

REPORT

2021 Annual Groundwater Monitoring and Corrective Action Report

SCL4A - Utility Waste Landfill Cell 4A, Sioux Energy Center, St. Charles County, Missouri, USA

Submitted to:

Ameren Missouri

1901 Chouteau Avenue, St. Louis, Missouri 63103

Submitted by: **Golder Associates USA Inc.** 701 Emerson Road, Suite 250, Creve Coeur, Missouri, USA 63141

+1 314 984-8800

153140603

January 31, 2022

1.0 **EXECUTIVE SUMMARY AND STATUS OF THE SCL4A 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) Cell 4A (SCL4A) at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCL4A describes CCR Rule groundwater monitoring activities from January 1, 2021, through December 31, 2021, including verification results related to late 2020 sampling.

Throughout 2021, the SCL4A 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. In 2021, an SSI was determined for the April 2021 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 Date	Parameters Collected	Verified SSI	SSI Determination Date	ASD Completion Date	
er 2020 J Event	Detection Monitoring, November 16-17, 2020	December 28, 2020	Appendix III, Major Cations and Anions	None			
Novembe Sampling	Verification Sampling, January 11, 2021 Z 00		Detected Appendix III parameters (See Note 1)	Noie	NA	NA	
2021 Ig Event	Detection Monitoring, April 13, 2021	May 25, 2021	Appendix III, Major Cations and Anions		August 23,	November	
April 20 Sampling	Verification Sampling, June 2, 2021	June 18, 2021	Detected Appendix III parameters (See Note 1)	Sulfate: TMW-2	2021	19, 2021	
November 2021 Sampling Event	Detection Monitoring, November 8-9, 2021	December 28, 2021	Appendix III, Major Cations and Anions	To be determined after stat Sampling are o	istical analysis and completed in 2022.	l Verification	

Table 1 - Summary of 2021 SCL4A Sampling Events, Previous Year Verification, and Statistical
Evaluations

Notes:

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

SSI - Statistically Significant Increase. 2)

ASD - Alternative Source Demonstration. 3)

TDS - Total Dissolved Solids. 4)

5) NA - Not Applicable.

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 Alternative Source Demonstration was prepared for the April 2021 Detection Monitoring sampling event and is discussed further in this Annual Report.

There were no changes made to the monitoring system in 2021 with no new wells being installed or decommissioned.

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APPENDIX C

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2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

In accordance with the CCR Rule, a groundwater monitoring system has been installed to monitor the SCL4A. The groundwater monitoring system consists of six (6) groundwater monitoring wells screened in the uppermost aquifer and is displayed in **Figure 1**. No new monitoring wells were installed or decommissioned in 2021 as a part of the CCR Rule monitoring program for the SCL4A. For more information on the groundwater monitoring network, details are provided in the previous Annual Groundwater Monitoring Reports for the SCL4A.

3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the SCL4A CCR Unit in 2021. **Table 2** provides a summary of the groundwater samples collected in 2021 including the number of samples, the date of sample collection, and the monitoring program.

Sampling Event	BMW-1S	BMW-3S UG-3 TMW-1 Date of Sample Collect		TMW-1	TMW-2	TMW-3	Monitoring Program
		riogram					
January 2021 Verification Sampling	-	-	-	1/11/2021	1/11/2021	1/11/2021	Detection
April 2021 Detection Monitoring	4/13/2021	4/13/2021	4/13/2021	4/13/2021	4/13/2021	4/13/2021	Detection
June 2021 Verification Sampling	-	-	6/2/2021	-	6/2/2021	-	Detection
November 2021 Detection Monitoring	11/8/2021	11/8/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	Detection
Total Number of Samples Collected	2	2	3	3	4	3	NA

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.

3.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 16-17, 2020. Verification sampling and the statistical analysis to evaluate for SSIs for the November 2020 event were not completed until 2021 and are, therefore, included in this report. Detections of Appendix III analytes triggered a verification sampling event, which was completed on January 11, 2021, and did not verify any SSIs. **Table 3** summarizes the results of the statistical analysis of the November 2020 Detection Monitoring event and laboratory analytical data are provided in **Appendix A**.

Detection Monitoring samples were collected April 13, 2021, and testing was completed for all Appendix III analytes as well as major cation and anions. Statistical analysis of the data determined SSIs. Detections of Appendix III analytes triggered Verification Sampling, which was completed June 2, 2021, and the testing results verified an SSI. Table 4 summarizes the results of the statistical analysis of the April 2021 Detection Monitoring event and laboratory analytical data are provided in Appendix A.

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 SSI and is provided in Appendix B. This ASD demonstrates that SSI at the TMW-2 was not caused by the SCL4A CCR Unit and the SCL4A CCR Unit remains in Detection Monitoring.

