCPC Pace Project No.: 60453817

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 30, 2024 and June 01, 2024. 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,

Church

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

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC. Lisa Meyer, Ameren Grant Morey, Rocksmith Geoengineering, LLC.





CERTIFICATIONS

Project: AMEREN SCPC Pace Project No.: 60453817

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Certification #: 88-00679 Illinois Certification #: 2000302023-6 Colorado Division of Oil and Public Safety Iowa Certification #: 118 Kansas Field Laboratory Certification #: E-92587 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Missouri Inorganic Drinking Water Certification Nevada Certification #: KS000212024-1 Oklahoma Certification #: 2023-073 Texas Certification #: T104704407-23-17 Utah Certification #: KS000212022-13



SAMPLE SUMMARY

Project: AMEREN SCPC Pace Project No.: 60453817

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60453817001	S-UG-2	Water	05/28/24 13:25	05/30/24 05:35
60453817002	S-UG-1A	Water	05/30/24 16:10	06/01/24 07:05
60453817003	S-DG-1	Water	05/30/24 12:48	06/01/24 07:05
60453817004	S-DG-2	Water	05/30/24 13:51	06/01/24 07:05
60453817005	S-DG-3	Water	05/30/24 15:14	06/01/24 07:05
60453817006	S-DG-4	Water	05/30/24 11:11	06/01/24 07:05
60453817007	S-SCPC-DUP-1	Water	05/30/24 00:00	06/01/24 07:05
60453817008	S-SCPC-FB-1	Water	05/30/24 14:42	06/01/24 07:05
60453812001	S-BMW-1S	Water	05/28/24 11:35	05/30/24 05:35
60453812002	S-BMW-3S	Water	05/28/24 14:20	05/30/24 05:35



SAMPLE ANALYTE COUNT

Project: AMEREN SCPC Pace Project No.: 60453817

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60453817001	S-UG-2	EPA 200.7	JXD	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817002	S-UG-1A	EPA 200.7	JXD	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817003	S-DG-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817004	S-DG-2	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817005	S-DG-3	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817006	S-DG-4	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817007	S-SCPC-DUP-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453817008	S-SCPC-FB-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812001	S-BMW-1S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K
	S-BMW-3S	EPA 200.7	JXD		PASI-K



SAMPLE ANALYTE COUNT

Project: Pace Project	AMEREN SCPC No.: 60453817				
Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project:	AMEREN SCPC

Pace Project No.: 60453817

Sample: S-UG-2	Lab ID:	60453817001	Collected	: 05/28/24	13:25	Received: 05/	30/24 05:35 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	,	Method: EPA 2 ytical Services	•		nod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	143 87100 <9.1 18100 25.4 4150	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	06/05/24 14:26 06/05/24 14:26 06/05/24 14:26 06/05/24 14:26 06/05/24 14:26 06/05/24 14:26	06/07/24 12:53 06/07/24 12:53 06/07/24 12:53 06/07/24 12:53 06/07/24 12:53 06/07/24 12:53	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity		ug/L Method: SM 23 ytical Services		115 y	1	06/05/24 14:26	06/07/24 12:53	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		10.5 y	1		06/06/24 15:57		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 ytical Services		10.0 y	1		06/03/24 13:07		
Chloride Fluoride Sulfate	6.7 <0.12 35.8	mg/L mg/L mg/L	1.0 0.20 5.0	0.53 0.12 2.8	1 1 5		06/13/24 05:13 06/13/24 05:13 06/13/24 05:31	16984-48-8	N2



Project: AMEREN SCPC

Pace Project No.: 60453817

Sample: S-UG-1A	Lab ID:	60453817002	Collected	d: 05/30/24	16:10	Received: 06/	/01/24 07:05 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	ration Meth	od: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas C	ty					
Boron	408	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:51	7440-42-8	
Calcium	124000	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:51	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:51	7439-89-6	
Magnesium	29200	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:51	7439-95-4	
Manganese	356	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:51	7439-96-5	
Potassium	7700	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:51	7440-09-7	
Sodium	49900	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:51	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas C	ty					
Alkalinity, Total as CaCO3	378	mg/L	20.0	10.5	1		06/06/24 16:14		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Total Dissolved Solids	667	mg/L	13.3	13.3	1		06/05/24 10:00		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas Ci	ty					
Chloride	82.7	mg/L	10.0	5.3	10		06/14/24 21:53	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/14/24 21:39	16984-48-8	N2
Sulfate	92.3	mg/L	10.0	5.5	10		06/14/24 21:53	14808-79-8	



Project:	AMEREN SCPC

Pace Project No.: 60453817

Sample: S-DG-1	Lab ID:	60453817003	Collected	d: 05/30/24	12:48	Received: 06/	/01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	ration Meth	od: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas Ci	ty					
Boron	94.2J	ug/L	100	6.4	1	06/06/24 15:48	06/10/24 09:10	7440-42-8	
Calcium	147000	ug/L	200	26.9	1	06/06/24 15:48	06/10/24 09:10	7440-70-2	M1,P6
Iron	4640	ug/L	50.0	9.1	1	06/06/24 15:48	06/10/24 09:10	7439-89-6	
Magnesium	32400	ug/L	50.0	20.1	1	06/06/24 15:48	06/10/24 09:10	7439-95-4	
Manganese	365	ug/L	5.0	0.39	1	06/06/24 15:48	06/10/24 09:10	7439-96-5	
Potassium	6210	ug/L	500	69.7	1	06/06/24 15:48	06/10/24 09:10	7440-09-7	
Sodium	7330	ug/L	500	115	1	06/06/24 15:48	06/10/24 09:10	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas C	ty					
Alkalinity, Total as CaCO3	539	mg/L	20.0	10.5	1		06/06/24 16:20		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Total Dissolved Solids	531	mg/L	10.0	10.0	1		06/05/24 10:00		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas Ci	ty					
Chloride	11.2	mg/L	1.0	0.53	1		06/17/24 18:29	16887-00-6	M1
Fluoride	0.16J	mg/L	0.20	0.12	1		06/17/24 18:29	16984-48-8	M1,N2
Sulfate	64.7	mg/L	10.0	5.5	10		06/17/24 19:18	14808-79-8	M1



Project:	AMEREN SCPC

Pace Project No.: 60453817

Sample: S-DG-2	Lab ID:	60453817004	Collected	05/30/24	13:51	Received: 06/	01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	,	Method: EPA 2 ytical Services			iod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	102 150000 537 35000 584 5730	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 5.0	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48	06/10/24 09:16	7440-70-2 7439-89-6 7439-95-4 7439-96-5	
Sodium 2320B Alkalinity		ug/L Method: SM 23 vtical Services		115	1	06/06/24 15:48	06/10/24 09:16	7440-23-5	
Alkalinity, Total as CaCO3	475	mg/L	20.0	, 10.5	1		06/06/24 16:33		
2540C Total Dissolved Solids		Method: SM 25 ytical Services		y					
Total Dissolved Solids	574	mg/L	10.0	10.0	1		06/05/24 10:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride Fluoride Sulfate	5.6 <0.12 95.4	mg/L mg/L mg/L	1.0 0.20 10.0	0.53 0.12 5.5	1 1 10		06/15/24 00:25 06/15/24 00:25 06/15/24 00:39	16984-48-8	N2



Project:	AMEREN SCPC

Pace Project No.: 60453817

Sample: S-DG-3	Lab ID:	60453817005	Collected	: 05/30/24	15:14	Received: 06/	/01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 lytical Services	•		iod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	102 164000 2910 33100 767 5550	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 5.0	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48	06/10/24 09:18 06/10/24 09:18	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity		ug/L Method: SM 23 lytical Services		115 y	1	06/06/24 15:48	06/10/24 09:18	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 lytical Services		10.5 y	1		06/06/24 16:40		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 lytical Services		10.0 y	1		06/05/24 10:00		
Chloride Fluoride Sulfate	26.6 <0.12 75.8	mg/L mg/L mg/L	5.0 0.20 5.0	2.6 0.12 2.8	5 1 5		06/15/24 01:34 06/15/24 01:20 06/15/24 01:34	16984-48-8	N2



Project:	AMEREN SCPC

Pace Project No.: 60453817

Sample: S-DG-4	Lab ID:	60453817006	Collected	: 05/30/24	4 11:11	Received: 06/	01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	,	Method: EPA 2 ytical Services			nod: EP	A 200.7			
Boron Calcium Iron	94.5J 152000 91.9	ug/L ug/L ug/L	100 200 50.0	6.4 26.9 9.1	1 1 1	06/06/24 15:48 06/06/24 15:48 06/06/24 15:48	06/10/24 09:20 06/10/24 09:20 06/10/24 09:20	7440-70-2 7439-89-6	
Magnesium Manganese Potassium Sodium	45300 860 6720 9640	ug/L ug/L ug/L ug/L	50.0 5.0 500 500	20.1 0.39 69.7 115	1 1 1 1	06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48	06/10/24 09:20 06/10/24 09:20 06/10/24 09:20 06/10/24 09:20	7439-96-5 7440-09-7	
2320B Alkalinity		Method: SM 23 ytical Services		у					
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		10.5 y	1		06/06/24 16:46		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 vtical Services		13.3	1		06/05/24 12:21		
Chloride Fluoride Sulfate	14.9 <0.12 65.2	mg/L mg/L mg/L	1.0 0.20 10.0	9 0.53 0.12 5.5	1 1 10		06/15/24 01:48 06/15/24 01:48 06/15/24 02:02	16984-48-8	N2



Project: AMEREN SCPC

Pace Project No.: 60453817

Sample: S-SCPC-DUP-1	Lab ID:	60453817007	Collected	05/30/24	4 00:00	Received: 06/	/01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepar	ation Meth	nod: EP/	A 200.7			
	Pace Anal	vtical Services	 Kansas Cit 	у					
Boron	104	ug/L	100	6.4	1	06/06/24 15:48	06/10/24 09:27	7440-42-8	
Calcium	157000	ug/L	200	26.9	1	06/06/24 15:48	06/10/24 09:27	7440-70-2	
Iron	545	ug/L	50.0	9.1	1	06/06/24 15:48	06/10/24 09:27	7439-89-6	
Magnesium	36600	ug/L	50.0	20.1	1	06/06/24 15:48	06/10/24 09:27	7439-95-4	
Manganese	610	ug/L	5.0	0.39	1	06/06/24 15:48	06/10/24 09:27	7439-96-5	
Potassium	5980	ug/L	500	69.7	1	06/06/24 15:48	06/10/24 09:27	7440-09-7	
Sodium	5420	ug/L	500	115	1	06/06/24 15:48	06/10/24 09:27	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	vtical Services	- Kansas Cit	у					
Alkalinity, Total as CaCO3	478	mg/L	20.0	10.5	1		06/06/24 16:53		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	vtical Services	- Kansas Cit	у					
Total Dissolved Solids	614	mg/L	10.0	10.0	1		06/05/24 12:21		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	vtical Services	- Kansas Cit	у					
Chloride	5.5	mg/L	1.0	0.53	1		06/15/24 02:16	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/15/24 02:16	16984-48-8	N2
Sulfate	76.5	mg/L	10.0	5.5	10		06/15/24 09:05	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60453817

Sample: S-SCPC-FB-1	Lab ID:	60453817008	Collected	d: 05/30/24	14:42	Received: 06/	/01/24 07:05 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 ytical Services	•		od: EP	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	<6.4 <26.9 <9.1 <20.1 <0.39 <69.7	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48 06/06/24 15:48	06/10/24 09:29 06/10/24 09:29 06/10/24 09:29 06/10/24 09:29 06/10/24 09:29 06/10/24 09:29	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity	Pace Anal	ug/L Method: SM 23 ytical Services	- Kansas C	-	1	06/06/24 15:48	06/10/24 09:29	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids	Pace Anal	mg/L Method: SM 25 ytical Services	- Kansas C		1		06/06/24 17:00		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 ytical Services		5.0 ity	1		06/05/24 12:21		
Chloride Fluoride Sulfate	<0.53 <0.12 <0.55	mg/L mg/L mg/L	1.0 0.20 1.0	0.53 0.12 0.55	1 1 1		06/15/24 09:19 06/15/24 09:19 06/15/24 09:19	16887-00-6 16984-48-8 14808-79-8	N2



Project: AMEREN SCPC

Pace Project No.: 60453817

Sample: S-BMW-1S	Lab ID:	60453812001	Collecte	d: 05/28/24	11:35	Received: 05/	30/24 05:35 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	aration Meth	od: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas C	City					
Boron	58.1J	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:09	7440-42-8	
Calcium	133000	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:09	7440-70-2	
Iron	27.5J	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:09	7439-89-6	
Magnesium	25800	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:09	7439-95-4	
Manganese	606	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:09	7439-96-5	
Potassium	404J	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:09	7440-09-7	
Sodium	6070	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:09	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B						
	Pace Anal	ytical Services	- Kansas C	ity					
Alkalinity, Total as CaCO3	408	mg/L	20.0	10.5	1		06/05/24 17:24		
2540C Total Dissolved Solids	Analytical	Method: SM 25	540C						
	Pace Anal	ytical Services	- Kansas C	ity					
Total Dissolved Solids	470	mg/L	10.0	10.0	1		06/03/24 13:05		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas C	ity					
Chloride	10.1	mg/L	1.0	0.53	1		06/12/24 18:30	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/12/24 18:30	16984-48-8	N2
Sulfate	37.7	mg/L	10.0	5.5	10		06/12/24 18:47	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60453817

Sample: S-BMW-3S	Lab ID:	60453812002	Collecte	d: 05/28/24	4 14:20	Received: 05	/30/24 05:35 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2	•		nod: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas C	ity					
Boron	54.1J	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:11	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:11	7440-70-2	
Iron	33.4J	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:11	7439-89-6	
Magnesium	20500	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:11	7439-95-4	
Manganese	140	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:11	7439-96-5	
Potassium	618	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:11	7440-09-7	
Sodium	6410	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:11	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas C	ity					
Alkalinity, Total as CaCO3	364	mg/L	20.0	10.5	1		06/05/24 17:47		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas C	ity					
Total Dissolved Solids	529	mg/L	10.0	10.0	1		06/03/24 13:05		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas C	ity					
Chloride	11.1	mg/L	1.0	0.53	1		06/12/24 19:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		06/12/24 19:05	16984-48-8	N2
Sulfate	19.7	mg/L	1.0	0.55	1		06/12/24 19:05	14808-79-8	



QC Batch: 89684	7	Analysis Meth	iod: EP.	A 200.7		
QC Batch Method: EPA 2	00.7	Analysis Desc	cription: 200	0.7 Metals, Total		
		Laboratory:	Pa	ce Analytical Sei	vices - Kansas City	/
Associated Lab Samples:	60453812001, 6045381200	2, 60453817001				
METHOD BLANK: 354959	6	Matrix:	Water			
Associated Lab Samples:	60453812001, 6045381200	2, 60453817001				
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
	ug/L	<6.4	100	6.4	06/07/24 11:57	
Boron		<26.9	200	26.9	06/07/24 11:57	
	ug/L	~20.5				
Boron Calcium Iron	ug/L ug/L	<9.1	50.0	9.1	06/07/24 11:57	
Calcium	•		50.0 50.0	9.1 20.1	06/07/24 11:57 06/07/24 11:57	
Calcium Iron	ug/L	<9.1				
Calcium Iron Magnesium	ug/L ug/L	<9.1 <20.1	50.0	20.1	06/07/24 11:57	

LABORATORY CONTROL SAMPLE: 3549597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	954	95	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	10300	103	85-115	
Magnesium	ug/L	10000	9920	99	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SP		ICATE: 3549	598		3549599							
			MS	MSD								
		60453805002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Boron	ug/L		1000	1000	1030	1020	96	96	70-130	1	20	
Calcium	ug/L	112000	10000	10000	122000	121000	99	91	70-130	1	20	
Iron	ug/L	8240	10000	10000	18500	18500	102	103	70-130	0	20	
Magnesium	ug/L	25600	10000	10000	35600	35100	100	96	70-130	1	20	
Manganese	ug/L	572	1000	1000	1610	1580	104	101	70-130	2	20	
Potassium	ug/L	3410	10000	10000	13600	13400	102	100	70-130	1	20	
Sodium	ug/L	6260	10000	10000	16300	16300	100	101	70-130	0	20	
MATRIX SPIKE SAMPLE:		3549600										
			60453	8812008	Spike	MS		MS	% Rec			
Parameter		Units	Re	esult	Conc.	Result	%	Rec	Limits		Qualif	iers
Boron		ug/L		113	1000	10	060	95	70	-130		
Calcium		ug/L		144000	10000	1500	000	62	70	-130 M	1	

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



Project: AMEREN SCPC Pace Project No.: 60453817

MATRIX SPIKE SAMPLE:	3549600						
		60453812008	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L		10000	10300	102	70-130	
Magnesium	ug/L	30000	10000	39100	91	70-130	
Manganese	ug/L	232	1000	1260	103	70-130	
Potassium	ug/L	2300	10000	12500	102	70-130	
Sodium	ug/L	5820	10000	16000	102	70-130	

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.



AMEREN SCPC

Project:

QUALITY CONTROL DATA

QC Batch: 89704	0		Anal	sis Metho	d: E	PA 200.7						
QC Batch Method: EPA 2	00.7			ysis Descri		200.7 Metals	s, Total					
			Labo	ratory:	F	Pace Analyti	cal Servio	ces - Kansa	is City			
Associated Lab Samples:	60453817003	3, 6045381700	4, 6045381	7005, 604		-						
METHOD BLANK: 355045	9			Matrix: W	/ater							
Associated Lab Samples:	60453817003	3, 6045381700	4, 6045381	7005, 604	53817006, 6	6045381700	7, 60453	817008				
			Bla	nk	Reporting							
Parameter		Units	Res	ult	Limit	MDL	-	Analyzed	Q	ualifiers		
Boron		ug/L		<6.4	100)	6.4 0	6/10/24 09	:05			
Calcium		ug/L		<26.9	200)	26.9 0	6/10/24 09	:05			
Iron		ug/L		<9.1	50.0)	9.1 0	6/10/24 09	:05			
Magnesium		ug/L		<20.1	50.0)	20.1 0	6/10/24 09	:05			
Manganese		ug/L		<0.39	5.0)	0.39 0	6/10/24 09	:05			
Potassium		ug/L		<69.7	500			6/10/24 09				
Sodium		ug/L		<115	500)	115 0	6/10/24 09	:05			
LABORATORY CONTROL S	AMPLE: 35	550460										
			Spike	LC	s	LCS	% F	Rec				
Parameter		Units	Conc.	Res	sult	% Rec	Lim	its	Qualifiers			
Boron		ug/L	100	00	954	95	;;	85-115				
Calcium		ug/L	1000	00	10400	104	Ļ	85-115				
Iron		ug/L	1000	00	10400	104	Ļ	85-115				
Magnesium		ug/L	1000	00	10200	102	2	85-115				
Manganese		ug/L	100		1050	105		85-115				
Potassium		ug/L	1000		9950	99		85-115				
Sodium		ug/L	1000	00	10100	101		85-115				
MATRIX SPIKE & MATRIX S		CATE: 3550	461		3550462							
			MS	MSD								
	6	0453817003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	94.2J	1000	1000	1040	1040	94	95	70-130	0	20	
Calcium	ug/L	147000	10000	10000	153000	153000	60					M1
Iron	ug/L	4640	10000	10000	14400	14600	97					
Magnesium	ug/L	32400	10000	10000	41700	41800	94	94	70-130			
Manganese	ug/L	365	1000	1000	1370	1350	101	98	70-130	2	20	
Potassium	ug/L	6210	10000	10000	16200	16100	99	99				
Sodium	ug/L	7330	10000	10000	16000	15900	87	85	5 70-130	1	20	
MATRIX SPIKE SAMPLE:	35	550463										
			60453	962001	Spike	MS		MS	% Red	5		
Parameter		Units	Re	sult	Conc.	Result	ç	% Rec	Limits	;	Quali	ifiers

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.

10000

27300

105

70-130

16.9 mg/L

ug/L

REPORT OF LABORATORY ANALYSIS

Calcium



Project: AMEREN SCPC Pace Project No.: 60453817

MATRIX SPIKE SAMPLE:	3550463						
		60453962001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	ND	10000	9960	99	70-130	
Magnesium	ug/L	3.9 mg/L	10000	13900	100	70-130	
Manganese	ug/L	ND	1000	1020	102	70-130	
Potassium	ug/L	4.7 mg/L	10000	14800	101	70-130	
Sodium	ug/L	16.5 mg/L	10000	26800	103	70-130	

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.



Project: A	MEREN SCPC								
Pace Project No.: 6	0453817								
QC Batch:	897579		Analysis M	lethod:	EPA 200.7				
QC Batch Method:	EPA 200.7		Analysis D	escription:	200.7 Metal	s, Total			
			Laboratory	/:	Pace Analyt	ical Ser	vices - Kar	sas City	
Associated Lab Sampl	es: 604538170	002			-			-	
METHOD BLANK: 3	553144		Matr	ix: Water					
Associated Lab Sampl	es: 604538170	002							
			Blank	Reportin	g				
Paramet	er	Units	Result	Limit	MDI	-	Analyz	ed	Qualifiers
Boron		ug/L		4	100	6.4	06/12/24	11:06	
Calcium		ug/L	28.7	J	200	26.9	06/12/24	11:06	
Iron		ug/L	<9.	1 :	50.0	9.1	06/12/24	11:06	
Magnesium		ug/L	<20.	1 :	50.0	20.1	06/12/24	11:06	
Manganese		ug/L	<0.3	9	5.0	0.39	06/12/24	11:06	
Potassium		ug/L	<69.	7	500	69.7	06/12/24	11:06	
Sodium		ug/L	<11	5	500	115	06/12/24	11:06	
LABORATORY CONT	ROL SAMPLE:	3553145							
			Spike	LCS	LCS	%	Rec		
Paramet	er	Units	Conc.	Result	% Rec	L	imits	Qualifi	ers
Boron		ug/L	1000	952	95	5	85-115		
Calcium		ug/L	10000	10100	101	l	85-115		
Iron		ug/L	10000	9970	100)	85-115		
Magnesium		ug/L	10000	9880	99		85-115		
Manganese		ug/L	1000	1030	103		85-115		
Potassium		ug/L	10000	9750	97		85-115		
Sodium		ug/L	10000	9980	100)	85-115		

MATRIX SPIKE & MATRIX SP	PIKE DUPI	LICATE: 3553	146		3553147							
			MS	MSD								
		60453815004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	5390	1000	1000	6320	6440	93	105	70-130	2	20	
Calcium	ug/L	235000	10000	10000	241000	248000	63	3 129	70-130	3	20	M1
Iron	ug/L	<9.1	10000	10000	9880	10100	99) 101	70-130	2	20	
Magnesium	ug/L	58100	10000	10000	67400	69300	93	3 112	70-130	3	20	
Manganese	ug/L	1160	1000	1000	2140	2200	98	3 104	70-130	3	20	
Potassium	ug/L	5340	10000	10000	15100	15700	98	8 103	70-130	3	20	
Sodium	ug/L	68200	10000	10000	76900	78900	87	1 07	70-130	3	20	
MATRIX SPIKE SAMPLE:		3553149										
			60453	812020	Spike	MS		MS	% Rec			
Parameter		Units	Re	sult	Conc.	Result		% Rec	Limits		Quali	fiers
Boron		ug/L		56.9J	1000	1	010	95	70	-130		
Calcium		ug/L		117000	10000	126	000	95	70	-130		

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



Project: AMEREN SCPC

Pace Project No.: 60453817

MATRIX SPIKE SAMPLE:	3553149						
		60453812020	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	7750	10000	17900	101	70-130	
Magnesium	ug/L	28700	10000	38300	96	70-130	
Manganese	ug/L	655	1000	1650	100	70-130	
Potassium	ug/L	3890	10000	13800	99	70-130	
Sodium	ug/L	6750	10000	16800	100	70-130	

SAMPLE DUPLICATE: 3554404

Parameter Units Result Result RPD RPD Qualifiers Boron ug/L 2700 2830 5 20 Calcium ug/L 109000 116000 6 20 Iron ug/L 7300 7630 4 19 Magnesium ug/L 27000 28700 6 20 Manganese ug/L 789 827 5 12 Potassium ug/L 3940 4200 6 20 Sodium ug/L 15900 16800 5 20			60453812018	Dup		Max	
Calcium ug/L 10900 116000 6 20 Iron ug/L 7300 7630 4 19 Magnesium ug/L 27000 28700 6 20 Manganese ug/L 789 827 5 12 Potassium ug/L 3940 4200 6 20	Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Iron ug/L 7300 7630 4 19 Magnesium ug/L 27000 28700 6 20 Manganese ug/L 789 827 5 12 Potassium ug/L 3940 4200 6 20	Boron	ug/L	2700	2830	5	20	
Magnesium ug/L 27000 28700 6 20 Manganese ug/L 789 827 5 12 Potassium ug/L 3940 4200 6 20	Calcium	ug/L	109000	116000	6	20	
Manganese ug/L 789 827 5 12 Potassium ug/L 3940 4200 6 20	Iron	ug/L	7300	7630	4	19	
Potassium ug/L 3940 6 20	Magnesium	ug/L	27000	28700	6	20	
	Manganese	ug/L	789	827	5	12	
Sodium ug/L 15900 16800 5 20	Potassium	ug/L	3940	4200	6	20	
	Sodium	ug/L	15900	16800	5	20	

SAMPLE DUPLICATE: 3554413

		60453812020	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Boron	ug/L	56.9J	54.3J		20	
Calcium	ug/L	117000	119000	2	20	
Iron	ug/L	7750	7690	1	19	
Magnesium	ug/L	28700	29300	2	20	
Manganese	ug/L	655	650	1	12	
Potassium	ug/L	3890	3860	1	20	
Sodium	ug/L	6750	6760	0	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.



Pace Project No.: 60453817 QC Batch: 896743 Analysis Method: SM 2320B QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity Laboratory: Pace Analytical Services - Kansas City
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity Laboratory: Pace Analytical Services - Kansas City
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002
METHOD BLANK: 3549169 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002
Blank Reporting
Parameter Units Result Limit MDL Analyzed Qualifier
Alkalinity, Total as CaCO3 mg/L <10.5 20.0 10.5 06/05/24 16:02
LABORATORY CONTROL SAMPLE: 3549170
Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers
Alkalinity, Total as CaCO3 mg/L 500 518 104 90-110
SAMPLE DUPLICATE: 3549171
60453805003 Dup Max
Parameter Units Result Result RPD RPD Qualifiers
Alkalinity, Total as CaCO3 mg/L 265 265 0 10
SAMPLE DUPLICATE: 3549172
60453812001 Dup Max
Parameter Units Result Result RPD RPD Qualifiers
Alkalinity, Total as CaCO3 mg/L 408 413 1 10

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



Project:	AMERE	N SCPC						
Pace Project No.:	604538	17						
QC Batch:	89683	2		Analysis Me	ethod:	SM 2320B		
QC Batch Method:	SM 23	320B		Analysis De	escription:	2320B Alkalini	ty	
				Laboratory:		Pace Analytica	al Services - Kar	nsas City
Associated Lab Sar	mples:	60453817 60453817	'001, 60453817002 '008	2, 60453817003,	60453817004	, 60453817005	, 60453817006,	60453817007,
METHOD BLANK:	354949	0		Matrix	: Water			
Associated Lab Sar	mples:	60453817 60453817	7001, 60453817002 7008	2, 60453817003,	60453817004	, 60453817005	, 60453817006,	60453817007,
				Blank	Reporting			
Paran	neter		Units	Result	Limit	MDL	Analyz	zed Qualifiers
Alkalinity, Total as C	CaCO3		mg/L	<10.5	5 20	0.0	10.5 06/06/24	15:44
LABORATORY COI	NTROL S	AMPLE:	3549491					
				Spike	LCS	LCS	% Rec	
Paran	neter		Units	Conc.	Result	% Rec	Limits	Qualifiers
Alkalinity, Total as C	CaCO3		mg/L	500	518	104	90-110	
SAMPLE DUPLICA	TE: 354	19492						
				60453817003	Dup		Max	
Paran	neter		Units	Result	Result	RPD	RPD	Qualifiers
Alkalinity, Total as C	CaCO3		mg/L	539) 54	44	1	10

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.



Project:	AMEREN SCPC								
Pace Project No.:	60453817								
QC Batch:	896436		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total E	Dissolve	ed Solids		
			Laboratory:		Pace Analytic	al Servi	ices - Kan	sas City	у
Associated Lab Sam	ples: 60453812	001, 6045381200	2, 60453817001						
METHOD BLANK:	3548054		Matrix	: Water					
Associated Lab Sam	ples: 60453812	001, 6045381200	2, 60453817001						
			Blank	Reporting					
Param	eter	Units	Result	Limit	MDL		Analyze	ed	Qualifiers
Total Dissolved Solid	s	mg/L	<5.0) :	5.0	5.0	06/03/24 1	3:04	
LABORATORY CON	TROL SAMPLE:	3548055							
_			Spike	LCS	LCS		Rec	- ···	
Param	eter	Units	Conc	Result	% Rec	Lin	nits	Quali	ifiers
Total Dissolved Solid	s	mg/L	1000	931	93		80-120		
SAMPLE DUPLICAT	E: 3548056								
_			60453848004	Dup			Max		0 11
Param		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solid	S	mg/L	3530	39	30	11		10 D6	,H1
SAMPLE DUPLICAT	E: 3548057								
D	-1	l la ita	60453812008	Dup	000		Max		Outelifiers
Param		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solid	s	mg/L	481	4	89	2		10	

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.



Project:	AMEREN SCPC							
Pace Project No.:	60453817							
QC Batch:	896723		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total E	Dissolved Solids	6	
			Laboratory:		Pace Analytic	al Services - Ka	ansas C	lity
Associated Lab Sam	ples: 60453817	002, 6045381700	03, 60453817004,	60453817005				
METHOD BLANK:	3549074		Matrix	: Water				
Associated Lab Sam	ples: 60453817	002, 6045381700	03, 60453817004,	60453817005				
			Blank	Reporting				
Param	eter	Units	Result	Limit	MDL	Anal	/zed	Qualifiers
Total Dissolved Solid	ls	mg/L	<5.0	Ę	5.0	5.0 06/05/24	4 09:55	
LABORATORY CON	ITROL SAMPLE:	3549075	0			a (D		
Param	otor	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Our	alifiers
Total Dissolved Solid				946	95	80-120		
Total Dissolved Solid	15	mg/L	1000	940	95	80-120)	
SAMPLE DUPLICAT	E: 3549078							
SAMPLE DUPLICAT	E. 3549076		60453815004	Dup		Мах		
Param	eter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	ls	mg/L	1150	12	30	7	10	
SAMPLE DUPLICAT	E: 3549079							
_			60453817003	Dup		Max		0 11/1
Param		Units	Result	Result	RPD			Qualifiers
Total Dissolved Solid	ls	mg/L	531	5	30	0	10	

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.



Project:	AMEREN SCPC								
Pace Project No.: 6	60453817								
QC Batch:	896817		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total	Dissolv	ved Solids		
			Laboratory:		Pace Analytic	cal Ser	vices - Kar	nsas C	ity
Associated Lab Samp	oles: 60453817	006, 60453817007	7, 60453817008						
METHOD BLANK:	3549433		Matrix	: Water					
Associated Lab Samp	oles: 60453817	006, 60453817007	7, 60453817008						
			Blank	Reporting	9				
Parame	eter	Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Total Dissolved Solids	6	mg/L	<5.0		5.0	5.0	06/05/24	12:20	
LABORATORY CON	TROL SAMPLE:	3549434							
_			Spike	LCS	LCS		6 Rec	_	
Parame	eter	Units	Conc.	Result	% Rec	L	imits	Qua	alifiers
Total Dissolved Solids	6	mg/L	1000	909	91		80-120		
SAMPLE DUPLICATE	E: 3549437								
5			60453818005	Dup			Max		0 11
Parame		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solids	5	mg/L	465	i a	467	0		10	
SAMPLE DUPLICATE	E: 3549438								
Demo		Linita	60453805003	Dup	000		Max		Qualifiana
Parame		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solids	6	mg/L	423		415	2		10	

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.



Project: AMER Pace Project No.: 604538	EN SCPC 817											
QC Batch: 8978	26		Anal	ysis Metho	d: E	PA 300.0						
QC Batch Method: EPA	300.0		Anal	ysis Descri	ption: 3	00.0 IC Anio	ons					
			Labo	oratory:	Р	ace Analyti	cal Serv	/ices - Kansa	s City			
Associated Lab Samples:	604538120	01, 6045381200	02, 6045381	17001								
METHOD BLANK: 355402	25			Matrix: W	ater							
Associated Lab Samples:	604538120	01, 6045381200	2, 6045381	17001								
			Bla	nk	Reporting							
Parameter		Units	Res	ult	Limit	MDL		Analyzed	Qu	alifiers		
Chloride		mg/L		<0.53	1.0)	0.53	06/11/24 17:	27			
Fluoride		mg/L		<0.12	0.20)	0.12	06/11/24 17:	27 N2			
Sulfate		mg/L		<0.55	1.0)	0.55	06/11/24 17:	27			
LABORATORY CONTROL	SAMPLE:	3554026										
			Spike	LC	S	LCS	%	Rec				
Parameter		Units	Conc.	Res	sult	% Rec	Li	mits	Qualifiers	_		
Chloride		mg/L		5	4.6	92		90-110				
Fluoride		mg/L	2	.5	2.4	98	1	90-110 N2				
Sulfate		mg/L		5	5.2	104		90-110				
MATRIX SPIKE & MATRIX	SPIKE DUPI	_ICATE: 3554	027		3554028							
			MS	MSD								
Parameter	Units	60453805001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	
Chloride	mg/L	10.1	5	5	18.3	18.3	16	53 163	80-120	0	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	4.5	4.5	18			0	15	M1,N2
Sulfate	mg/L	25.0	50	50	135	126	22	20 202	80-120	7	15	M1
MATRIX SPIKE SAMPLE:		3554029										
			60453	8812008	Spike	MS		MS	% Rec			
Parameter		Units	Re	esult	Conc.	Result		% Rec	Limits		Qual	ifiers
Chloride		mg/L		7.8	5	1	2.5	94	80	-120		
Fluoride		mg/L		<0.12	2.5		2.5	102	80	-120 N	2	