As outlined in the Statistical Analysis Plan for this site, updates to the statistical limits are completed once four (4) to eight (8) new sample results are available. After statistical analysis of the April 2021 sampling event, the statistical limits used to determine an SSI were updated according to the Statistical Analysis Plan. These updated limits will be used for November 2021 and subsequent statistical analyses.

A Detection Monitoring sampling event was completed November 8-9, 2021, and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2021 data were not completed in 2021 and the results will be provided in the 2022 Annual Report. Table 5 summarizes the results of the November 2021 Detection Monitoring event and laboratory analytical data are provided in Appendix A.

3.2 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 C. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aguifer is dynamic and influenced by seasonal changes in the water level in the adjacent Mississippi and Missouri Rivers, since the alluvial aquifer is hydraulically connected to 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 were estimated for the alluvial aquifer wells at the SEC using commercially available software. Results from this assessment indicate that groundwater flow direction is variable due to fluctuating river levels, but has typically flowed from north to south. The overall net groundwater flow in the alluvial aguifer at the SEC was slightly to the east due to reversals in flow as a result of variable river levels in the Missouri and Mississippi Rivers. Horizontal gradients calculated by the program range from 0.00006 to 0.0009 feet/foot with an estimated net annual groundwater movement of approximately three (3) feet in the prevailing downgradient direction.

3.3 Sampling Issues

No notable sampling issues were encountered at the SCL4A in 2021.



4.0 ACTIVITIES PLANNED FOR 2022

Detection Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2022. Statistical analysis of the November 2021 Detection Monitoring data will be completed in 2022 and included in the 2022 Annual Report.

Tables



Table 3November 2020 Detection Monitoring ResultsSCL4A - Landfill Cell 4ASioux Energy Center, St. Charles County, MO

		BACKGR	OUND			GROL	JNDWATER M	ONITORING V	VELLS		
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-3	UG-3	Prediction Limit TMW-1	TMW-1	Prediction Limit TMW-2	TMW-2	Prediction Limit TMW-3	TMW-3
			N	ovember 2020	Detection M	onitoring Eve	nt				
DATE	NA	11/16/2020	11/16/2020	NA	11/17/2020	NA	11/17/2020	NA	11/17/2020	NA	11/17/2020
рН	SU	6.96	7.07	6.243-7.648	7.25	6.216-7.528	7.25	6.441-7.519	7.16	6.337-7.638	7.13
BORON, TOTAL	μg/L	75.1 J	66.3 J	1,027	188	DQR	65.7 J	DQR	87.9 J	114.8	88.5 J
CALCIUM, TOTAL	μg/L	141,000	125,000	160,085	119,000	115,800	119,000	134,272	128,000 J	150,887	130,000 J
CHLORIDE, TOTAL	mg/L	7.0	11.4	102.2	16.5	4.463	1.8	3.954	3.3	3.1	2.1
FLUORIDE, TOTAL	mg/L	0.34	0.40	0.3772	0.34	0.4264	0.43	0.4061	0.34	0.3573	0.37
SULFATE, TOTAL	mg/L	24.8	30.6	165.7	69.5	50.29	37.1	52.1	46.3	60.9	37.6
TOTAL DISSOLVED SOLIDS	mg/L	505	455	698.7	473	485.1	398	495.8	673	505.9	433
				January 2021	Verification S	ampling Event	t				
DATE	NA						1/11/2021		1/11/2021		1/11/2021
pН	SU										
BORON, TOTAL	μg/L										
CALCIUM, TOTAL	μg/L						114,000				
CHLORIDE, TOTAL	mg/L										
FLUORIDE, TOTAL	mg/L						0.38				0.32
SULFATE, TOTAL	mg/L										
TOTAL DISSOLVED SOLIDS	mg/L								435		

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. Prediction Limits calculated using Sanitas Software.

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

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

7. If all background values are less than the Practical Quantitation Limit (PQL) then the Double Quantification Rule (DQR) is used.

Table 4 April 2021 Detection Monitoring Results SCL4A - Landfill Cell 4A Sioux Energy Center, St. Charles County, MO