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



Project: AME	REN SCPC											
Pace Project No.: 6045												
QC Batch: 898	111		Analy	ysis Metho	d. E	EPA 300.0						
	A 300.0			ysis Netrio		300.0 IC An	ions					
	4000.0			ratory:				ces - Kansa	e City			
Associated Lab Samples:	604538170	002, 6045381700		•		•			•	3		
METHOD BLANK: 3555	140			Matrix: W	ater							
Associated Lab Samples:	604538170	02, 6045381700	3, 6045381	7004, 604	53817005, 6	604538170	06, 6045:	3817007, 60	0453817008	3		
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	MDI	L	Analyzed	d Qi	ualifiers		
Chloride		mg/L		<0.53	1.(5	0.53	06/14/24 14	:16			
Fluoride		mg/L		<0.12	0.20	C	0.12	06/14/24 14	:16 N2			
Sulfate		mg/L		<0.55	1.()	0.55	06/14/24 14	:16			
LABORATORY CONTROL	L SAMPLE:	3555141	Coller		· c	1.00	0/	Boo				
Parameter		Units	Spike Conc.	LC Res		LCS % Rec		Rec nits	Qualifiers			
								······	Quaimers			
Chloride		mg/L	_	5	5.0	99		90-110				
		mg/L	2.	.5	2.6	10	5	90-110 N2	2			
Fluoride		-		5	F 2	10	5	00 110				
Sulfate		mg/L		5	5.3	10	5	90-110				
Sulfate		mg/L	143	5			5	90-110				
	K SPIKE DUPI	mg/L			5.3 3555144		5	90-110				
Sulfate	K SPIKE DUPI	mg/L LICATE: 3555	MS	MSD	3555144				% Rec		Max	
Sulfate	K SPIKE DUPI Units	mg/L					5 MS % Rec	90-110 MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate MATRIX SPIKE & MATRIX	Units	mg/L LICATE: 3555 60453815004	MS Spike	MSD Spike Conc.	3555144 MS Result	MSD	MS	MSD % Rec	Limits	RPD 11	RPD	Qual M1
Sulfate MATRIX SPIKE & MATRIX Parameter		mg/L LICATE: 3555 60453815004 Result	MS Spike Conc.	MSD Spike	3555144 MS	MSD Result	MS % Rec	MSD <u>% Rec</u> 7 135	Limits 5 80-120		RPD 15	
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride	Units mg/L	mg/L LICATE: 3555 60453815004 Result 113	MS Spike Conc. 250	MSD Spike Conc. 250	3555144 MS Result 406	MSD Result 451	MS % Rec 11	MSD <u>% Rec</u> 7 138 1 144	Limits 5 80-120 4 80-120	11	RPD 15 15	M1
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475	MS Spike Conc. 250 2.5 250	MSD Spike Conc. 250 2.5	3555144 MS Result 406 3.5 799	MSD Result 451 3.6 892	MS % Rec 11 [*] 14	MSD <u>% Rec</u> 7 138 1 144	Limits 5 80-120 4 80-120	11 3	RPD 15 15	M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride	Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475	MS Spike Conc. 250 2.5 250	MSD Spike Conc. 250 2.5 250	3555144 MS Result 406 3.5	MSD Result 451 3.6 892	MS % Rec 11 [*] 14	MSD <u>% Rec</u> 7 138 1 144	Limits 5 80-120 4 80-120	11 3	RPD 15 15	M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555	MS Spike Conc. 250 2.5 250 145 MS	MSD Spike Conc. 250 2.5 250 MSD	3555144 MS Result 406 3.5 799 3555146	MSD Result 451 3.6 892	MS % Rec 11 14 13	MSD - % Rec 7 138 1 144 0 167	Limits 5 80-120 4 80-120 7 80-120	11 3	RPD 15 15 15	M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475	MS Spike Conc. 250 2.5 250	MSD Spike Conc. 250 2.5 250	3555144 MS Result 406 3.5 799	MSD Result 451 3.6 892	MS % Rec 11 [*] 14	MSD <u>% Rec</u> 7 138 1 144	Limits 5 80-120 4 80-120	11 3	RPD 15 15	M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter	Units mg/L mg/L mg/L K SPIKE DUPI	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result	MS Spike Conc. 250 2.5 250 145 MS Spike Conc.	MSD Spike Conc. 250 2.5 250 MSD Spike Conc.	3555144 MS Result 406 3.5 799 3555146 MS Result	MSD Result 451 3.6 892 MSD Result	MS % Rec 11 ⁻ 14 13 ⁻ MS % Rec	MSD % Rec 7 139 1 144 0 165 MSD % Rec	Limits 5 80-120 4 80-120 7 80-120 % Rec Limits	11 3 11	RPD 15 15 15 15 Max RPD	M1 M1,N2 M1
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride	Units mg/L mg/L mg/L K SPIKE DUPI	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8	MSD Result 451 3.6 892 MSD Result 18.2	MS % Rec 11 ⁻ 14 13 ⁻ 13 ⁻ MS % Rec 15 ⁻	MSD % Rec 7 13: 1 14: 0 16: MSD % Rec 4 14:	Limits 5 80-120 4 80-120 7 80-120 % Rec Limits 0 80-120	11 3 11 RPD 4	RPD 15 15 15 15 Max RPD 15	M1 M1,N2 M1 Qual M1
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Fluoride	Units mg/L mg/L mg/L K SPIKE DUPI	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9	MSD Result 451 3.6 892 MSD Result 18.2 4.4	MS % Rec 11 ⁻ 14 13 ⁻ 13 ⁻ MS % Rec 15 ⁻ 18 ⁻	MSD % Rec 7 13: 1 14: 0 16: MSD % Rec 4 14: 9 17:	Limits 5 80-120 4 80-120 7 80-120 6 Rec Limits 0 80-120 0 80-120 0 80-120	11 3 11 	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride	Units mg/L mg/L mg/L K SPIKE DUPI	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8	MSD Result 451 3.6 892 MSD Result 18.2	MS % Rec 11 ⁻ 14 13 ⁻ 13 ⁻ MS % Rec 15 ⁻	MSD % Rec 7 13: 1 14: 0 16: MSD % Rec 4 14: 9 17:	Limits 5 80-120 4 80-120 7 80-120 6 Rec Limits 0 80-120 0 80-120 0 80-120	11 3 11 	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride	Units mg/L mg/L mg/L (SPIKE DUPI Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9	MSD Result 451 3.6 892 MSD Result 18.2 4.4	MS % Rec 11 ⁻ 14 13 ⁻ 13 ⁻ MS % Rec 15 ⁻ 18 ⁻	MSD % Rec 7 13: 1 14: 0 16: MSD % Rec 4 14: 9 17:	Limits 5 80-120 4 80-120 7 80-120 6 Rec Limits 0 80-120 0 80-120 0 80-120	11 3 11 	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: 3	Units mg/L mg/L mg/L (SPIKE DUPI Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J 64.7	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5 50 604538	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5 50 15004	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9 138 Dup	MSD Result 451 3.6 892 MSD Result 18.2 4.4 140	MS % Rec 11 14 13 30 MS % Rec 15 18 14	MSD % Rec 7 138 1 144 0 165 MSD % Rec 4 140 9 170 7 155 Max	Limits 80-120 80-120 7 80-120 % Rec Limits 80-120 80-120 1 80-120 1 80-120	11 3 11 RPD 4 10 1	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L (SPIKE DUPI Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5 50	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5 50 15004	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9 138	MSD Result 451 3.6 892 MSD Result 18.2 4.4	MS % Rec 11 14 13 30 MS % Rec 15 18 14	MSD % Rec 7 138 1 144 0 165 MSD % Rec 4 140 9 170 7 155	Limits 5 80-120 4 80-120 7 80-120 6 Rec Limits 0 80-120 0 80-120 0 80-120	11 3 11 RPD 4 10 1	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: 3	Units mg/L mg/L mg/L (SPIKE DUPI Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J 64.7	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5 50 604538	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5 50 15004	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9 138 Dup	MSD Result 451 3.6 892 MSD Result 18.2 4.4 140	MS % Rec 11 14 13 30 MS % Rec 15 18 14	MSD % Rec 7 138 1 144 0 167 % Rec 4 140 9 170 7 157 Max RPD	Limits 80-120 80-120 7 80-120 % Rec Limits 80-120 80-120 1 80-120 1 80-120	11 3 11 RPD 4 10 1	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2
Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: C	Units mg/L mg/L mg/L (SPIKE DUPI Units mg/L mg/L mg/L	mg/L LICATE: 3555 60453815004 Result 113 <0.12 475 LICATE: 3555 60453817003 Result 11.2 0.16J 64.7 Units	MS Spike Conc. 250 2.5 250 145 MS Spike Conc. 5 2.5 50 604538	MSD Spike Conc. 250 2.5 250 MSD Spike Conc. 5 2.5 50 15004 ult	3555144 MS Result 406 3.5 799 3555146 MS Result 18.8 4.9 138 Dup Result	MSD Result 451 3.6 892 MSD Result 18.2 4.4 140	MS % Rec 11 14 13 MS % Rec 15 18 14	MSD % Rec 7 138 1 144 0 167 % Rec 4 140 9 170 7 157 Max RPD	Limits 5 80-120 4 80-120 7 80-120 7 80-120 0 80-120 0 80-120 1 80-120 1 80-120	11 3 11 RPD 4 10 1	RPD 15 15 15 15 Max RPD 15 15	M1 M1,N2 M1 Qual M1 M1,N2

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



Project: AMEREN SCPC Pace Project No.: 60453817

SAMPLE DUPLICATE: 3555147		60453817003	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	11.2	11.2	1	15	5
Fluoride	mg/L	0.16J	<0.12		15	5 N2
Sulfate	mg/L	64.7	65.9	2	15	5

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



QUALIFIERS

Project: AMEREN SCPC

Pace Project No.: 60453817

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- H1 Analysis conducted outside the EPA method holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
- P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	AMEREN SCPC
Pace Project No .:	60453817

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812001	S-BMW-1S	EPA 200.7	896847	EPA 200.7	897011
60453812002	S-BMW-3S	EPA 200.7	896847	EPA 200.7	897011
60453817001	S-UG-2	EPA 200.7	896847	EPA 200.7	897011
60453817002	S-UG-1A	EPA 200.7	897579	EPA 200.7	897660
60453817003	S-DG-1	EPA 200.7	897040	EPA 200.7	897199
60453817004	S-DG-2	EPA 200.7	897040	EPA 200.7	897199
0453817005	S-DG-3	EPA 200.7	897040	EPA 200.7	897199
0453817006	S-DG-4	EPA 200.7	897040	EPA 200.7	897199
60453817007	S-SCPC-DUP-1	EPA 200.7	897040	EPA 200.7	897199
0453817008	S-SCPC-FB-1	EPA 200.7	897040	EPA 200.7	897199
60453812001	S-BMW-1S	SM 2320B	896743		
60453812002	S-BMW-3S	SM 2320B	896743		
60453817001	S-UG-2	SM 2320B	896832		
60453817 002	S-UG-1A	SM 2320B	896832		
60453817003	S-DG-1	SM 2320B	896832		
60453817004	S-DG-2	SM 2320B	896832		
60453817005	S-DG-3	SM 2320B	896832		
60453817006	S-DG-4	SM 2320B	896832		
60453817007	S-SCPC-DUP-1	SM 2320B	896832		
60453817008	S-SCPC-FB-1	SM 2320B	896832		
60453812001	S-BMW-1S	SM 2540C	896436		
60453812002	S-BMW-3S	SM 2540C	896436		
60453817001	S-UG-2	SM 2540C	896436		
60453817002	S-UG-1A	SM 2540C	896723		
60453817003	S-DG-1	SM 2540C	896723		
60453817004	S-DG-2	SM 2540C	896723		
60453817005	S-DG-3	SM 2540C	896723		
60453817006	S-DG-4	SM 2540C	896817		
60453817007	S-SCPC-DUP-1	SM 2540C	896817		
60453817008	S-SCPC-FB-1	SM 2540C	896817		
60453812001	S-BMW-1S	EPA 300.0	897826		
60453812002	S-BMW-3S	EPA 300.0	897826		
60453817001	S-UG-2	EPA 300.0	897826		
60453817002	S-UG-1A	EPA 300.0	898111		
60453817003	S-DG-1	EPA 300.0	898111		
60453817004	S-DG-2	EPA 300.0	898111		
60453817005	S-DG-3	EPA 300.0	898111		
60453817006	S-DG-4	EPA 300.0	898111		
60453817007	S-SCPC-DUP-1	EPA 300.0	898111		
60453817008	S-SCPC-FB-1	EPA 300.0	898111		

	 DC#_Title: ENV-I	FRM-LENE-0009_Samp		0453817
MALYTICAL SERVICES	Revision: 2	Effective Date: 01/12/20	22 Issued By: Le	neva
		Effective Date: 01/12/20		
Courier: FedEx UPS Tracking #: Custody Seal on Cooler/Box Pro Packing Material: Bubble W Thermometer Used: <u>729</u>	Vrap □ Bubble 9 T	PEX E ECI Pace Shipping Label Used Seals intact: Yes Bags Foam Foam Type of Ice:	No D Nope D O e	Client Other ther Date and initials of person
Cooler Temperature (°C): As-		r. Factor <u><i>O</i></u> Correcte	$2\cdot 2$	examining contents:
Temperature should be above freezing	1 to 6°C			p 5/30/24
Chain of Custody present:		Yes No N/A		
Chain of Custody relinquished:		ZYes No N/A		
Samples arrived within holding tim	ie:			
Short Hold Time analyses (<72h	r):			
Rush Turn Around Time reques	ted:			
Sufficient volume:		Yes No N/A		
Correct containers used:		Yes No N/A		
Pace containers used:		yes □No □N/A		
Containers intact:		Yes No N/A		
Jnpreserved 5035A / TX1005/100	6 soils frozon in 48hr			
Filtered volume received for dissol				
		1		
Sample labels match COC: Date /				
Samples contain multiple phases? Containers requiring pH preservati HNO ₃ , H ₂ SO ₄ , HCI<2; NaOH>9 Sulfide Exceptions: VOA, Micro, O&G, KS TF Cyanide water sample checks:	on in compliance? e, NaOH>10 Cyanide)		.ist sample IDs, volur late/time added.	nes, lot #'s of preservative and the
Lead acetate strip turns dark? (Re	cord only)	□Yes □No		
Potassium iodide test strip turns bl	- /	e) 🛛 Yes 🗆 No		
rip Blank present:		□Yes □No ØN/A		
leadspace in VOA vials (>6mm):				
Samples from USDA Regulated Ar	ea: State:			
Additional labels attached to 50354		1		
erson Contacted:	Сору	COC to Client? Y / N Date/Time:	Field Data Required	3? Y / N
Project Manager Review:		Date:		

LAB USE ONLY- Affix Workorder/Login Label Here	Scan QR Code for instructions	Specify Container Size ** **Comtainer Size: (1) 11, [2] 500mL (3) 250mL (4) 1550mL (4) 1500mL (4) 1	Terracore, (9) 90mL, (10) other Terracore, (9) 90mL, (10) Other	Identify Container Preservative Type*** *** Preservative Types: (1) None, (2) HN03, (3)	H2504, (4) HCI, (5) NaOH, (6) Zn Acetate, (7)	Analysis Requested MeOH, (11) Other (19) Ascorbic Acid, (10) MeOH, (11) Other	Proj. Mgr.	ij	Table #-		Profile / Template: 15856	Prelog / Bottle Drd. ID:		Sample Comment											itions / Possible Hazards:	0: Correction Factor (*C): Obs. Temp. (*C) Corrected Temp. (*C) On ice:	hu ocsc Tracting Number	Delivered by: [] In-Person [] Courier	[] FedEX [] UPS [] Other	Pace: 1 of 1
LAB 見次変化目		Specify Co	3		2	Analysi			-	-	вјоТ	,2l519 20T\4	W Z O	soc								7	7	2	Customer Remarks / Special Conditions / Possible Hazards:	# Coolers: Thermometer ID:	Date/Timps	Date/Three:	Date/Time:	Date/Time:
CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields	Mark Haddock 314-974-6578 mark.haddock@rocksmithgeo.com		Mark Haddock	mark.haddock@rocksmithgeo.com			e(s): Missouri	able []Yes []No	DW PVSID # or WW Permit # as applicable;	litati Elissosi Désenieskishe i 1900 - 1900		: (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay	Collected or Composite End #	Date Time Cont. Results Units								5-28-24 1135 2	+ 1420 2	5-28-24 1325 2	V: Grant Morey	huf Any	Received by Arayke (Signature)	Received of Company: (Signatur)	Received by/Company: (Signature)	Received by/Company: (Signature)
CHAIN-OF-CUSTODY / Chain-of-Custody is a LEGAL	Contact/Report To: Phone #: E-Mail: Cc E-Mail:				Purchase Order # (if	Quote #!	County / State origin of sample(s):	CRA, etc.) as applicable: Reportable	Rush (Pre-approval required):	[] 2 Day [] 3 Day [] Other		er (GW), Waste Water (WW), Product hate (LL), Biosolid (BS), Other (OT)	Comp / Composite Start	Grab Date Time			/		/	/	/	/	/	G /	Collected By: (Printed Name)	Signature:	9412/1000 9-24/1600	Date/Time:	Date/Time:	Date/Time:
race" - rocation Requested (Lity/State): Pace Analytical Kansas 9608 Loiret Blvd., Lenexa, KS 66219	Rocksmith Geoengineering, LLC. 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043		AMEREN SCPC	-foldeniture set	u (as applicable):		AK []PT []MT []CT []ET	Regulatory Program (DW, RCRA, etc.) as applicable:		[] Same Day [] 1 Day [Requested:	* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)	Customer Sample ID		WT	WT	WT	WT	WT	TW	WT	BMW- (S WT	BANN-35 WT	2 FW	Additional Instructions from Pace®: * - App III and Cat/An Metals* - EPA 200.7: Ba, Ca, Fe, Mg, Mn, K, Na		N Rocker M			
Pace Pace A		#	riojett Name. AIVIEK	stra Collection Info/Escility ID (se sonlicable) [.]	אונה הטווברנומנו ונוומ/ בפכוונרא וי		Time Zone Collected: [] AK	Data Deliverables:	[] Level II [] Level III	[jequis	[] Other	 Matrix Codes (Insert in Ma (B), Vapor (V), Surface Water 	Custor		S-UG-1A	S-DG-1	S-DG-2	S-DG-3	S-DG-4	S-SCPC-DUP-1	S-SCPC-FB-1	SSCREMS - S-E	Sere MSD-1 5-	5-06-2	Additional Instructions from Pace [®] : * - App III and Cat/An Metals* - EP/		Reinquished by/Courporty: (Signature)	Relingwished by/Company: (Signatury	Ronquished by/Company: (Signature) CO	Refinquished by/Company: [Signature]

not log S-BMW-15 and 5-8MW-35	Officer SPLC WPDU											- Nine	Wipe/Swab	120mL Coliform Na Thiosultate	Ziploc Bag	liter	Alr Cassettes	Terracore Nit Summa Can			Matric	MIGUIX	er		Non-aqueous Liquid		cian Mator			
	BP3Z		-	-	_	_	_	-	-				Wipe	120r	Ziplo	AIL FILLER						ļ	Water	Solid	Non	OIL				
IMIS	BP3C		-	-			_	_		1								ľ				1								
5	BP3S	-	-		-		-	_					-	SP51	ZPLC	¥ (ہ د	4=		-	L		5	S	NAL		AN MC	5	-	Т
100	BP3F	-			1	_																	red	1						
40	BP3N					-				-	-									tic	e		eld filte		tic		ט בי	2		
	BP1N															astic	ale	tic	stic	ed plas	Acetat	tic	tic - fie	tic	seld bas	Stic Acotat	Auctar	tir.	stic	4 nistic
20	BP3U											Dlactic	astic	astic	lastic	ved pi	IL ACE	33 plas	04 pla	eserve	H, Zn	H plas	3 plas	3 plas	eserve		17 1	13 plas	O4 pla	Serves
Notes	BP2U												1L NAOH plastic	HNO3 plastic	1L H2SO4 plastic	11 MoOL 7- Actors	FIL NAURI, ZII ACEIZIE	500mL HNO3 plastic	500mL H2SO4 plastic	500mL unpreserved plastic	500mL NaOH, Zn Acetate	250mL NaOH plastic	250mL HNO3 plastic - field filtered	250mL HNO3 plastic	250mL unpreserved plastic	250mL H2SO4 plastic		125mL HNO3 plastic	125mL H2SO4 plastic	1602 Unbresserved pistic
	BP1U									-			1L N/					500m	500m	500m	500m	250m	250m	250m	250m	250m	1001	125m	125m	1607
	MGDU													1																_
	мекп												BP1C	BP1N			DC DC	BP2N	BP2S	BP2U	BP2Z	BP3C	BP3F	BP3N	BP3U	5578 7578	BDAL 1	BP4N	BP4S	WPDU
	ng⊧∩																		ass	Ĩ										
	NGÐA																2		nber g		s	SS	SS	s	s	in a	2			
	VG4U															anner wide		lass	lear/ar	glass	ther glass	oer gla	ber gla	er glas	er glas	er gla				
	AG3S												ar	ar	Jar ad ar			nber q	ulfate c	amber	3 ambe	04 amt)4 amt	es amb	ss amb	ame se	2011			
	NSƏA					Ň							ear soi	ear sol	ear sol		anha l	S04 ar	Thiosu	npres	ONH	. H2SC	H2SC	- unpre	nnpre		id in			
	UIÐA												8oz clear soil jar	4oz clear soil jar	Act licent soll jar	100ml unpreserved annuel wid	11 HCI amher clace	1L H2SO4 amber glass	1L Na Thiosulfate clear/amber glass	1liter unpres amber glass	500mL HNO3 arr	500mL H2SO4 amber glass	250mL H2SO4 amber glass	500mL unpres amber glass	250mL unpres amber glass	120mil unpres amber glass				
	нгәА																	1												
	BG1U												WGKU	WGFU			AG1H	AG1S	AG1T	AG1U	AG2N	AG2S	AG3S	AG2U	AG3U	AG51	222			
	DC9B											Glass															1			
	M690																				a						ŀ			
	DG9U								1				vial	a vial		r vial	r vial	erved		r vial	clear v	lass		lass	r glass					
	∩69∧	T											e clear	Der vo	clear v		ambe	unpres	ar vial	o. clear	erved (clear g	glass	Jear g	S Clea	a				
Site:	DG90	T	T				1						visultat			10SCH	Ja Thic	mber	-1CI cle	Va Thic	Inpres	2S04	upres (Unpre	Cal SU				
	DC9H												40mL bisultate clear via	40mL HCI amber voa vial	40ml TSD amber vial	40ml H2SOA amber vial	40ml Na Thin amher vial	40mL amber unpreserved	40mL HCI clear vial	40mL Na Thio. clear vial	40mL unpreserved clear vial	1liter H2SO4 clear glass	1liter unpres glass	250mL HCL Clear glass	250mL Unpres Clear glass	1002 CIERI SUI JAI				
	Н6ЭЛ			1									Ì				T	Ē												
	Matrix		1				T		11	5		Container Codes	DG9B				DG9T	DG9U	VG9H	VG9T	VG9U	BG1S	BG1U	BG3H	BG3U	2002				
	COC Line Item		, ,	0 <		un u	0			10		ainer		-1-	-1-		1		<		-	-1	-14	-14	-12	-	-			

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa

Pace Analytical Services, LLC

Qualtrax Document ID: 30422

Page 1 of 1

							¢:60453817
Pace	DC#_Title: EN	IV-FRM-LEN	E-0009	_Samp	ole Co	604538	17
1 — АНАЦИТСИ, SE	Revision: 2	Effective	e Date: 0	1/12/20	022	Issued By: L	enexa
Client Name:	Rocksmith	Geoong					
Courier: FedEx 🗆		lay 🗋 🛛 PEX			Pace		Client 🗆 Other 🗆
Tracking #:			iipping La			-	
Custody Seal on Cooler		No 🗆 🧼 Se oble Bags 🗆	eals intac	t: Yes ⊭ oam □		long 🗋 🔹 🤇	Other 🗆
	Bubble Wrap □ Bul T299	Type of Ice:		oam ⊡ 8lue Nor			
۔ Cooler Temperature (°C	1.	Corr. Factor	0			3.6/1-2	Date and initials of person examining contents:
Temperature should be abov	0.01		00				NEBAU
Chain of Custody present		7	Yes 🗆 No	□n/a			/ /
Chain of Custody relingui	shed	1	Yes □No	□n/A			
Samples arrived within ho	olding time:	1	Yes □No	⊡n/A			
Short Hold Time analys			Yes 💋 No	□n/a			
Rush Turn Around Time				□n/A			
Sufficient volume:			Yes DNo	⊡n/a			
Correct containers used:		16	Yes 🗆 No	□n/A			
Pace containers used:		/	Yes DNo				
Containers intact:		1	, Yes □No		-		
	005/1006 soils frozen in	/	Yes 🗆 No	4			
Filtered volume received f		_	Yes 🗆 No				
	C: Date / time / ID / analys		Yes 🗆 No				
			Yes ZNo				
Samples contain multiple Containers requiring pH p			Yes No		List sa	mple IDs, volu	umes, lot #'s of preservative and t
HNO₃, H₂SO₄, HCl<2; NaOH	>9 Sulfide, NaOH>10 Cyani	de)	57182		date/ti	me added.	
Exceptions: VOA, Micro, O8 Cyanide water sample che		LOT#: 🖌	0107				
ead acetate strip turns da	, .		Yes □No				
otassium iodide test strip	turns blue/purple? (Pres	erve)	Yes 🗆 No				
rip Blank present:			Yes 🗆 No	ZN/A			
leadspace in VOA vials (>6mm):		Yes 🗆 No	<u>L</u> IN/A			
Samples from USDA Reg	ulated Area: State:		Yes □No				
dditional labels attached				IN/A	-		
Client Notification/ Reso	lution:	Copy COC to Clier	nt? Y	/ N	Fi	eld Data Requir	ed? Y / N
erson Contacted:		Date/Time:	_				
omments/ Resolution				_			

Project Manager Review.

Date:

Code for instruction are ** the Type*** the Type**** the Type*** the Type***	Adde Pace Analytical Kansas 9608 Loiret Bhid, Lenexa, KS 66219	96219		CHAIN-OF-C	CUSTODY tody is a LEGAL	CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Ostody is a LEGAL DOCUMENT - Complete all relevant fields	Jest Document all relevant fields		LAB USE ONLY- Affix Workorder/Login Label Here ,	ler/Login Label Here	
be ** the Type*** the Type*** the Type*** the Type*** cd dd		¢ ШС. d, Maryland Heights,	Q	Contact/Report To Phone #: E-Mail: Cc E-Mail:		ldock 6578 Idock@rocksmithgeo.c	Egg		Scan QR Code for Inst	7817 ructions	
Ather Type***								Spedi	y Container Size **	**Contauner Size: (1) 11, (2) 500mL (3) 2.50mL (4) 12 5mL (5) 100mL (6) 40mL vial (7) Enfone (8)	nt., (4) (8)
ed ed Description of 205 Description Descr				Invoice To:	Mark Hat	ldock		113		TerraCore, (9) 90mL, (10) Other	E
ed Concretion fraction (C), Des Description Determined Determi	Site Collection Info/Facility ID (as applicable);			Invoice E-Mail: Purchase Order #		ldock@rocksmithgeo.c	шo	Identify Cont	ainer Preservative Type***	*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCI, (5) NaOH, (6) Zn Acetate, (7)	(8)
Date Definere Date Definere				applicable):				-	alysis Requested	MaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic A MeOH, (11) Other	cid, (10)
Date Define Define				Quote #:						Proj. Mgr:	
Date Definere Date Definere	[]PT []N	AT []CT []E Regulatory Program (DV	/, RCRA, et	County / State ori c.) as applicable:	gin of sample(s Reportabl	Missour		*(L) 		Jamie Church AcctNum / Client ID:	of bailing
Page		R	sh (Pre-	approval require	:0	DW PWSID# or	WW Permit # as applicable:	e (200			uon iden
Date 0 0 0 0 0 0 0 0 Delivere Delivere		Jay [ay [] 2	Day [] 3 Day [] Other			_			ot mai
Page		Date Results Requested:				Field Filtered (if applicab Analysis:	ke):[]Yes:[]No	Total Alkałi			
Page	 Matrix Codes (Insert in Matrix box below): Drinkin (B), Vapor (V), Surface Water (SW), Sediment (SED). 	ig Water (DW), Ground Studie (SL), Caulk (CK),	Nater (GM	(), Waste Water (M	/W), Product (P	", soil/solid (ss), oil (ou),	Wipe (WP), Tissue (TS), Blos	, siste		Prelog / Bottle Ord. ID:	ion noit
Page	Circlomar Samula ID	Matrix	Comp/	Composit	e Stert	Collected or Compositu	e End # Res. Chlor	705/2		FL 305/014	eserva
Page			Grab		Time		Cont. Results	CI\E 500		Sample Comment	bu
Page	S-UG-1A	MT	3		/	5-30-27/16		55			
Possible Hazards:	S-DG-1	WT	ى		/		1	27			
Page	S-DG-2	WT	Q			1 13.	-	111			
Possible Hazards:	S-DG-3	WT	0	/		F 15		122			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	S-D6-4	WT	0	/		10-08-		2			
Page	S-SCPC-DUP-1	WT	0	/		-	10	177			
Possible Hazards: Correction Factor ("C): Obs. T 0 • 0 705 Delivere	S-SCPC-FB-1	WT	0	/		1		222			
Possible Hazards: Possible Hazards: Correction Factor (C): Cles. Temp. (C) 0:0 0:0 Direction Mumber: 10 Delivered by: []10 []] FedEX	S-SCPC-MS-1	WT	9	/		-30-24		111		Collected 25-DG-1	
Possible Hazards: Correction Factor (*C): Des. Temp. (*C) 0 • 0 1 Tractoing Number: 0 705 Delivered by: []11- []] FedEX	s-scpc-MsD-1	WT	ଓ	1			1	111		-1	
Possible Hazards: correction factor (°C): Des. Temp. (°C) 0 • 0 1 Trading Number: 0 7005 Delivered by: []In- []]FedEX											
Correction fisctor ("C): Obs. Temp. ("C) 0 • 0 1 racting Number: 0 7005 Delivered by: [_]In- [_] FedEX	Additional Instructions from Pace®: * - App III and Cat/An Metals* - EPA 200.7: Ba, Ca,	Fe, Mg, Mn, K, Na			Collected By. (Printed Nam	Grant	wer	Customer Remarks / Special	Conditions / Possible Hazards:		
0 705 Trading Number: Delivered by: []In- [] FedEX					Signature:		2 July	F		Corrected Temp. (2)	On Ice:
belivered by: []In- [] FedEX	Rectes	2.2	Date Line		llea	philip indeduges / Ing participants	Contres	a	124 0T	Tracking Number:	
[] FedEX	letinquisted by/company: (Signature) Tu		Date/Time			Received company: (Signa	(any	Date/III		Delivered by: [] In- Person [] Courier	
Page:	Company: (Signature)		Date/Time	v		Received by/Company: (Signa	ture)	Date/Ti	iii	- [] FedEX [] UPS [] Other	
	Oftelinquished by/Company: (Signature)		Date/Time			Received by/Company: (Signa	tture)	Date/Ti	.e.	Page: of	

6E	UIE	HIS	350	075 532		n-Je	екл	eDU		T TIEC	NI		53E	SEC	3 3 3 2 6	JIEL DIC DIC DIC DIC DIC DIC DIC DIC DIC DIC	FC C	Jet
D	-	+	-	-	+	n	+	-	-	18	18	- 81	+	-	-	+	+	+
								3	~			3				-	-	
								-	_			1		-	-		_	
		-						-				-			-	-	-	
	_							-				1				_	_	-
1				-				-					-	-	-	-	_	
								-	_			-				-	-	
	_							-	-							-	-	
								-						1		-	-	
				-					-								-	
									-	_						-	-	_
		-		-		1	-		-	_	_		10		_	-	-	_
1 (2)	Glass						_			Plastic							Misc.	
	WGKU		8oz clear soil jar	lar			BP1C	11	1L NAOH plastic	plastic			-		N	Wipe/Swab	de	
1 1	WGFU		4oz clear soil jar	ar			BP1N	11	1L HNO3 plastic	plastic			S I	SP51	21	SOML CO	oliform	120mL Coliform Na Thiosulfate
	WG2U		2oz clear soil jar	ar			BP1S	; ;	1L H2SO4 plastic	plastic	:			ZPLC	7	Ziploc Bag	5	
			40Z UNDRESERVED amber wid	ved amber	amber wide			=	11 Unpreserved plastic	Zn Are	astic		Ϋ́	_	A	AIF FIITEF Air Cassettes	toc	
	AGUU			r alaco	diass						alic						rites	
	AG1S		1L HOI dillucti gidass	mher class			BP2N	202	500ml HNO3 plastic	IO3 nlas	stic				- <i>G</i>	Summa Can	an	
	AG1T		Na Thiosu	Ifate clea	11 Na Thiosulfate clear/amber glass		BP2S	50	500ml H2SO4 plastic	SO4 pl	astic							
	AG1U		1liter unpres am	amber glass	3SS		BP2U	50	500mL unpreserved plastic	Dreserv	ed plast	ici i	Г					
	AG2N		500mL HNO3 amber glass	3 amber g	lass	Ш	BP2Z	50	500mL NaOH, Zn Acetate	OH. Zn	Acetat	0					Matrix	
	AG2S		500mL H2SO4 amber glass)4 amber	glass	ш	BP3C	25	250mL NaOH plastic	OH plax	stic							
	AG3S		JmL H2SC)4 amber	glass	-	BP3F	25	NH THU	JO3 pla:	stic - fie	250mL HNO3 plastic - field filtered		TM	3	Water		
	AG2U	Ĩ	500mL unpres amber glass	s amber	glass		BP3N	25	250mL HNO3 plastic	103 plat	stic		S	SL	Š	Solid		
	AG3U		250mL unpres amber glass	s amber	glass	-	BP3U	25	250mL unpreserved plastic	preserv	ed plas	Lic.	Z	NAL	Ž	Non-aqueous Liquid	sous Lid	pint
	AG4U		125mL unpres amber glass	s amber	glass		BP3S	25	250mL H2SO4 plastic	SO4 pl	astic			Ы	0	OIL		
	AG5U		100mL unpres amber glass	s amber	glass	Ш	BP3Z	25	250mL NaOH, Zn Acetate	IOH, Zn	Acetati	0	5	WP	3	Wipe		
							BP4U	12	125mL unpreserved plastic	preserv	ed plas	tic		DW	D	Drinking Water	Nater	
						<u> </u>	BP4N	12	125mL HNO3 plastic	VO3 pla:	stic				ł			6
							BP4S	12	125mL H2SO4 plastic	SO4 pl	astic							
		1				-	WPDU	16	16oz unpresserved plstic	esserve	d plstic							

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa

Pace Analytical Services, LLC

Qualtrax Document ID: 30422

Page 1 of 1



Memorandum August 7, 2024

То:	Project File Rocksmith Geoengineering, LLC	Project Number: 23009-24
CC:	Mark Haddock, Jeffrey Ingram	
From:	Jack Rasmussen	Email: Jack.Rasmussen@Rocksmithgeo.com
RE:	Data Validation Summary, Sioux Energy Center – S	CPC – Data Package 60453817

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

- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- 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: <u>Rocksmith Geoengineering</u>	Project Manager: J. Ingram
Project Name: Ameren SCPC	Project Number: 23009-24
Reviewer: J. Rasmussen	Validation Date: 8/7/2024
Laboratory: Pace Analytical Analytical Method (type and no.): EPA 200.7 (Total Metals); SI	SDG #: 60453817 M 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
Matrix: Air Soil/Sed. Water Waste	
Sample Names S-UG-2, S-UG-1A, S-DG-1, S-DG-2, S-DG-3,	

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

Field Ir	nformation	YES	NO	NA	COMMENTS
a)	Sampling dates noted?	×			05/28/2024 and 05/30/2024
b)	Sampling team indicated?	×			GTM/JTA
c)	Sample location noted?	×			
d)	Sample depth indicated (Soils)?			X	
e)	Sample type indicated (grab/composite)?	×			Grab
f)	Field QC noted?	x			See Notes
g)	Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h)	Field Calibration within control limits?	×			
i)	Notations of unacceptable field conditions/performa	nces fro	om field lo	ogs or field n	otes?
			x		
j)	Does the laboratory narrative indicate deficiencies?			X	No lab narrative.
	Note Deficiencies:				
Chain-	of-Custody (COC)	YES	NO	NA	COMMENTS
			_	_	COMMENTS
a)	Was the COC properly completed?	YES	NO	NA	COMMENTS
	Was the COC properly completed? Was the COC signed by both field	x	_	_	
a)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel?	×			COMMENTS
a) b)	Was the COC properly completed? Was the COC signed by both field	x			
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel?	×			
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	× × ×			
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	× × ×			
a) b) c) Genera	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	× × YES			
a) b) c) Genera a)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment?	× × × YES	 NO	□ □ NA	
a) b) c) Genera a) b)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis?	× × ¥ ¥ ¥	 NO		
a) b) c) Genera a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used?	× × ¥ ¥ ¥ ×	NO	□ □ NA □	
a) b) c) Genera a) b) c) d)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used? Was the correct method used?	× × ¥ ¥ × × ×	□ □ ■ ■ ■ ■		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	•	YES	NO	NA	COMMENTS
a)	Were analytes detected in the method blank(s)?	X			See Notes
b)	Were analytes detected in the field blank(s)?	х			See Notes
c)	Were analytes detected in the equipment blank(s)?			х	
d)	Were analytes detected in the trip blank(s)?			X	
Labora	tory Control Sample (LCS)	YES	NO	NA	COMMENTS
a)	Was a LCS analyzed once per SDG?	х			
b)	Were the proper analytes included in the LCS?	X			
c)	Was the LCS accuracy criteria met?	Х			
Duplic	ates	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du	ıplicate	sample n	ames)?	
		X			S-SCPC-DUP-1 @ S-DG-2
b)	Were field dup. precision criteria met (note RPD)?		x		See Notes
c)	Were lab duplicates analyzed (note original and dup	olicate	samples)?		
		х			
d)	Were lab dup. precision criteria met (note RPD)?		X		See Notes
Blind \$	Standards	YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			х	
	analytes included and concentrations)?				
b)	Was the %D within control limits?			х	
Matrix	Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a)	Was MS accuracy criteria met?		×		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
b)	Was MSD accuracy criteria met?		×		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
c)	Were MS/MSD precision criteria met?	х			See Notes

Comments/Notes:

General:
Chloride and/or sulfate diluted in several samples, no qualifications necessary.

Method Blanks:

3553144: calcium (28.7J), associated with sample -002. Result > RL and 10x blank, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field Blanks:

S-SCPC-FB-1 @ S-DG-3: sodium (191J), TDS (24.0). All results > RL and 10x blank, no qualification necessary.

Duplicate:

S-SCPC-DUP-1 @ S-DG-2: field duplicate RPD exceeds control limit (20%) for sulfate (21.9%), results qualified as estimates.

Lab duplicate max RPD: 10%: alkalinity, TDS: 15%: chloride, fluoride, sulfate; 20%: ferrous iron, sulfide, 200.7 metals. 3548056: Lab duplicate exceeds max RPD for TDS, associated with unrelated sample.

MS/MSD:

3549600: MS recovery low for calcium, associated with unrelated sample, no qualification necessary.

3550461/3550462: MS/MSD recovery low for calcium, associated with sample -003. Result qualified as estimate.

3553146/3553147: MS recovery low for calcium, MSD/RPD fall within control limits. Associated with sample -004, no qualification necessary.

3554027/3554028: MS/MSD recovery high for chloride, fluoride, sulfate. Associated with unrelated sample, no qualification necessary.

3555143/3555144: MSD recovery high for chloride, MS recovery and RPD within control limits, no qualification necessary.

MS/MSD recovery high for fluoride and sulfate, associated with unrelated sample, no qualification necessary.

3555145/3555146: MS/MSD recovery high for chloride, fluoride, sulfate. Associated with sample -003, results qualified as estimates.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-DG-2	Sulfate	95.4	J	Field DUP RPD exceeds control limit
S-SCPC-DUP-1	"	76.5	J	"
S-DG-1	Calcium	147000	J-	MS/MSD recovery low
S-DG-1	Chloride	11.2	J+	MS/MSD recovery high
"	Fluoride	0.16	J+	n
"	Sulfate	64.7	J+	n
			-	
	1 A	I	I	00/07/2024
Signature:	Int			Date: 08/07/2024



Pace Analytical Services, LLC 9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665

August 12, 2024

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

RE: Project: AMEREN SCPC - VERIFICATION Pace Project No.: 60457663

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2024. 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,

Jame Church

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

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC. Lisa Meyer, Ameren Grant Morey, Rocksmith Geoengineering, LLC.