		BACKGR	OUND			GROU	JNDWATER M	ONITORING W	VELLS		
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-3	UG-3	Prediction Limit TMW-1	TMW-1	Prediction Limit TMW-2	TMW-2	Prediction Limit TMW-3	TMW-3
				April 2021 D	etection Mon	itoring Event					
DATE	NA	4/13/2021	4/13/2021	NA	4/13/2021	NA	4/13/2021	NA	4/13/2021	NA	4/13/2021
рН	SU	6.85	6.98	6.243-7.648	7.08	6.216-7.528	7.07	6.441-7.519	6.99	6.337-7.638	6.99
BORON, TOTAL	μg/L	70.8 J	74.2J	1,027	225	DQR	57.2 J	DQR	76.0 J	114.8	75.8 J
CALCIUM, TOTAL	μg/L	149,000	134,000	160,085	139,000	115,800	93,200	134,272	105,000	150,887	114,000
CHLORIDE, TOTAL	mg/L	8.2	12.8	102.2	41.4	4.463	2.1	3.954	3.4	3.1	2.2 J
FLUORIDE, TOTAL	mg/L	0.36	0.39	0.3772	0.38	0.4264	0.41	0.4061	0.43	0.3573	0.32
SULFATE, TOTAL	mg/L	29.4	34.8	165.7	58.2	50.29	47.7	52.1	64.8	60.9	33.1
TOTAL DISSOLVED SOLIDS	mg/L	579	509	698.7	578	485.1	386	495.8	439	505.9	445
				June 2021 V	erification Sai	npling Event					
DATE	NA				6/2/2021				6/2/2021		
pН	SU										
BORON, TOTAL	μg/L										
CALCIUM, TOTAL	μg/L										
CHLORIDE, TOTAL	mg/L										
FLUORIDE, TOTAL	mg/L				0.33				0.38		
SULFATE, TOTAL	mg/L								64.0		
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. Prediction Limits calculated using Sanitas Software.

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

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

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

8. If all background values are less than the Practical Quantitation Limit (PQL) then the Double Quantification Rule (DQR) is used.

Table 5November 2021 Detection Monitoring ResultsSCL4A - Landfill Cell 4ASioux Energy Center, St. Charles County, MO

		BACKG	ROUND	GROU	GROUNDWATER MONITORING WELLS				
ANALYTE	UNITS	BMW-1S	BMW-3S	UG-3	TMW-1	TMW-2	TMW-3		
	N	ovember 202	1 Detection N	Ionitoring Eve	nt				
DATE	NA	11/8/2021	11/8/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021		
рН	SU	6.86	6.99	6.71	6.94	6.97	6.96		
BORON, TOTAL	μg/L	66.9 J	67.8 J	210	69.8 J	86.9 J	96.5 J		
CALCIUM, TOTAL	μg/L	160,000	137,000	126,000	111,000	115,000	126,000		
CHLORIDE, TOTAL	mg/L	7.4	12.0	24.5	1.9 J	1.8 J	2.6 J		
FLUORIDE, TOTAL	mg/L	ND	0.46	0.38	0.46 J	0.36	0.32		
SULFATE, TOTAL	mg/L	31.8	31.2	66.0	41.5	46.0	34.6		
TOTAL DISSOLVED SOLIDS	mg/L	534	461	519	390	423	449		

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.

Figures



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APPROXIMATE. NTER, SIOUX PROPER E PLANE MISSOURI EA IG PROGRAM P AND MONITO YYYY-MM-DD DESIGNED PREPARED	Feet RTY CONTROL MAP, FEBRUA AST FIPS 2,401 FEET. RING WELL 2021-12-21 JSI RJF
APPROXIMATE. NTER, SIOUX PROPER E PLANE MISSOURI EA IG PROGRAM PAND MONITO YYYY-MM-DD DESIGNED PREPARED REVIEWED	Feet RTY CONTROL MAP, FEBRUA AST FIPS 2,401 FEET. RING WELL 2021-12-21 JSI RJF GTM

APPENDIX A

Laboratory Analytical Data





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

January 20, 2021

Jeffrey Ingram Golder Associates 13515 Barrett Parkway Drive Suite 260 Ballwin, MO 63021

RE: Project: AMEREN SCL4A - VS Pace Project No.: 60358899

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 13, 2021. 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,

Parmi Church

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

Enclosures

cc: Ryan Feldmann, Golder Mark Haddock, Golder Associates Eric Schneider, Golder Associates





CERTIFICATIONS

Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 200030 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Nevada Certification #: KS000212020-2 Oklahoma Certification #: 9205/9935 Florida: Cert E871149 SEKS WET Texas Certification #: T104704407-19-12 Utah Certification #: KS000212019-9 Illinois Certification #: 004592 Kansas Field Laboratory Accreditation: # E-92587 Missouri SEKS Micro Certification: 10070



SAMPLE SUMMARY

Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60358899001	S-TMW-1	Water	01/11/21 09:27	01/13/21 04:00
60358899002	S-TMW-2	Water	01/11/21 10:15	01/13/21 04:00
60358899003	S-TMW-3	Water	01/11/21 11:07	01/13/21 04:00
60358899004	S-SCL4A-DUP-1	Water	01/11/21 00:00	01/13/21 04:00
60358899005	S-SCL4A-FB-1	Water	01/11/21 09:40	01/13/21 04:00



SAMPLE ANALYTE COUNT

Project: AMEREN SCL4A - VS Pace Project No.: 60358899

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60358899001	S-TMW-1	EPA 200.7	нкс	1	PASI-K
		SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358899002	S-TMW-2	EPA 200.7	НКС	1	PASI-K
		SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358899003	S-TMW-3	EPA 300.0	CRN2	1	PASI-K
60358899004	S-SCL4A-DUP-1	EPA 200.7	НКС	1	PASI-K
		SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358899005	S-SCL4A-FB-1	EPA 200.7	НКС	1	PASI-K
		SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Sample: S-TMW-1	Lab ID:	60358899001	Collected	l: 01/11/21	09:27	Received: 01/	(13/21 04:00 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			
Calcium	114000	ug/L	200	32.4	1	01/18/21 11:25	01/18/21 16:36	7440-70-2	
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ty					
Total Dissolved Solids	399	mg/L	10.0	10.0	1		01/15/21 10:25		
300.0 IC Anions 28 Days		Method: EPA 3 ytical Services		ty					
Fluoride	0.38	mg/L	0.20	0.085	1		01/14/21 20:39	16984-48-8	



Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Sample: S-TMW-2	Lab ID:	60358899002	Collecte	d: 01/11/21	10:15	Received: 01/	/13/21 04:00 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2	•		nod: EP	PA 200.7			
Calcium	122000	ug/L	200	32.4	1	01/18/21 11:25	01/18/21 16:38	7440-70-2	
2540C Total Dissolved Solids	,	Method: SM 25 ytical Services		ity					
Total Dissolved Solids	435	mg/L	5.0	5.0	1		01/18/21 10:12		
300.0 IC Anions 28 Days		Method: EPA 3		ity					
Fluoride	0.35	mg/L	0.20	0.085	1		01/14/21 20:53	16984-48-8	



Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Sample: S-TMW-3	Lab ID:	60358899003	Collecte	d: 01/11/21	11:07	Received: 01/	/13/21 04:00 Ma	trix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Method: EPA 3		Sity					
Fluoride	0.32	mg/L	0.20	0.085	1		01/14/21 21:37	16984-48-8	



Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Sample: S-SCL4A-DUP-1	Lab ID:	60358899004	Collected	: 01/11/21	00:00	Received: 01/	(13/21 04:00 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Vethod: EPA 2	•		od: EP	A 200.7			
Calcium	115000	ug/L	200	32.4	1	01/18/21 11:25	01/18/21 16:46	7440-70-2	
2540C Total Dissolved Solids		Vethod: SM 25 /tical Services		у					
Total Dissolved Solids	398	mg/L	5.0	5.0	1		01/18/21 10:12		
300.0 IC Anions 28 Days		Vethod: EPA 3 /tical Services		у					
Fluoride	0.37	mg/L	0.20	0.085	1		01/14/21 21:51	16984-48-8	



Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

Sample: S-SCL4A-FB-1	Lab ID:	60358899005	Collected	: 01/11/21	09:40	Received: 01/	13/21 04:00 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			
Calcium	1100	ug/L	200	32.4	1	01/18/21 11:25	01/18/21 16:48	7440-70-2	
2540C Total Dissolved Solids		Method: SM 25 ytical Services		y					
Total Dissolved Solids	10.0	mg/L	5.0	5.0	1		01/18/21 10:12		
300.0 IC Anions 28 Days	,	Method: EPA 3 ytical Services		ty					
Fluoride	<0.085	mg/L	0.20	0.085	1		01/14/21 22:06	16984-48-8	



Project:	AMEREN SCL4A -	VS										
Pace Project No.:	60358899											
QC Batch:	699504		Analy	sis Method	d:	EPA 200.7						
QC Batch Method:	EPA 200.7		Analy	sis Descri	otion:	200.7 Metals	s, Total					
			Labo	ratory:		Pace Analyti	cal Serv	rices - Kansa	as City			
Associated Lab Sam	nples: 603588990	001, 6035889900	2, 6035889	9004, 603	58899005							
METHOD BLANK:	2821639			Matrix: W	ater							
Associated Lab Sam	nples: 603588990	001, 6035889900	2, 6035889	9004, 603	58899005							
			Blar	ık l	Reporting							
Param	neter	Units	Res	ult	Limit	MDL	-	Analyzed	d Qu	ualifiers		
Calcium		ug/L		34.2J	20	0	32.4	01/18/21 16	5:31			
LABORATORY COM	ITROL SAMPLE:	2821640										
Param	neter	Units	Spike Conc.	LC Res		LCS % Rec		Rec mits	Qualifiers			
Param	neter	Units ug/L	•	Res			Liı		Qualifiers	_		
		ug/L	Conc1000	Res	ult	% Rec 108	Liı	mits	Qualifiers	_		
Calcium		ug/L	- Conc. 1000		ult	% Rec 108	Liı	mits	Qualifiers	_	Max	
Calcium	ATRIX SPIKE DUP	ug/L	- Conc. 1000 641 MS	0 Res	2821642	% Rec 108		mits 85-115 MSD		RPD	Max RPD	Qual