CERTIFICATIONS

Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Certification #: 88-00679 Illinois Certification #: 2000302023-6 Colorado Division of Oil and Public Safety Iowa Certification #: 118 Kansas Field Laboratory Certification #: E-92587 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Missouri Inorganic Drinking Water Certification Nevada Certification #: KS000212024-1 Oklahoma Certification #: 2023-073 Texas Certification #: T104704407-23-17 Utah Certification #: KS000212022-13



SAMPLE SUMMARY

Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60457663001	S-DG-1	Water	07/30/24 10:45	07/31/24 07:07
60457663002	S-DG-2	Water	07/30/24 09:28	07/31/24 07:07
60457663003	S-DG-3	Water	07/29/24 13:53	07/31/24 07:07
60457663004	S-SCPC-DUP-1	Water	07/30/24 00:00	07/31/24 07:07
60457663005	S-SCPC-FB-1	Water	07/30/24 09:10	07/31/24 07:07



SAMPLE ANALYTE COUNT

Project:AMEREN SCPC - VERIFICATIONPace Project No.:60457663

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60457663001	S-DG-1	SM 2540C	 КVI	1	PASI-K
		EPA 300.0	PL	2	PASI-K
60457663002	S-DG-2	SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	2	PASI-K
60457663003	S-DG-3	SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	2	PASI-K
60457663004	S-SCPC-DUP-1	SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	2	PASI-K
60457663005	S-SCPC-FB-1	SM 2540C	KVI	1	PASI-K
		EPA 300.0	PL	2	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Sample: S-DG-1	Lab ID:	60457663001	Collecte	d: 07/30/24	4 10:45	Received: 07	7/31/24 07:07 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	,	Method: SM 25 lytical Services		lity					
Total Dissolved Solids	486	mg/L	10.0	10.0	1		07/31/24 09:40		
300.0 IC Anions 28 Days	,	Method: EPA 3 lytical Services		lity					
Chloride Sulfate	8.9 50.2	mg/L mg/L	1.0 10.0	0.53 5.5	1 10		08/07/24 03:20 08/07/24 03:39		



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Sample: S-DG-2	Lab ID:	60457663002	Collecte	d: 07/30/24	1 09:28	Received: 07	7/31/24 07:07 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	,	Method: SM 25 lytical Services		ity					
Total Dissolved Solids	485	mg/L	10.0	10.0	1		07/31/24 09:40		
300.0 IC Anions 28 Days	,	Method: EPA 3 lytical Services		ity					
Chloride Sulfate	6.0 43.9	mg/L mg/L	1.0 10.0	0.53 5.5	1 10		08/07/24 04:34 08/07/24 04:52		



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Sample: S-DG-3	Lab ID:	60457663003	Collecte	d: 07/29/24	13:53	Received: 07	7/31/24 07:07 Ma	trix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ity					
Total Dissolved Solids	573	mg/L	10.0	10.0	1		07/31/24 09:40		
300.0 IC Anions 28 Days		Method: EPA 3 ytical Services		ity					
Chloride Sulfate	34.0 83.3	mg/L mg/L	5.0 5.0	2.6 2.8	5 5		08/07/24 05:10 08/07/24 05:10	16887-00-6 14808-79-8	M1



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Sample: S-SCPC-DUP-1	Lab ID:	60457663004	Collecte	d: 07/30/24	4 00:00	Received: 07	7/31/24 07:07 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	,	Method: SM 25		ity					
Total Dissolved Solids	487	mg/L	10.0	10.0	1		07/31/24 09:40		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Ana	lytical Services	- Kansas C	ity					
Chloride	9.0	mg/L	1.0	0.53	1		08/07/24 08:19	16887-00-6	
Sulfate	52.6	mg/L	10.0	5.5	10		08/07/24 08:37	14808-79-8	



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

Sample: S-SCPC-FB-1	Lab ID:	60457663005	Collecte	d: 07/30/24	4 09:10	Received: 07	7/31/24 07:07 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids		Method: SM 25 lytical Services		ity					
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		08/01/24 12:08		
300.0 IC Anions 28 Days		Method: EPA 3 lytical Services		ity					
Chloride Sulfate	<0.53 <0.55	mg/L mg/L	1.0 1.0	0.53 0.55	1 1		08/07/24 08:55 08/07/24 08:55		



- ,	AMEREN SCPC - 60457663	VERIFICATION						
QC Batch:	903652		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total [Dissolved Solids	S	
			Laboratory:		Pace Analytic	al Services - Ka	ansas C	ity
Associated Lab Sam	ples: 60457663	001, 60457663002	, 60457663003,	60457663004				
METHOD BLANK:	3576269		Matrix	: Water				
Associated Lab Sam	ples: 60457663	001, 60457663002	, 60457663003,	60457663004				
			Blank	Reporting				
Param	eter	Units	Result	Limit	MDL	Anal	yzed	Qualifiers
Total Dissolved Solid	s	mg/L	<5.0	5	5.0	5.0 07/31/2	4 09:36	
LABORATORY CON		3576270	Spike	LCS	LCS	% Rec		
Param	eter	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Solid	s	mg/L	1000	927	93	80-120)	
SAMPLE DUPLICAT	E: 3576307							
			60457660002	Dup		Max		
Param	eter	Units	Result	Result	RPD	RPD)	Qualifiers
Total Dissolved Solid	s	mg/L	1030	103	30	1	10	
SAMPLE DUPLICAT	E: 3576332							
_			60457662001	Dup		Max		
Param	eter	Units	Result	Result	RPD	RPD)	Qualifiers
Total Dissolved Solid	s	mg/L	440	4	65	6	10	
SAMPLE DUPLICAT	E: 3576333							
_			60457663003	Dup		Max		
Param	eter	Units	Result	Result	RPD	RPD)	Qualifiers
			573					

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

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



Project:	AMEREN SCPC -	VERIFICATION							
Pace Project No.:	60457663		Analysis M	athad	SM 25400				
	903859		Analysis M		SM 2540C	D'			
QC Batch Method:	SM 2540C		Analysis D		2540C Total				4 .
Associated Lab San	nples: 60457663	005	Laboratory		Pace Analyt	cai Ser	lices - Kai	isas Ci	ту
METHOD BLANK:	3576975		Matri	x: Water					
Associated Lab San	nples: 60457663	005							
	,		Blank	Reporting	a				
Paran	neter	Units	Result	Limit	MDL	-	Analyz	ed	Qualifiers
Total Dissolved Soli	ds	mg/L	<5.0)	5.0	5.0	08/01/24	12:07	
LABORATORY COM	NTROL SAMPLE:	3576976							
			Spike	LCS	LCS	%	Rec		
Paran	neter	Units	Conc.	Result	% Rec	Li	imits	Qua	lifiers
Total Dissolved Soli	ds	mg/L	1000	951	95		80-120		
SAMPLE DUPLICA	TE: 3576977								
			60457773001	•			Max		
Paran	neter	Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	883	3	917	4		10	
SAMPLE DUPLICA	TE: 3576978								
			60457773005				Max		
Paran	neter	Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	1110	D 1	130	2		10	

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.



QC Batch: 904	194		Analy	sis Metho	4.	EPA 300.0						
	A 300.0			/sis Netrio		300.0 IC A	aione					
	4 300.0			ratory:	5001.			rvices - Kans	as City			
Associated Lab Samples:	60457663	001, 6045766300		,	57663004	-						
METHOD BLANK: 3578	340			Matrix: W	ater							
Associated Lab Samples:	60457663	001, 6045766300	2, 6045766	3003, 604	57663004	, 60457663(005					
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	ME)L	Analyze	d Qu	ualifiers		
Chloride		mg/L		<0.53	1	.0	0.53	08/06/24 1	1:06			
Sulfate		mg/L		<0.55	1	.0	0.55	08/06/24 1	1:06			
METHOD BLANK: 3580	377			Matrix: W	ater							
Associated Lab Samples:	-	001, 6045766300	2. 6045766			. 604576630	005					
	00101000		Blar		Reporting	,						
Parameter		Units	Res		Limit	ME)L	Analyze	d Qu	ualifiers		
Chloride		mg/L		<0.53	1	.0	0.53	08/08/24 0	9:44			
Sulfate		mg/L		<0.55	1	.0	0.55	08/08/24 0	9:44			
LABORATORY CONTRO	L SAMPLE:	3578341										
			Spike	LC	S	LCS	9	6 Rec				
Parameter		Units	Conc.	Res	ult	% Rec	L	_imits	Qualifiers			
Chloride		mg/L		5	4.6	ę	92	90-110				
Sulfate		mg/L		5	4.7	ç	93	90-110				
LABORATORY CONTRO	L SAMPLE:	3580378										
_			Spike	LC		LCS		6 Rec				
Parameter		Units	Conc.	Res	sult	% Rec	l	_imits	Qualifiers	_		
Chloride		mg/L		5	4.8		96	90-110				
Sulfate		mg/L		5	5.1	1()2	90-110				
MATRIX SPIKE & MATRI	X SPIKE DUP	LICATE: 3578	342		357834	3						
			MS	MSD	•							
Parameter	Units	60457658003 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Re		% Rec Limits	RPD	Max RPD	Qua
Chloride	mg/L		50	50	61.9	64.6		67 7	3 80-120	4	15	M1

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.



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

MATRIX SF	PIKE & MATRIX SI	PIKE DUPL	ICATE: 35	78345		3578346							
			~~ ~~~~~~~~	MS	MSD					04 D			
Pa	arameter	Units	6045766000 Result	2 Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride		mg/L	54		250	248	248	78	77	80-120	0		M1
Sulfate		mg/L	53		250	762	736	90	80	80-120	3		
MATRIX SP	PIKE & MATRIX SI	PIKE DUPL	ICATE: 35	78348		3578349							
				MS	MSD								
Pa	arameter	Units	6045766200 Result	1 Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride		mg/L	9	0 5	5	11.6	11.5	51	50	80-120	0	15	M1
Sulfate		mg/L	82	2 5	5	88.0	90.3	116	163	80-120	3	15	M1
MATRIX SF	PIKE & MATRIX SI	PIKE DUPL	ICATE: 35	78351		3578352							
				MS	MSD					_			
Pa	arameter	Units	6045766300 Result	3 Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride		mg/L	34	0 25	25	45.7	45.7	47	47	80-120	0	15	M1
Sulfate		mg/L	83	3 25	25	108	110	101	105	80-120	1	15	
SAMPLE D	UPLICATE: 357	8344											
	Parameter		Units	604576 Res		Dup Result	RPI	C	Max RPD	Qualif	iers		
Chloride			mg/L		28.2	19.	7	35	15	D6			
Sulfate			mg/L		52.3	47.	1	11	15	5			
SAMPLE D	UPLICATE: 357	8347											
	Parameter		Units	604576 Res		Dup Result	RPI	C	Max RPD	Qualif	iers		
Chloride			mg/L		54.4	64.	 B	17	15	D6			
Sulfate			mg/L		537	499	9	7	15	i			
SAMPLE D	UPLICATE: 357	8350											
	Parameter		Units	604576 Res		Dup Result	RPI	D	Max RPD	Qualif	iers		
Chloride			mg/L		9.0	8.	9	1	15	;			
Sulfate			mg/L		82.2	85.		4	15				

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

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



Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

SAMPLE DUPLICATE: 3578353						
		60457663003	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	34.0	31.9	7	15	
Sulfate	mg/L	83.3	81.7	2	15	

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.



QUALIFIERS

Project: AMEREN SCPC - VERIFICATION

Pace Project No.: 60457663

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPC - VERIFICATION Pace Project No.: 60457663

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytic Batch
60457663001		SM 2540C	903652		
60457663002	S-DG-2	SM 2540C	903652		
60457663003	S-DG-3	SM 2540C	903652		
60457663004	S-SCPC-DUP-1	SM 2540C	903652		
60457663005	S-SCPC-FB-1	SM 2540C	903859		
60457663001	S-DG-1	EPA 300.0	904194		
60457663002	S-DG-2	EPA 300.0	904194		
60457663003	S-DG-3	EPA 300.0	904194		
60457663004	S-SCPC-DUP-1	EPA 300.0	904194		
60457663005	S-SCPC-FB-1	EPA 300.0	904194		

			WO#:60457663
Pace	C#_Title: ENV-FRM	-LENE-0009_Sample	60457663
addring servers	evision: 2 Eff	ective Date: 01/12/2022	2 Issued By: Lenexa
Client Name: Courier: FedEx UPS Tracking #: Custody Seal on Cooler/Box Press Packing Material: Bubble Wr Thermometer Used: <u>7299</u> Cooler Temperature (°C): As-ref Temperature should be above freezing for	sent: Yes	ace Shipping Label Used? Seals intact: Yes Foam Foam f Ice:	No Nonge Other
Chain of Custody present:		Øres □No □N/A	p= 1131124
Chain of Custody relinquished:			
Samples arrived within holding time	a.		
Short Hold Time analyses (<72hr)			
Rush Turn Around Time requeste			
Sufficient volume:			
A COLORADO			
Correct containers used:			
Pace containers used:		Yes No N/A	
Containers intact:		Yes No N/A	
Unpreserved 5035A / TX1005/1006	soils frozen in 48hrs?	Yes No N/A	
Filtered volume received for dissolve	ed tests?	Yes No ZN/A	
Sample labels match COC: Date / ti	me / ID / analyses	Yes No N/A	
Samples contain multiple phases?	Matrix: WT	Yes No N/A	
Containers requiring pH preservation (HNO ₃ , H ₂ SO ₄ , HCI<2; NaOH>9 Sulfide, (Exceptions: VOA, Micro, O&G, KS TPH Cyanide water sample checks: Lead acetate strip turns dark? (Reco	NaOH>10 Cyanide) I, OK-DRO) LOT#	dai	t sample IDs, volumes, lot #'s of preservative and the te/time added.
Potassium iodide test strip turns blue	• /	□Yes □No	
rip Blank present:		UYes DNo DNA	
leadspace in VOA vials (>6mm):			
Samples from USDA Regulated Area	a: State:		
dditional labels attached to 5035A			
Client Notification/ Resolution:	Copy COC t	o Client? Y / N	Field Data Required? Y / N

Qualtrax Document ID: 30468

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Client	ormation:	Required Project Information:	vject Info	ormation:					Invoice Info	Jeculon C Invoice Information:	ion:				ľ				Page:	: 1	of	1
Company: Ro	Rocksmith Geoengineering, LLC	Report To: Mark Haddock	lark H	addock					Attention										5			
Address: 523	5233 Roanoke Drive	Copy To: Je	effery l	Jeffery Ingram, Grant Morey	Grant M	lorey			Compar	Company Name:	: Rocksmith	imith				REGL	LATOR	REGULATORY AGENCY	_{>}			
St	St. Charles, MO 63304								Address:	36						Ĺ	NPDES	GR0	GROUND WATER	ER	DRINKING WATER	WATER
Email To: <u>ma</u>	mark.haddock@rocksmithgeo.com	Purchase Order No : COC #1	der No :	COC #	2				Pace Qu Referenc	ote e:						L	UST	L RCRA	-	Loons	OTHER	
Phone: 314-974-5678	1-5678 Fax:	Project Name;		Ameren SCPC - Verification Sam	PC - VI	erificatic	n Sampli	pling	Pace Project Manager:		Jamie Church	urch				Site	Site Location					
Requested Due Date/TAT:	tte/TAT: Standard	Project Number. COC#1	er. CC	DC#1					Pace Pro		15856, line 1	le 1				-	STATE:	2	MO			
													_	Req	uested	Analys	Requested Analysis Filtered (Y/N)	ed (V/N)				
Section E Required (Section D Valid Matrix Codes Required Client Information MATRIX COI	odes CODE	-		о С	COLLECTED	ED			đ	Preservatives	ves	1 N /A	z z	z	z z	z	z z				
	DRINKING WATER WATER WASE WATER PRODUCT SOLUSOLD OIL	SL W	See valid codes		COMPOSITE START		COMPOSITE END/GRAB	OLLECTION	S				t		sbiloS		-		(N/A) (
ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE			DATE	TIME		DATE	E MPLE TEMP AT C	# OF CONTAINER	HNO ² H ² SO ⁴ Dublesetved	N ⁹ OH HCI HNO ³	Nethanol Methanol Other	tesT sizylsnA	Chloride Sulfate	bevlossid IstoT				Residual Chlorine	2	どせらうんら3 Pace Project No./Lab I.D	663 10/Labl.[
1	S-DG-1	~	WT G		_	1 7.2	7-30-34 10	1045	-	-				3	2							
2	S-DG-2	~	WT G		/	17.	P-36-24 09	826	1					1	2							
8	S-DG-3	~	WT G		/	7-2	7-29-24 13	353						1	>							
4	S-SCPC-DUP-1	~	WT G		-	7-3	- HC-02-L	1	1	-				2	1		-					
ŝ	S-SCPC-FB-1	2	WT G	(P)	~	ř		0410	-	_	_			3	5		-	_	_			
9	S-SCPC-MS-1	2	MT G	10	/	1.1	7-24-24 13	353		-				5	1					Coller	LUCS	-26-3
7	S-SCPC-MSD-1	~	WT G		_	7.2	EI HEREL	1353						1	1	_			_		1	
8		V V	WT G	/ 15																		
0		~	WT G	-	_								_	-								
10			WT G	-		-	-							-								
11		_	0 MT	-	-	-	-	-		_				-								
12		Í	MT G	-	_	-	-	-		-				-								
	ADDITIONAL COMMENTS		SELINO	RELINQUISHED BY / AFFILIATION	Y / AFFI	LATION		DATE	Ē.	TIME	1	HICE BU	CCEPTED BY / AFFILIATION	AFFILL	ATION	-	DATE	TIME	_	SAM	SAMPLE CONDITIONS	SNO
		here	5	Row	Rocksunt	t	1	11-06-	ch: 21 h	Ş	C	m	AP.	55		-	10/2	000	5-1	X	7	7
		0																	1.0	X	X	2
F																						
age					SAA	APLER N	AME AND	SAMPLER NAME AND SIGNATURE	U.S.										Э. I) oojet qλ) Intact
18 of					_	PRII	VT Name of	PRINT Name of SAMPLER:	C	t-t	1 Nor	M		DATE	Sinned				eub Iu	осејлео (Д) есј	O bels O bels (V/Y)	selqri NYY)
f 19						SIG	NATURE o	SIGNATURE of SAMPLER:		N	1	5		(MM/I	(WW/DD/WW):	10	104	11	L		θS	IBC

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 15% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Site: DG9H DG9H DG9U DG9U DG9U DG9U DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9M DG9B DG9M DG9M DG9B DG9M DG9B	W69D
VG9U VC9U	DG9U
	Site: Site: Site: AdmL bisulfate clea 40mL March and 40mL Na Thio and 40mL Na

DC#_Trite: ENV-FRM-LENE-0001 v07_Sample Container Count Effective Date: 7/12/2024

60457663

Qualtrax ID: 30422

Pace® Analytical Services, LLC



Memorandum August 14, 2024

То:	Project File Project Number: 23009-24 Rocksmith Geoengineering, LLC						
CC:	Mark Haddock, Jeffrey Ingram						
From:	Jack Rasmussen	Email: jack.rasmussen@rocksmithgeo.com					
RE:	Data Validation Summary, Sioux Energy Center – SCPC – Data Package 60457663						

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 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). When matrix spike recovery was less than 10%, and the associated sample result was a non-detect, the result was rejected (R).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: <u>Rocksmith Geoengineering</u>	Project Manager: <u>J. Ingram</u>
Project Name: <u>Ameren SCPC - Verification</u>	Project Number: 23009-24
Reviewer: J. Rasmussen	Validation Date: 8/14/2024
Laboratory: Pace Analytical Analytical Method (type and no.): SM 2540C (TDS); EPA 300.0 (A Matrix: Air Soil/Sed. Water Waste Sample Names S-DG-1, S-DG-2, S-DG-3, S-SCPC-DUP-1, S-SCPC-F	

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

Field I	nformation	YES	NO	NA	COMMENTS
a)	Sampling dates noted?	X			7/29/2024 - 7/30/2024
b)	Sampling team indicated?	X			GTM/JTR
c)	Sample location noted?	×			
d)	Sample depth indicated (Soils)?			×	
e)	Sample type indicated (grab/composite)?	x			Grab
f)	Field QC noted?	х			See Notes
g)	Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h)	Field Calibration within control limits?	x			
i)	Notations of unacceptable field conditions/performa	nces fr	om field lo	ogs or fiel	d notes?
			×		
j)	Does the laboratory narrative indicate deficiencies?			×	No lab narrative.
	Note Deficiencies:				
Chain-	of-Custody (COC)	YES	NO	NA	COMMENTS
		_	_	_	
a)	Was the COC properly completed?	х			
b)	Was the COC signed by both field and laboratory personnel?	×		П	
c)	Were samples received in good condition?	×			
	·····				
Genera					
	al (reference QAPP or Method)	YES	NO	NA	COMMENTS
	al (reference QAPP or Method)	YES	NO	NA	COMMENTS
a)	al (reference QAPP or Method) Were hold times met for sample pretreatment?	YES	NO	NA	COMMENTS
a) b)		_	_	_	COMMENTS
,	Were hold times met for sample pretreatment?	×			COMMENTS
b)	Were hold times met for sample pretreatment? Were hold times met for sample analysis?	×			COMMENTS
b) c)	Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used?	× × ×			COMMENTS
b) c) d)	Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used? Was the correct method used?	× × ×			COMMENTS

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks		YES	NO	NA	COMMENTS
a)	Were analytes detected in the method blank(s)?		X		
b)	Were analytes detected in the field blank(s)?		x		
c)	Were analytes detected in the equipment blank(s)?			×	
d)	Were analytes detected in the trip blank(s)?			×	
Labora	tory Control Sample (LCS)	YES	NO	NA	COMMENTS
a)	Was a LCS analyzed once per SDG?	x			
b)	Were the proper analytes included in the LCS?	X			
c)	Was the LCS accuracy criteria met?	x			
Duplica	ates	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du	uplicate	sample n	ames)?	
		х			S-SCPC-DUP-1 @ S-DG-1
b)	Were field dup. precision criteria met (note RPD)?	x			All RPD's within control limits
c)	Were lab duplicates analyzed (note original and du	olicate	samples)?	2	
		x			
d)	Were lab dup. precision criteria met (note RPD)?		x		See Notes
Blind S	tandards	YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			×	
	analytes included and concentrations)?				
b)	Was the %D within control limits?			×	
Matrix	Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a)	Was MS accuracy criteria met?		×		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
b)	Was MSD accuracy criteria met?		×		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			X	
c)	Were MS/MSD precision criteria met?	x			

Comments/Notes:

Chloride and/or sulfate diluted in several samples, no qualifications necessary.	General:
,, _,	Chloride and/or sulfate diluted in several samples, no qualifications necessary.

Duplicates:

Lab duplicate max RPD: 10%: TDS; 15%: chloride, sulfate.

3578344: Lab duplicate exceeds max RPD for chloride, associated with unrelated sample, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Duplicate continued:

3578347: Lab duplicate exceeds RPD for chloride, associated with unrelated sample, no qualification necessary.

MS/MSD:

3578342/3578343: MS and MSD recovery low for chloride, RPD okay. Associated with unrelated sample, no qualification necessary. 3578345/3578346: MS and MSD recovery low for chloride, RPD okay. Associated with unrelated sample, no qualification necessary.

3578348/3578349: MS and MSD recovery low for chloride, RPD okay. MSD recovery high for sulfate, MS and RPD okay.

Associated with unrelated sample, no qualification necessary.

3578351/3578352: MS and MSD recovery low for chloride, RPD okay. Associated with sample -003, result qualified as estimate.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-DG-3	Chloride	34.0	J-	MS and MSD recovery low, RPD okay
\mathbf{X}				
	<u>\</u>			
		-		
		\sim		
		\vdash		
			\searrow —	
			$+ \times -$	
			+	
				$\overline{}$
	Int	~		08/14/2024
Signature:	~ '			Date:



December 23, 2024

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

RE: Project: AMEREN SCPC Pace Project No.: 60464704

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 15, 2024 and November 21, 2024. 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,

Church

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

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC. Lisa Meyer, Ameren Grant Morey, Rocksmith Geoengineering, LLC. Austin Nieman, Ameren





CERTIFICATIONS

Project: AMEREN SCPC

Pace Project No.: 60464704

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Certification #: 88-00679 Illinois Certification #: 2000302023-6 Colorado Division of Oil and Public Safety Iowa Certification #: 118 Kansas Field Laboratory Certification #: E-92587 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Missouri Inorganic Drinking Water Certification Nevada Certification #: KS000212024-1 Oklahoma Certification #: 2023-073 Texas Certification #: T104704407-23-17 Utah Certification #: KS000212022-13



SAMPLE SUMMARY

Project: AMEREN SCPC Pace Project No.: 60464704

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60464704001	S-UG-2	Water	11/14/24 12:12	11/15/24 05:55
60464704002	S-UG-1A	Water	11/15/24 14:18	11/16/24 05:34
60464704003	S-DG-1	Water	11/15/24 09:42	11/16/24 05:34
60464704004	S-DG-2	Water	11/15/24 10:42	11/16/24 05:34
60464704005	S-DG-3	Water	11/15/24 11:56	11/16/24 05:34
60464704006	S-DG-4	Water	11/15/24 13:01	11/16/24 05:34
60464704007	S-SCPC-DUP-1	Water	11/15/24 08:00	11/16/24 05:34
60464704008	S-SCPC-FB-1	Water	11/15/24 12:10	11/16/24 05:34
60464699011	S-BMW-1S	Water	11/20/24 09:00	11/21/24 07:45
60464699012	S-BMW-3S	Water	11/20/24 11:43	11/21/24 07:45



SAMPLE ANALYTE COUNT

Project:AMEREN SCPCPace Project No.:60464704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60464704001	S-UG-2	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704002	S-UG-1A	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704003	S-DG-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704004	S-DG-2	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704005	S-DG-3	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704006	S-DG-4	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704007	S-SCPC-DUP-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464704008	S-SCPC-FB-1	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699011	S-BMW-1S	EPA 200.7	ARMN	7	PASI-K
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699012	S-BMW-3S	EPA 200.7	ARMN	7	PASI-K



SAMPLE ANALYTE COUNT

Project: Pace Project	AMEREN SCPC No.: 60464704				
Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-UG-2	Lab ID:	60464704001	Collected	: 11/14/24	12:12	Received: 11/	15/24 05:55 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA Pace Analytical Services - Kansas City					A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	112 90800 10.9J 18800 19.5 4560	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	6.4 26.9 9.1 20.1 0.39 69.7 115	1 1 1 1 1 1	11/18/24 09:30 11/18/24 09:30 11/18/24 09:30 11/18/24 09:30 11/18/24 09:30 11/18/24 09:30	12/04/24 12:53 12/04/24 12:53 12/04/24 12:53 12/04/24 12:53 12/04/24 12:53 12/04/24 12:53	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids	326 mg/L 20.0 10.5 1 Analytical Method: SM 2540C Pace Analytical Services - Kansas City					11/27/24 17:39			
Total Dissolved Solids 300.0 IC Anions 28 Days	409 mg/L 10.0 10.0 1 Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City						11/19/24 12:19		
Chloride Fluoride Sulfate	26.5 0.29 29.4	mg/L mg/L mg/L	5.0 0.20 5.0	2.6 0.12 2.8	5 1 5		11/30/24 18:48 11/30/24 18:35 11/30/24 18:48	16984-48-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-UG-1A	Lab ID:	60464704002	Collected	l: 11/15/24	14:18	Received: 11/	Received: 11/16/24 05:34 Matrix: Water				
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	ration Meth	od: EP	A 200.7					
	Pace Anal	vtical Services	- Kansas Ci	ty							
Boron	307	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:14	7440-42-8			
Calcium	160000	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:14	7440-70-2			
Iron	<9.1	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:14	7439-89-6			
Magnesium	35700	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:14	7439-95-4			
Manganese	400	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:14	7439-96-5			
Potassium	11100	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:14	7440-09-7			
Sodium	51700	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:14	7440-23-5			
2320B Alkalinity	Analytical	Method: SM 23	20B								
	Pace Anal	vtical Services	- Kansas Ci	ty							
Alkalinity, Total as CaCO3	425	mg/L	20.0	10.5	1		11/27/24 18:53				
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C								
	Pace Anal	vtical Services	- Kansas Ci	ty							
Total Dissolved Solids	711	mg/L	13.3	13.3	1		11/20/24 12:08				
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0								
-	Pace Anal	vtical Services	- Kansas Ci	ty							
Chloride	116	mg/L	10.0	5.3	10		11/30/24 14:44	16887-00-6			
Fluoride	0.27	mg/L	0.20	0.12	1		11/30/24 14:31	16984-48-8			
Sulfate	60.0	mg/L	10.0	5.5	10		11/30/24 14:44	14808-79-8			



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-DG-1	Lab ID:	60464704003	Collected	d: 11/15/24	09:42	Received: 11/	16/24 05:34 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	ration Meth	od: EP	A 200.7			
	Pace Anal	vtical Services	- Kansas C	ity					
Boron	101	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:16	7440-42-8	
Calcium	144000	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:16	7440-70-2	
Iron	5010	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:16	7439-89-6	
Magnesium	31100	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:16	7439-95-4	
Manganese	451	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:16	7439-96-5	
Potassium	6030	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:16	7440-09-7	
Sodium	5280	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:16	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	vtical Services	- Kansas C	ity					
Alkalinity, Total as CaCO3	438	mg/L	20.0	10.5	1		11/27/24 18:59		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
		vtical Services		ity					
Total Dissolved Solids	541	mg/L	10.0	10.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	vtical Services	- Kansas C	ity					
Chloride	7.5	mg/L	1.0	0.53	1		11/30/24 14:56	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.12	1		11/30/24 14:56	16984-48-8	
Sulfate	50.5	mg/L	5.0	2.8	5		11/30/24 15:09	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-DG-2	Lab ID:	60464704004	Collected	: 11/15/24	10:42	Received: 11/	16/24 05:34 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	ration Meth	od: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas Ci	ty					
Boron	103	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:18	7440-42-8	
Calcium	141000	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:18	7440-70-2	
Iron	1160	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:18	7439-89-6	
Magnesium	31400	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:18	7439-95-4	
Manganese	588	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:18	7439-96-5	
Potassium	6370	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:18	7440-09-7	
Sodium	4930	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:18	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
-	Pace Anal	ytical Services	- Kansas Ci	ty					
Alkalinity, Total as CaCO3	442	mg/L	20.0	10.5	1		11/27/24 19:05		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Total Dissolved Solids	522	mg/L	10.0	10.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Chloride	4.5	mg/L	1.0	0.53	1		12/10/24 17:22	16887-00-6	
Fluoride	0.51	mg/L	0.20	0.12	1		12/10/24 17:22	16984-48-8	MO
Sulfate	41.5	mg/L	10.0	5.5	10		12/10/24 17:47	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-DG-3	Lab ID:	60464704005	Collected	d: 11/15/24	11:56	Received: 11/	(16/24 05:34 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 ytical Services			nod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	105 172000 3160 33400 990 5670	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51	12/04/24 16:29 12/04/24 16:29 12/04/24 16:29 12/04/24 16:29 12/04/24 16:29 12/04/24 16:29 12/04/24 16:29	7440-70-2 7439-89-6 7439-95-4 7439-96-5	
Sodium	5810	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:29		
2320B Alkalinity Alkalinity, Total as CaCO3		Method: SM 23 ytical Services mg/L		ity 10.5	1		11/27/24 19:18		
2540C Total Dissolved Solids		Method: SM 25 ytical Services	40C	ity					
Total Dissolved Solids	627	mg/L	13.3	13.3	1		11/20/24 12:09		
300.0 IC Anions 28 Days		Method: EPA 3 ytical Services		ty					
Chloride Fluoride Sulfate	14.7 0.39 85.5	mg/L mg/L mg/L	1.0 0.20 5.0	0.53 0.12 2.8	1 1 5		11/30/24 16:01 11/30/24 16:01 11/30/24 16:14	16887-00-6 16984-48-8 14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-DG-4	Lab ID:	60464704006	Collected	: 11/15/24	13:01	Received: 11/	(16/24 05:34 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 ytical Services	•		iod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	109 168000 50.3 48700 1420 6920	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 5.0	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51 11/18/24 13:51	12/04/24 16:30 12/04/24 16:30 12/04/24 16:30 12/04/24 16:30 12/04/24 16:30 12/04/24 16:30	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity	Pace Anal	ug/L Method: SM 23 ytical Services	- Kansas Cit	,	1	11/18/24 13:51	12/04/24 16:30	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		10.5 y	1		11/27/24 19:25		
Total Dissolved Solids 300.0 IC Anions 28 Days	,	mg/L Method: EPA 3 ytical Services		13.3 y	1		11/20/24 12:09		
Chloride Fluoride Sulfate	13.0 0.38 70.4	mg/L mg/L mg/L	1.0 0.20 5.0	0.53 0.12 2.8	1 1 5		11/30/24 16:39 11/30/24 16:39 11/30/24 16:52	16984-48-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-SCPC-DUP-1	Lab ID:	60464704007	Collecte	d: 11/15/24	08:00	Received: 11/	(16/24 05:34 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	aration Meth	od: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas C	ity					
Boron	100	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:32	7440-42-8	
Calcium	148000	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:32	7440-70-2	M1
Iron	5470	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:32	7439-89-6	
Magnesium	31900	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:32	7439-95-4	
Manganese	466	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:32	7439-96-5	
Potassium	6280	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:32	7440-09-7	
Sodium	5440	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:32	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas C	ity					
Alkalinity, Total as CaCO3	453	mg/L	20.0	10.5	1		11/27/24 19:43		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas C	ity					
Total Dissolved Solids	526	mg/L	10.0	10.0	1		11/20/24 12:09		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Anal	ytical Services	- Kansas C	ity					
Chloride	6.2	mg/L	1.0	0.53	1		11/30/24 17:18	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.12	1		11/30/24 17:18	16984-48-8	
Sulfate	48.6	mg/L	10.0	5.5	10		11/30/24 17:31	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-SCPC-FB-1	Lab ID:	60464704008	Collecte	d: 11/15/24	12:10	Received: 11/	/16/24 05:34 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepa	aration Meth	nod: EP	A 200.7			
	Pace Anal	ytical Services	- Kansas C	ity					
Boron	<6.4	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:36	7440-42-8	
Calcium	35.9J	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:36	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:36	7439-89-6	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:36	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:36	7439-96-5	
Potassium	<69.7	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:36	7440-09-7	
Sodium	<115	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:36	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas C	ity					
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/27/24 19:49		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas C	ity					
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/20/24 12:10		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Anal	ytical Services	- Kansas C	ity					
Chloride	<0.53	mg/L	1.0	0.53	1		11/30/24 17:44	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.12	1		11/30/24 17:44	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/30/24 17:44	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-BMW-1S	Lab ID:	60464699011	Collected	: 11/20/24	09:00	Received: 11/	21/24 07:45 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EPA 2	00.7 Prepar	ation Meth	od: EP/	A 200.7			
	Pace Anal	ytical Services	 Kansas Cit 	У					
Boron	61.9J	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:19	7440-42-8	
Calcium	175000	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:19	7440-70-2	
Iron	121	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:19	7439-89-6	
Magnesium	33700	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:19	7439-95-4	
Manganese	1070	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:19	7439-96-5	
Potassium	450J	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:19	7440-09-7	
Sodium	5690	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:19	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B						
	Pace Anal	ytical Services	 Kansas Cit 	у					
Alkalinity, Total as CaCO3	347	mg/L	20.0	10.5	1		12/02/24 16:57		
2540C Total Dissolved Solids	Analytical	Method: SM 25	540C						
	Pace Anal	ytical Services	- Kansas Cit	у					
Total Dissolved Solids	613	mg/L	13.3	13.3	1		11/27/24 17:56		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas Cit	у					
Chloride	14.2	mg/L	1.0	0.53	1		12/14/24 17:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/24 17:32	16984-48-8	
Sulfate	37.1	mg/L	10.0	5.5	10		12/14/24 17:46	14808-79-8	



Project: AMEREN SCPC

Pace Project No.: 60464704

Sample: S-BMW-3S	Lab ID:	60464699012	Collected	: 11/20/24	11:43	Received: 11/	21/24 07:45 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 ytical Services	•		iod: EP/	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	57.3J 113000 28.9J 19800 268 452J	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	6.4 26.9 9.1 20.1 0.39 69.7	1 1 1 1 1	11/22/24 09:01 11/22/24 09:01 11/22/24 09:01 11/22/24 09:01 11/22/24 09:01 11/22/24 09:01	12/10/24 11:21 12/10/24 11:21 12/10/24 11:21 12/10/24 11:21 12/10/24 11:21 12/10/24 11:21	7440-42-8 7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity		ug/L Method: SM 23 ytical Services		115 y	1	11/22/24 09:01	12/10/24 11:21	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids	,	mg/L Method: SM 25 ytical Services		10.5 y	1		12/02/24 17:03		
Total Dissolved Solids 300.0 IC Anions 28 Days	,	mg/L Method: EPA 3 ytical Services		10.0 y	1		11/27/24 17:57		
Chloride Fluoride Sulfate	13.1 <0.12 17.1	mg/L mg/L mg/L	1.0 0.20 1.0	0.53 0.12 0.55	1 1 1		12/14/24 18:00 12/14/24 18:00 12/14/24 18:00	16984-48-8	



AMEREN SCPC

Project:

QUALITY CONTROL DATA

Max D RPD Qua
M1
Quelterr
ers

REPORT OF LABORATORY ANALYSIS

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



Project: AMEREN SCPC Pace Project No.: 60464704

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 3630	020		3630021							
	C	0464667005	MS Spiles	MSD Spiles	MC	MOD	MC	MCD			Max	
Parameter	Units	0464667005 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L		10000	10000	11500	11200	106	103	70-130	3	20	
Magnesium	ug/L	36200	10000	10000	45700	45600	95	93	70-130	0	-	
Manganese	ug/L	31.6	1000	1000	1050	1040	102	101	70-130	1	20	
Potassium	ug/L	21000	10000	10000	30600	31100	96	101	70-130	2	20	
Sodium	ug/L	280000	10000	10000	287000	289000	73	90	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.



Project: AMER	EN SCPC											
Pace Project No.: 60464	704											
QC Batch: 9168	306		Analy	sis Metho	d:	EPA 200.7						
QC Batch Method: EPA	200.7		Analy	/sis Descri	ption:	200.7 Metals	s, Total					
			Labo	ratory:		Pace Analyti	cal Servi	ces - Kansas	s City			
Associated Lab Samples:	604647040	02, 6046470400	3, 6046470	4004, 604	64704005,	6046470400	6, 60464	1704007, 604	464704008	3		
METHOD BLANK: 36301	85			Matrix: W	/ater							
Associated Lab Samples:	604647040	02, 6046470400	3, 6046470	4004, 604	64704005,	6046470400	6, 60464	704007, 604	464704008	3		
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	MDL		Analyzed	Qı	ualifiers		
Boron		ug/L		<6.4	10	0	6.4 1	12/04/24 16:	03			
Calcium		ug/L		<26.9	20	0	26.9 1	12/04/24 16:	03			
Iron		ug/L		<9.1	50.	0	9.1 1	12/04/24 16:	03			
Magnesium		ug/L		<20.1	50.	0	20.1 1	12/04/24 16:	03			
Manganese		ug/L		<0.39	5.			12/04/24 16:				
Potassium		ug/L		<69.7	50			12/04/24 16:				
Sodium		ug/L		<115	50	0	115 1	12/04/24 16:	03			
LABORATORY CONTROL	SAMPLE:	3630186										
			Spike	LC	s	LCS	% F	Rec				
Parameter		Units	Conc.	Res	sult	% Rec	Lin	nits (Qualifiers			
Boron		ug/L	100	0	932	93		85-115				
Calcium		ug/L	1000	0	10100	101		85-115				
Iron		ug/L	1000	0	10000	100)	85-115				
Magnesium		ug/L	1000		9880	99		85-115				
Manganese		ug/L	100		1030	103		85-115				
Potassium		ug/L	1000		9750	98		85-115				
Sodium		ug/L	1000	0	10300	103		85-115				
MATRIX SPIKE & MATRIX	SPIKE DUPL	_ICATE: 3630	187		3630188	}						
			MS	MSD								
		60464704004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	103	1000	1000	1060	1040	96	<u> </u>	70-130	2	20	
Calcium	ug/L	141000	10000	10000	150000	149000	97	7 79	70-130	1	20	
Iron	ug/L	1160	10000	10000	11500	11400	104		70-130	1	20	
Magnesium	ug/L	31400	10000	10000	40800	40400	94		70-130	1	20	
Manganese	ug/L	588	1000	1000	1610	1590	102		70-130		20	
Potassium	ug/L	6370	10000	10000	16400	16100	100		70-130			
Sodium	ug/L	4930	10000	10000	15100	14900	102	2 100	70-130	1	20	

MATRIX SPIKE SAMPLE:	3630189						
		60464704007	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Boron	ug/L	100	1000	1060	96	70-130	
Calcium	ug/L	148000	10000	154000	60	70-130 I	v11

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

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



Project: AMEREN SCPC Pace Project No.: 60464704

MATRIX SPIKE SAMPLE:	3630189						
		60464704007	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	5470	10000	15900	105	70-130	
Magnesium	ug/L	31900	10000	40600	86	70-130	
Manganese	ug/L	466	1000	1490	102	70-130	
Potassium	ug/L	6280	10000	16200	99	70-130	
Sodium	ug/L	5440	10000	15600	102	70-130	

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.



QC Batch: 91737	71		Analy	sis Metho	d: E	EPA 200.7						
QC Batch Method: EPA 2	200.7		Analy	/sis Descri	ption: 2	200.7 Metal	s, Total					
			Labo	ratory:	F	Pace Analyt	ical Servi	ces - Kansa	s City			
Associated Lab Samples:	604646990	11, 6046469901	2									
METHOD BLANK: 363281	6			Matrix: W	ater							
Associated Lab Samples:	604646990	11, 6046469901	2									
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	MDI	_	Analyzed	Qu	alifiers		
Boron		ug/L		<6.4	100	 D	6.4	12/10/24 11:	09			
Calcium		ug/L		<26.9	200	C	26.9 ⁻	12/10/24 11:	09			
Iron		ug/L		<9.1	50.0	0	9.1 [·]	12/10/24 11:	09			
Magnesium		ug/L		<20.1	50.0			12/10/24 11:				
Manganese		ug/L		<0.39	5.0			12/10/24 11:				
Potassium		ug/L		<69.7	500			12/10/24 11:				
Sodium		ug/L		<115	500)	115 ⁻	12/10/24 11:	09			
LABORATORY CONTROL S		3632817										
		3032017	Spike	LC	S	LCS	% F	Rec				
Parameter		Units	Spike Conc.	LC Res		LCS % Rec		Rec nits (Qualifiers			
Parameter			•	Res			Lin		Qualifiers	_		
Parameter Boron		Units	Conc.	Res 00	sult	% Rec	Lin 7	nits (Qualifiers	_		
Parameter Boron Calcium		Units ug/L	Conc. 100	00 00	972	% Rec 97	Lin 7 3	nits (85-115	Qualifiers	_		
Parameter Boron Calcium Iron		Units ug/L ug/L	Conc. 100 1000	Res 00 00 00	sult 972 10300	% Rec 97 103	Lin 7 3 2	nits (85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese		Units ug/L ug/L ug/L ug/L ug/L	Conc. 100 1000 1000 1000 1000	Res 00 00 00 00 00	972 10300 10200 10200 10200 1070	% Rec 97 103 102 102 107	Lin 7 3 2 2 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese Potassium		Units ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 100 1000 1000 1000 1000 1000	Res 00 00 00 00 00 00 00	972 10300 10200 10200 1070 10000	% Rec 97 103 102 102 107 100	Lin 7 3 2 2 7 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese		Units ug/L ug/L ug/L ug/L ug/L	Conc. 100 1000 1000 1000 1000	Res 00 00 00 00 00 00 00	972 10300 10200 10200 10200 1070	% Rec 97 103 102 102 107	Lin 7 3 2 2 7 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium		Units ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 100 1000 1000 1000 1000 1000 1000	Res 00 00 00 00 00 00 00	972 10300 10200 10200 1070 10000 10300	% Rec 97 103 102 102 107 100 103	Lin 7 3 2 2 7 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese Potassium		Units ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 100 1000 1000 1000 1000 1000 1000	Res 00 00 00 00 00 00 00	972 10300 10200 10200 1070 10000	% Rec 97 103 102 102 107 100 103	Lin 7 3 2 2 7 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers	_		
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium		Units ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 100 100 1000 1000 1000 1000 1000 818	Res 00 00 00 00 00 00	972 10300 10200 10200 1070 10000 10300	% Rec 97 103 102 102 107 100 103	Lin 7 3 2 2 7 7	nits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	Qualifiers % Rec	_	Max	
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium		Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 100 100 1000 1000 1000 1000 1000 818 MS	Res 00 00 00 00 00 00 00 00 MSD	sult 972 10300 10200 10200 1070 10000 10300 3632819	% Rec 97 103 102 102 107 100 103	Lin 7 3 2 2 7 0 3	nits (85-115 85-115 85-115 85-115 85-115 85-115 85-115		RPD	Max RPD	Qua
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S Parameter	SPIKE DUPL	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019	Conc. 100 1000 1000 1000 1000 1000 818 MS Spike	Res 00 00 00 00 00 00 00 00 00 00 00 00 00	sult 972 10300 10200 10200 1070 10000 10300 3632819 MS	% Rec 97 103 102 102 107 100 103 103	Lin 2 2 7 0 3 MS	MSD % Rec	% Rec Limits	 RPD0		Qua
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S Parameter Boron	SPIKE DUPL	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019 Result	Conc. 100 100 100 100 100 100 100 818 MS Spike Conc.	Res 00 00 00 00 00 00 00 00 00 00 00 00 00	sult 972 10300 10200 10200 1070 10000 10300 3632819 MS Result	% Rec 97 103 102 102 107 100 103 100 103	Lin Lin Lin MS % Rec	mits 0 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 95-115 85-115 95-115	% Rec Limits 70-130		RPD 20	
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S Parameter Boron Calcium	SPIKE DUPL	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019 Result 56.8J	Conc. 100 1000 1000 1000 1000 1000 818 MS Spike Conc. 1000	Res 00 00 00 00 00 00 00 00 00 00 00 00 00	sult 972 10300 10200 10200 1070 10000 10300 3632819 MS Result 1040	% Rec 97 103 102 102 107 100 103 100 103	Lin Lin Lin MS % Rec 98	MSD MSD MSD MSD MSD MSD MSD MSD	% Rec Limits 70-130 70-130	0	RPD 20	
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S Parameter Boron Calcium ron	SPIKE DUPL Units ug/L ug/L	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019 Result 56.8J 115000 6100 27700	Conc. 100 1000 1000 1000 1000 1000 818 MS Spike Conc. 1000 10000 10000 10000 10000 10000	Res 00 00 000 00 000 00 000 00 000 00 000 00 000 00	sult 972 10300 10200 10200 1070 10000 10300 3632819 MS Result 1040 129000	% Rec 97 103 102 102 103 100 103 103 103 103 103 103 103 103	Lin 2 2 7 0 3 MS % Rec 98 148	Mits Mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 99 3 99 3 119 5 106 1 101	% Rec Limits 70-130 70-130 70-130 70-130	0 2 0 3	RPD 20 20 20 20 20	
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S Parameter Boron Calcium Iron Magnesium Manganese	SPIKE DUPL Units ug/L ug/L ug/L ug/L ug/L ug/L	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019 Result 56.8J 115000 6100 27700 395	Conc. 100 1000 1000 1000 1000 1000 818 MS Spike Conc. 1000 100000 100000 100000 10000 100000 10000 10000 1000	Res 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 10000 10000 10000	sult 972 10300 10200 10200 1070 10000 10300 3632819 MS Result 1040 129000 16700 38800 1450	% Rec 97 103 102 102 107 100 103 105 105 105 105 105 105 105 105 105 105	Lin Lin Lin MS % Rec 98 148 106 111 106	Mits Mits 85-115 85-115 99 93 106 106 105 105	% Rec Limits 70-130 70-130 70-130 70-130 70-130	0 2 0 3 1	RPD 20 20 20 20 20 20	
Parameter Boron Calcium Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & MATRIX S	SPIKE DUPL Units ug/L ug/L ug/L ug/L	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L LICATE: 3632 60464699019 Result 56.8J 115000 6100 27700	Conc. 100 1000 1000 1000 1000 1000 818 MS Spike Conc. 1000 10000 10000 10000 10000 10000	Res 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 10000 10000 10000	sult 972 10300 10200 1070 10000 10300 3632819 MS Result 1040 129000 16700 38800	% Rec 97 103 102 102 103 100 103 103 103 103 103 103 103 103	Lin Lin MS % Rec 98 148 106 111	Mits Mits 85-115 85-115 85-115 106 106 101 105 104	% Rec Limits 70-130 70-130 70-130 70-130 70-130 70-130	0 2 0 3	RPD 20 20 20 20 20	

MATRIX SPIKE SAMPLE:	3632820						
		60464699018	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Boron	ug/L	55.2J	1000	1050	99	70-130	
Calcium	ug/L	127000	10000	138000	110	70-130	

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

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



Project: AMEREN SCPC Pace Project No.: 60464704

MATRIX SPIKE SAMPLE:	3632820						
		60464699018	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	8380	10000	19100	107	70-130	
Magnesium	ug/L	30800	10000	41500	106	70-130	
Manganese	ug/L	714	1000	1790	108	70-130	
Potassium	ug/L	4270	10000	14600	103	70-130	
Sodium	ug/L	7240	10000	17700	105	70-130	

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

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



Project: Pace Project No.:	AMEREN SCPC 60464704							
QC Batch:	917909		Analysis M	ethod:	SM 2320B			
QC Batch Method:	SM 2320B		Analysis De	escription: 2	2320B Alkalinit	у		
			Laboratory	: 1	Pace Analytical	I Services - Ka	nsas Ci	ity
Associated Lab San	nples: 60464704	001						
METHOD BLANK:	3634992		Matrix	x: Water				
Associated Lab San	nples: 60464704	001						
_			Blank	Reporting				
Paran		Units	Result	Limit	MDL	Analy	zed	Qualifiers
Alkalinity, Total as C	aCO3	mg/L	<10.5	5 20.	0 1	0.5 11/27/24	15:47	
LABORATORY CON		3634993 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qua	lifiers
Alkalinity, Total as C	aCO3	mg/L	500	480	96	90-110		
SAMPLE DUPLICA	TE: 3634994							
_			60464293013			Max		
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers
Alkalinity, Total as C	aCO3	mg/L	343	3 34	7	1	10	
SAMPLE DUPLICA	TE: 3634995							
D		l leite	60464699001	Dup		Max		Qualifiana
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Alkalinity, Total as C	aCO3	mg/L	337	33	9	1	10	

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.



Project: Pace Project No.:	AMER 60464	EN SCPC 704								
QC Batch:	9179	10		Analysis Me	ethod:	SM 2320B				
QC Batch Method:	SM 2	320B		Analysis De	escription:	2320B Alka	inity			
				Laboratory:		Pace Analy	ical Se	rvices - Kai	nsas C	lity
Associated Lab Sar	nples:	60464704	002, 60464704003,	60464704004,	60464704005	, 604647040	06, 604	64704007,	60464	1704008
METHOD BLANK:	36349	96		Matrix	: Water					
Associated Lab Sar	nples:	60464704	002, 60464704003,	60464704004,	60464704005	, 604647040	06, 604	64704007,	60464	1704008
				Blank	Reporting					
Paran	neter		Units	Result	Limit	MD	L	Analyz	zed	Qualifiers
Alkalinity, Total as C	CaCO3		mg/L	<10.5	20).0	10.5	11/27/24	18:31	
LABORATORY CO	NTROL	SAMPLE:	3634997	Spike	LCS	LCS	c	% Rec		
Paran	neter		Units	Conc.	Result	% Rec		Limits	Qu	alifiers
Alkalinity, Total as C	CaCO3		mg/L	500	483	9	7	90-110		
SAMPLE DUPLICA	TE: 36	634998		00404704004	Dur			Mari		
Paran	neter		Units	60464704004 Result	Dup Result	RPI)	Max RPD		Qualifiers
Alkalinity, Total as C			mg/L	442		43	0		10	
· ····································							-			
SAMPLE DUPLICA	TE: 36	634999								
Paran	notor		Units	60464795002 Result	Dup Result	RPI	`	Max RPD		Qualifiers
Alkalinity, Total as C				424			2	KF D	10	
Airaillily, 10tai as C	acus		mg/L	424	- 4	15	Z		10	
SAMPLE DUPLICA	TE: 36	635000								
Davas	n otor		Linita	60464769007	Dup			Max		Qualifiara
Paran			Units	Result	Result			RPD		Qualifiers
Alkalinity, Total as C	CaCO3		mg/L	351	3	51	0		10	

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.



,	MEREN SCPC								
QC Batch:	918131		Analysis M	ethod:	SM 2320B				
QC Batch Method:	SM 2320B		Analysis De	escription:	2320B Alkalir	nity			
			Laboratory	:	Pace Analytic	cal Serv	vices - Kar	nsas C	ity
Associated Lab Samp	les: 60464699	011, 60464699012							
METHOD BLANK: 3	635814		Matrix	k: Water					
Associated Lab Samp	les: 60464699	011, 60464699012							
_			Blank	Reporting					
Parame	ter	Units	Result	Limit	MDL		Analyz		Qualifiers
Alkalinity, Total as Ca	003	mg/L	<10.5	5 20	.0	10.5	12/02/24	16:17	
LABORATORY CONT	ROL SAMPLE:	3635815							
_			Spike	LCS	LCS		Rec	_	
Parame		Units	Conc.	Result	% Rec	Li	mits	Qua	alifiers
Alkalinity, Total as Ca	003	mg/L	500	487	97		90-110		
SAMPLE DUPLICATE	: 3635816								
_			60464699019	Dup			Max		0 111
Parame		Units	Result	Result	RPD		RPD		Qualifiers
Alkalinity, Total as Ca	003	mg/L	306	30 30)6	0		10	
SAMPLE DUPLICATE	: 3635817								
_			60465156001	Dup			Max		
Parame	ter	Units	Result	Result	RPD		RPD		Qualifiers
Alkalinity, Total as Ca	003	mg/L	329	34	7	5		10	

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.



Project: AMEREN SC	PC						
Pace Project No.: 60464704							
QC Batch: 916954		Analysis Me	ethod:	SM 2540C			
QC Batch Method: SM 2540C		Analysis De	escription: 2	2540C Total D	Dissolved Solids	3	
		Laboratory	: 1	Pace Analytic	al Services - Ka	ansas C	ity
Associated Lab Samples: 60464	1704001						
METHOD BLANK: 3630622		Matrix	: Water				
Associated Lab Samples: 60464	1704001						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analy	/zed	Qualifiers
Total Dissolved Solids	mg/L	<5.0) 5.0	0	5.0 11/19/24	12:16	
LABORATORY CONTROL SAMPL	E: 3630623						
		Spike	LCS	LCS	% Rec	•	
Parameter	Units	Conc	Result	% Rec	Limits		alifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120)	
SAMPLE DUPLICATE: 3630624		60464559003	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solids	mg/L) 14	0	0	10	
SAMPLE DUPLICATE: 3630625							
		60464294022			Max		
Parameter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solids	mg/L	647	66	4	3	10	

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.



Project:	AMEREN SCPC							
Pace Project No.:	60464704							
QC Batch:	917114		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total D	issolved Solids		
			Laboratory:		Pace Analytic	al Services - Ka	nsas Ci	ity
Associated Lab San	nples: 60464704	002, 6046470400	3, 60464704004,	60464704005	5, 60464704006	, 60464704007,	60464	704008
METHOD BLANK:	3631336		Matrix	: Water				
Associated Lab San	nples: 60464704	002, 6046470400	3, 60464704004,	60464704005	i, 60464704006	, 60464704007,	60464	704008
			Blank	Reporting				
Paran	neter	Units	Result	Limit	MDL	Analyz	zed	Qualifiers
Total Dissolved Soli	ds	mg/L	<5.0) :	5.0	5.0 11/20/24	12:07	
LABORATORY COM	NTROL SAMPLE:	3631337						
_			Spike	LCS	LCS	% Rec	_	
Paran	neter	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Soli	ds	mg/L	1000	1010	101	80-120		
SAMPLE DUPLICA	TE: 3631338							
_			60464704004	Dup		Max		0 11
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	522	2 5	29	1	10	
SAMPLE DUPLICA	TE: 3631347							
D		l la ita	60464795002	Dup	000	Max		Qualifiana
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	1870) 18	20	3	10	

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.



Project: AMEREN SC Pace Project No.: 60464704	CPC						
QC Batch: 917911		Analysis Me	ethod:	SM 2540C			
QC Batch Method: SM 2540C		Analysis De	escription:	2540C Total D	Dissolved Solic	S	
		Laboratory:		Pace Analytic	al Services - K	ansas C	City
Associated Lab Samples: 6046	64699011, 60464699012						
METHOD BLANK: 3635001		Matrix	: Water				
Associated Lab Samples: 6046	64699011, 60464699012						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Ana	yzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5	.0	5.0 11/27/2	4 17:56	
LABORATORY CONTROL SAMP	PLE: 3635002						
-		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits		alifiers
Total Dissolved Solids	mg/L	1000	992	99	80-12	0	
SAMPLE DUPLICATE: 3635003	3						
		60464699019	Dup		Ma	(
Parameter	Units	Result	Result	RPD	RPI)	Qualifiers
Total Dissolved Solids	mg/L	494	- 49	99	1	10	
SAMPLE DUPLICATE: 3635004	4						
Demonster	11-20-	60465156001	Dup	000	Ma		Qualifiant
Parameter	Units	Result	Result	RPD	RPI		Qualifiers
Total Dissolved Solids	mg/L	460	45	52	2	10	

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.



Project:	AMEREN SCPC							
Pace Project No.:	60464704							
QC Batch:	917888		Analysis Me	thod:	EPA 300.0			
QC Batch Method:	EPA 300.0		Analysis Des	scription:	300.0 IC Anions			
			Laboratory:		Pace Analytical	Services - Kans	sas City	
Associated Lab Sam	ples: 60464704	4001, 6046470400	2, 60464704003, 6	60464704005,	, 60464704006, (60464704007, 6	60464704008	
METHOD BLANK:	3634901		Matrix:	Water				
Associated Lab Sam	ples: 60464704	4001, 6046470400	2, 60464704003, 6	60464704005,	, 60464704006, (60464704007, 6	60464704008	
			Blank	Reporting				
Param	eter	Units	Result	Limit	MDL	Analyze	ed Qualifier	S
Chloride		mg/L	<0.53	1	.0 0.	53 11/30/24 1	0:23	
Fluoride		mg/L	<0.12	0.2	20 0.	12 11/30/24 1	0:23	
Sulfate		mg/L	<0.55	1	.0 0.	55 11/30/24 1	0:23	
		3634902						
LABORATORY CON	TROL SAMPLE:	3634902	Spike	LCS	LCS	% Rec		
LABORATORY CON		3634902 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Param			•				Qualifiers	
LABORATORY CON Param Chloride Fluoride		Units	Conc.	Result	% Rec	Limits	Qualifiers	
Param Chloride Fluoride		Units mg/L		Result	% Rec	Limits	Qualifiers	
Param Chloride Fluoride Sulfate	eter	Units mg/L mg/L mg/L	Conc5 5 5	4.7 2.4	% Rec 95 97	Limits 90-110 90-110	Qualifiers	
Param Chloride Fluoride Sulfate	eter	Units mg/L mg/L	Conc5 5 5	Result 4.7 2.4 5.3	% Rec 95 97	Limits 90-110 90-110	Qualifiers % Rec	
Param Chloride Fluoride Sulfate	eter IPLE:	Units mg/L mg/L mg/L	Conc. 5 2.5 5	Result 4.7 2.4 5.3	% Rec 95 97 106	Limits 90-110 90-110 90-110		Qualifiers
Param Chloride Fluoride Sulfate MATRIX SPIKE SAM Param	eter IPLE:	Units mg/L mg/L mg/L 3634908	Conc. 5 2.5 5 60464704008	Result 4.7 2.4 5.3 Spike Conc.	% Rec 95 97 106 MS Result	Limits 90-110 90-110 90-110 MS	% Rec Limits	Qualifiers
Param Chloride Fluoride Sulfate MATRIX SPIKE SAM	eter IPLE:	Units mg/L mg/L mg/L 3634908 Units	Conc. 5 2.5 5 60464704008 Result	Result 4.7 2.4 5.3 Spike Conc. 53 5 5 5 5	% Rec 95 97 106 MS Result 5.3	Limits 90-110 90-110 90-110 90-110 MS % Rec	% Rec Limits 7 80-120	Qualifiers

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.



Project: AM	IEREN SCPC											
Pace Project No.: 604	464704											
QC Batch: 9	19032		Anal	ysis Metho	d: E	PA 300.0						
QC Batch Method: E	PA 300.0			, ysis Descri		00.0 IC Anio	ons					
				pratory:				es - Kansas	s Citv			
Associated Lab Sample	s: 604647040	004	2000	, and y					, end			
METHOD BLANK: 36	39774			Matrix: W	/ater							
Associated Lab Sample	s: 604647040	004										
			Bla	nk	Reporting							
Paramete	r	Units	Res	sult	Limit	MDL		Analyzed	Qı	ualifiers		
Chloride		mg/L		<0.53	1.0)	0.53 1	2/10/24 16:	56			
Fluoride		mg/L		<0.12	0.20)	0.12 1	2/10/24 16:	56			
Sulfate		mg/L		<0.55	1.0)	0.55 1	2/10/24 16:	56			
LABORATORY CONTR	OL SAMPLE:	3639775	Spike	LC	2	LCS	% F					
Paramete	r	Units	Conc.			% Rec	Lim		Qualifiers			
Chloride		mg/L		5	4.8	96		90-110				
Fluoride		mg/L	2	5	2.5	100		90-110				
Sulfate		mg/L		5	5.1	101		90-110				
MATRIX SPIKE & MAT		LICATE: 3639	788		3639789							
		LICATE. 5055	MS	MSD	5053703							
		60464704004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	4.5	5	5	9.5	9.7	100	104	80-120	2	15	
Fluoride	mg/L	0.51	2.5	2.5	3.5	3.6	119		80-120	3		MO
Sulfate	mg/L	41.5	50	50	92.5	93.4	102	104	80-120	1	15	
SAMPLE DUPLICATE:	3639790											
			604647	04004	Dup			Max				
Paramete	r	Units	Res	sult	Result	RPD		RPD	Qualif	iers		
Chloride		mg/L		4.5	4.5	5	1	15	5			
Fluoride		mg/L		0.51	0.51		0	15				
Sulfate		mg/L		41.5	42.0)	1	15	5			

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

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



QC Batch: 91964	.1		Analy	sis Methoo	d: E	PA 300.0						
QC Batch Method: EPA 3				/sis Descrip		00.0 IC Ani	ons					
	0010			ratory:		ace Analyti		es - Kansa	s Citv			
Associated Lab Samples:	604646990	11, 6046469901		,		, , .			,			
METHOD BLANK: 364261	5			Matrix: Wa	ater							
Associated Lab Samples:	604646990	11, 6046469901	2									
			Blar		Reporting				•			
Parameter		Units	Res		Limit	MDL		Analyzed		ualifiers		
Chloride		mg/L		<0.53	1.0			2/14/24 04				
Fluoride		mg/L		<0.12	0.20			2/14/24 04				
Sulfate		mg/L		<0.55	1.0		0.55 1	2/14/24 04	:07			
LABORATORY CONTROL S	AMPLE:	3642616										
Parameter		Units	Spike Conc.	LC Res		LCS % Rec	% R Lim		Qualifiers			
Chloride					4.7	93 93		90-110	Quaimers	_		
Fluoride		mg/L	2.	5	4.7 2.3	93 92		90-110 90-110 CL				
Sulfate		mg/L mg/L		5 5	2.3 5.2	92 104		90-110 CL 90-110				
				-	0.2			00 110				
MATRIX SPIKE & MATRIX S					3642618							
MATRIX SPIKE & MATRIX S	PIKE DUPL	ICATE: 3642	617 MS	MSD	3642618							
MATRIX SPIKE & MATRIX S Parameter	SPIKE DUPL Units		617			MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Parameter		ICATE: 3642	617 MS Spike	MSD Spike	3642618 MS		MS	MSD % Rec	Limits	RPD 11		Qual
MATRIX SPIKE & MATRIX S Parameter Chloride Fluoride	Units	ICATE: 36420 60464769007 	617 MS Spike Conc.	MSD Spike Conc.	3642618 MS Result	Result	MS % Rec	MSD % Rec	Limits 80-120		RPD 15	CL,M1
Parameter Chloride Fluoride	Units mg/L	LICATE: 36420 60464769007 Result 5.6	617 MS Spike Conc. 5	MSD Spike Conc. 5	3642618 MS Result 10.9	Result 9.8	MS % Rec 107	MSD % Rec 85 126	Limits 80-120 80-120	11	RPD 15 15	
Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12	617 MS Spike Conc. 5 2.5	MSD Spike Conc. 5 2.5	3642618 MS Result 10.9 3.8	Result 9.8 3.1	MS % Rec 107 151	MSD % Rec 85 126	Limits 80-120 80-120	11 18	RPD 15 15	CL,M1 R1
Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 2.5 50 769012	3642618 MS Result 10.9 3.8 92.1 Spike	Result 9.8 3.1	MS % Rec 107 151 117	MSD % Rec 85 126 133 MS	Limits 80-120 80-120 80-120 % Rec	11 18 8	RPD 15 15 15	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 5 2.5 50	3642618 MS Result 10.9 3.8 92.1	Result 9.8 3.1 100	MS % Rec 107 151 117	MSD % Rec 85 126 133	Limits 80-120 80-120 80-120	11 18 8	RPD 15 15	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE:	Units mg/L mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 5 2.5 50 769012 sult 12.6	3642618 MS Result 10.9 3.8 92.1 Spike	Result 9.8 3.1 100 MS Result	MS % Rec 107 151 117	MSD % Rec 85 126 133 MS	Limits 80-120 80-120 80-120 % Rec Limits	11 18 8	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter Chloride Fluoride	Units mg/L mg/L mg/L	LICATE: 36424 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L mg/L	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 5 2.5 50 769012 sult 12.6 <0.12	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5 2.5	Result 9.8 3.1 100 MS Result	MS % Rec 107 151 117 6.1 3.0	MSD % Rec 85 126 133 MS 6 Rec 72 120	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80	11 18 8 -120 M -120	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter	Units mg/L mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 5 2.5 50 769012 sult 12.6	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5	Result 9.8 3.1 100 MS Result	MS % Rec 107 151 117 	MSD % Rec 85 126 133 MS 6 Rec 72	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80	11 18 8	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter Chloride Fluoride	Units mg/L mg/L	LICATE: 36424 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L mg/L	617 MS Spike Conc. 5 2.5 50 60464	MSD Spike Conc. 5 2.5 50 769012 sult 12.6 <0.12	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5 2.5	Result 9.8 3.1 100 MS Result	MS % Rec 107 151 117 6.1 3.0	MSD % Rec 85 126 133 MS 6 Rec 72 120 105	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80	11 18 8 -120 M -120	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: 364	Units mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L mg/L mg/L	617 MS Spike Conc. 5 2.5 50 60464 Re 6046476	MSD Spike Conc. 5 2.5 50 769012 sult 12.6 <0.12 19.7	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5 2.5 50 Dup	Result 9.8 9.1 100 MS Result 1 7	MS % Rec 107 151 117 6.1 3.0 2.0	MSD % Rec 85 126 133 MS 6 Rec 72 120 105 Max	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80 80	-120 M -120 -120	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: 364 Parameter	Units mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L mg/L mg/L mg/L	617 MS Spike Conc. 5 2.5 50 60464 Re	MSD Spike Conc. 5 2.5 50 769012 sult 12.6 <0.12 19.7 69007 ult	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5 2.5 50 Dup Result	Result 9.8 3.1 100 MS Result 1 7 RepD	MS % Rec 107 151 117 6.1 3.0 2.0	MSD % Rec 85 126 133 MS 6 Rec 72 120 105 Max RPD	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80 80	-120 M -120 -120	RPD 15 15 15 0	CL,M1 R1 M1
Parameter Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter Chloride Fluoride Sulfate SAMPLE DUPLICATE: 364	Units mg/L mg/L	LICATE: 36420 60464769007 Result 5.6 <0.12 33.6 3642620 Units mg/L mg/L mg/L	617 MS Spike Conc. 5 2.5 50 60464 Re 6046476	MSD Spike Conc. 5 2.5 50 769012 sult 12.6 <0.12 19.7	3642618 MS Result 10.9 3.8 92.1 Spike Conc. 5 2.5 50 Dup	Result 9.8 3.1 100 MS Result 1 7 Reput	MS % Rec 107 151 117 6.1 3.0 2.0	MSD % Rec 85 126 133 MS 6 Rec 72 120 105 Max RPD 1	Limits 80-120 80-120 80-120 % Rec Limits 80 80 80 80	-120 M -120 -120	RPD 15 15 15 0	CL,M1 R1 M1

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

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



QUALIFIERS

Project: AMEREN SCPC

Pace Project No.: 60464704

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	AMEREN SCPC
Pace Project No .:	60464704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464704001	S-UG-2	EPA 200.7	916731	EPA 200.7	916791
60464704002	S-UG-1A	EPA 200.7	916806	EPA 200.7	916863
60464704003	S-DG-1	EPA 200.7	916806	EPA 200.7	916863
60464704004	S-DG-2	EPA 200.7	916806	EPA 200.7	916863
60464704005	S-DG-3	EPA 200.7	916806	EPA 200.7	916863
60464704006	S-DG-4	EPA 200.7	916806	EPA 200.7	916863
60464704007	S-SCPC-DUP-1	EPA 200.7	916806	EPA 200.7	916863
0464704008	S-SCPC-FB-1	EPA 200.7	916806	EPA 200.7	916863
0464699011	S-BMW-1S	EPA 200.7	917371	EPA 200.7	917460
0464699012	S-BMW-3S	EPA 200.7	917371	EPA 200.7	917460
60464704001	S-UG-2	SM 2320B	917909		
60464704002	S-UG-1A	SM 2320B	917910		
60464704003	S-DG-1	SM 2320B	917910		
60464704004	S-DG-2	SM 2320B	917910		
60464704005	S-DG-3	SM 2320B	917910		
60464704006	S-DG-4	SM 2320B	917910		
60464704007	S-SCPC-DUP-1	SM 2320B	917910		
0464704008	S-SCPC-FB-1	SM 2320B	917910		
60464699011	S-BMW-1S	SM 2320B	918131		
0464699012	S-BMW-3S	SM 2320B	918131		
60464704001	S-UG-2	SM 2540C	916954		
60464704002	S-UG-1A	SM 2540C	917114		
60464704003	S-DG-1	SM 2540C	917114		
60464704004	S-DG-2	SM 2540C	917114		
60464704005	S-DG-3	SM 2540C	917114		
60464704006	S-DG-4	SM 2540C	917114		
60464704007	S-SCPC-DUP-1	SM 2540C	917114		
60464704008	S-SCPC-FB-1	SM 2540C	917114		
60464699011	S-BMW-1S	SM 2540C	917911		
60464699012	S-BMW-3S	SM 2540C	917911		
60464704001	S-UG-2	EPA 300.0	917888		
60464704002	S-UG-1A	EPA 300.0	917888		
60464704003	S-DG-1	EPA 300.0	917888		
60464704004	S-DG-2	EPA 300.0	919032		
60464704005	S-DG-3	EPA 300.0	917888		
60464704006	S-DG-4	EPA 300.0	917888		
60464704007	S-SCPC-DUP-1	EPA 300.0	917888		
60464704008	S-SCPC-FB-1	EPA 300.0	917888		
60464699011	S-BMW-1S	EPA 300.0	919641		
60464699012	S-BMW-3S	EPA 300.0	919641		

Pace	DC#_Title: EN\	/-FRM-L	ENE-0009	_Sampl	e Con		ŧ:60	464704
ANALYTICAL SERVICES	Revision: 2	Effec	tive Date: 0	1/12/202	2 Ise	sued By: Ler	пеха	
Client Name: Ko	cksmith Ge	eveng	2					
Courier: FedEx D UPS			EX 🗆 EC		Pace 🗆	Xroads 6	Client 🗆	Other 🗆
Tracking #:		Pace	Shipping La	ibel Used?	Yes [Not		
Custody Seal on Cooler/Box	Present: Yes	No 🗆	Seals intac	t: Yes 🖓	No 🗆			
•		ole Bags 🗆		oam □	Non	e 🗆 Ot	her 🗋	
Thermometer Used:	298	Type of		llue None			Date and	l initials of person
Cooler Temperature (°C): A	s-read <u>/·/</u> C	orr. Facto	r -0·1	Correcte	d _/`	0		ig contents:
Temperature should be above freez	zing to 6°C	_	1	1			pr.	11/15/24
Chain of Custody present:			Yes No	□n/A	_			
Chain of Custody relinquished:		/		□n/A				
Samples arrived within holding	time:	/		□n/a	_			
Short Hold Time analyses (<7	2hr):			□n/A				
Rush Turn Around Time requ				⊡n/A				
Sufficient volume:								
Correct containers used:		1	Yes DNo					
Pace containers used:				□n/a				
Containers intact:				□n/A				
Inpreserved 5035A / TX1005/1	006 soils frozen in 48	Bhrs?	□Yes □No					
Filtered volume received for dis			□Yes □No					
Sample labels match COC: Date		S		□n/A				
Samples contain multiple phase	,	IT						
Containers requiring pH preserv				□n/a L			ies, lot #'s d	of preservative and
HNO ₃ , H ₂ SO ₄ , HCl<2, NaOH>9 Sul	winds and a summer and		6.000	d	ate/time	added.		
Exceptions: VOA, Micro, O&G, KS Cyanide water sample checks:	TPH, OK-DRO)	LOT#:	0011					
ead acetate strip turns dark? (F	• •		□Yes □No					
otassium iodide test strip turns	blue/purple? (Preser	rve)	□Yes □No					
rip Blank present:			□Yes □No					
leadspace in VOA vials (>6mm	n):		□Yes □No	ZINIA				
amples from USDA Regulated	Area: State:		□Yes □No					
dditional labels attached to 503	35A / TX1005 vials in	the field?	□Yes □No					
lient Notification/ Resolution		py COC to (/ N	Field	Data Required	?Y/	N
Person Contacted:		Date/Tin	ne:		_			
Comments/ Resolution.				_				
Project Manager Review:		_		Date:				

9608 Loiret Blvd, Lerrexa, KS 66219	56219	CHAI	CHAIN-OF-CUSTODY	TODY Analyti	Analytical Request Document L DOCUMENT - Complete all relevant fields	Document ant fields			LAD USE UNLT- Allix WORKORENLOGIN LABEI HERE		υ
Company Name: Rocksmith Geoeng:neering, LLC. Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	ç, LLC d, Maryland Heights, I		Contact/Report To: Phone #: E-Mail: Cc E-Mail:	Mark Haddock 314-974-6578 mark haddock@rocksmithgeo.com	ksmithgeo.com				Scan QR Code for instructions	ructions	
÷.								Specify Container	itainer Size **	*-Container Size:	* Container Size: (1) 1L, (2) 500mL, (3) 250mL, (2 356mL, (5) 300mL, (2) 600mL, (2) 250mL, (2)
AMEKEN SCPC		Invoice To: Invoice F-N	Invoice To: Invoice F-Mailt	Mark Haddock mark haddock@rockemithmoo.com	licent that a com		5			TerraCore, (9) 90mL, (10) 40mL via	n, 19/ 4000 May, (7) citcure, (8) 0mL, (10) Other
Site Coliection Info/Facility iD (as applicable):		Purcha	Purchase Order # (if					Identity Container Preservative	Preservative Type***	H2SO4, (4) HCI, (5) NaO	 Preservative Types: (2) None, (2) HND3, (3) H2SO4, (4) HCl, (5) NaOH. (6) Zh Acetate, (7)
		applicable): Quote #:	sble): #:					Anaiysis	Anaiysis Requested	NaHSO4, (8) Sod MeCH, (11) Other	NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other
ed: [] AK [] PT []	JMT []CT []ET	County	County / State origin of sample(s)		Missouri					Proj Mgr: Jamîe Church	
	Regulatory Program (DW, RCRA, etc.) as applicable:	, RCRA, etc.) as al	pplicable:	Reportable [] Yes	[] No		(2.00	_			t ID:
[] Level H [] Level H [] Level IV	Ru: [] Same Day []1D	Rush (Pre-approval required): j1Day []2Day []3Day []Other	al required):] 3 Day [] Oth		DW PWSID # or WW Permit # as applicable	nit # as applicable:	yti S) alate			Tab Da B B C C C C C C C C C C C C C C C C C	bi opnisn
[] EQUIS	Date Results				ield Fiitered (if applicable):] Yes [] No	nileXIV			Profile / Template	
1 Other Nation Eddors (Insert In Matrix box Selfow): Drinking Water (DW), Ground Water (GW), Waster (WW), Product (P), B. Varini Eddors (Insert In Matrix box Selfow): Drinking Water (DW), Ground Water (GW), Waster (WW), Product (P).	equested: © Water (DW), Ground V	Vater (GWI), Wast	e Water (WW).		(SS), Oil (OL), Wripe (W	nalysis: Soil/Solid (SS), Oil (OL), Wrpe (WP), Tasue (FS), Bloassay	T, als) 4\20T	_		15856 Prelog / Bo	0
	ornage lock camic (cv): c	Comp /	Composite Start		Collected or Composite End	# Res Chlorine	tos.	_		EZ 3163158	
Customer Sample ID	Matrix *	Grab	Date	me	1	<u>عما</u> نه	CI\E\ 500			Sam	Sample Comment
S-UG-1A	WT			/							
S-DG-1	WT										
S-DG-2	ΜŢ										
S-DG-3	ΨŢ										
S-DG-4	WT										
S-SCPC-DUP-1	WT										
S-SCPC-FB-1	WT										
S-SCPC-MS-1	WT										
S-SCPC-MSD-1	ΨŢ										
5-06-2	TW	6 1		H2-H-11	elel h	2	7 7				
Additional Instructions from Pace": * - App III and Cat/An Metals* - EPA 200.7: Ba, Ca, Fe, Mg, Mn, K, Na	ء Fe, Mg, Mn, K, Na		Coll (Pri	Collected By: (Printed Name)	1 More		Customer Remark	s / Special Condi	Customer Remarks / Special Conditions / Possible Hazards:		
			Sigr	Signature:	KN3		# Coolers:	TL99	D: Correction Factor (°C):	Obs Temp (°C)	Corrected Temp. ("C) On Ice:
May man of Company (Stenaword) 206 (24m	Z	Date/Time:	1/1400	Receiver by 19	and any (Signature)	754		Date/Time/	-12 V DS: 57	Tracking Number	
		Date/Time:		Received by/C	ompany: (Signatur			Date/Time:	3	Delivered by: [] In- Person	Person [] Courier
te <mark>10</mark> uished by/Company: {Signature} 30		Date/Time:		Received by/C	eceived by/Company: (Signature)			Date/Time:		[] FedEX	[] UPS [] Other
teli m uished by/Company: (Signature)		Date/Time:		Received by/C	eceived by/Company: (Signature)			Date/Time			-