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 SCL4A -	VS						
Pace Project No.: 60358899							
QC Batch: 699437		Analysis M	ethod:	SM 2540C			
QC Batch Method: SM 2540C		Analysis D	escription:	2540C Total D	Dissolved Solids		
		Laboratory	:	Pace Analytic	al Services - Ka	nsas Ci	ity
Associated Lab Samples: 603588990	001						
METHOD BLANK: 2821376		Matri	x: Water				
Associated Lab Samples: 603588990	001						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analy	zed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	0 5	5.0	5.0 01/15/21	10:21	
LABORATORY CONTROL SAMPLE:	2821377						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120		
SAMPLE DUPLICATE: 2821378							
Demonster	11-1-	60358825003		000	Max		
Parameter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solids	mg/L	1830	0 18	30	0	10	
SAMPLE DUPLICATE: 2821379		60358897001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solids	mg/L	655	5 6	 57	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:	AMER	EN SCL4A -	VS							
Pace Project No.:	603588	399								
QC Batch:	6994	74		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2	540C		Analysis De	escription:	2540C Total	Dissol	ved Solids		
				Laboratory:		Pace Analyti	cal Se	rvices - Kai	nsas C	lity
Associated Lab San	nples:	60358899	002, 60358899004	, 60358899005						
METHOD BLANK:	282150)2		Matrix	: Water					
Associated Lab San	nples:	60358899	002, 60358899004	, 60358899005						
				Blank	Reporting					
Paran	neter		Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Total Dissolved Solie	ds		mg/L	<5.0) :	5.0	5.0	01/18/21	10:11	
LABORATORY COM	NTROL	SAMPLE:	2821503							
				Spike	LCS	LCS		6 Rec		
Paran	neter		Units	Conc.	Result	% Rec	L	_imits	Qua	alifiers
Total Dissolved Solie	ds		mg/L	1000	1000	100		80-120		
SAMPLE DUPLICA	TE: 28	21504								
-				60358899002	Dup			Max		0 11
Paran			Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solie	ds		mg/L	435	4	42	1		10	
SAMPLE DUPLICA	TE: 28	21505								
_				60359028001	Dup			Max		0 11
Paran			Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solie	ds		mg/L	1070	10	80	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 SCL4A	- VS							
Pace Project No.:	60358899								
QC Batch:	699312		Analysis N	lethod:	EPA 300.0				
QC Batch Method:	EPA 300.0		Analysis D	escription:	300.0 IC Ar	nions			
			Laboratory	/:	Pace Analy	tical Se	rvices - Ka	nsas City	,
Associated Lab Sam	ples: 60358899	9001, 6035889900	2, 60358899003	, 6035889900	4, 603588990	005			
METHOD BLANK:	2820878		Matr	x: Water					
Associated Lab Sam	ples: 60358899	0001, 6035889900	2, 60358899003	, 6035889900	4, 603588990	005			
_			Blank	Reporting	-				o
Param	neter	Units	Result	Limit	MC		Analyz	zed	Qualifiers
Fluoride		mg/L	<0.08	5 0).20	0.085	01/14/21	20:10	
METHOD BLANK:	2822620		Matri	x: Water					
Associated Lab Sam	ples: 60358899	001, 6035889900	2, 60358899003	, 6035889900	4, 603588990	005			
_			Blank	Reporting	-				
Param	neter	Units	Result	Limit			Analyz	zed	Qualifiers
Fluoride		mg/L	<0.08	5 0).20	0.085	01/15/21	09:15	
METHOD BLANK:	2823077		Matri	x: Water					
METHOD BLANK: Associated Lab Sam		9001, 6035889900			4, 603588990	005			
		9001, 6035889900		, 6035889900 Reporting		005			
	nples: 60358899	9001, 6035889900 Units	2, 60358899003	, 6035889900			Analyz	zed	Qualifiers