Class Class Class Class Class Class <th>DW</th> <th>tate WP</th> <th></th> <th>lastic NAL</th> <th>SL</th> <th>- field filtered WT</th> <th></th> <th>500mL NaOH, Zn Acetate Matrix</th> <th>500mL unpreserved plastic</th> <th>500mL H2SO4 plastic</th> <th>5</th> <th>< -</th> <th></th> <th></th> <th>1L unpreserved plastic AF Air Filter</th> <th>1L H2SO4 plastic ZPLC Ziploc Bag</th> <th>1L HNO3 plastic SP51 120mL Coliform Na Thiosultate</th> <th></th> <th>(µеι ЪГС ЪГС БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ </th> <th></th> <th>Notes</th> <th></th>	DW	tate WP		lastic NAL	SL	- field filtered WT		500mL NaOH, Zn Acetate Matrix	500mL unpreserved plastic	500mL H2SO4 plastic	5	< -			1L unpreserved plastic AF Air Filter	1L H2SO4 plastic ZPLC Ziploc Bag	1L HNO3 plastic SP51 120mL Coliform Na Thiosultate											(µеι ЪГС ЪГС БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ БЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ СЭЗ 		Notes	
Megen Megen Morenu Medenu																						_					M	NGDU	-		
Sie: DG9Q DG9U DG9B BG1U DG9B DG9U DG9B BG1U DG9B	100mL unpres arriver glass	100mL unpres amber glass	125mL unpres amber glass	250mL unpres amber glass	500mL unpres amber glass	250mL H2SO4 amber glass	500mL H2SO4 amber glass	500mL HNO3 amber glass	1liter unpres amber glass	1L Na Thiosulfate clear/amber glass		11 H2CO4 amber glass	11 HCt ambar alses	100mL unores amber glass	4oz unpreserved amber wide	2oz clear soil jar			Ĩ								A A A A	//@2N //@4N //@32 //@3N //@3N			
Site: DG9Q DG9Q DG9U DG9U DG9U DG9U DG9U DG9U DG9U DG9U	IAGOU	AG5U	AG4U	AG3U	AG2U	AG3S	AG2S	AG2N	AG1U	AG1T	AUIO	AG18	AC1H	AGOU	JGFU	WG2U	WGFU	WGKU	Glass	_							B	ULĐ			
1000 December 2000 December 20			16oz clear soil jar	250mL Unpres Clear glass	250mL HCL Clear glass	1 liter unpres glass	1liter H2SD4 clear glass	40mL unpreserved clear vial	40mL Na Thio. clear vial	40mL HCI clear vial	40mm amber unpreserved	40ml amber untreserved	And Na This amhar vial	40mL H2SO4 amber vial	40mL TSP amber vial	40mL MeOH clear vial	40mL HCI amber voa vial	40mL bisulfate clear vial										0690 0690 0690 H690		Site:	

halpana

Page 35 of 39

DC#_Title: ENV-FRM-LENE-0001 v07_Sample Container Count Effective Date: 7/12/2024

0 • 9

		1		WO#:60464704
	Pace	DC#_Title: ENV-FRN	I-LENE-0009_Sampl	e (60464704
	AWALYTICAL SERVICES	Revision: 2	ffective Date: 01/12/202	22 Issued By: Lenexa
Client Nan	ne: R	ocksmith		
Courier:	FedEx 🗆 UPS	U VIA Clay C		Pace 🗆 Xroads 🗖 Client 🗆 Other 🗆
Tracking #:		Р	ace Shipping Label Used?	? Yes 🖉 No 🗆
Custody Sea	l on Cooler/Box	Present: Yes Z No 🗆	Seals intact: Yes	No 🗆
Packing Mate	erial: Bubbl	e Wrap 🗆 🛛 Bubble Bag	s 🗆 💦 Foam 🗆	None 🔽 Other 🗆
Thermomete	rUsed: 1	78 Туре	of Ice: (Ve) Blue None	Date and initials of person
Cooler Temp	erature (°C):	As-read 2.0 Corr. Fa	ictor <u>70, l</u> Correcte	d 1, 90-9 examining contents:
Temperature sh	ould be above free	ezing to 6°C / 1 D		191 11/16
Chain of Cust	ody present:			· L
Chain of Cust	ody relinquished:		Yes No N/A	
Samples arriv	ed within holding	time:		
Short Hold Ti	me analyses (<	72hr):		
	round Time requ			
Sufficient volu				
Correct contai	ners used:			
Pace containe	rs used:			
Containers int	act:			
Unpreserved §	5035A / TX1005/	1006 soils frozen in 48hrs?	□Yes No □N/A	
Filtered volum	e received for dis	ssolved tests?		
Sample labels	match COC: Da	te / time / ID / analyses		
Samples conta	ain multiple phase	es? Matrix: WT		2
Containers rec	uiring pH preser	vation in compliance?		ist sample IDs, volumes, lot #'s of preservative and the
		ulfide, NaOH>10 Cyanide)	002-22	ate/time added.
)A, Micro, O&G, KS sample checks:	S TPH, OK-DRO) LOT	#: 0072/	
	trip turns dark? (• •	□Yes □No	
Potassium iodi	de test strip turn	s blue/purple? (Preserve)	□Yes □No	
Frip Blank pres	sent:		□Yes □No ØN/A	
leadspace in	VOA vials (>6mi	m):		
Samples from	USDA Regulated	d Area: State:	Yes No N/A	
Additional labe	ls attached to 50	35A / TX1005 vials in the fiel	d? 🗆 Yes 🗖 No 🗆 N/A	
Client Notifica	tion/ Resolution	n: Copy COC	to Client? Y / N	Field Data Required? Y / N
Person Contac		Date	/Time:	
Comments/ Re	solution:			
Project Manage	er Review:		Date:	

Project Manager Review:

Pace * Location Requested (City/State): Pace Analytical Kansas 9608 Loiret Blvd , Lenexa, K5 66219		CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields	USTODY .	IN-OF-CUSTODY Analytical Request Docum Chain-of-custody is a LEGAL DOCUMENT - Complete all relevant fields	Request mplete all rele	Documen'	4		LAB	LAB USE ONLY- Affix Workorder/Login Label Here	rder/Login Label He	sre
Company Name: Rocksmith Geoengineering, LLC Street Adoress 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	sights, MO	Contact/Report To: Phone #: E-Mail: Cc E-Mail:		Mark Haddock 314-974-6578 mark haddock@rocksmithgeo.com	.hgeo.com					6464704 Scan QR Code for instructions	Joy structions	
4 1							1	10	Specify Container Size	tainer Size **	Container Si	Container Size: (1) 1L, (2) SOOmL, (3) 250mL, (4)
Project Name: AMEREN SCPC		Invoíce To:	Mark Haddock	dock							TerraCore, (9) 9	225mL, [5] 100mL, [b] 40mL vial, {r/} EnCore, {8] TerraCore, (9) 90mL, (10) Other
Site Collection (Afo/Savility, ID (ac son live high).		Invoice E-Mail:		mark haddock@rocksmithgeo com	chgeo com			4	identify Container Preservative	^b reservative Type***	*** Preservativ	** Preservative Types: (1) None, (2) HNO3, (3)
are constrian muol-acimy ID (as applicable).		Purchase Order # (IT applicable):	÷				-	_			H2504, (4) HCI NaH504, (8) So	H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10)
		Quote #:					-	-	Analysis	Analysis Requested	MeOH, (11) Other	her
Time Zone Collected: [] AK [] PT [] MT [] CT	[] ET	County / State origin of sample(s):	in of sample(s)	Missouri			1				Proj. Mgr: Jamie Church	
	am (DW, RCRA, e	Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable	[] Yes [No		T		(1:00			:0:
[] level Ii [] Level II [] Level IV		approval required	:	DW PWS	DW PWSID # or WW Pe	Permit # as applicabl	Ju		17) 91		VInO Table #:	opi osu
A PC	[]1Day []2]1Day []2Day []3Day []Other	Other	-				ƙjiui	PIAIA		-	
Date Results Cother Requested:				Tield Filtered (If a Analysis:	(if applicable): [] Yes [] No		Total	1 nAti			Profile / Template: 15856
⁴ Matrix Coder, Insert in Matrix gox below): Drinking Water (DW), Ground Water (GW), Water Water (WW), Product (P) (31, Vacor V), Surface Water (SW):Sediment (SED). Studie (S.). Gaulk (CO), Leachare (11, Biosolid (BS), Orber (CT)	round Weter (GV) & (CK), Leachate (V), Waste Water (WV	M), Product (P) her (OT)	Soil/Solid [55], C	1. (Oi,), Wine (Self/Solid (SS), Off (Ot), Wine (WP), Tissue (TS), Brassey	, Brtassay	S01/I			Prelog / B	Sottle Ord ID:
	Comp /	Composite Start	Start	Collected or Composite End	mposite End	# Res. (Res. Chlorine	vosi	PIII		EZ 316	
Customer Sample ID	Matrix Grab		Time	Date	Time	²²	s Units	CI/L/	ddy		San	Sample Comment
S-UG-1A	WT G		/	11)16/34	1418	Ч		11	/			
S-DG-1	WT G		/	11/15/24	2420	6		11	/			
S-DG-2	WT G			11/15/24	2401	2		11				
S-DG-3	WT R		/	1115/24	1156	a		11	/			
S-DG-4	MT N	\geq		11115/24		~~~		1	/			
S-SCPC-DUP-1	WT G	\langle		11/15/24	1	2		11				
S SCPC-FB-1	NT TW	/		11/15/24	1210	3		11	/			
S-SCPC-MS-1	WT G	/		ul15/24	1042	2		11	/			
S-SCPC-MSD-1	WT G			ILISTR	2401	4		1 1	>			
Additional Instructions from Pace*: * - App III and Cat/An Metals* - EPA 200.7: Ba, Ca, Fe, ME, Mn, K, Na	- g		Collected By: (Printed Name)	John	Rasmu	1 5144	0	ustomer Rem	irks / Special Condi	Customer Remarks / Special Conditions / Possible Hazards;	_	
			Signature.	Anda				# Coalers:	Thermometer I	Correction Factor (°C)	c): Obs. Temp. (°C)	Corrected Tamp. (*C) On Ice:
The residued by/Company: [Signate re	Date/Time	-		C W	(Sienature)				L & L	1.0-1	Fredkine Number	011
Karesmith def	1115	5/24 / 15/0	0	10	/amonale/		1	la.	1-11 -	6 0534		
Beinguahed Sylfompany; (Signature)	Date/Time			Received by/Compan	by/Company: (Signature)			"	Date/Time:	7	Delivered by: [] In] In- Person [] Courier
Rei B uisteed by/Company: (Signative) 20	Date/Time:	21		Received by/Company: (Signature)	y: (Šignature)				D. te/Time.		[] FedEX	[] UPS [] Other
Religuished by/Company: (Signature)	Date/Time:			Received by/Company: (Signature	y: (Signature)				Date/Time:		Page:	of
5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.	gment and accep	otance of the Pace® .	Terms and Cor	ditions found at l	tttps://www	bacelabs com/rei	source-librar	//resource/pa	ditions 'ound at https://www pacelabs com/resource-library/resource/pace-terms-and-conditions	ttions/	ENV-FRM-CORO	ENV-FRM-CORQ-0019 V02 110123 @

40	Offher ZPLC												j,		120mL Coliform Na Thiosultate							Matrix			Non-aqueous Liquid			ter	
holpghod	MEDU												Misc.	Swab	Colific	er	Air Cassettes	Terracore Kit	Summa Can			Ma			dueou.		10101 -	Drinking Water	
46	BP3Z													Wipe/Swab	7:plac Pag	Air Filter	Air Ca	Terrac	Sumr				Water	Solid	Non-a	0IL Wine	VVIDE	nrinki	
20	BP3B																												
P	BP3S													_	SP51	AF	0	ъ	5				M	SL	NAL O		VVL N		_
4	BP3F																1						pa		1				
A PPerd	вьзи	-	-	3	1	-	1	1															d filter		<u>.</u>			<u>0</u>	
PR	BP1N															stic	ate	ic.	<u>.</u>	stic	u plast		ic - fiel	<u>.0</u>	d plast	stic	Cetate	d plast ric	stic
-	BP3U												Plastic	Istic	Stic	11 unpreserved plastic	1L NaOH, Zn Acetate	500mL NAOH plastic	500mL HNO3 plastic	500mL H2SO4 plastic	SOUTH LUTPLESELVED PLASTIC	250mL NaOH plastic	250mL HNO3 plastic - field filtered	250mL HNO3 plastic	250mL unpreserved plastic	250mL H2SO4 plastic	250mL NaOH, Zh Acetate	125mL unpreserved plastic 125mL HNO3 plastic	125mL H2SO4 plastic
Notes	BP2U												Pla	1L NAOH plastic	1L HNO3 plastic	Dresen	OH. Zr	- NAO	ONH -	H2S(NaO	HNO	L HNO	nnpre	L H2S(L H2S(
	ULAB	1	1	~	-	-	1	-						1L NA	1L HN		1L Na	500ml	500ml	500ml	Linu c	250ml	250m	250m	250m	250m		125m 125m	125m
	Medu																												
	MGKN													BP1B	BP1N	BP1U	BP1Z	BP2B	BP2N	BP2S		BP3B	BP3F	BP3N	BP3U	BP3S	BP3Z	BP4U BP4N	BP4S
	1.0FU																			ass									
	NGÐA															vide	ss			1L Na Thiosulfate clear/amber glass		2 2	SS	ss	SS	SS	ss		
	N€4U															amber wide	100mL unores amber glass	0	lass	clear/ar	Der glass	500mL HNU3 amber glass	250mL H2SO4 amber glass	500mL unpres amber glass	250mL unpres amber glass	125mL unpres amber glass	100mL unpres amber glass		
	SEDA													lar	lar		es amt	1L HCI amber glass	1L H2SO4 amber glass	ulfate c	ampe	3 amp	04 am	es amt	es amt	es amt	es am		
	vesu													8oz clear soil jar	4oz clear soil jar	407 Unbreserved	- unor	ambe	S04 a	Thios	Tiliter unpres am	UNH 1	L H2S(L unpr	L unpr	r unpr	r unpr		
	UIÐA													8oz cl	4oz cl	407 LT	100ml	1L HC	1L H2	1L Na			250m	500m	250m	125m	100m		
	Hrða																												
	BG1U												Glass	WGKU	WGFU	11251	AGOU	AG1H	AG1S	AG1T	010A	AG2S AG2S	AG3S	AG2U	AG3U	AG4U	AG5U		
313	DG9B												0																
	DG9M																				-	Val			s				
	DG9U													ir vial	oa vial		er vial	er vial	40mL amber unpreserved	_	ar vial	40mL unpreserved clear vial 11iter H2SO4 clear diace	200	glass	250mL Unpres Clear glass				
	N69V													40mL bisulfate clear via	40mL HCI amber voa vial	40mL MeOH Clear Vial 40ml TSP amher vial	40mL H2SO4 amber vial	40mL Na Thio amber vial	nnpre.	40mL HCI clear vial	4UmL Na Inio, clear viai	40mL unpreserved clear 1liter H2SO4 clear class	dlass	250mL HCL Clear glass	es Cle	oil jar			
Site:	DG90													bisulfa	HCI ar	TSP al	H2SQ	Na Thi	amber	HCIC	Na	10SOA	1liter unbres glass	HCL	_ Unpr	16oz clear soil jar			
	DG9H													40mL	40mL	40mL	40mL	40mL	40mL	40mL	40mL	4 umL	1 liter	250m	250mi	16oz (
	H69A											1											1						
						_	_	_	-	-	-		Container Codes	DG9B	DG9H		DG9S	DG9T	DG9U	VG9H	VGU	VG9U BG1A	BG1U	BG3H	BG3U	WGDU	1		

DC#_Tritle: ENV-FRM-LENE-0001 v07_Sample Container Count Effective Date: 7/12/2024

pollog

Pace® Analytical Services, LLC

Page 1 of 1

Qualtrax ID: 30422

W0#:60464704	60454704		125m1, (5) 200m1, (5) 40mL (2) 40mL (2) 570m2, (2) 11m20m2, (2) 11m20m2, (3) 90mL, (30) 01ker		-2505, (3) HOL, (5) HaOK, (6) 24 Acrese: (7) NaHSOS, (6) Sed. Traospitate. (9) Acrestic Acrd. (20)	Requested Meeth, (11) Other	Proj. Mgr.	:0			Profile / Template: 15856	Prelog / South Ord, ID:		Santole Contract											ns / Possible Hazards.	Correction Factor (*C): Obs Temp (*C) Corrected Temp (*C) On Ice:	24 OJ4C Lacting Number:	Celivered by [] in-Person [] Caurier	[] FedEX [] UPS [] Other	Page 1 of 1
M	e g Series Ser	Specify Container Size **	113	identify Container Preservative Type***	112	Analysis Re		,(2 00		Anon	UNIV/	slets SOTA	os/	cne									111	111	Customer Remarks / Special Conditions / Possible Hazards	# Cociers Thatmometer (D:	11/21	Date/Time	Case (Time	Date/Tume
CHAIN-OF-CUSTODY Analytical Request Document Cita r of-Custopy is a LEGAL DOCUMEN: - Complete all relevant fredit	ivlark Haddock 314-974-6578 mark haddock@rocksnithgeo.com		Mark Haddock	mark.haddock@rccksmithgeo.com			imale(s): Missauri	Reportable [Yes] No	DW PWSID # Ct WW Permit # as applicable.		Prese Federed (if applicable); [] Yas [] No Astalysis;	duct (P), Soni/Solid (SS), On (OU), Wipe (WP), Tissue (TS), 5-025529	Collected or Composite End 🙀 Res. Chlorine	Time Date Time Cont. Results Units									11/20/24 0900 2		murss even	Lall -	Of Maderer	Hey wed by Sympany (Signature)	Received by: [Compary (Signature]	Received by/Company {Signature}
CHAIN-OF-CUST	Contact/Report To: NJ Phone #: 31 F-Ma*: nJ Co E-Mail:				Fuichase Order # (if acolicable);	Quate #:	County/ State crigin of sample(s):		Rush (Pre-approval required);	2 Day [] 3 Day [] Other		GWJ, Waste Water (WWJ, Pro	5 / Composite Start	Date				/				/	/	/	Collect	Signaturo:	me:		.ēw	ime:
sted (City/State): S 66715	Rocksmith Geoengineering, LLC 2320 Creve Coeur Mill Road, Waryland Heights, MO 63043						The flor flor	Regulatory Program (DW, ACRA, etc.) as applicable:		as i	Uate Results Requested:	sing Water (DW), Ground Weter (i), Studeo (SI), Caule (CK), Leachare	Matrix * Contp /	Grab	WT	WT	WT	WT	WT	WT	ΥΨ	WT	WT G	wt G	a, Fe, Mg. Mn, K, Na		Cate/Terre	Date/Time	Oate/Tone	Date. Time:
raue Iouainon requested (Liny/State). Bace Analytica: Kansas 9605 Lanet Bind , Leneta, KS 66735		1) 1-1	Project Name: AMEREN SCPC	Site (Diserting sets (Geodises 10 (ac and carle))			14 [] XX [] PT [Data Deliveratios.	[] [[] [] [] [] [] [] [] Level IV	EQUS	Cther	* Marris Zodat (Pasett in Marris Bas below): Drinking Water (DW), Graund Weter (GW), Waste Water (WW), Product (P), (2), Vator (V), Surface Water (SWI), Sediment (SED), Bludar (S), Loude (CR), Leachage (H), Bloacide (SS), Christi (CT)	Customer Sample (0	1	S-UG-1A	S-DG-1	S-DG-2	S-DG-3	S-DG-4	S-SCPC-DUP-1	S SCPC-F3-1	S-SCPC-MS-1	Hydritter 5- B.M.W -15	5-BMW-35	Additional instructions from Pace" • App III and Cat/An Metals" - EPA 200.7: 8a, Ca, Fe, Mg, Mn, K, Na		Rece Rods with 14M	Velocquating by/Compary: (Newature)	Rollowshed by/Company: (Signature) 0	Rol <mark>@</mark> uisted by/Company: (Signature)



Memorandum January 22, 2025

То:	Project File Rocksmith Geoengineering, LLC	Project Number: 23009-24
CC:	Mark Haddock, Jeffrey Ingram	
From:	Grant Morey	Email: grant.morey@rocksmithgeo.com
RE:	Data Validation Summary, Sioux Energy Center – So	CPC – Data Package 60464704

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

- When a compound was detected in a 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 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

Project Manager: <u>J. Ingram</u>							
Project Number: 23009-24							
Validation Date: 01/22/2025							
SDG #: <u>60464704</u> I 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions)							
Matrix: 🗌 Air 🔲 Soil/Sed. 🔳 Water 🗌 Waste 🔲							
-4, S-SCPC-DUP-1, S-SCPC-FB-1, S-BMW-1S, S-BMW-3S							

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

Field I	nformation	YES	NO	NA	COMMENTS		
a)	Sampling dates noted?	X			11/14/24-11/20/24		
b)	Sampling team indicated?	×			JDQ, JTR & GTM		
c)	Sample location noted?	X					
d)	Sample depth indicated (Soils)?			x			
e)	Sample type indicated (grab/composite)?	X			Grab		
f)	Field QC noted?	x			See Notes		
g)	Field parameters collected (note types)?	X			pH, Spec Cond, Turb, Temp, DO, ORP		
h)	Field Calibration within control limits?	X					
i) Notations of unacceptable field conditions/performances from field logs or field notes?							
			X				
j)	Does the laboratory narrative indicate deficiencies?			x	No lab narrative.		
	Note Deficiencies:						
	<u></u>						
Chain-	of-Custody (COC)	YES	NO	NA	COMMENTS		
Chain- a)		YES	NO	NA	COMMENTS		
	of-Custody (COC) Was the COC properly completed? Was the COC signed by both field		_	_	COMMENTS		
a)	Was the COC properly completed?		_	_	COMMENTS		
a)	Was the COC properly completed? Was the COC signed by both field	X			COMMENTS		
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	x			COMMENTS		
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel?	x			COMMENTS		
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	X X X					
a) b) c) Genera	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition?	× × × YES					
a) b) c) Genera a)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment?	× × ¥ YES	□ □ ■ NO	□ □ NA	COMMENTS		
a) b) c) Genera a) b)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis?	× × ¥ YES	□ □ NO □		COMMENTS		
a) b) c) Genera a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used?	× × YES ×	□ □ NO		COMMENTS		
a) b) c) Gener a a) b) c) d)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used? Was the correct method used?	× × YES × ×	□ □ ■ ■ ■ ■		COMMENTS		
a) b) c) Genera a) b) c) d) e)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel? Were samples received in good condition? Al (reference QAPP or Method) Were hold times met for sample pretreatment? Were hold times met for sample analysis? Were the correct preservatives used? Was the correct method used? Were appropriate reporting limits achieved?	× × YES × ×	□ □ ■ ■ ■ ■		COMMENTS See Notes		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks		YES	NO	NA	COMMENTS
a)	Were analytes detected in the method blank(s)?		×		
b)	Were analytes detected in the field blank(s)?	×			S-SCPC-FB-1 @ S-DG-3
c)	Were analytes detected in the equipment blank(s)?			x	
d)	Were analytes detected in the trip blank(s)?			X	
Laboratory Control Sample (LCS)		YES	NO	NA	COMMENTS
a)	Was a LCS analyzed once per SDG?	×			
b)	Were the proper analytes included in the LCS?	×			
c)	Was the LCS accuracy criteria met?	x			
Duplica	ates	YES	NO	NA	COMMENTS
a)					
		х			S-SCPC-DUP-1 @ S-DG-1
b)	Were field dup. precision criteria met (note RPD)?	×			
c)	Were lab duplicates analyzed (note original and du	olicate	samples)?	,	
		x			See Notes
d)	Were lab dup. precision criteria met (note RPD)?	x			
Blind S	standards	YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			х	
	analytes included and concentrations)?				
b)	Was the %D within control limits?			х	
Matrix	Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a)	Was MS accuracy criteria met?		×		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			×	
b)	Was MSD accuracy criteria met?		×		See Notes
,	Recovery could not be calculated since sample contained high concentration of analyte?			×	
c)	Were MS/MSD precision criteria met?	X.			

Comments/Notes:

General:	
Chloride and sulfate diluted in several samples, no qualifications necessary.	

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field blank:

S-SCPC-FB-1 @ S-DG-3: calcium (35.9J) and fluoride (0.21). Fluoride result < 10x blank, result qualified as estimate.

Field duplicates:

S-SCPC-DUP-1 @ S-DG-1: All RPD's within control limits.

Lab duplicates:

Max RPD: 15% for chloride, fluoride, and sulfate; 10% for alkalinity and TDS.

MS/MSD:

362944: MS recovery high for calcium. Associated with unrelated sample, no qualification necessary.

3632818/3632819: MS recovery high for calcium, MSD recovery and RPD within control. Associated with unrelated sample, no qualification necessary.

3639788/3639789: MSD recovery high for fluoride, MS recovery and RPD within control. Associated with sample -004, no

qualification necessary.

3642617/3642618: MS/MSD recovery and RPD high for fluoride. MSD recovery high for sulfate, MS recovery and RPD within controls. Associated with unrelated sample, no qualification necessary.

3642620: MS recovery low for chloride. Associated with unrelated sample, no qualification necessary.

3630189: MS recovery low for calcium. Associated with sample -007 result qualified as estimate.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-SCPC-DUP-1	Calcium	148000	J-	MS recovery low
S-DG-3	Fluoride	0.39	J	Detected in field blank, result < 10x blank
\mathbf{X}				
	4 LM			01/22/2025
Signature:	Grant Mon	ey		Date:

Appendix B

Alternative Source Demonstration – November 2023 Sampling Event



REPORT

SCPC – Alternative Source Demonstration

Sioux Energy Center, St. Charles County, Missouri, USA

June 24, 2024 Project Number: 23009-24

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



Table of Contents

1.0	Certification Statement	1
2.0	Introduction	2
3.0	Site Description and Background	2
3.1	Geological and Hydrogeological Setting	2
3.2	Utility Waste Landfill – SCPC	2
3.3	CCR Rule Groundwater Monitoring	3
4.0	Review of the Statistically Significant Increases	4
5.0	Evidence of SSI from Alternative Source	4
5.1	CCR Indicators	5
5.2	Evaluation of the Statistically Significant Boron Exceedance at UG-2	5
5.3	Evaluation of the Statistically Significant Increases of Total Dissolved Solids at DG-4	8
6.0	Demonstration that Statistically Significant Increases were not caused by SCPC Impacts	9
7.0	References	10

TABLES

Table 1: November 2023 Detection Monitoring Results

Table 2: Review of Statistically Significant Increase (Embedded in Text)

Table 3: Types of CCR and Typical Indicator Parameters (Embedded in Text)

Table 4: Summary of Mississippi and Missouri River Elevations (Embedded in Text)

Table 5: Total Dissolved Solids Major Constituent Concentrations Over Time at DG-4 (Embedded in Text)

FIGURES

Figure 1: Sioux Energy Center Groundwater Monitoring Programs and Sample Location Map

Figure 2: Timeseries Plot of Boron Concentrations at UG-2

Figure 3: Calculated Mississippi and Missouri River Elevations at the SEC

Figure 4: Difference in Feet Between Mississippi and Missouri River Elevations at the SEC

Figure 5: Timeseries Plot of TDS Concentrations at DG-4

Figure 6: Average Percentage of Overall Total Dissolved Solids by Constituent at DG-4



1.0 CERTIFICATION STATEMENT

This SCPC – 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 SCPC – Alternative Source Demonstration, 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 §257.94(e)(2).

Rocksmith Geoengineering, LLC.,



Mark Haddock, P.E., R.G. Principal Engineer, Senior Partner



2.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), this SCPC – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for two Statistically Significant Increases (SSIs) identified for Ameren Missouri's (Ameren's) Sioux Energy Center (SEC), Utility Waste Landfill (UWL) SCPC Cell 1. This document satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI 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

Ameren owns and operates the SEC in St. Charles County, Missouri located approximately 12 miles westnorthwest of the confluence of the Mississippi and Missouri Rivers. **Figure 1** depicts the site location and layout, including the location of SCPC. The SEC is approximately 1,025 acres and is located in the floodplain between the Mississippi and Missouri Rivers. The SEC is bounded to the north by wooded areas associated with the Mississippi River; to the south by a railroad; and to the east and west by agricultural fields.

3.1 Geological and Hydrogeological Setting

Hydrogeologically, the SCPC 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 range from approximately 100 to 130 feet in thickness and comprise 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 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 Utility Waste Landfill - SCPC

UWL Cell 1 is referred to by Ameren as the SCPC, or "Gypsum Pond" Cell 1. The SCPC is approximately 37.5 acres in size and is located south of the generating plant on the south side of Highway 94 (Figure 1). The CCR Unit managed CCR from the SEC Wet Flue-Gas Desulfurization System (WFGD), which began operation in 2010. The unit ceased receiving CCR waste on December 14, 2022 and closure has begun on the unit. Closure is anticipated to be completed by the end of 2024. Since that date, the WFGD has been sent to the adjacent SCPD CCR Unit.

The WFGD process occurs after the removal of slag and fly ash. A



crushed limestone (CaCO3) mix is introduced into the boiler flue gas flow. The limestone reacts with sulfur dioxide (SO2) in the flue gas and produces 'synthetic' gypsum (calcium sulfate dihydrate (CaSO4 * 2H2O)). The resultant gypsum material was wet sluiced from the plant across the highway to the SCPC. Once there, the gypsum dewatered by gravity with the sluice conveying recycled water back to the WFGD for reuse. The primary soluble constituents of the gypsum CCR are sulfate, calcium, chloride, and sodium (Gredell and Reitz & Jens, 2014).

The SCPC was constructed with a composite liner system consisting of two feet of compacted clay soil with a hydraulic conductivity of less than 1 X 10⁻⁷ centimeters per second (cm/sec) overlain by a 60-mil high density polyethylene (HDPE) geomembrane liner. Information on the design of the UWL is available in the 2014 Proposed Construction Permit Modification, Construction Permit Number 0918301 (Gredell and Reitz & Jens, 2014).



A groundwater monitoring well network was installed in 2007 and 2008 to permit the UWL construction. This monitoring well network was approved by the Missouri Department of Natural Resources (MDNR) and consists of 16 monitoring wells ringing the current and proposed future extents of the UWL (Figure 1). These monitoring wells are installed in the uppermost portions of the alluvial aquifer, just below the seasonally low elevation for groundwater. Quarterly groundwater samples have been collected in these monitoring wells since June 2008 for the Missouri UWL parameters.

The permit for the SCPC was issued July 30, 2010 (permit #0918301). Nine sampling events were performed prior to July 30, 2010 and represent groundwater quality prior to WFGD placement in the UWL. The results from these pre-disposal monitoring events are used in conjunction with other site information in the ASD presented below.

3.3 CCR Rule Groundwater Monitoring

As required by the CCR Rule, the following were completed prior to the October 17, 2017 deadline: (1) a groundwater monitoring well system was installed and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, (3) a Groundwater Monitoring Plan (GMP) was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record, and (4) eight baseline groundwater sampling events were completed for all Appendix III and Appendix IV parameters of CCR Rule.

The groundwater monitoring system for the SCPC consists of eight monitoring wells screened in the uppermost aquifer (alluvial aquifer) as shown on Figure 1. Six existing monitoring wells (UG-1A, UG-2, DG-1, DG-2, DG-3, and DG-4) were installed by Gredell Engineering Resources, Inc. in December 2007 and June 2008 as a part of the Missouri UWL state monitoring program. The remaining monitoring wells (BMW-1S and BMW-3S) were installed by Golder in 2016 for CCR Rule groundwater monitoring purposes. More information on the design and installation of the monitoring wells is provided in the SCPC GMP (Golder, 2017) and the SCPC 2017 Annual Report (Golder, 2018).

Between May 2016 and June 2017, eight baseline sampling events were completed for the SCPC. After baseline sampling, the first Detection Monitoring event was completed in November of 2017. The following Appendix III constituents were analyzed during Detection Monitoring:

- Boron
- Calcium
- Chloride
- pH
- Sulfate
- Total Dissolved Solids (TDS)
- Fluoride

In January 2018, background results from the eight baseline sampling events were used to calculate statistical upper prediction limits (UPLs). These UPLs were then compared to the Detection Monitoring results from the November 2017 samples and subsequent semi-annual Detection Monitoring sampling events. If results were higher than the calculated UPL, this was considered to be an initial exceedance, and a verification sample was then collected and tested in accordance with the SCPC Statistical Analysis Plan (SAP). In August 2019, the background dataset used to calculate statistical limits was expanded to include the first four Detection Monitoring events, per the SAP. The updated UPLs were then used for the November 2019 and subsequent Detection Monitoring events. The following provides a summary of the Detection Monitoring results to date.

Since November 2017, several ASDs have been prepared for DG-2, DG-3, DG-4, UG-1A, and UG-2. These previous ASDs are available in the Annual Reports for the SCPC and are available on Ameren's publicly available CCR Compliance website (https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports). These ASDs have demonstrated that previous SSIs at the site were not caused by the SCPC, but rather the result of relatively low calculated UPLs that were not representative of the full, natural geochemical variability within the alluvial aquifer or caused by the SCPC being downgradient from the SCPA, which is currently in Corrective Action.



In November 2023, one initial exceedance was identified: boron at UG-2. Verification sampling results confirmed this initial exceedance. Additionally, during updates to the prediction limits completed in March 2024 (Rocksmith, 2024), the UPL for Total Dissolved Solids at DG-4 was lowered below the November 2023 sample result. Because this update occurred after the February 2024 verification sampling event, no verification sample was collected. Therefore, TDS at DG-4 from November 2023 is treated as an SSI for this ASD. Results from this sampling event are provided in **Table 1**.

4.0 REVIEW OF THE STATISTICALLY SIGNIFICANT INCREASES

Monitoring wells UG-2 and DG-4 are screened in the upper portion of the alluvial aquifer, just below the average seasonal low elevation for groundwater. As shown in **Figure 1**, DG-4 is located south of the SCPC while UG-2 is located north of the SCPC. Both wells are south of the generating plant, Highway 94, and the two surface impoundments near the plant (SCPA and SCPB), and north of Dwiggins Road.

Based on Rocksmith's review of the pre-disposal data (discussed in Section 3.2 above), as well as our comparison of the pre-disposal data with the results from the eight CCR-rule baseline events, it was concluded that the groundwater in some areas around the SCPC contained low-level pre-existing impacts from CCR that pre-dated SCPC construction and operation. As a result of these pre-existing impacts, the SCPC statistical analysis plan uses intrawell upper prediction limits (UPLs) to determine SSIs. Intrawell UPLs are calculated from historical data within a particular well, and not by pooling data from the background wells, such that individual limits are calculated for each constituent in each well in the monitoring program. Intrawell prediction limits for the SCPC monitoring network were updated in March 2024. A summary table of the November 2023 SSIs is provided in **Table 2.**

Constituent	Well ID	UPL Based on Baseline Events	Current UPL (Updated March 2024)	Baseline Sampling Event Range	Range of Values Prior to November 2023 Sampling Event (CCR Rule and State UWL Sampling)	November 2023 Result	February 2024 Result
Boron (µg/L)	UG-2	234.6	277.7	88.2 – 196	ND (<100) – 2,180	1,700	1,360
Total Dissolved Solids (mg/L)	DG-4	698.9	680.5	543 – 637	474 – 808	732	NS

Notes:

- 1) mg/L milligrams per liter.
- 2) µg/L micrograms per liter.
- 3) UPL Upper Prediction Limit. UPLs calculated using Sanitas[™] software.

4) ND – Non-Detect

5) NS – Not sampled. The upper prediction limit for TDS at DG-3 was updated in March 2024 to be below the November 2023 sampling event. Because this update occurred following the February 2024 verification sampling event, no verification sample was collected.

TDS is the sum of all dissolved solids within water and refers to any minerals, salts, metals, cations or anions dissolved in water. TDS is principally made up of calcium, magnesium, potassium, sodium, bicarbonates (alkalinity), chlorides, sulfates and some small amounts of organic matter.

5.0 EVIDENCE OF SSI FROM ALTERNATIVE SOURCE

Several different lines of evidence indicate that the SSIs are not the result of a release from the SCPC and the SSI originates from an alternative source. The following bullets summarize the different lines of evidence that support this ASD:



- Southward groundwater flow from the upgradient SCPA CCR Unit, currently in Corrective Action, toward the SCPC.
- Documentation of pre-existing, low-level concentrations of CCR indicators and other parameters in groundwater that pre-date the SCPC operation, especially on the northern side of the SCPC.
- Lack of elevated FGD Indicators (sulfate, calcium, chloride) above pre-CCR placement levels in monitoring wells with SSIs.
- Construction documents of the SCPC indicating the 60-mil high-density polyethelyne (HDPE) geomembrane liner and a 2-foot thick clay barrier met quality assurance testing during construction.

5.1 CCR Indicators

Several types of CCR byproducts are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 3** below describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

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.	 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.	BromidePotassiumSodiumFluoride
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.	 Sulfate Fluoride Calcium Boron Bromide Chloride

Table 3: Types of CCR and Typical Indicator Parameters

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 as well as Gredell and Reitz & Jens, 2014.

As described above, the SCPC historically received FGD-type wastes managed at the SEC.

5.2 Evaluation of the Statistically Significant Boron Exceedance at UG-2

In 2018, an ASD was completed for the SCPB (fly ash pond) unit to the north/northeast of the SCPC and is available in the 2018 Annual Report for the SCPB on Ameren's publicly available website¹. In that ASD, pore-water samples were collected from the SCPA and SCPB, and samples were collected in the shallow, intermediate

⁽https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports)



¹ Ameren's publicly available CCR reporting website is available at:

(middle) and deep zones of the alluvial aquifer just outside of the two units. From this ASD, it was determined that CCR impacts found directly outside of the SCPB are from the SCPA and not the SCPB. Impacts were present at their highest concentrations at deeper depths, and groundwater chemistry was similar between the waters of the SCPA and the impacted wells. The SCPB ASD concluded these deeper impacts are from the SCPA because the SCPA is an unlined CCR unit that extends approximately 70 feet below ground surface, while the SCPB is an HDPE-lined, shallower CCR unit. Therefore, if impacts were from the SCPB, they would be expected to be concentrated in the shallow zone of the alluvial aquifer, whereas impacts from the SCPA would be present across all zones of the alluvial aquifer. Additionally, the SPCA has historically managed bottom ash, fly ash, and boiler slag. As displayed in **Table 2**, boron is a key indicator parameter for impacts from these types of CCR.