Associated Lab Sam Param	nples: 60358899		2, 60358899003 Blank	, 6035889900 Reporting Limit	g		Analyz 01/18/21		Qualifiers
Associated Lab Sam	nples: 60358899	Units	2, 60358899003 Blank Result	, 6035889900 Reporting Limit	g MD)L			Qualifiers
Associated Lab Sam Param Fluoride LABORATORY CON	nples: 60358899	Units mg/L 2820879	2, 60358899003 Blank Result	, 6035889900 Reporting 5 C	g <u>MC</u> 0.20 LCS	0L 0.085	01/18/21	09:32	
Associated Lab Sam Param Fluoride	nples: 60358899	Units mg/L	2, 60358899003 Blank Result <0.08	, 6035889900 Reporting Limit 5 C	9 MC 	0L 0.085	01/18/21		
Associated Lab Sam Param Fluoride LABORATORY CON	nples: 60358899	Units mg/L 2820879	2, 60358899003 Blank Result <0.08 Spike	, 6035889900 Reporting 5 C	g <u>MC</u> 0.20 LCS	0L 0.085 9	01/18/21	09:32	
Associated Lab Sam Param Fluoride LABORATORY CON Param	nples: 60358899	Units mg/L 2820879 Units	2, 60358899003 Blank Result <0.08 Spike Conc.	, 6035889900 Reporting 	g ME 0.20 LCS % Rec	0L 0.085 9	01/18/21 % Rec Limits	09:32	
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON	nples: 60358899 neter ITROL SAMPLE: neter	Units mg/L 2820879 Units mg/L 2822621	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5 Spike	, 6035889900 Reporting 5 C LCS Result 2.6 LCS	g <u>MC</u> 0.20 LCS % Rec 10 LCS	0L 0.085 	01/18/21 % Rec Limits 90-110 % Rec	09:32 Quali	fiers
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON Param	nples: 60358899 neter ITROL SAMPLE: neter	Units mg/L 2820879 Units mg/L	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5	, 6035889900 Reporting 5 C LCS Result 2.6	g <u>MD</u> 0.20 LCS % Rec 10	0L 0.085 	01/18/21 % Rec Limits 90-110	09:32	fiers
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON	nples: 60358899 neter ITROL SAMPLE: neter	Units mg/L 2820879 Units mg/L 2822621	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5 Spike	, 6035889900 Reporting 5 C LCS Result 2.6 LCS	g <u>MC</u> 0.20 LCS % Rec 10 LCS	0.085 0.085 	01/18/21 % Rec Limits 90-110 % Rec	09:32 Quali	fiers
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON Param	nples: 60358899 neter ITROL SAMPLE: neter ITROL SAMPLE: neter	Units mg/L 2820879 Units g/L 2822621 Units	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5 Spike Conc. 2.5	, 6035889900 Reporting Limit 5 0 LCS Result 2.6 LCS Result 2.5	g <u>ME</u> 0.20 <u>ME</u> LCS % Rec 10 LCS % Rec 10	0L 0.085 	01/18/21 % Rec Limits 90-110 % Rec Limits 90-110	09:32 Quali	fiers
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON Param	nples: 60358899 neter ITROL SAMPLE: neter ITROL SAMPLE: neter	Units mg/L 2820879 Units mg/L 2822621 2822621 Units mg/L 2823078	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5 Spike Conc. 2.5 Spike	, 6035889900 Reporting Limit 5 0 LCS Result 2.6 LCS Result 2.5	g <u>ME</u> 0.20 <u>ME</u> LCS % Rec 10 LCS % Rec 10 LCS	0L 0.085 12 12 11 9 11 9	01/18/21 % Rec Limits 90-110 % Rec Limits 90-110 % Rec	Quali	fiers
Associated Lab Sam Param Fluoride LABORATORY CON Param Fluoride LABORATORY CON Param Fluoride	nples: 60358899 neter ITROL SAMPLE: neter ITROL SAMPLE: neter	Units mg/L 2820879 Units mg/L 2822621 Units mg/L	2, 60358899003 Blank Result <0.08 Spike Conc. 2.5 Spike Conc. 2.5	, 6035889900 Reporting Limit 5 0 LCS Result 2.6 LCS Result 2.5	g <u>ME</u> 0.20 <u>ME</u> LCS % Rec 10 LCS % Rec 10 LCS % Rec	0L 0.085 12 12 11 9 11 9	01/18/21 % Rec Limits 90-110 % Rec Limits 90-110	09:32 Quali	fiers

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

REPORT OF LABORATORY ANALYSIS

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Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

MATRIX SPIKE & MATRIX S		CATE: 2820	MS	MSD	2820881							
Parameter	6 Units	0358899002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.35	2.5	2.5	2.9	2.7	103	94	80-120	8	15	
MATRIX SPIKE & MATRIX S		CATE: 2820		MSD	2820962							
MATRIX SPIKE & MATRIX S			MS	MSD Spike			MS	MSD	% Rec		Мах	
MATRIX SPIKE & MATRIX S Parameter		CATE: 2820 0358897001 Result		MSD Spike Conc.	2820962 MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN SCL4A - VS

Pace Project No.: 60358899

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.

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

TNI - The NELAC Institute.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCL4A - VS Pace Project No.: 60358899

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60358899001	S-TMW-1	EPA 200.7	699504	EPA 200.7	699532
60358899002	S-TMW-2	EPA 200.7	699504	EPA 200.7	699532
60358899004	S-SCL4A-DUP-1	EPA 200.7	699504	EPA 200.7	699532
60358899005	S-SCL4A-FB-1	EPA 200.7	699504	EPA 200.7	699532
60358899001	S-TMW-1	SM 2540C	699437		
60358899002	S-TMW-2	SM 2540C	699474		
60358899004	S-SCL4A-DUP-1	SM 2540C	699474		
60358899005	S-SCL4A-FB-1	SM 2540C	699474		
60358899001	S-TMW-1	EPA 300.0	699312		
60358899002	S-TMW-2	EPA 300.0	699312		
60358899003	S-TMW-3	EPA 300.0	699312		
60358899004	S-SCL4A-DUP-1	EPA 300.0	699312		
60358899005	S-SCL4A-FB-1	EPA 300.0	699312		

Pace Analytical Sample Condition	Upon Receipt	WO#:60358899
Client Name: Golder Associates		
Courier: FedEx UPS VIA Clay		Pace 🛛 Xroads, 🖅 Client 🖾 Other 🗆
Tracking #: P	ace Shipping Label Use	*
Custody Seal on Cooler/Box Present: Yes Z No 🗆	Seals intact: Yes 4	No 🗆
Packing Material: Bubble Wrap □ Bubble Bags Thermometer Used: <u>1-298</u> Type	s □ Foam □ of Ice: wet Blue No	None Other BCC
Cooler Temperature (°C): As-read Corr. Fa	ctor -0.2 Correc	ted 0, 7 % Date and initials of person examining contents:
Temperature should be above freezing to 6°C 2,		1.9-0 1-13-2140
Chain of Custody present:		
Chain of Custody relinguished:	Dres DNo DN/A	
Samples arrived within holding time:	Pres DNo DN/A	
Short Hold Time analyses (<72hr):		
Rush Turn Around Time requested:		
Sufficient volume:		
Correct containers used:	Tes ONO ON/A	
Pace containers used:	Pres DNo DN/A	
Containers intact:	Yes No N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	Yes No AN/A	
Filtered volume received for dissolved tests?		
Sample labels match COC: Date / time / ID / analyses	AYes DNO DN/A	
Samples contain multiple phases? Matrix: WT		
Containers requiring pH preservation in compliance?		List sample IDs, volumes, lot #'s of preservative and the
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA Micro, O&G KS TPH OK-DRO) LOT#	603173	date/time added.
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# Cyanide water sample checks:	00115	
Lead acetate strip turns dark? (Record only)	□Yes □No	
Potassium iodide test strip turns blue/purple? (Preserve)	Yes No	×.
Trip Blank present:	Yes No PN/A	
Headspace in VOA vials (>6mm):	Yes No N/A	
Samples from USDA Regulated Area: State:	□Yes □No □N/A	
Additional labels attached to 5035A / TX1005 vials in the field	1? □Yes □No □N/A	
Client Notification/ Resolution: Copy COC		Field Data Required? Y / N
Person Contacted: Date/	Time:	
Comments/ Resolution		
Project Manager Revie	Date	