Figure 2 displays boron concentrations at UG-2 since state monitoring began in 2008. As displayed on Figure 2, there has been a previous spike in boron concentration in 2013 – 2014. This spike has been attributed to construction associated with the nearby SCL4A.

In 2018 and 2019, the SCPA moved from Assessment Monitoring into Corrective Action and an investigation into the nature and extent of impacts from the SCPA was completed. As a part of this investigation, samples were collected in the shallow, middle, and deep zones of the alluvial aquifer in multiple locations around the site. One set of piezometers (TP-5) was installed approximately 200 feet to the east of UG-2. In the TP-5 piezometers, boron concentrations ranged from 211-263 μ g/L in the shallow zone of the alluvial aquifer, 3,120-3,190 μ g/L in the intermediate zone and 5,460-8,250 μ g/L in the deep zone of the alluvial aquifer.

This increase in boron concentration with depth at TP-5 is indicative of impacts from the SCPA rather than the SCPB, SCPC or SCL4A because the SCPA is unlined and extends downward 70 feet below ground surface, whereas the SCPB, SCPC and SCL4A are constructed with liner systems with base elevations above the natural groundwater table. If impacts were from the SCPC, the greatest impacts would be expected in the shallow zone of the alluvial aquifer and would dilute and be expected to decrease with depth. Results from the nature and extent and corrective action investigations further indicate that impacts in the alluvial aquifer at the SEC are from the SCPA and not the other lined units.

For boron impacts to be from the SCPA, UG-2 would need to be hydraulically connected to the SCPA. As displayed on **Figure 1**, UG-2 is located approximately 1,500 feet to the south/southeast of the SCPA at its nearest point. As discussed in the Annual Reports for the SCPC, publicly available on Ameren's website, 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 the aquifer. 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 or south toward the Mississippi and Missouri Rivers, depending on river levels.

River level elevations for the site can be estimated using nearby United State Geological Survey (USGS) gauges. Four nearby gauges are used to calculate the approximate river level of the Mississippi and Missouri Rivers at the SEC:

- Grafton Illinois gauge on the Mississippi (USGS #05587450).
- Alton Illinois gauge on the Mississippi River (USGS # 05587500)
- St. Louis Missouri gauge on the Mississippi River (USGS #07010000)
- St. Charles Missouri gauge on the Missouri River (USGS #06935965)

A daily water gauge measurement is available for each of these four gauges since at least November 15, 1986. **Figure 3** summarizes the calculated Missouri and Mississippi River data at the plant. The Mississippi River level at the SEC is controlled by a series of locks and dams, with the nearest one being approximately 6 miles downriver at the Mel Price Alton Lock and Dam. This dam controls the river elevation on the Mississippi River near the SEC, minimizing impacts from flooding and drought and giving the Mississippi River a more consistent elevation, as displayed on **Figure 3**. The Missouri River does not have any dams located near the SEC, with the closest dam on the Missouri River being the Gavins Point Dam, located near Yankton, South Dakota. Therefore,



the Missouri River is susceptible to larger variations in elevation caused by flooding and drought, as displayed in **Figure 3**.

Figure 4 displays the difference between the Mississippi and Missouri River for each day. **Table 4** provides a summary comparison of the Mississippi and Missouri River elevations at the plant. Using the data from January 1, 1987 to June 17, 2024, the Mississippi River was higher than the Missouri River on 7,634 of the 13,683 days (approximately 56% of the time). From 2021 through early 2024, there was a significant hydraulic gradient from the Mississippi to the Missouri River (southward), with 2023 being the second highest average gradient of southward groundwater flow since 1987 (2006 was the highest). This indicates that UG-2, which is south of the SCPA, is downgradient of the unit and hydraulically connected.

This southward flow of groundwater has been confirmed by onsite water level measurements. Prior to each sampling event, water levels are recorded at all monitoring wells to determine groundwater flow rates and direction. Potentiometric surface maps generated from these water level measurements display a southward flow of groundwater from the SCPA toward UG-2.

Year	Days Missouri River has Higher Elevation	Days Mississippi River has Higher Elevation	Average Annual Difference between Mississippi and Missouri Rivers (Results in Feet, number displays Mississippi River Elevation minus the Missouri River Elevation. Negative results indicate higher Missouri River, positive results indicate higher Mississippi River elevation)
1987	243	122	-1.38
1988	82	284	1.48
1989	41	324	2.24
1990	162	203	0.32
1991	92	273	1.34
1992	152	214	-0.20
1993	355	10	-3.05
1994	166	199	-1.17
1995	269	96	-1.62
1996	242	124	-0.98
1997	312	53	-1.70
1998	317	48	-2.21
1999	207	158	-1.15
2000	28	338	2.30
2001	133	232	0.66
2002	63	302	2.18
2003	28	337	3.12
2004	125	241	1.08
2005	88	277	1.91
2006	11	354	4.05
2007	141	224	0.71
2008	209	157	-0.29
2009	202	163	-0.32
2010	296	69	-1.79
2011	229	136	-1.58
2012	59	307	2.15
2013	51	314	2.46
2014	88	277	1.54
2015	177	188	-0.36

Table 4 – Summary of Mississippi and Missouri River Elevations



Year	Days Missouri River has Higher Elevation	Days Mississippi River has Higher Elevation	Average Annual Difference between Mississippi and Missouri Rivers (Results in Feet, number displays Mississippi River Elevation minus the Missouri River Elevation. Negative results indicate higher Missouri River, positive results indicate higher Mississippi River elevation)
2016	196	170	-0.55
2017	154	211	0.46
2018	232	133	0.03
2019	349	16	-3.08
2020	234	132	-0.72
2021	160	205	0.31
2022	77	288	2.39
2023	20	345	3.38
2024	59	110	0.78
Total	6049	7634	Average Difference – 0.32 feet

5.3 Evaluation of the Statistically Significant Increases of Total Dissolved Solids at DG-4

TDS alone is not a key indicator of CCR or FGD (EPRI 2017, EPRI 2012). As displayed on **Figure 5**, TDS concentration at DG-4 on November 13, 2023 was 732 mg/L. This concentration is just greater than the original calculated UPL used for TDS concentrations at DG-4 of 698.9 mg/L and the current UPL of 680.5 mg/L. Notably, this value is also less than the UPL of 808 mg/L that was updated following the April 2021 sampling event. As part of the state UWL sampling program, DG-4 was also sampled on November 7, 2024, immediately prior to the CCR Rule sampling event, with a TDS result of 604 mg/L. This result is well below the current and previous UPLs for TDS at DG-4 and is reflective of the historical variability observed at this well.

Historically, TDS at DG-4 has displayed significant variability, ranging from 474 – 808 mg/L since 2008. As displayed in **Figure 5**, There appears to be no significant increasing or decreasing trends over time, including with respect to the SCPC receiving CCR materials in 2010 and halting receipt of CCR materials in 2022.

As discussed previously, TDS is primarily composed of calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity concentrations. **Table 5** displays the concentrations of each of these constituents at DG-4 collected during semi-annual detection monitoring sampling events since November 2018.

Sample Date	Total Sodium (mg/L)	Total Potassium (mg/L)	Total Calcium (mg/L)	Total Magnesium (mg/L)	Total Chloride (mg/L)	Total Alkalinity (mg/L)	Total Sulfate (mg/L)
11/13/2018	33.8	7.54	121	37.8	80.2	412	39.3
8/19/2019	44.6	7.57	136	39.5	103	403	31.5
11/15/2019	40.3	7.58	138	38.9	96.9	381	33.9
4/28/2020	23.4	5.90	115	32.7	27.1	391	21.7
11/16/2020	35.4	8.10	132	42.0	68.5	457	37.1
4/14/2021	20.8	7.06	154	46.6	95.3	426	51.1
11/10/2021	26.9	7.90	136	40.7	58.3	442	49.9
4/1/2022	6.99	7.95	144	40.6	15.6	487	65.1
10/21/2022	35.0	7.26	136	39.3	54.0	456	52.0

Table 5 – Total Dissolved Solids Major Constituent Concentrations over Time at DG-4



Sample Date	Total Sodium (mg/L)	Total Potassium (mg/L)	Total Calcium (mg/L)	Total Magnesium (mg/L)	Total Chloride (mg/L)	Total Alkalinity (mg/L)	Total Sulfate (mg/L)
5/3/2023	15.1	6.64	139	43.5	25.4	501	56.9
11/13/2023	88.7	6.69	154	47.8	12.4	521	63.3
Average Concentration	33.7	7.29	137	40.9	57.9	443	45.6
November 2023 Ranking	1st	9th	1st	1st	11th	1st	2nd

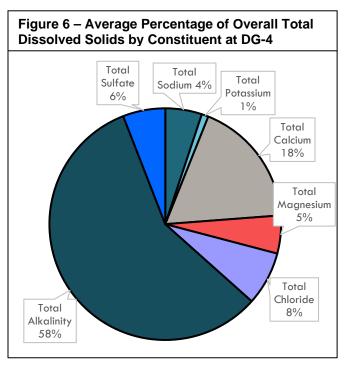
Notes:

1) Alkalinity is equal to Carbonate + Bicarbonate.

2) mg/L – Milligrams per liter.

3) J – value is estimated.

As displayed in Figure 6 and based on average concentrations in Table 5, alkalinity makes up approximately 58% of the total TDS value at DG-4. In November 2023, the alkalinity result was the greatest of the 11 results since November 2018, with a concentration 78 mg/L greater than the historical average and 20 mg/L greater than the next highest concentration. Alkalinity is not considered a key indicator of CCR impacts, including WFGD materials. The high alkalinity concentration observed in November 2023 relative to previous samples is the primary contributor to the elevated TDS concentration and its exceedance over the current UPL. Although concentrations for some WFGD indicators (calcium and sulfate) are higher than average at DG-4 for the November 2023 sampling event, the chloride concentration (another key WFGD indicator) is lowest relative to previous sampling events. Additionally, all indicator constituents are present below the well UPLs, indicating that there are no impacts from the SCPC.



6.0 DEMONSTRATION THAT STATISTICALLY SIGNIFICANT INCREASES WERE NOT CAUSED BY SCPC IMPACTS

Based on the information presented in Section 5.0 above, the SSIs reported for UG-2 and DG-4 during the November 2023 detection monitoring event are not a result of impacts from the SCPC. The SSI for boron at UG-2 is not caused by the SCPC as there are boron impacts in the shallow, intermediate and deep portions of the alluvial aquifer in this area and net groundwater flow has been toward the south. The SSI for boron at UG-2 appears to be the result of southward migrating impacts from the upgradient SCPA, which is currently in Corrective Action. The SSI for TDS at DG-4 was also not caused by impacts from the SCPC and is attributable to natural geochemical variability within the shallow alluvial aquifer. Along with these lines of evidence listed above, the SCPC is documented to be constructed with an engineered compacted clay liner overlain by a 60-mil HDPE



geomembrane liner system, which was designed and constructed to properly contain CCR and prevent groundwater impacts.

7.0 REFERENCES

- Ameren Missouri. 2016. Structural Integrity Criteria & Hydrologic/Hydraulic Capacity Assessment, Sioux Energy Center.
- Electric Power Research Institute (EPRI). 1998, Field Evaluation of the Comanagement of Utility Low-Volume Wastes With High-Volume Coal Combustion By-Products: SX Site. Report TRACE-108409. September 1998.
- Electric Power Research Institute (EPRI). 2011, Composition and Leaching of FGD Gypsum and Mined Gypsum, Report 1022146. November 2011.
- Electric Power Research Institute (EPRI). 2012, Groundwater Quality Signatures for Assessing Potential Impacts from Coal Combustion Product Leachate, Report 1017923. October 2012.
- Electric Power Research Institute (EPRI). 2017, Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites, Report 3002010920, October 2017.
- Golder Associates Inc., 2017, 40 CFR Part 257 Groundwater Monitoring Plan, SCPC Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2018, 2017 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2019a, 2018 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.

Golder Associates Inc., 2019b, Updated Statistical Limits With Additional Background Data – SCPC.

- Golder Associates Inc., 2020, 2019 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2021, 2020 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates USA Inc., 2022a, 2021 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates USA Inc., 2022b, Updated Statistical Limits With Additional Background Data, Surface Impoundment (SCPC), Sioux Energy Center St. Charles County, Missouri, USA.
- GREDELL Engineering Resources, Inc. 2006. Detailed Geologic and Hydrologic Site Investigation Report. AmerenUE Sioux Power Plant Proposed Utility Waste Disposal Area. St. Charles County, Missouri. August 2006.
- GREDELL Engineering Resources, Inc. 2009. Background Groundwater Monitoring Report. AmerenUE Sioux Power Plant. St. Charles County, Missouri. June 2009.
- Johnson, A.I. 1967. Specific Yield Compilation of Specific Yields for Various Materials: U.S. Geological Survey Water-Supply Paper 1662-D. Available at: https://pubs.er.usgs.gov/publication/wsp1662D.



- MDNR. 2011. Missouri Well Construction Rules. Missouri Department of Natural Resources Division of Geology and Land Survey. Rolla, MO. August 2011.
- Reitz & Jens, Inc., and GREDELL Engineering Resources, Inc. 2014. Ameren Missouri Sioux Power Plant Utility Waste Landfill Proposed Construction Permit Modification Construction Permit Number 0918301 St. Charles County, Missouri, revised August 2014.
- Rocksmith Geoengineering, LLC, 2024a, 2023 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Rocksmith Geoengineering LLC, 2024b, Updated Statistical Limits with Additional Background Data, SCPC CCR Unit, Sioux Energy Center, St. Charles, Missouri.
- USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery Program Implementation and Information Division. March 2009.
- USEPA. 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule/ [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER].
- WSP USA Inc., 2023, 2022 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.



Tables



Table 1November 2023 Detection Monitoring ResultsSCPC Surface ImpoundmentSioux Energy Center, St. Charles County, MO

		BACKGR	OUND					GROU	INDWATER M	ONITORING W	/ELLS				
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-1A	UG-1A	Prediction Limit UG-2	UG-2	Prediction Limit DG-1	DG-1	Prediction Limit DG-2	DG-2	Prediction Limit DG-3	DG-3	Prediction Limit DG-4	DG-4
					No	ovember 202	3 Detection M	Ionitoring Eve	ent					-	
DATE	NA	11/10/2023	11/10/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023	NA	11/13/2023
рН	SU	7.04	7.14	6.433 - 7.279	6.90	6.29 - 7.5	7.10	6.565 - 7.38	7.00	6.725 - 7.268	7.02	6.66 - 7.227	6.93	6.638 - 7.221	6.88
BORON, TOTAL	μg/L	57.9 J	58.9 J	453.4	165	277.7	1,700	118.3	107	113.2	82.0 J	103.2	81.9 J	114.1	105
CALCIUM, TOTAL	μg/L	136,000	114,000	203,439	157,000	143,772	119,000	174,000	138,000	166,000	133,000 J	169,490	160,000	166,717	154,000
CHLORIDE, TOTAL	mg/L	7.2	13.4	147.8	74.8 J	93.74	12.9 J	10	2.5 J	10.93	2.3 J	17.26	8.2 J	155.7	12.4 J
FLUORIDE, TOTAL	mg/L	ND	ND	0.47	ND	0.34	ND	0.41	ND	0.49	ND	0.49	ND	0.48	ND
SULFATE, TOTAL	mg/L	46.9	12.3	113.4	52.7 J	93.63	0.79 J	69.58	19.4 J	68	35.2 J	74.45	65.1 J	79.91	63.3 J
TOTAL DISSOLVED SOLIDS	mg/L	475	398	819.5	672	657.3	483	552.3	549	537	505	617.9	594	680.5	732*
					F	ebruary 2024	Verification S	Sampling Ever	nt						
DATE	NA						2/7/2024								
рН	SU														
BORON, TOTAL	μg/L						1,360								
CALCIUM, TOTAL	μg/L														
CHLORIDE, TOTAL	mg/L														
FLUORIDE, TOTAL	mg/L														
SULFATE, TOTAL	mg/L														
TOTAL DISSOLVED SOLIDS	mg/L														

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.

2. J - Result is an estimated value.

3. NA - Not applicable.

4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

5. Prediction Limits calculated using Sanitas Software.

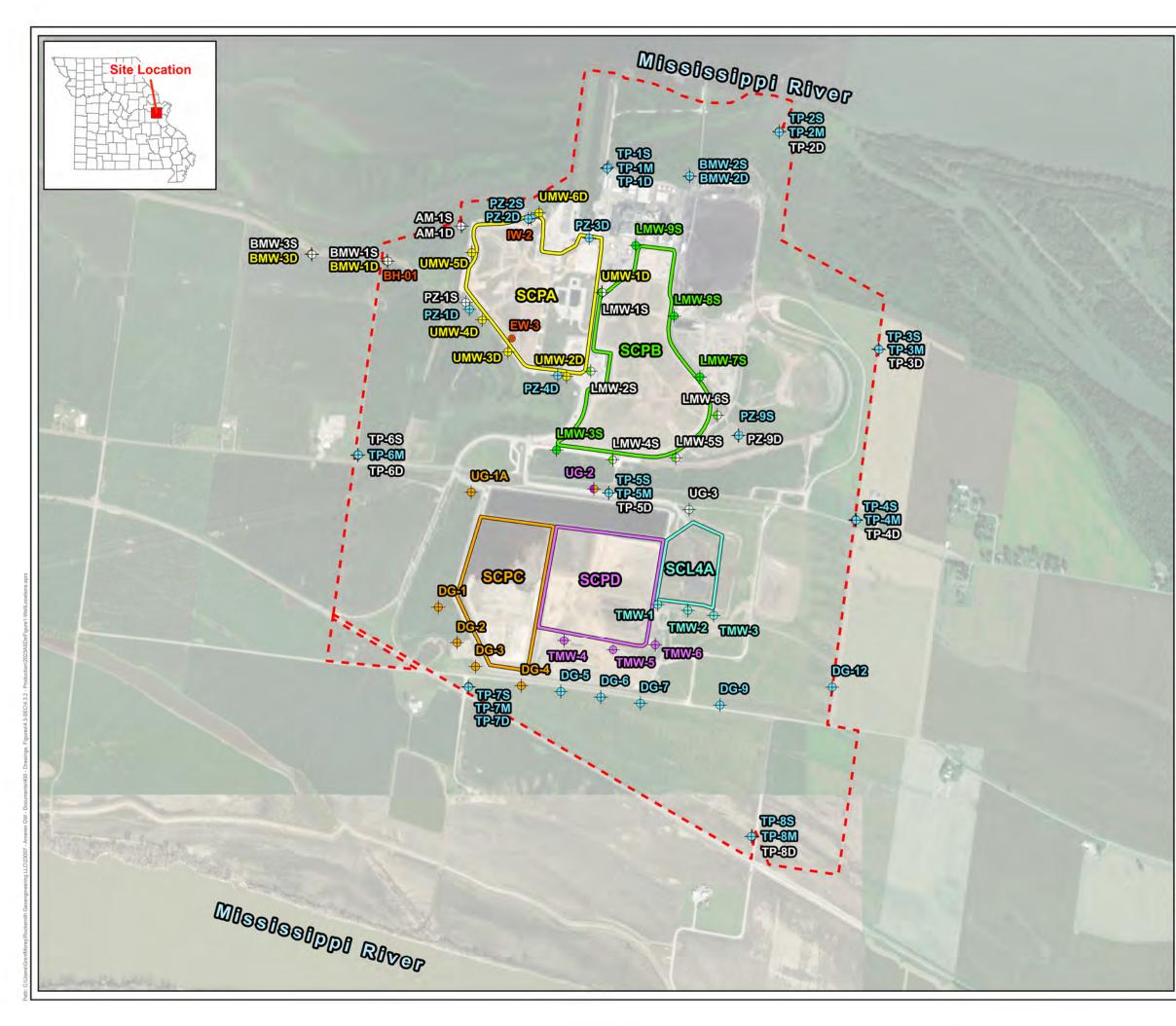
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).

7. Only analytes/wells that were detected above the prediction limit were tested during Verification Sampling.

8. * - During updates to prediction limits completed in March 2024, the upper prediction limit for Total Dissolved Solids at DG-4 was lowered below the November 2023 sample result. Because this update occured after the February 2024 verification sampling event, no verification sample was collected. This result will be treated as an SSI and an Alternative Source Demonstration will be produced for Total Dissolved Solids at well DG-4.

Figures





SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

	-
02	Sioux Energy Center Property Boundary
CCR	Units
	SCPA - Bottom Ash Surface Impoundment (Closed)
	SCPB - Fly Ash Surface Impoundment (Closed)
Utility	y Waste Landfill Cells
	SCL4A - Dry CCR Disposal Area
	SCPC- Inactive FGD Surface Impoundment
	SCPD - FGD Surface Impoundment
Moni	toring 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 0

NOTES

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

REFERENCES

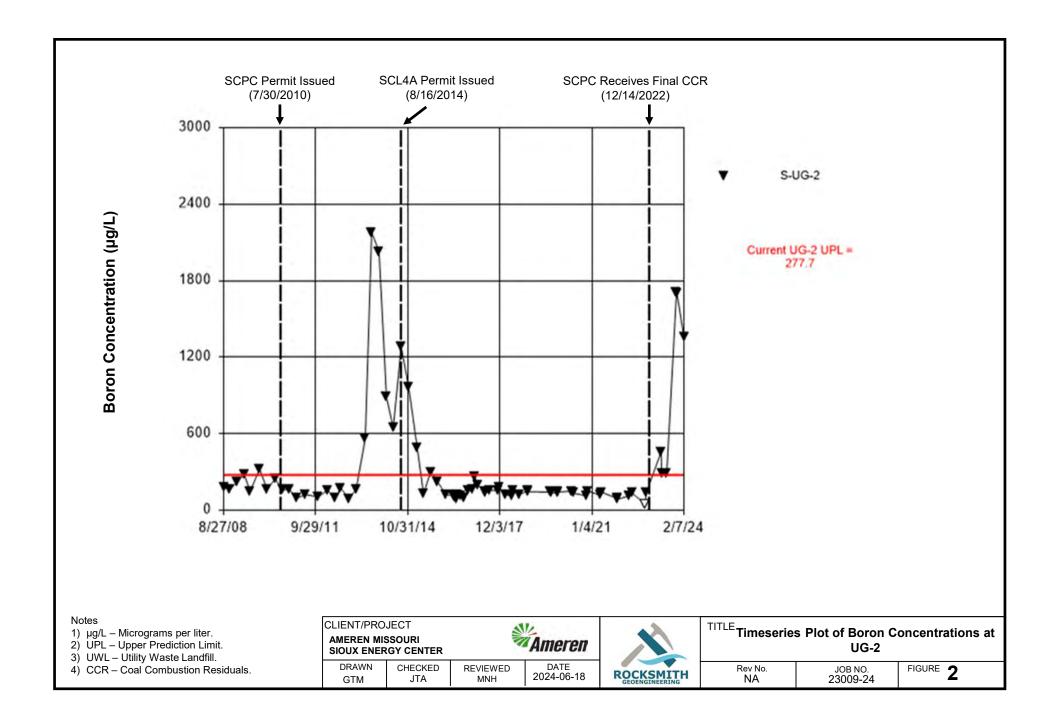
1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.

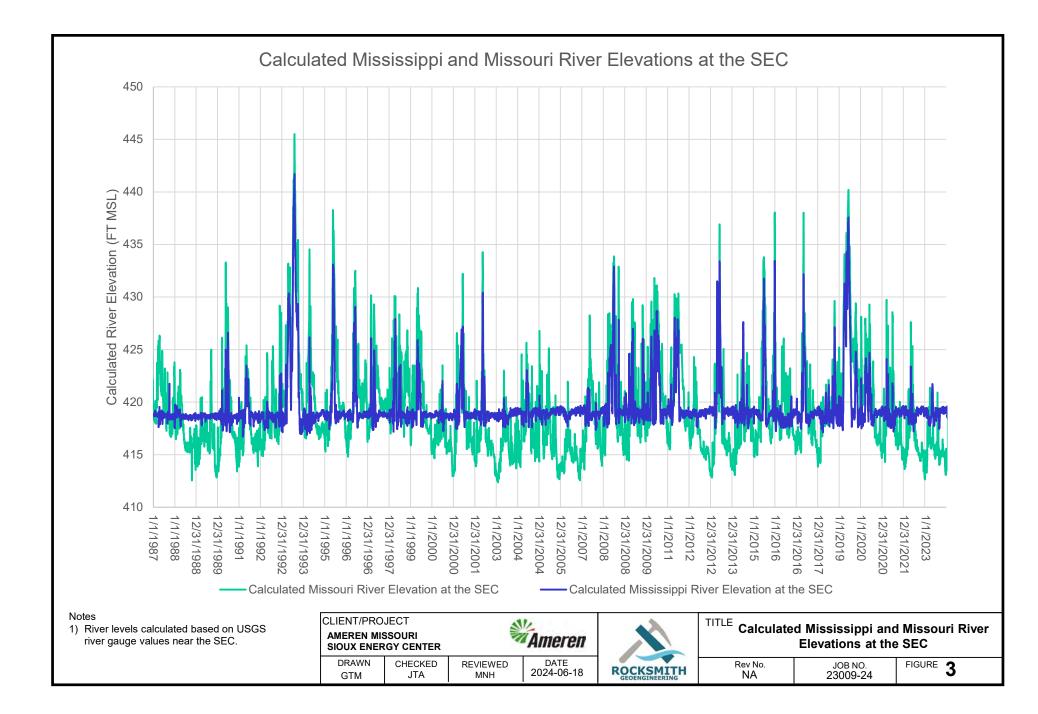


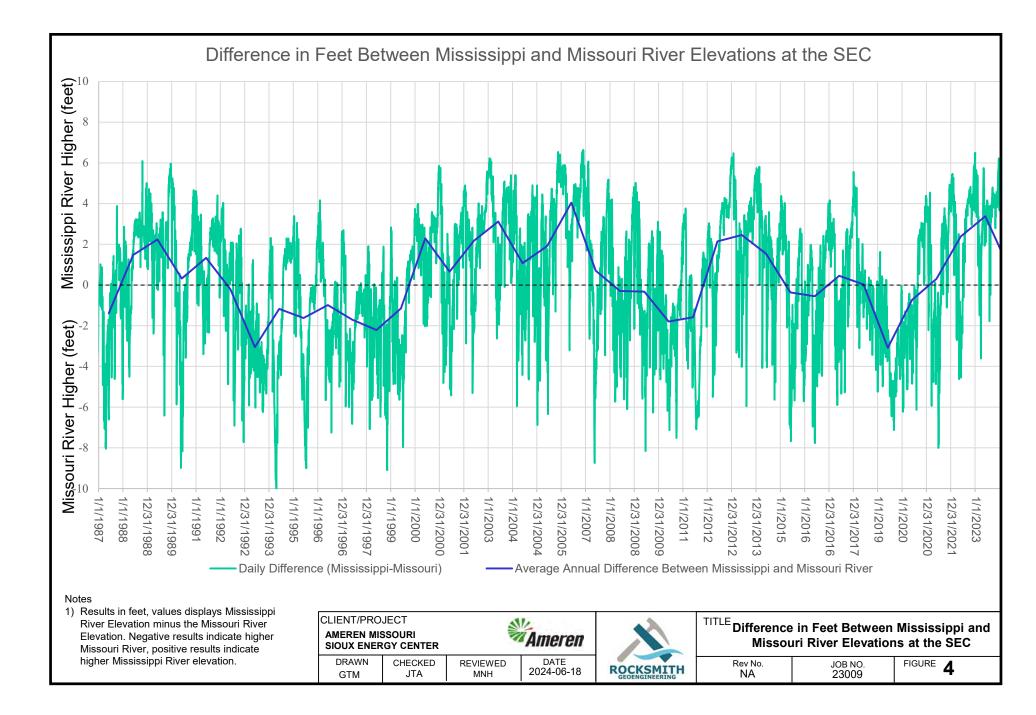
PROJEC

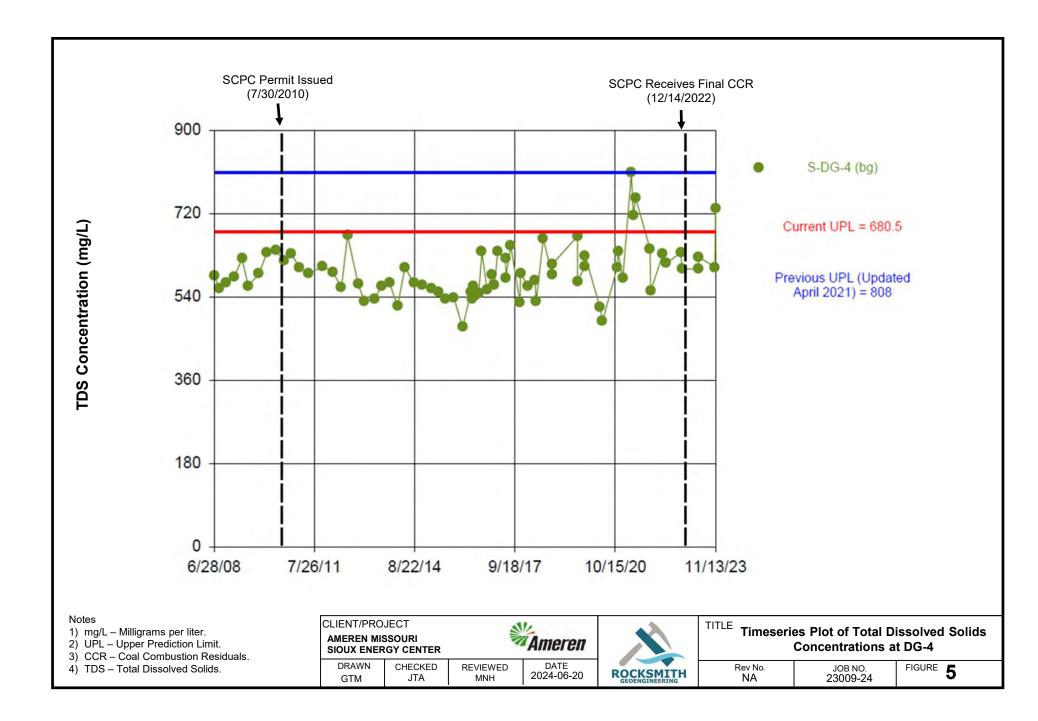
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT AMEREN MISSOURI SIOUX ENERGY CEI		Ameren
•	DESIGN JSI	YYYY-MM-DD 2023-03-29
	PREPARED JSI	PROJECT No 23009
150	REVIEW GTM	FIGURE 4
GEOENGINEERING	APPROVED MNH	FIGURE 1









Appendix C Alternative Source Demonstration – May 2024 Sampling Event



REPORT

SCPC – Alternative Source Demonstration

Sioux Energy Center, St. Charles County, Missouri, USA

January 3, 2025 Project Number: 23009-24

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



Table of Contents

1.0	Certification Statement	1
2.0	Introduction	2
3.0	Site Description and Background	2
3.1	Geological and Hydrogeological Setting	2
3.2	Utility Waste Landfill – SCPC	2
3.3	CCR Rule Groundwater Monitoring	3
4.0	Review of the Statistically Significant Increases	4
5.0	Evidence of SSI from Alternative Source	4
5.1	CCR Indicators	5
5.2	Site Specific Key CCR Indicators	5
5.3	Concentrations of Key Indicators at DG-3	7
5.4	Sulfate Concentrations at the SCPC	8
5.5	Chloride Concentrations at the SCPC	9
5.	.5.1 Groundwater Flow Evaluation	9
6.0	Demonstration that Statistically Significant Increases were not caused by SCPC Impacts	11
7.0	References	12

TABLES

- Table 1 May 2024 Detection Monitoring Results
- Table 2 Review of Statistically Significant Increase (Embedded in Text)
- Table 3 Types of CCR and Typical Indicator Parameters (Embedded in Text)
- Table 4 Summary of Mississippi and Missouri River Elevations (Embedded in Text)
- Table 5 Total Dissolved Solids Major Constituent Concentrations Over Time at DG-4 (Embedded in Text)

FIGURES

- Figure 1 Sioux Energy Center Groundwater Monitoring Programs and Sample Location Map
- Figure 2 Timeseries Plot of Boron Concentrations at DG-3
- Figure 3 Timeseries Plot of Calcium Concentrations at DG-3
- Figure 4 Timeseries Plot of Chloride Concentrations at DG-3
- Figure 5 Timeseries Plot of Fluoride Concentrations at DG-3
- Figure 6 Timeseries Plot of Sulfate Concentrations at DG-3
- Figure 7 Box and Whiskers Plot of Sulfate Concentrations Pre-CCR Placement at SCPC
- Figure 8 Box and Whiskers Plot of Chloride Concentrations Pre-CCR Placement at SCPC
- Figure 9 Timeseries Plot of Chloride Concentrations at DG-3 and DG-4
- Figure 10 Calculated Mississippi and Missouri River Elevations at the SEC
- Figure 11 Difference in Feet Between Mississippi and Missouri River Elevations at the SEC

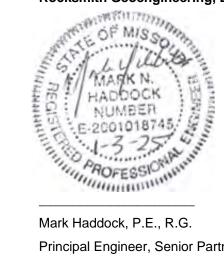


CERTIFICATION STATEMENT 1.0

This SCPC - Alternative Source Demonstration, Sioux Energy Center, St. Charles County, Missouri, USA has been prepared to comply with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule) under the direction of a licensed professional engineer with Rocksmith Geoengineering, LLC.

I hereby certify that this SCPC – Alternative Source Demonstration, 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 §257.94(e)(2).

Rocksmith Geoengineering, LLC.,



Principal Engineer, Senior Partner



2.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), this SCPC – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for two Statistically Significant Increases (SSIs) identified for Ameren Missouri's (Ameren's) Sioux Energy Center (SEC), Utility Waste Landfill (UWL) SCPC (Cell 1). This document satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI 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

Ameren owns and operates the SEC in St. Charles County, Missouri located approximately 12 miles westnorthwest of the confluence of the Mississippi and Missouri Rivers. **Figure 1** depicts the site location and layout, including the location of SCPC. The SEC is approximately 1,025 acres and is located in the floodplain between the Mississippi and Missouri Rivers. The SEC is bounded to the north by wooded areas associated with the Mississippi River; to the south by a railroad; and to the east and west by agricultural fields.

3.1 Geological and Hydrogeological Setting

Hydrogeologically, the SCPC 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 range from approximately 100 to 130 feet in thickness and comprise 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 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 Utility Waste Landfill - SCPC

UWL Cell 1 is referred to by Ameren as the SCPC, or "Gypsum Pond" Cell 1. The SCPC is approximately 37.5 acres in size and is located south of the generating plant on the south side of Highway 94 (Figure 1). The CCR Unit managed CCR from the SEC Wet Flue-Gas Desulfurization System (WFGD), which began operation in 2010. The unit ceased receiving CCR waste on December 14, 2022, and closure has begun on the unit. Since that date, the WFGD has been sent to the adjacent SCPD CCR Unit.

The WFGD process occurs after the removal of slag and fly ash. A crushed limestone $(CaCO_3)$ mix is introduced into the boiler flue



gas flow. The limestone reacts with sulfur dioxide (SO₂) in the flue gas and produces 'synthetic' gypsum (calcium sulfate dihydrate (CaSO₄ * 2H₂O)). The resultant gypsum material was wet sluiced from the plant across the highway to the SCPC. Once there, the gypsum material is dewatered by gravity with the sluice conveying recycled water back to the WFGD for reuse. The primary soluble constituents of the gypsum CCR are sulfate, calcium, chloride, and sodium (Gredell and Reitz & Jens, 2014).

The SCPC was constructed with a composite liner system consisting of two feet of compacted clay soil with a hydraulic conductivity of less than 1 X 10⁻⁷ centimeters per second (cm/sec) overlain by a 60-mil high density polyethylene (HDPE) geomembrane liner. Information on the design of the UWL is available in the 2014 Proposed Construction Permit Modification, Construction Permit Number 0918301 (Gredell and Reitz & Jens, 2014).

A groundwater monitoring well network was installed in 2007 and 2008 to permit the UWL construction. This monitoring well network was approved by the Missouri Department of Natural Resources (MDNR) and consists of 16 monitoring wells ringing the current and proposed future extents of the UWL (Figure 1). These monitoring wells



are installed in the uppermost portions of the alluvial aquifer, just below the seasonally low elevation for groundwater. Quarterly groundwater samples have been collected in these monitoring wells since June 2008 for the Missouri UWL parameters.

The permit for the SCPC was issued July 30, 2010 (permit #0918301). Nine sampling events were performed prior to July 30, 2010 and represent groundwater quality prior to WFGD placement in the UWL. The results from these pre-disposal monitoring events are used in conjunction with other site information in the sections presented below.

3.3 CCR Rule Groundwater Monitoring

As required by the CCR Rule, the following were completed prior to the October 17, 2017 deadline: (1) a groundwater monitoring well system was installed and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, (3) a Groundwater Monitoring Plan (GMP) was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record, and (4) eight baseline groundwater sampling events were completed for all Appendix III and Appendix IV parameters of CCR Rule.

The groundwater monitoring system for the SCPC consists of eight monitoring wells screened in the uppermost aquifer (alluvial aquifer) as shown on **Figure 1**. Six existing monitoring wells (UG-1A, UG-2, DG-1, DG-2, DG-3, and DG-4) were installed by Gredell Engineering Resources, Inc. in December 2007 and June 2008 as a part of the Missouri UWL state monitoring program. The remaining monitoring wells (BMW-1S and BMW-3S) were installed by Golder Associates Inc. (Golder) in 2016 for CCR Rule groundwater monitoring purposes. More information on the design and installation of the monitoring wells is provided in the SCPC GMP (Golder, 2017) and the SCPC 2017 Annual Report (Golder, 2018).

Between May 2016 and June 2017, eight baseline sampling events were completed for the SCPC. After baseline sampling, the first Detection Monitoring event was completed in November of 2017. The following Appendix III constituents were analyzed during Detection Monitoring:

- Boron
- Calcium
- Chloride
- pH
- Sulfate
- Total Dissolved Solids (TDS)
- Fluoride

In January 2018, background results from the eight baseline sampling events were used to calculate statistical upper prediction limits (UPLs). These UPLs were then compared to the Detection Monitoring results from the November 2017 samples and subsequent semi-annual Detection Monitoring sampling events. If results were higher than the calculated UPL, this was considered to be an initial exceedance, and a verification sample was then collected and tested in accordance with the SCPC Statistical Analysis Plan (SAP). In August 2019, the background dataset used to calculate statistical limits was expanded to include the first four Detection Monitoring events, per the SAP. The updated UPLs were then used for the November 2019 and subsequent Detection Monitoring events. UPLs for the SCPC Detection Monitoring network were updated again using data collected through June 2021, and most recently, using data collected through July 2023 (Rocksmith 2024). The following provides a summary of the Detection Monitoring results to date.

Since November 2017, several ASDs have been prepared for DG-2, DG-3, DG-4, UG-1A, and UG-2. These previous ASDs are available in the Annual Reports for the SCPC and are available on Ameren's publicly available CCR Compliance website (https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports). These ASDs have demonstrated that previous SSIs at the site were not caused by the SCPC, but rather the result of relatively low calculated UPLs that were not representative of the full, natural geochemical variability within the alluvial aquifer or caused by the SCPC being downgradient from the SCPA, which is currently in Corrective Action.

The May 2024 Detection Monitoring event at the SCPC identified the following initial exceedances: chloride at DG-1, sulfate and total dissolved solids at DG-2, and chloride and sulfate at DG-3. Verification sampling



completed in July 2024 confirmed SSIs of chloride and sulfate at DG-3, but the other initial exceedances were not confirmed. Results from the May 2024 Detection Monitoring event and associated verification sampling are provided in **Table 1**.

4.0 REVIEW OF THE STATISTICALLY SIGNIFICANT INCREASES

Monitoring well DG-3 is screened in the upper portion of the alluvial aquifer, just below the average seasonal low elevation for groundwater. As shown in **Figure 1**, DG-3 is located along the southwestern perimeter of the SCPC. DG-3 is located south of the generating plant, Highway 94, and the two surface impoundments near the plant (SCPA and SCPB), and north of Dwiggins Road.

Based on Rocksmith's review of the pre-disposal data (discussed in Section 3.2 above), as well as our comparison of the pre-disposal data with the results from the eight CCR-rule baseline events, it was concluded that the groundwater in some areas around the SCPC contained low-level pre-existing impacts from CCR that pre-dated SCPC construction and operation. As a result of these pre-existing impacts, the SCPC statistical analysis plan uses intrawell upper prediction limits (UPLs) to determine SSIs. Intrawell UPLs are calculated from historical data within a particular well, and not by pooling data from the background wells, such that individual limits are calculated for each constituent in each well in the monitoring program. Intrawell prediction limits for the SCPC monitoring network were updated in March 2024 using data collected through July 2023. A summary table of the May 2024 SSIs is provided in **Table 2**.

Constituent	Well ID	UPL Based on Baseline Events	Current UPL (Updated March 2024)	Baseline Sampling Event Range	Range of Values Prior to May 2024 Sampling Event (CCR Rule and State UWL Sampling)	May 2024 Result	July 2024 Result
Chloride (mg/L)	DG-3	16.08	17.26	2.7 – 23.0	5.7 – 12.3	26.6	34.0 J
Sulfate (mg/L)	DG-3	61.41	74.45	49.1 – 59.4	29.7 – 82.0	75.8	83.3

Table 2: Review of Statistically Significant Increases

Notes:

- 1) mg/L milligrams per liter.
- 2) UPL Upper Prediction Limit. UPLs calculated using Sanitas[™] software.
- 3) J Result is an estimated value.

5.0 EVIDENCE OF SSI FROM ALTERNATIVE SOURCE

Several different lines of evidence indicate that the SSIs are not the result of a release from the SCPC and the SSI originates from an alternative source. The following bullets summarize the different lines of evidence that support this ASD:

- Lack of elevated key FGD Indicators (boron, fluoride, calcium, sulfate) above pre-CCR placement levels at monitoring well DG-3.
- Documentation of pre-existing, low-level concentrations of CCR indicators and other parameters in groundwater that pre-date the SCPC operation, particularly in monitoring wells just south of DG-3 along Dwiggins Road.
- Variable groundwater flow across the site, which temporarily flows northward from Dwiggins Road to well DG-3.



 Construction documents of the SCPC indicating the 60-mil high-density polyethelyne (HDPE) geomembrane liner and a 2-foot thick clay barrier met quality assurance testing during construction.

5.1 CCR Indicators

Several types of CCR byproducts are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 3** below describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

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.	 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.	 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.	 Sulfate Fluoride Calcium Boron Bromide Chloride

Table 3: Types of CCR and Typical Indicator Parameters

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 as well as Gredell and Reitz & Jens, 2014.

5.2 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 pore-water) 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 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 flue gas desulfurization material, sulfate, fluoride, calcium, boron, and chloride are regularly sampled as part of the CCR Rule. Testing for bromide has not been completed at this site.

Table 2 provides a snapshot of the concentrations present onsite in background groundwater, Mississippi River, Missouri River, SCPA pore-water, and SCPD leachate for the constituents sampled on the key indicator list for FGD material.



Constituent (Units)		Back- ground	Mississippi River ¹	Missouri River ¹	SCPA Porewater	SCPD Leachate	Advantages and Caveats as Key Indicator (from EPRI 2012)	
Sulfate	Minimum	12.3	29.9	188	48.5		High concentrations expected in both washed and unwashed FGD gypsum.	
	Average	31.03	34.08	192.1	1,088	5 000	Commonly analyzed. Very mobile in a	
(mg/L)	Maximum	61.1	40.5	196	2,080	5,820	hydrogeologic environments. Less useful in strongly reducing environments where sulfate can be reduced to hydrogen-sulfide gas.	
Fluoride	Minimum	ND (<0.086)	0.16	0.43	0.22		Mobile and non-reactive in common hydrogeologic environments. Assure	
(mg/L)	Average	0.2735	0.196	0.4435	1.142	68.0	that leachate concentration is higher than background, particularly for	
	Maximum	0.46	0.24	0.46	2.9		washed gypsum.	
	Minimum	97,100	42,500	63,000	73,400		High concentrations expected in both washed and unwashed FGD gypsum.	
Calcium	Average	129,001	50,255	64,385	409,680	911,000	Understanding of carbonate chemistry	
(µg/L)	Maximum	184,000	58,500	65,400	825,000		necessary to assure that precipitation or dissolution does not affect downgradient concentrations.	
	Minimum	42.4	27.1	110	348	239,000	239,000	Mobile indicator constituent for
Boron (µg/L)	Average	94.05	36.4	112.3	53,266			unwashed FGD gypsum. Concentrations for washed gypsum
	Maximum	240	59.9	117	111,000		may be too low to be useful.	
	Minimum	1.9	22.2	23.3	20.5		Mobile indictor constituent for unwashed FGD gypsum.	
Chloride	Average	8.625	27.06	23.48	24.34	7,390	Concentrations may be very high if	
(mg/L)	Maximum	16.8	41.0	23.9	27.1	,	transport water is recirculated. Concentrations for washed gypsum may be too low to be useful.	

Table 2 – Summary of FGD Impact Indicator Parameters at the Sioux Energy Center

Notes:

1) Unit abbreviations - mg/L – milligrams per liter, μ g/L – micrograms per liter

2) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

3) SCPA porewater samples collected by Golder Associates in January 2018.

 A single leachate sample was collected directly from the SCPD by Gredell Engineering Resources, Inc. in December 2023. The SCPD currently collects WFGD material that was once sluiced to the SCPC until December 2022.

Boron has previously been attributed as a primary indicator for CCR impacts at the site, particularly for bottom and fly ash impacts. As shown in **Table 2**, the FGD leachate material contained in the SCPC (as well as the adjacent SCPD) contains significantly higher concentrations of key indicator parameters than other potential sources at the SEC. The following describes the practicality of each of the key FGD indicators for determining CCR impacts from the SCPC:

Boron, which is typically the most mobile of CCR-related constituents, would be expected to have the most notable increase if there were impacts from the SCPC/SCPD. Of the key FGD indicators listed above, the boron concentration in SCPD leachate is greatest relative to background groundwater at the site (2,541 times higher concentration in SCPD leachate than average background groundwater). Other key FGD indicators are lower in terms of their relative concentrations in leachate compared to background groundwater. Additionally, boron has low concentrations in the adjacent Missouri and Mississippi Rivers;

¹ 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.



therefore, elevated boron is likely from a CCR unit, whether it be the SCPA, SCPB, SCPC, SCPD, or SCL4A.

- Fluoride may be a very good FDG indicator parameter because it is typically mobile in most geological environments and is present in SCPD leachate at a level 248 times greater than average background groundwater concentrations. Background fluoride concentrations are also similar to Mississippi and Missouri River concentrations; therefore, an apparent source of increased fluoride could be from FGD impacts. Fluoride concentrations are also much higher in FGD leachate than SCPA porewater, indicating that if increased fluoride is occurring, it would be suspected that the impacts may be from FGD and not fly ash or bottom ash as managed by the SCPA.
- Chloride may be a good FGD indicator parameter because it is mobile in most geological environments and is present in SCPD leachate at a level 856 times greater than average background groundwater concentrations. However, chloride concentrations can be greatly affected by the use of road salt (NaCl) for road deicing. Chloride concentrations for the DG-xx wells installed south of the UWL were measured as high as 125 mg/L prior to any placement of CCR materials in the UWL (prior to June 30, 2010). Additionally, surface water samples collected from the Mississippi and Missouri Rivers near the SEC average approximately 27 and 23 mg/L of chloride, respectively. Therefore, if chloride concentrations are significantly greater than those other alternative sources (greater than approximately 125 mg/L), then chloride can be a good indicator parameter for FGD impacts. At concentrations lower than this, chloride is less effective as a FGD indicator at the SEC.
- Sulfate may be a good FGD indicator parameter as well because it is mobile in most geological environments and is present at a level 187 times greater than average background groundwater concentrations. However, based on surface water sampling near the SEC, sulfate concentrations in the Mississippi and Missouri Rivers reach up to approximately 196 mg/L. Therefore, if sulfate concentrations are significantly greater than concentrations in the nearby rivers and background groundwater (greater than approximately 200 mg/L), then it may be a good indicator for CCR indicator for fly ash, bottom ash, or FGD impacts. At concentrations lower than this, sulfate is less effective as an FGD indicator at the SEC.
- Calcium may be a useful FDG Indicator parameter; however, it is not always mobile in all geological environments and an understanding of carbonate chemistry necessary to assure that precipitation or dissolution does not affect downgradient concentrations. Additionally, calcium concentrations are only 7 times greater in the FGD leachate than average background groundwater at the site. Significant increases in calcium may indicate an FGD impact; however, increases would be expected to be less notable than other key indicators, such as boron and fluoride.

5.3 Concentrations of Key Indicators at DG-3

Figures 2-6 display historical concentrations of each of the key indicator parameters of FGD impacts at monitoring well DG-3. The SCPC was permitted to receive WFGD material beginning in July 2010, and its receipt of WFGD material ceased in December 2022. During that period, there are no distinct increasing trends for any of these parameters, which would be expected if impacts were from the SCPC. Boron and calcium concentrations have remained relatively stable, and fluoride concentrations have decreased. As the most effective indicator of CCR impacts, as discussed above, the presence of stable boron and decreasing fluoride concentrations at DG-3 is strong evidence that FGD impacts are not causing the SSIs at DG-3. Out of these key parameters, chloride and sulfate concentrations exhibit the most historical variability, with transitory increases and decreases not indicative of CCR impacts, but rather natural variability in the aquifer.

Table 3, below, displays concentration ranges of key FGD indicator parameters before, during, and after CCR placement in the SCPC in relation to recently collected data. Pre-CCR placement, sulfate concentrations at DG-3 have been measured as high as 75.0 mg/L, which exceeds the current UPL of 74.45 mg/L and is similar to recent concentrations. Chloride concentrations have displayed significant variability before, during, and after CCR placement in the SCPC, but results from May and July 2024 are elevated compared to previous results.



Constituent	Range of Values Prior to SCPC Pemit (before 7/30/2010)	Range of Values during Active Conditions of SCPC (7/30/2010 – 12/14/2022)	Range of Values following final receipt of CCR, prior to May 2024	May 2024 Result	July 2024 Result
Sulfate (mg/L)	57.0 - 75.0	29.7 – 82.0	47.0 - 76.3	75.8	83.3
Fluoride (mg/L)	0.28 - 0.41	ND (<0.12) – 0.49	ND (<0.12) – 0.42	ND (<0.12)	NS
Calcium (µg/L)	134,000 – 172,000	113,000 – 163,000	159,000 – 170,000	164,000	NS
Boron (µg/L)	80.8 – 95.5	62.1 – 108	78.2 – 95.2 J	102	NS
Chloride (mg/L)	5.0 - 9.0	2.7 – 23.0	6.9 - 8.2	26.6	34.0 J

Table 3: Ranges of Key FGD Indicators Before, During, and After CCR Placement at SCPC

Notes:

1) Unit abbreviations - mg/L - milligrams per liter, µg/L - micrograms per liter.

 ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

3) NS - Not sampled.

4) J - Result is an estimated value.

Boron, calcium, sulfate, and fluoride results pre-CCR placement are at similar ranges to concentrations observed during and after active conditions of the SCPC. Chloride, which is often affected by the use of road salt on nearby roads, has similar concentrations during active conditions and after final receipt of CCR from the SCPC. With each of these key FGD impact indicators not showing elevated concentrations when compared to previous sampling, there is strong evidence that the elevated chloride and sulfate in May of 2024 are not caused by the SCPC.

5.4 Sulfate Concentrations at the SCPC

Sulfate can be key indicator of potential FGD impacts because high concentrations of sulfate are found ubiquitously in FGD materials with the exception of strongly reducing conditions, and sulfate is relatively mobile in most hydrogeological environments. The groundwater around the SCPC does not demonstrate strongly reducing conditions, such as dissolved oxygen values below 0.5 mg/L, negative oxidation reduction potential (ORP), dissolved iron concentrations above 1 mg/L, nor are hydrogen sulfide odors reported at the SCPC.

Figure 6 displays the full historical set of sulfate concentrations at DG-3 including the period prior to the receipt of CCR. If the SSI was caused by impacts from the SCPC, sulfate concentrations would be expected to increase following the placement of CCR materials. **Figure 6** demonstrates that current sulfate concentrations remain at levels similar to those from pre-CCR placement and are not elevated compared to previous sampling at DG-3.

To further investigate the geochemical variability of sulfate in the UWL area, the historical data from the state UWL wells (located on the south side of the UWL, outside of the interpreted zone of impact form the SCPA) were reviewed. These UWL wells (labeled "DG-xx") were installed and sampled on at least 9 occasions prior to the receipt of FGD in the SCPC. Each of these DG-xx monitoring wells are screened at approximately the same depth as DG-3 in the shallow zone of the alluvial aquifer. **Figure 7** displays a box and whisker plot of the sulfate concentrations for the DG-xx wells prior to the receipt of FGD in the SCPC (any CCR placement south of Highway 94), which represents natural variability in local groundwater chemistry. Using all pre-disposal data from the 12 DG-xx wells, the non-parametric UPL for sulfate is 83 mg/L (highest results from DG-4 located 675 feet southeast of DG-3). As displayed in **Figure 7**, the May 2024 sampling results at DG-3 is within the pre-CCR sampling UPL for the nearby DG-xx wells.



Based on these data, the variability in sulfate concentrations over time is not a result of CCR influence on the groundwater from the SCPC. Additionally, sulfate concentrations within the Missouri River to the south of the SEC averaged approximately 192 mg/L, as shown in **Table 2**, which is significantly greater than the SSI concentration at DG-3. The Missouri River is a potential alternative source of sulfate to the groundwater at the SEC and likely contributes to the sulfate variability at the site. Further discussion of river impacts and groundwater flow is presented in Section 5.5.1. The SSI for sulfate is likely a result of geochemical variability of the aquifer that has not been captured by groundwater sampling to-date.

5.5 Chloride Concentrations at the SCPC

Chloride is not known to be a key indicator of fly ash or boiler slag/bottom ash (EPRI 2012) but can be an indicator for FGD type wastes and is commonly found in shallow groundwater systems near salt and brine treated roadways. The nearest public roadway to DG-3 is Dwiggins Road, located approximately 120 feet to the south of the well. Dwiggins Road is a paved road that receives salt treatment as needed during the winter months for ice control.

Figure 4 displays historical chloride concentrations at monitoring well DG-3. As shown in the figure, prior to the May 2024 sampling event, there have been two results greater than the current UPL of 17.26 mg/L (22.0 mg/L on 8/13/2014 and 23.0 on 8/4/2015). Other results prior to May 2024 are below the current UPL but exhibit reasonable variability between 2.7 to 17.0 mg/L. Changes in chloride concentrations do not appear to correspond with placement of CCR. At the time of this ASD, data from the November 2024 semiannual sampling event is available, and the chloride concentration at DG-3 was 14.7 mg/L on 11/15/2024, which is less than the current UPL, further demonstrating the variability of chloride at this well.

Figure 8 is a box & whiskers plot of chloride data collected from monitoring wells closest to DG-3, prior to CCR placement in the SCPC. The same date range and monitoring wells are included in this figure as displayed for sulfate in **Figure 7**. As shown, chloride concentrations before CCR placement in the SCPC were much greater in monitoring wells south of Dwiggins Road when compared with DG-3 and DG-2 to the north. Chloride at DG-4 during that time ranged from 9.0 to 86.0 mg/L, with an average of 44.4 mg/L. The presence of higher chloride concentrations just south of DG-3 that predate CCR placement in the SCPC displays that elevated chloride, likely from application of road salt for deicing, is present at the site and is a likely alternative source. **Figure 9** compares historical chloride concentrations at DG-3 and DG-4, further demonstrating that chloride concentrations are typically much greater just to the south of Dwiggins Road. Chloride concentrations at DG-4 display an increased level of variability, which would be consistent with isolated applications of road salt along Dwiggins Road. It would be expected that chloride levels would increase in the shallow alluvial aquifer following road salt application, and concentrations would decrease over time as dispersion and advection occur according to groundwater flow patterns.

5.5.1 Groundwater Flow Evaluation

In an effort to further demonstrate the recent chloride SSI at DG-3 is sourced from higher chloride concentrations to the south along Dwiggins Road from road salt application, a river level evaluation was conducted similar to a previous ASD for the SCPC, included in the 2023 Annual Report for the SCPC (Rocksmith 2024). 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 the aquifer. 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 or south toward the Mississippi and Missouri Rivers, depending on river levels.

River level elevations for the site can be estimated using nearby United State Geological Survey (USGS) gauges. Four nearby gauges are used to calculate the approximate river level of the Mississippi and Missouri Rivers at the SEC:

- Grafton Illinois gauge on the Mississippi (USGS #05587450).
- Alton Illinois gauge on the Mississippi River (USGS # 05587500)
- St. Louis Missouri gauge on the Mississippi River (USGS #07010000)



St. Charles Missouri gauge on the Missouri River (USGS #06935965)

Daily water gauge measurements are available for the four gauges since at least November 15, 1986. **Figure 10** summarizes the calculated Missouri and Mississippi River elevations at the plant using available historical daily gauge data. The Mississippi River level at the SEC is controlled by a series of locks and dams, with the nearest one being approximately 6 miles downriver at the Mel Price Alton Lock and Dam. This dam controls the river elevation on the Mississippi River near the SEC, minimizing impacts from flooding and drought and giving the Mississippi River a more consistent elevation, as displayed on **Figure 10**. The Missouri River does not have any dams located near the SEC, with the closest dam on the Missouri River being the Gavins Point Dam, located near Yankton, South Dakota. Therefore, the Missouri River is susceptible to larger variations in elevation caused by flooding and drought, as displayed in **Figure 10**.

Figure 11 displays the difference between the Mississippi and Missouri Rivers for each day since 2008, when groundwater data collection began at DG-3 and DG-4. When the Mississippi River is higher than the Missouri River, groundwater flow across the site is typically southward, and vice versa. **Table 4** provides a summary comparison of the Mississippi and Missouri River elevations at the SEC. Using the data from January 1, 1987 to December 16, 2024, the Mississippi River was higher than the Missouri River on 7,771 of the 13,865 days (approximately 56% of the time), meaning that groundwater flow across the site is southward more often than northward. However, there are periods of time where groundwater flow is northward, as shown in **Figure 11** and **Table 4**. Groundwater flow patterns across the SEC have been confirmed by onsite water level measurements. Prior to each quarterly sampling event, water levels are recorded at all monitoring wells to determine groundwater flow rates and direction.

Year	Days Missouri River has Higher Elevation	Days Mississippi River has Higher Elevation	Average Annual Difference between Mississippi and Missouri Rivers (Results in Feet, number displays Mississippi River Elevation minus the Missouri River Elevation. Negative results indicate higher Missouri River, positive results indicate higher Mississippi River elevation)
1987	243	122	-1.38
1988	82	284	1.48
1989	41	324	2.24
1990	162	203	0.32
1991	92	273	1.34
1992	152	214	-0.20
1993	355	10	-3.05
1994	166	199	-1.17
1995	269	96	-1.62
1996	242	124	-0.98
1997	312	53	-1.70
1998	317	48	-2.21
1999	207	158	-1.15
2000	28	338	2.30
2001	133	232	0.66
2002	63	302	2.18
2003	28	337	3.12
2004	125	241	1.08
2005	88	277	1.91
2006	11	354	4.05
2007	141	224	0.71
2008	209	157	-0.29
2009	202	163	-0.32

Table 4 – Summary of Mississippi and Missouri River Elevations



Year	Days Missouri River has Higher Elevation	Days Mississippi River has Higher Elevation	Average Annual Difference between Mississippi and Missouri Rivers (Results in Feet, number displays Mississippi River Elevation minus the Missouri River Elevation. Negative results indicate higher Missouri River, positive results indicate higher Mississippi River elevation)
2010	296	69	-1.79
2011	229	136	-1.58
2012	59	307	2.15
2013	51	314	2.46
2014	88	277	1.54
2015	177	188	-0.36
2016	196	170	-0.55
2017	154	211	0.46
2018	232	133	0.03
2019	349	16	-3.08
2020	234	132	-0.72
2021	160	205	0.31
2022	77	288	2.39
2023	20	345	3.38
2024	104	247	1.07
Total	6094	7771	Average Difference – 0.34 feet

Under southward flow conditions, elevated chloride concentrations along Dwiggins Road would move southward, away from DG-3. However, during periods when flow is northward, elevated concentrations would move northward, and potentially contribute to increased concentrations at that well. In addition to May and July 2024, there were temporary increased chloride concentrations at DG-3 thought portions of 2014 through 2016 (see **Figure 4**). As shown in **Figure 11**, there were periods during which flow across the site was northward, concurrent with these increased chloride results at DG-3. Most recently, from late April to late July 2024 flow across the site was northward, which corresponds with elevated results in May and July 2024. Flow returned largely southward in the latter half of 2024, when chloride was measured at 14.7 mg/L in November 2024.

Altogether, groundwater flow patterns across the site are variable, and would allow for increased chloride concentrations along Dwiggins Road to be temporarily advanced northward to DG-3. Variability in chloride concentrations at wells DG-3 and DG-4 are indicative of impacts from punctuated road salt application events and influenced by dynamic groundwater flow patterns. Additionally, this river-controlled flow pattern likely contributes to variability of sulfate in site groundwater discussed in Section 5.4, as the Missouri River contains relatively high sulfate concentrations compared to groundwater in the vicinity of DG-3.

6.0 DEMONSTRATION THAT STATISTICALLY SIGNIFICANT INCREASES WERE NOT CAUSED BY SCPC IMPACTS

Based on the information presented in Section 5.0 above, the SSIs of chloride and sulfate at monitoring well DG-3 from the May 2024 detection monitoring event are not a result of impacts from the SCPC. The following lines of evidence support this claim:

- Key FGD indicator parameters such as boron, fluoride, calcium, and sulfate are not elevated at DG-3 when compared to previous sampling results.
- Variable sulfate and chloride concentrations that are greater than those at DG-3 exist immediately to the south/southeast of DG-3, which predate CCR placement in the SCPC.



Concentrations at DG-3 are influenced by variable groundwater flow directions at the site, which at times flows northward from areas of elevated concentrations along Dwiggins Road, which receives road salt for winter ice control.

Along with these lines of evidence listed above, the SCPC is documented to be constructed with an engineered compacted clay liner overlain by a 60-mil HDPE geomembrane liner system, which was designed and constructed to properly contain CCR and prevent groundwater impacts.

7.0 REFERENCES

- Ameren Missouri. 2016. Structural Integrity Criteria & Hydrologic/Hydraulic Capacity Assessment, Sioux Energy Center.
- Electric Power Research Institute (EPRI). 1998, Field Evaluation of the Comanagement of Utility Low-Volume Wastes With High-Volume Coal Combustion By-Products: SX Site. Report TRACE-108409. September 1998.
- Electric Power Research Institute (EPRI). 2011, Composition and Leaching of FGD Gypsum and Mined Gypsum, Report 1022146. November 2011.
- Electric Power Research Institute (EPRI). 2012, Groundwater Quality Signatures for Assessing Potential Impacts from Coal Combustion Product Leachate, Report 1017923. October 2012.
- Electric Power Research Institute (EPRI). 2017, Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites, Report 3002010920, October 2017.
- Golder Associates Inc., 2017, 40 CFR Part 257 Groundwater Monitoring Plan, SCPC Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2018, 2017 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2019a, 2018 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2019b, Updated Statistical Limits With Additional Background Data SCPC.
- Golder Associates Inc., 2020, 2019 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates Inc., 2021, 2020 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates USA Inc., 2022a, 2021 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Golder Associates USA Inc., 2022b, Updated Statistical Limits With Additional Background Data, Surface Impoundment (SCPC), Sioux Energy Center St. Charles County, Missouri, USA.
- GREDELL Engineering Resources, Inc. 2006. Detailed Geologic and Hydrologic Site Investigation Report. AmerenUE Sioux Power Plant Proposed Utility Waste Disposal Area. St. Charles County, Missouri. August 2006.



- GREDELL Engineering Resources, Inc. 2009. Background Groundwater Monitoring Report. AmerenUE Sioux Power Plant. St. Charles County, Missouri. June 2009.
- Johnson, A.I. 1967. Specific Yield Compilation of Specific Yields for Various Materials: U.S. Geological Survey Water-Supply Paper 1662-D. Available at: https://pubs.er.usgs.gov/publication/wsp1662D.
- MDNR. 2011. Missouri Well Construction Rules. Missouri Department of Natural Resources Division of Geology and Land Survey. Rolla, MO. August 2011.
- Reitz & Jens, Inc., and GREDELL Engineering Resources, Inc. 2014. Ameren Missouri Sioux Power Plant Utility Waste Landfill – Proposed Construction Permit Modification – Construction Permit Number 0918301 – St. Charles County, Missouri, revised August 2014.
- Rocksmith Geoengineering, LLC, 2024a, 2023 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.
- Rocksmith Geoengineering LLC, 2024b, Updated Statistical Limits with Additional Background Data, SCPC CCR Unit, Sioux Energy Center, St. Charles, Missouri.
- USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery Program Implementation and Information Division. March 2009.
- USEPA. 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule/ [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER].
- WSP USA Inc., 2023, 2022 Annual Groundwater Monitoring Report, SCPC Surface Impoundment, Sioux Energy Center St. Charles County, Missouri, USA.



Tables



Table 1May 2024 Detection Monitoring ResultsSCPC Surface ImpoundmentSioux Energy Center, St. Charles County, MO

		BACKGR	OUND					GROU	NDWATER M	ONITORING W	ELLS				
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-1A	UG-1A	Prediction Limit UG-2	UG-2	Prediction Limit DG-1	DG-1	Prediction Limit DG-2	DG-2	Prediction Limit DG-3	DG-3	Prediction Limit DG-4	DG-4
						May 2024 De	etection Moni	itoring Event						-	
DATE	NA	5/28/2024	5/28/2024	NA	5/30/2024	NA	5/28/2024	NA	5/30/2024	NA	5/30/2024	NA	5/30/2024	NA	5/30/2024
рН	SU	6.86	6.95	6.433 - 7.279	7.04	6.29 - 7.5	7.04	6.565 - 7.38	7.13	6.725 - 7.268	7.09	6.66 - 7.227	7.06	6.638 - 7.221	6.99
BORON, TOTAL	μg/L	58.1 J	54.1 J	453.4	408	277.7	143	118.3	94.2 J	113.2	102	103.2	102	114.1	94.5 J
CALCIUM, TOTAL	μg/L	133,000	116,000	203,439	124,000	143,772	87,100	174,000	147,000 J	166,000	150,000	169,490	164,000	166,717	152,000
CHLORIDE, TOTAL	mg/L	10.1	11.1	147.8	82.7	93.74	6.7	10.0	11.2 J	10.93	5.6	17.26	26.6	155.7	14.9
FLUORIDE, TOTAL	mg/L	ND	ND	0.47	ND	0.34	ND	0.41	0.16 J	0.49	ND	0.49	ND	0.48	ND
SULFATE, TOTAL	mg/L	37.7	19.7	113.4	92.3	93.63	35.8	69.58	64.7 J	68	95.4 J	74.45	75.8	79.91	65.2
TOTAL DISSOLVED SOLIDS	mg/L	470	529	819.5	667	657.3	335	552.3	531	537	574	617.9	591	680.5	597
						July 2024 Ve	rification San	npling Event							
DATE	NA								7/30/2024		7/30/2024		7/29/2024		
pН	SU														
BORON, TOTAL	μg/L														
CALCIUM, TOTAL	μg/L														
CHLORIDE, TOTAL	mg/L								8.9				34.0 J		
FLUORIDE, TOTAL	mg/L														
SULFATE, TOTAL	mg/L										43.9		83.3		
TOTAL DISSOLVED SOLIDS	mg/L										485				

NOTES:

1. Unit Abbreviations: $\mu g/L$ - micrograms per liter, mg/L - milligrams per liter, SU - standard units.

2. J - Result is an estimated value.

3. NA - Not applicable.

4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

5. Prediction Limits calculated using Sanitas Software.

6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).

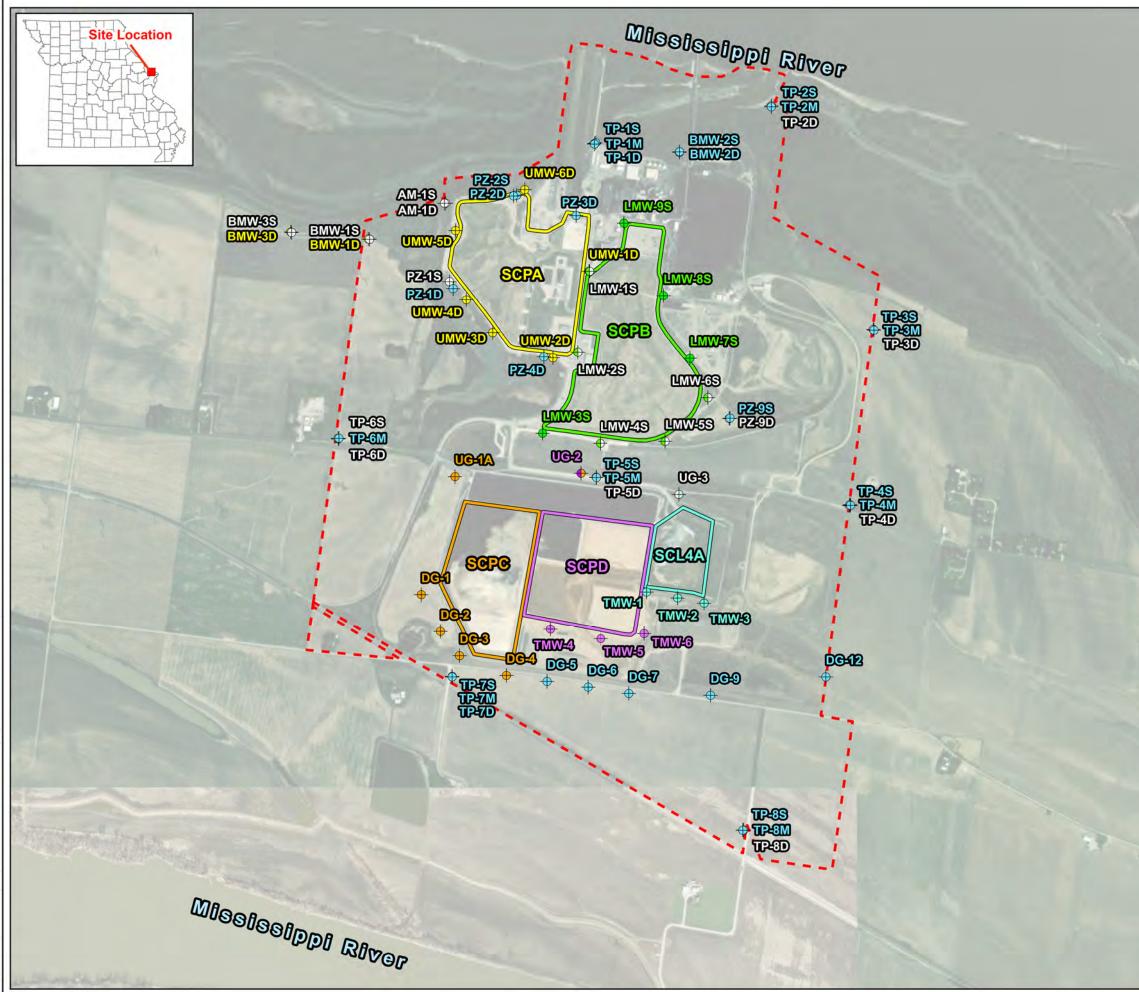
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).

8. Only analytes/wells that were detected above the prediction limit were tested during Verification Sampling.

Prepared By: JTR Checked By: JTA Reviewed By: MNH

Figures





SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

C Sioux Energy Center Property Boundary
CCR Units
SCPA - Bottom Ash Surface Impoundment (Closed)
SCPB - Fly Ash Surface Impoundment (Closed)
Utility Waste Landfill Cells
SCPC - FGD Surface Impoundment (Closed)
SCL4A - Dry CCR Disposal Area
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

- \oplus SCL4A and Corrective Action Monitoring Well
- \$ SCL4A Detection Monitoring Well
- 0 Monitoring Well Used for Water Level Elevation Measurements Only

NOTES

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

REFERENCES

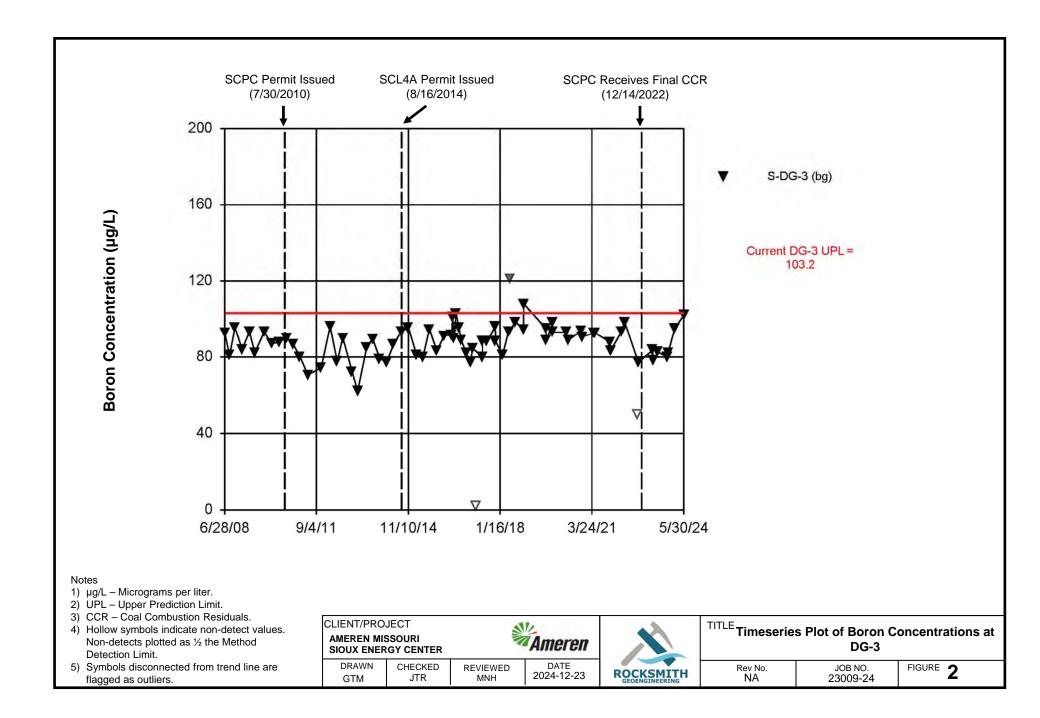
1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.

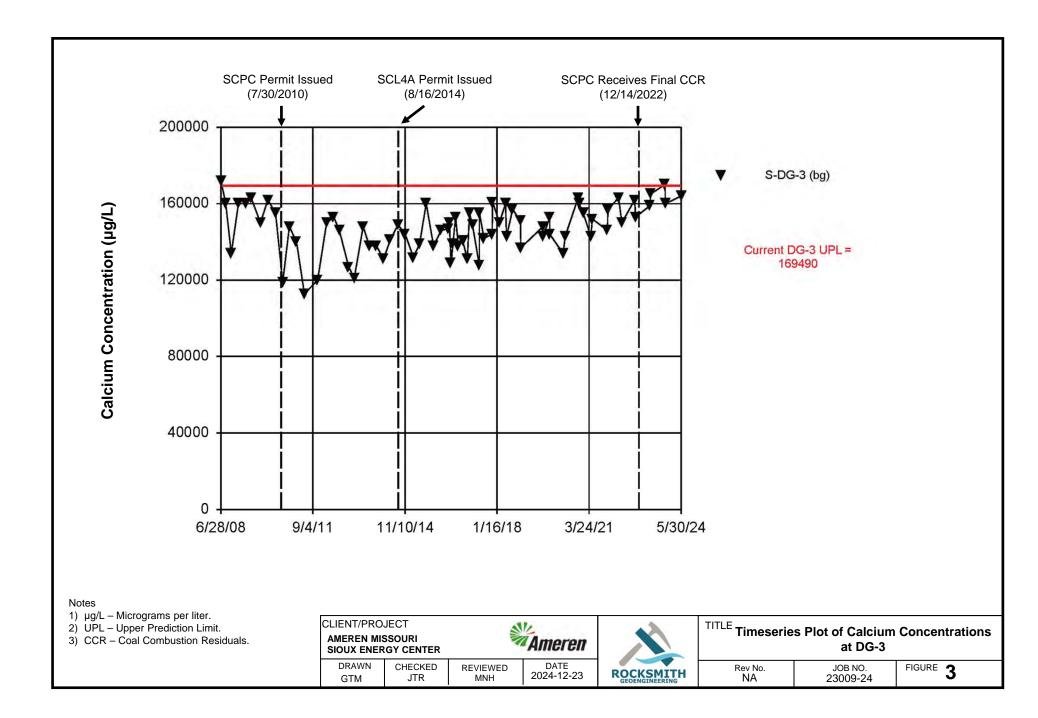


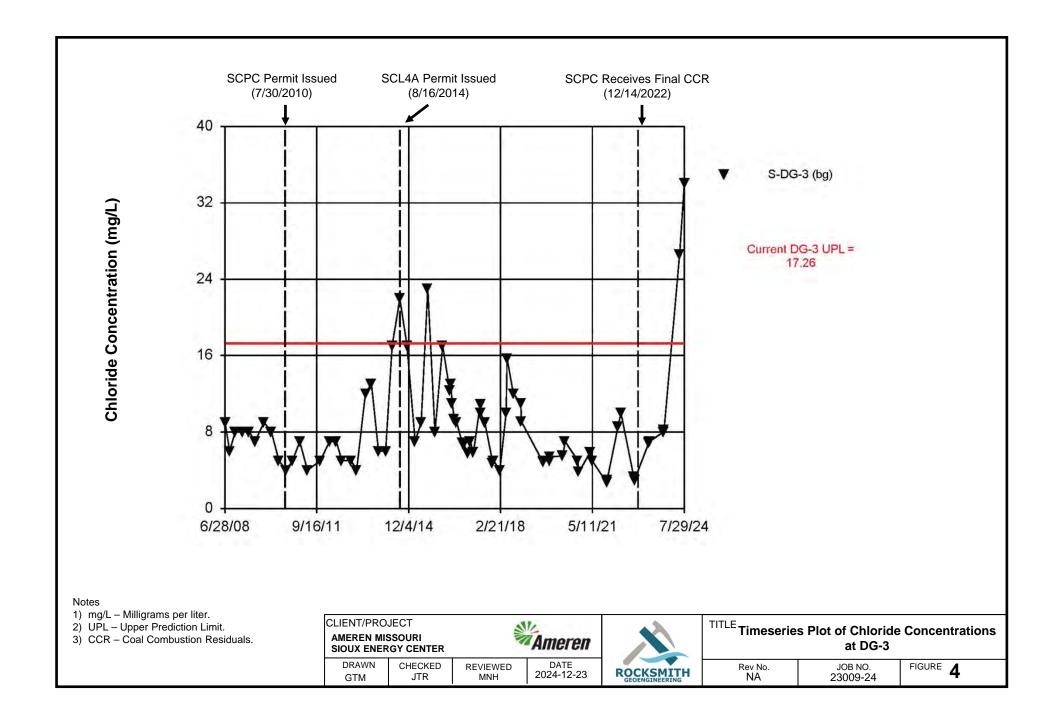
PROJEC

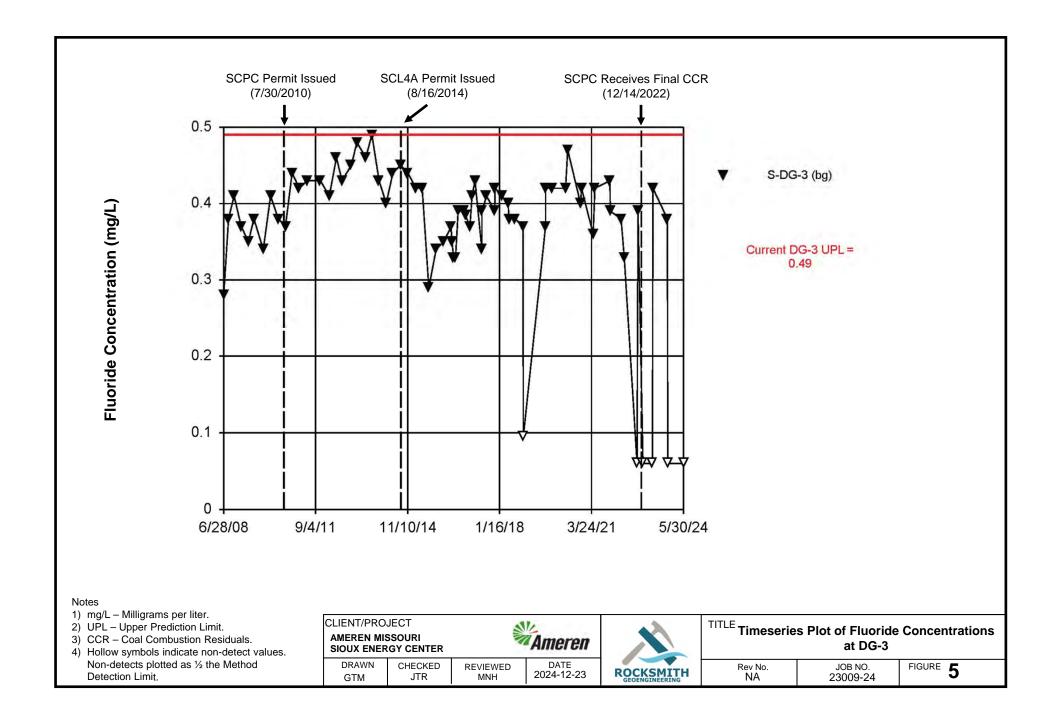
CCR RULE GROUNDWATER MONITORI	NG PROGRAM
CLIENT AMEREN MISSOURI SIOUX ENERGY CENTER	Ameren

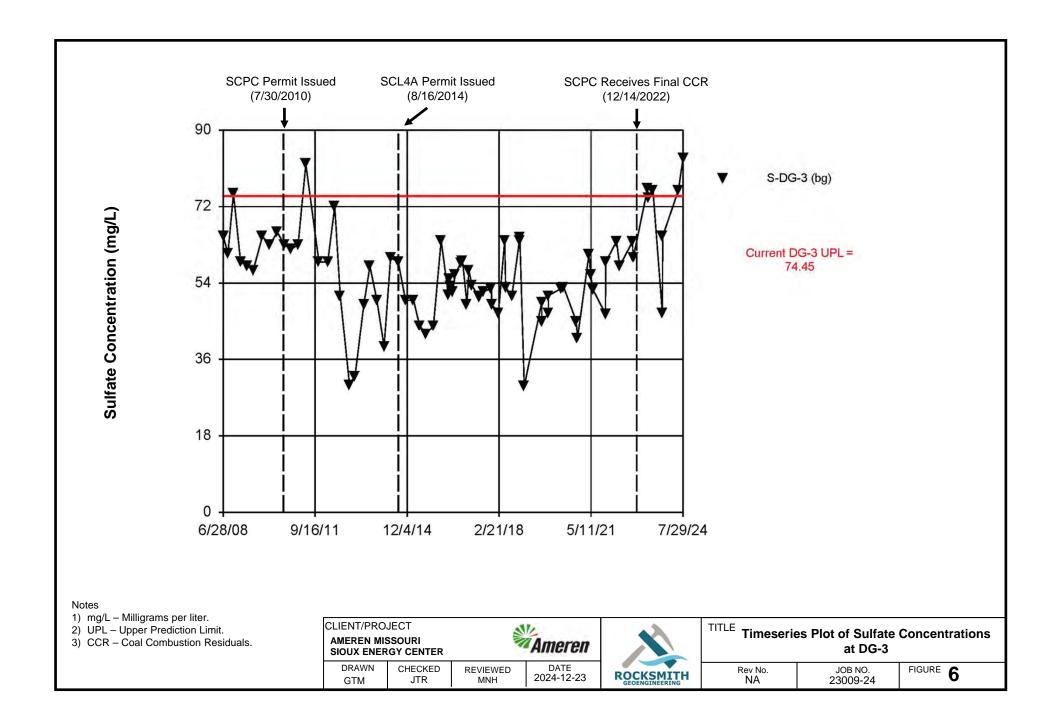
SIOUX ENERGY GEI	Autor on	
	DESIGN JSI	YYYY-MM-DD 2024-12-04
	PREPARED JSI	PROJECT No 23009-24
	REVIEW GTM	FIOLIDE 4
GEOENGINEERING	APPROVED MNH	FIGURE 1

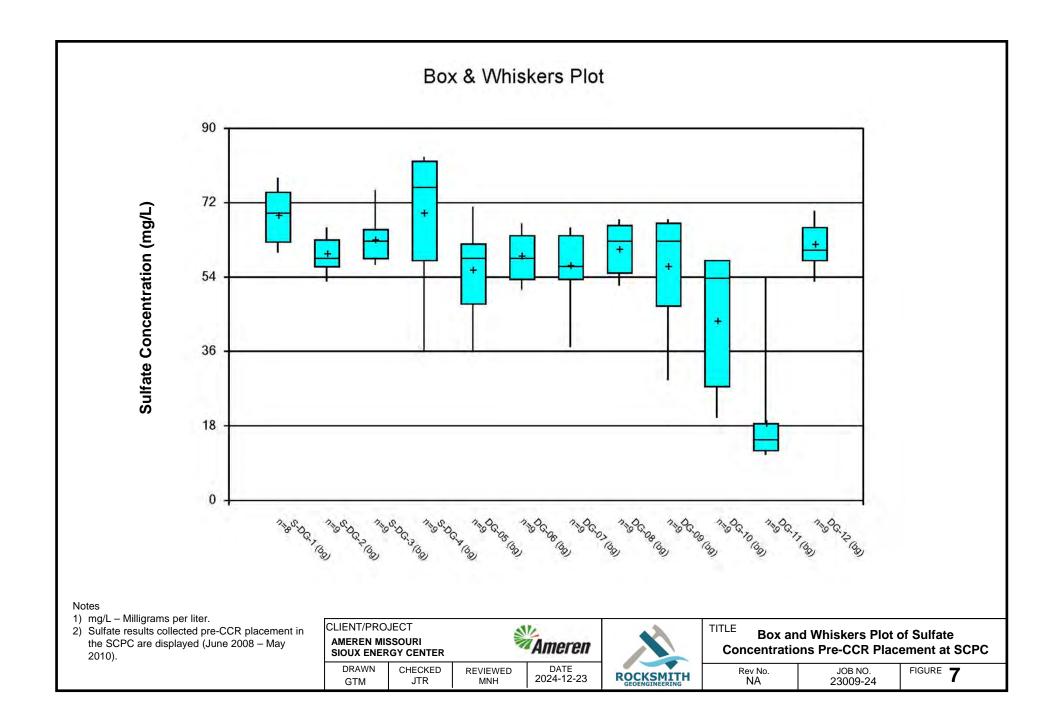


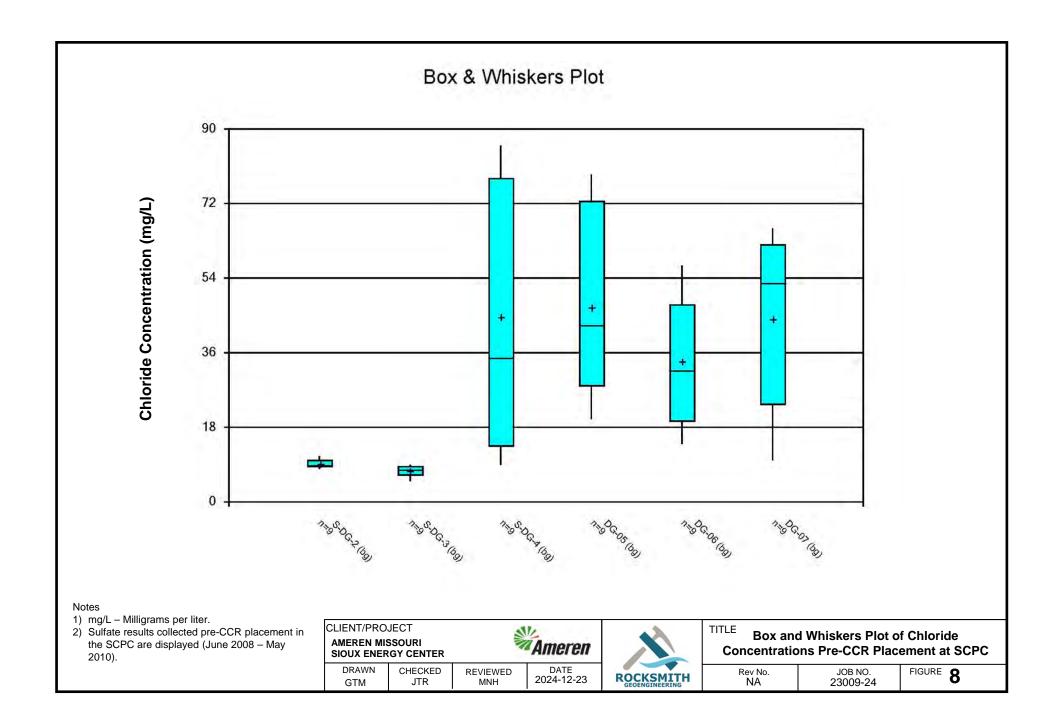


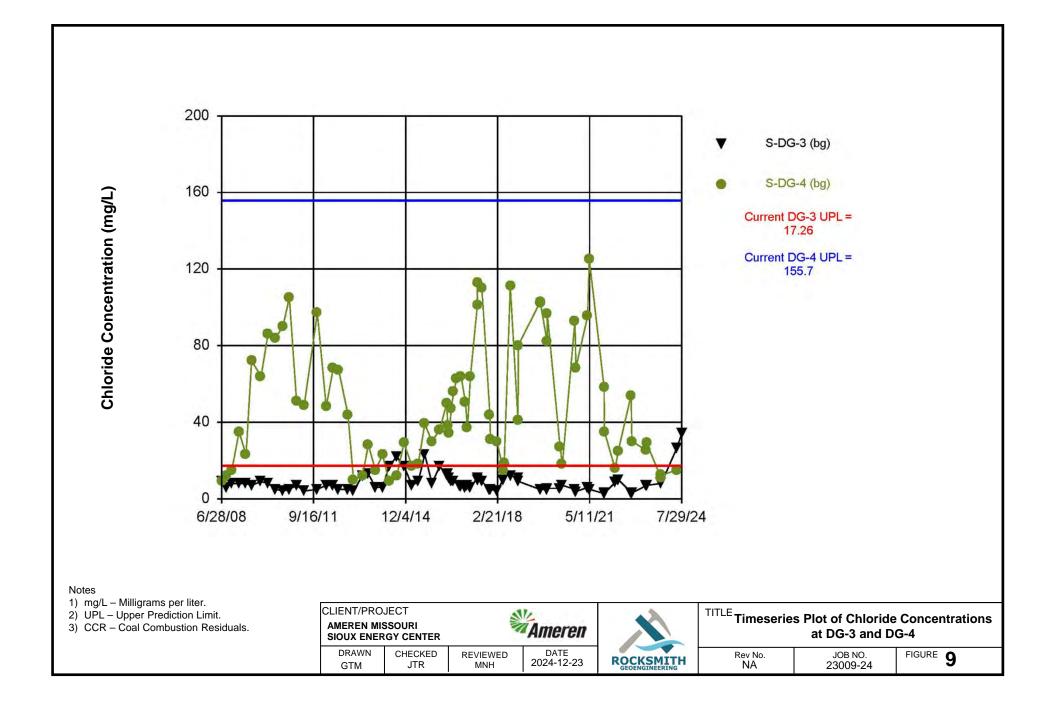


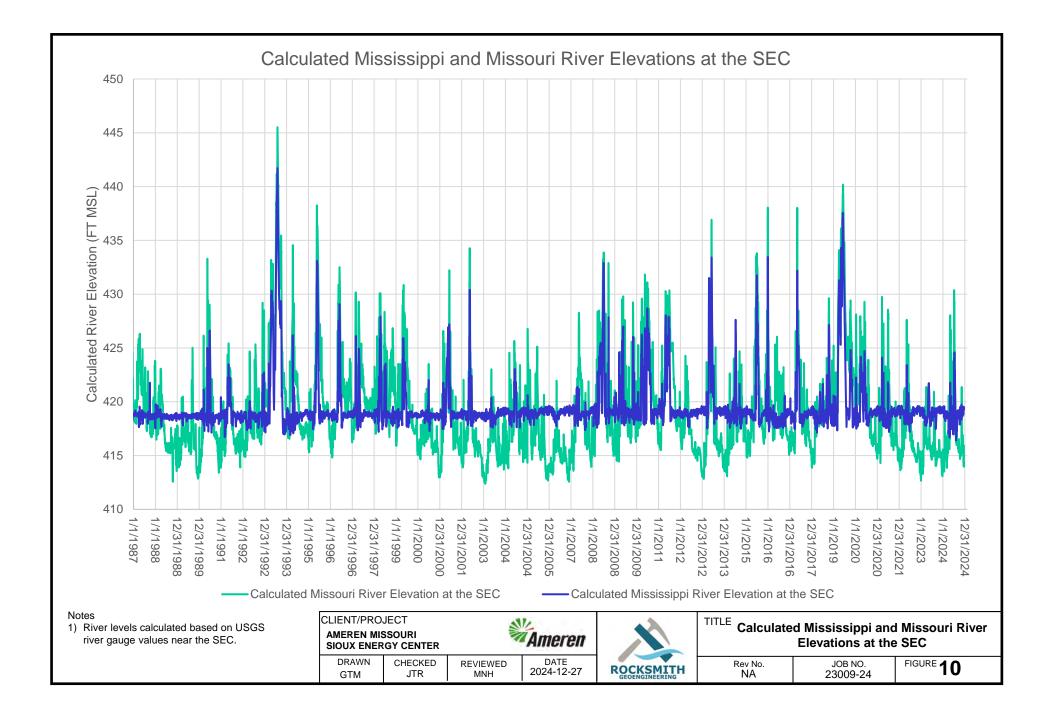


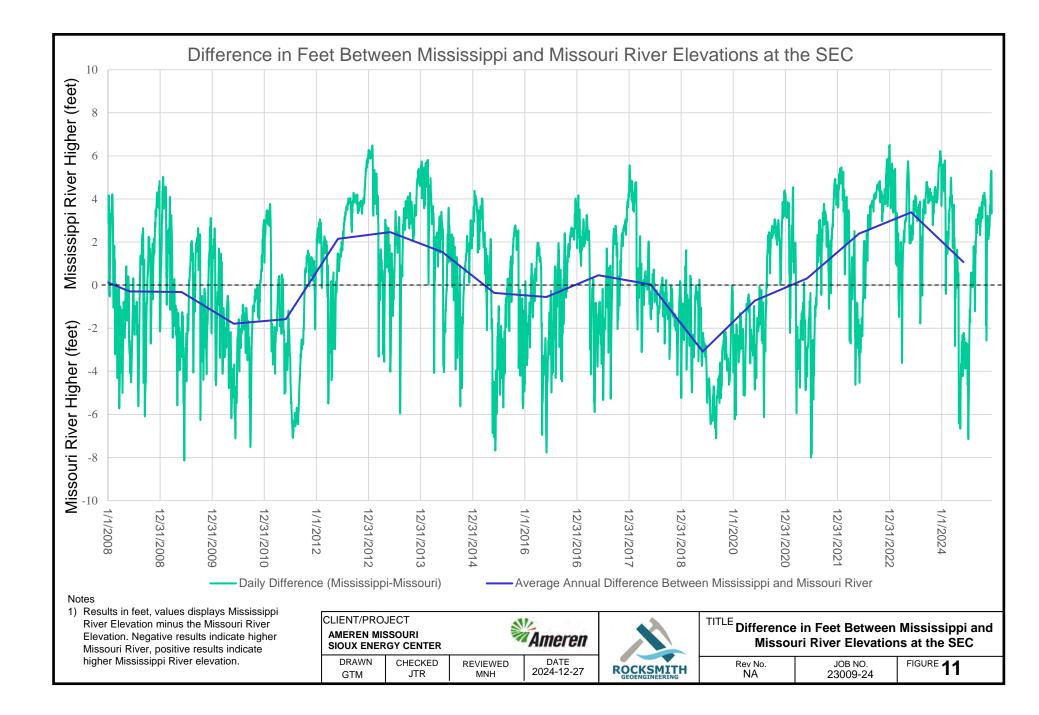






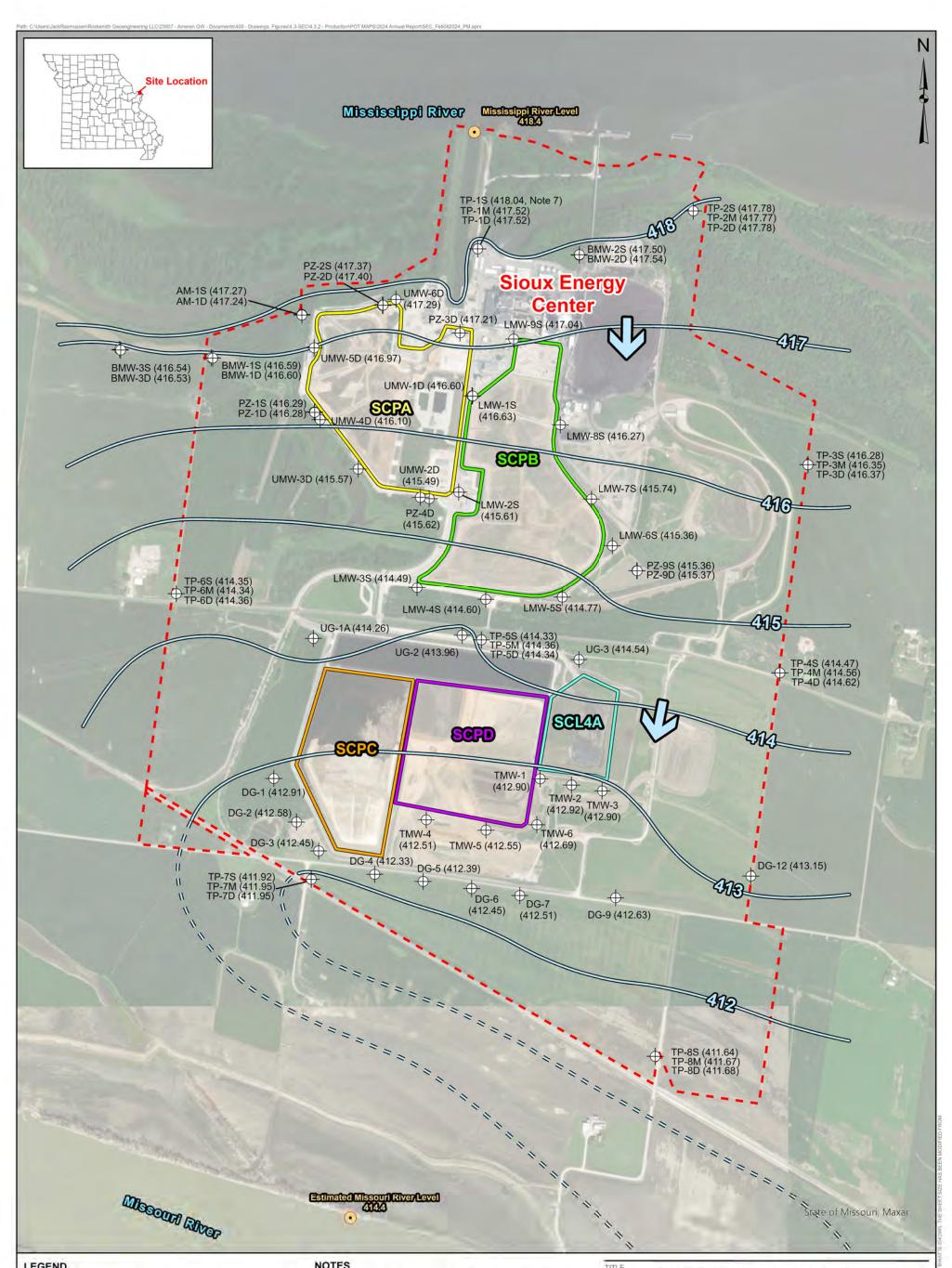






Appendix D 2024 Potentiometric Surface Maps



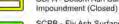


 -		in the	
 G	-		σ.,
 	- 1	чIJ	

-	-	Sioux Energy Center
	-	Property Boundary

CCR Units





SCPB - Fly Ash Surface Impoundment (Closed)



SCPA - Bottom Ash Surface

enter



SCL4A - Dry CCR Disposal Area

SCPD - FGD Surface Impoundn

Groundwa MSL)	ater Elevation Contour (FT
	Groundwater Elevation Contour (FT MSL)
= =	Inferred Groundwater Elevation Contour (FT MSL)
	urface Water nent Locations
	River Gauge Location
Φ	Monitoring Well or Piezometer
R	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.

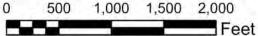
7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.

REFERENCES

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP FEBRUARY 2011

2.401 FEET.

3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450)



TITLE **FEBRUARY 6, 2024 POTENTIOMETRIC** SURFACE MAP

PROJECT

CCR GROUNDWATER MONITORING PROGRAM

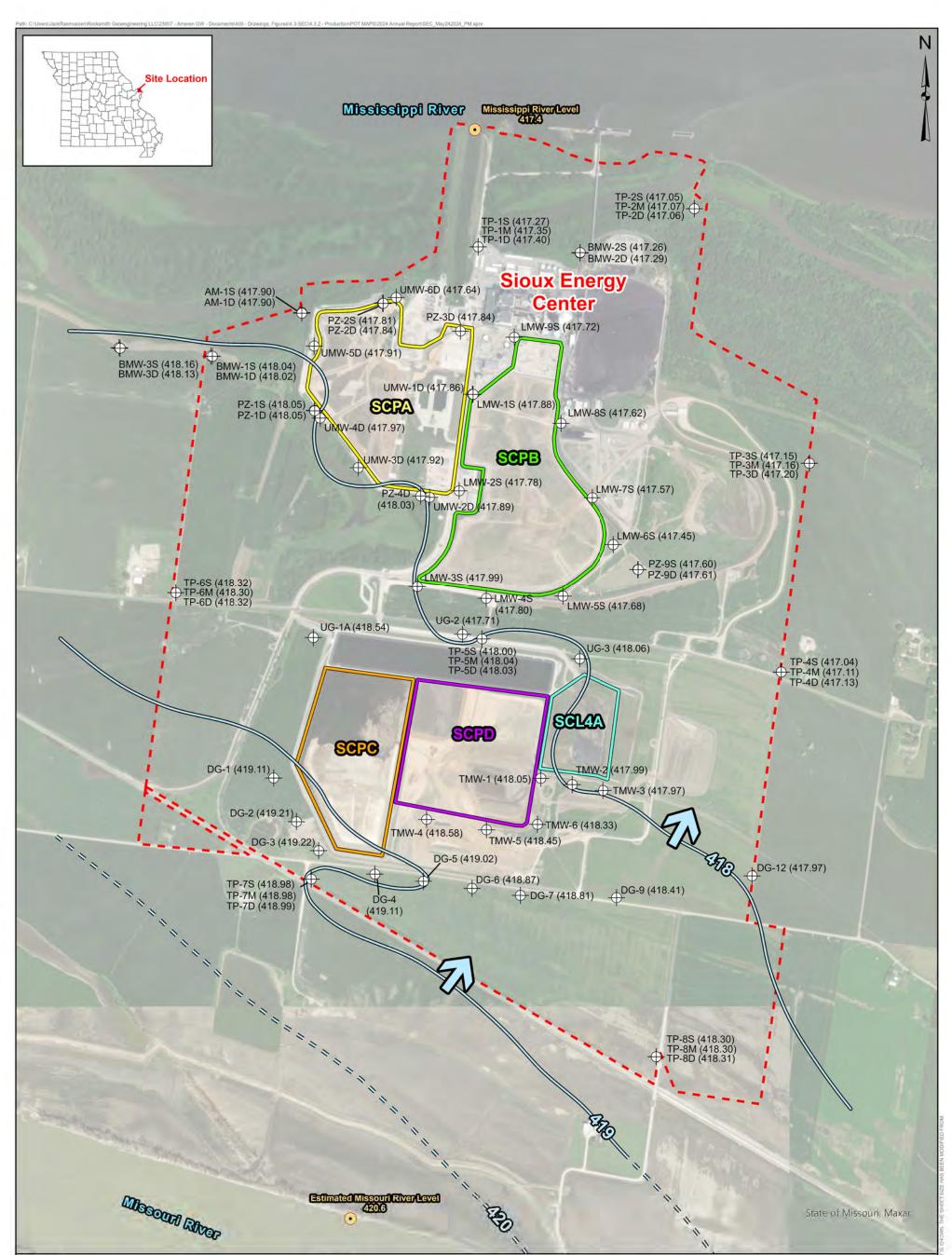




SVI	
Amer	on
- AIIICI	GII

....

	DESIGN	GTM	YYYY-MM-DD 2024-07-03
	PREPARED	JTA	PROJECT No. 23009-24
1	REVIEW	GTM	
	APPROVED	MNH	FIGURE D1

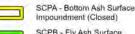


LE	G	E	N	D	

-	-	Sioux Energy Center
-	-	Property Boundary

CCR Units

G	_	_	_	_	_
Ш					
Ľ	-	_			
7					



SCPB - Fly Ash Surface Impoundment (Closed)





SCL4A - Dry CCR Disposal Area

SCPD - FGD Surface Impou

Groundwater Elevation Contour (FT MSL) Groundwater Elevation Contour (FT MSL)

Inferred Groundwater = = Elevation Contour (FT MSL)

Ground/Surface Water **Measurement Locations**



Monitoring Well or Piezometer 5

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.

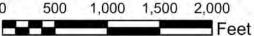
REFERENCES

0

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)



TITL MAY 24, 2024 POTENTIOMETRIC SURFACE MAP

PROJECT

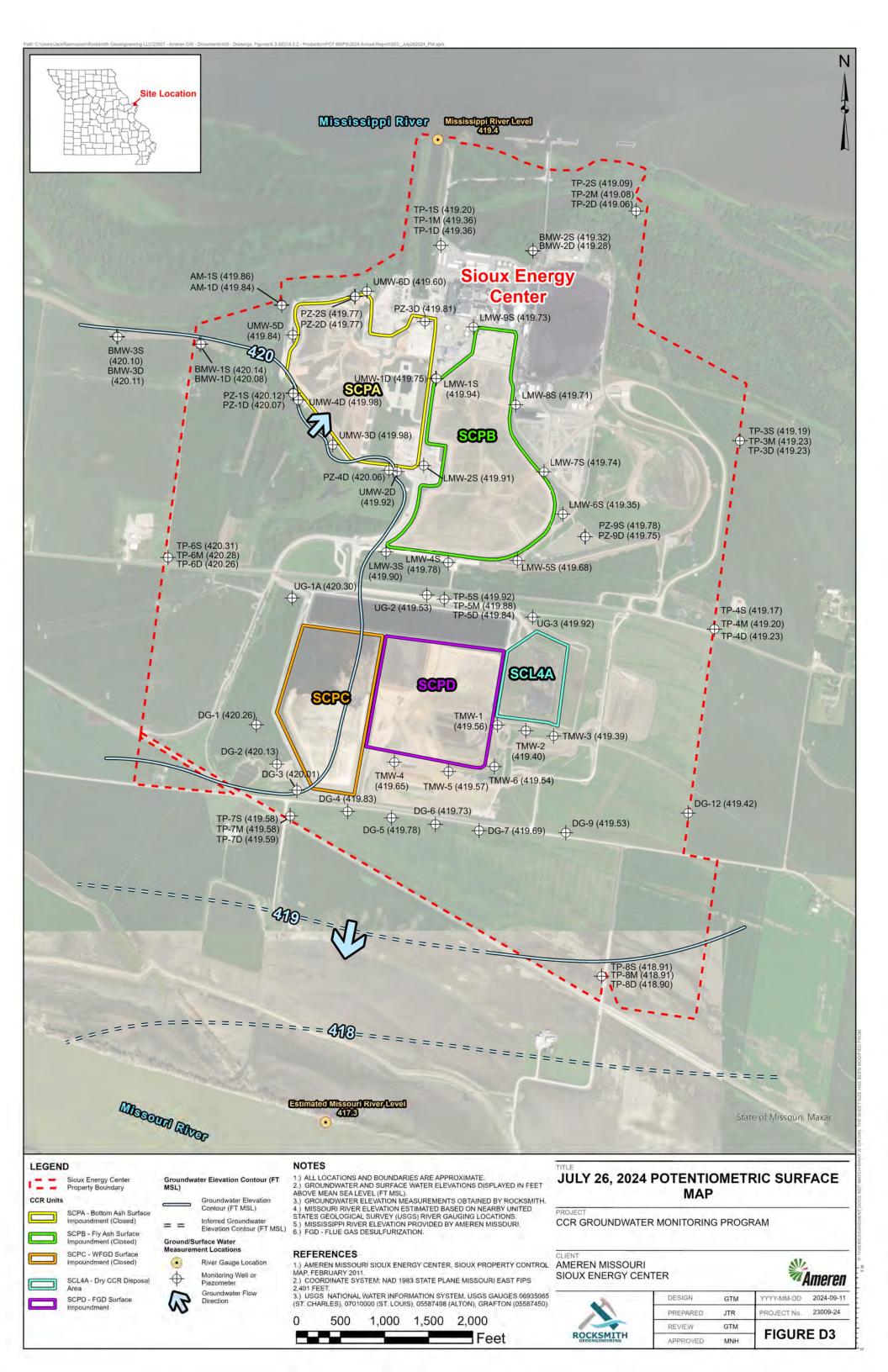
ROCKSMITH

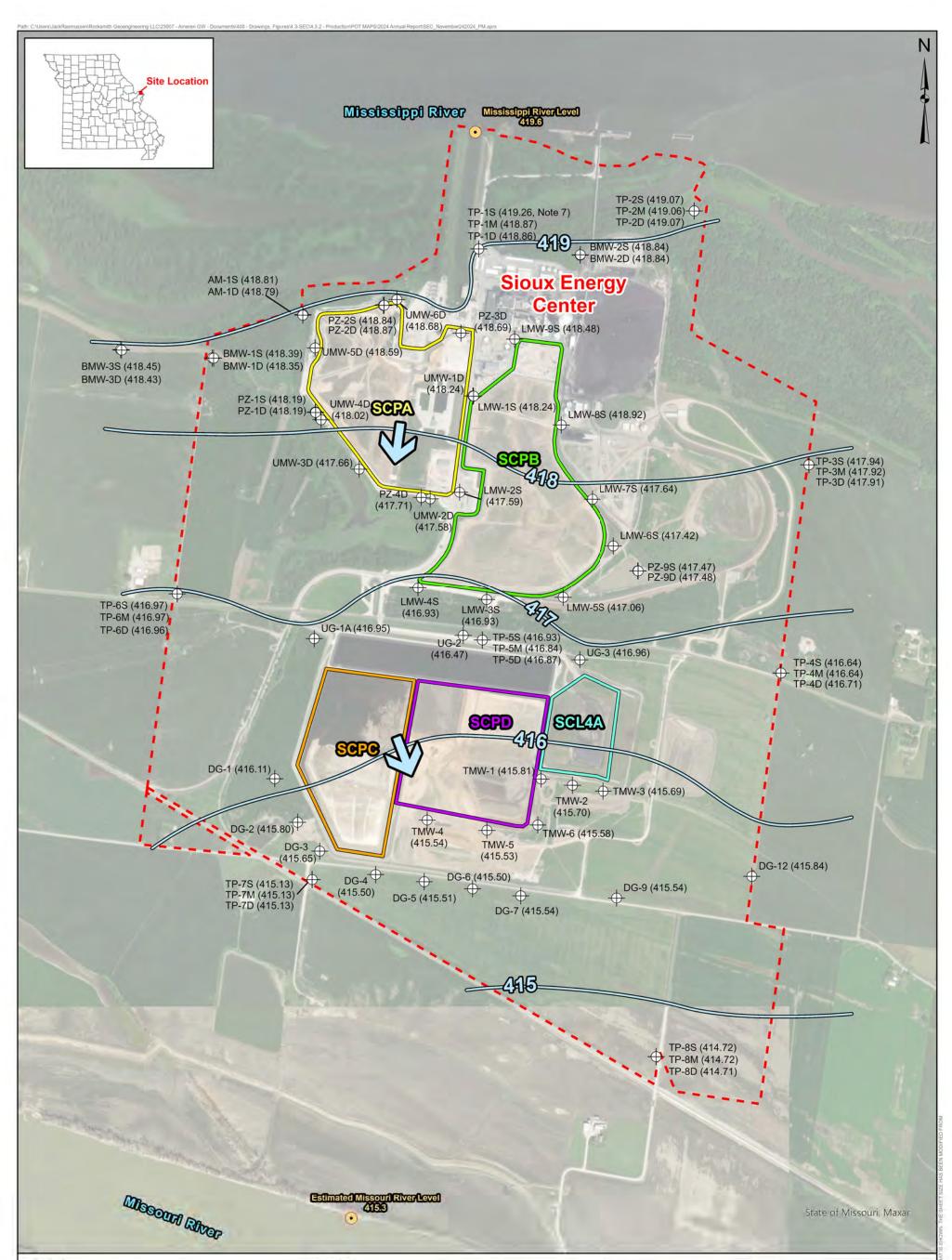
CCR GROUNDWATER MONITORING PROGRAM



MAmeren

ľ	DESIGN	GTM	YYYY-MM-DD	2024-07-03
Γ	PREPARED	JTA	PROJECT No.	23009-24
Γ	REVIEW	GTM	FIGURE D2	
	APPROVED	MNH	FIGUR	E D2





-	\sim	-		D	
-		-	N		

Sioux Energy Center Property Boundary - -

CCR Units



- SCPA Bottom Ash Surface Impoundment (Closed)
 - SCPB Fly Ash Surface Impoundment (Closed)
 - SCPC WFGD Surface Impoundment (Closed)



SCL4A - Dry CCR Disposal Area
and a second second second

SCPD - FGD Surface

Groundw MSL)	ater Elevation Contour (FT
_	Groundwater Elevation Contour (FT MSL)
= =	Inferred Groundwater Elevation Contour (FT MSL)
	Surface Water ment Locations
•	River Gauge Location
Φ	Monitoring Well or Piezometer
~	Groundwater Flow

Direction

2

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

0

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)

500 1,000 1,500 2,000 Feet

TITLE **NOVEMBER 14, 2024 POTENTIOMETRIC** SURFACE MAP

PROJECT

CCR GROUNDWATER MONITORING PROGRAM