F-KS-C-003-Rev 11, February 28, 2018

Face Analytical

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

+

Section	Section A Benninged Client Information:	Section B	-					Sei	Section C										Bage				
Company	coninfor	Required Project Information:		nation:				Invi	Invoice Information:	mation:						,		-	-	ле.		4	
	Golder Associates	. 1	Threy In	gram				Atte	Attention:														
Address:	13515 Barrett Parkway Dr., Ste 260	Copy To: Ry	an Felc	Ryan Feldmann/Eric Schneider	ic Schne	eider		Cor	Company Name:	ame:						REGL	LATOF	REGULATORY AGENCY	2				
	Ballwin, MO 63021							Add	Address:								NPDES	GRI	GROUND WATER	ATER	DRIN	DRINKING WATER	L H
Email 7o:	jeffrey ingram@golder.com	Purchase Order No.:	r No.:					Paci	Pace Quote Reference:							L	UST	L RCRA	R	in	OTHER	ا د	
Phone:	Fax: 636-724-9323	Project Name:	Ameren	E.	Sull	A - V.	~	Pac	e Project ager;		Jamie Church	c				Site	Site Location	L					
Request	Requested Due Date/TAT: Standard	Project Number:	5	3140002	202	00030	0	Pac	e Profile #	9285						_	STATE:	Ĵ	Q				
														Requ	lested	Analys	is Filte	Requested Analysis Filtered (Y/N)					
	Section D Valid Matrix Codes Required Client Information <u>MATRIX</u> <u>COI</u>	odes CODE	_		COLLI	COLLECTED				Prese	Preservatives	ş	₹ N /A	z	z z	z							
	DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID OIL	ee valid codes (оскав с=сс	COMPOSITE START	SITE	COMPOSITE END/GRAB	SITE RAB													(N/A)			
	SAMPLE ID (A-Z, 0-91, -) Sample IDs MUST BE UNIQUE	AR OT TS						D TA 9M9T			6		test eis		(48824	
# WƏTI		XIATAM	BIGMAS	DATE	TIME	DATE	TIME	_	H ^s 2O [¢] Nubrese	[®] ONH	N ^{gS} S ^S O ^S N ^g OH HCI	Methano	γlsnA↓	O 7.002	Chloride	Sulfate Sulfate				9		Pace Project No / Lab ID	2
1	1-mul->	WT	ບ 	-		12/11/1	t21,0	2	-	-						-							
2	2-MMUL-S	WT	T G	_		-	1015	2		E				-									
e	S-MMW-S	3 WT	T G	_		_	101		-				<u> </u>										
4	5-SLLHA - DUP.	P. I WT	T G	_			1	5	1	-				5	1								
5	5-56142- FB	3 - 1 WT	U F	-		_	2469	2	-	-			1.2.1	1	1				F		-		
9	5-SCL4A-MS	5-1 WT	U F	_			1015	N	1	1				1	/								
7	5-56444 1150-1	SD-1 WT	U L			+	1015	2		-				1	1								
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ge 1					SAMPLE	ER NAME /	SAMPLER NAME AND SIGNATURE	TURE											э.		belee		JOBIL
8 of						PRINT Nam	PRINT Name of SAMPLER:		Elle	V^{j}	shur	2							uj du	bevie A\Y) (_		(N/Y
i 18						SIGNATUR	URE of SAMPLER:		12.	1	1			DATE S (MM/DI	Signed (YY):	DATE Signed Q// 12	2/2		neT		otsu)))

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

"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 involces not paid within 30 days.



MEMORANDUM

Project No. 153140602

DATE January 28, 2021

TO Project File Golder Associates

- **CC** Amanda Derhake, Jeff Ingram
- **FROM** Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCL4A – VERIFICATION SAMPLING - DATA PACKAGE 60358899

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

None.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

2

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?	х			01/11/2021
b)	Sampling team indicated?	х			EMS
c)	Sample location noted?	х			
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)?	х			pH, S.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 field n	otes?
			X		
j)	Does the laboratory narrative indicate deficiencies?			X	
	Note Deficiencies:				
Chain-	of-Custody (COC)	YES	NO	NA	COMMENTS
a)	Was the COC properly completed?	x			
,	Was the COC signed by both field				
b)	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?	х			
c)	Were the correct preservatives used?	x			
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?		х		

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			See notes
c)	Were analytes detected in the equipment blank(s)?			×	
d)	Were analytes detected in the trip blank(s)?			х	
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?	Х			
Duplica	ates	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du	uplicate	sample n	ames)?	
		x			S-SCL4A-DUP-1 @ S-TMW-1
b)	Were field dup. precision criteria met (note RPD)?	x			Max RPD: 2.7% (<20%)
c) Were lab duplicates analyzed (note original and duplicate samples)?					
		x			
d)	Were lab dup. precision criteria met (note RPD)?	Х			Max RPD: 1% (<10%)
Blind S	standards	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?	х			
	Recovery could not be calculated since sample contained high concentration of analyte?			×	
b)	Was MSD accuracy criteria met?	х			
	Recovery could not be calculated since sample contained high concentration of analyte?			х	
c)	Were MS/MSD precision criteria met?	х			

Comments/Notes:

Method Blank:	
2821639: Calcium (34.2J). Associated with samples -9001, -9002, -9004, -9005. Sample results > RL, no qualification necessal	ry.

Field Blank:

S-SCL4A-FB-1 @ S-TMW-1: Calcium (1100), TDS (10.0). Sample results > 10x the blank result, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
\sum				
	\land			
		\searrow		
		\rightarrow		
			\searrow	
				<u></u>
				<u>_</u>
		#-		
Signature:	Ann Muthlf	nth		Date: 01/28/2021



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

July 06, 2021

Jeffrey Ingram Golder Associates 13515 Barrett Parkway Drive Suite 260 Ballwin, MO 63021

RE: Project: AMEREN SEC SCL4A Pace Project No.: 60366588

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on April 14, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Kansas City

REV-1, 7/6/21: S-BMW-1S and S-BMW-3S added per client request.

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

Sincerely,

fami Church

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

Enclosures

cc: Ryan Feldmann, Golder Mark Haddock, Golder Associates Eric Schneider, Golder Associates Brendan Talbert, Golder Associates





CERTIFICATIONS

Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 200030 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Nevada Certification #: KS000212020-2 Oklahoma Certification #: 9205/9935 Florida: Cert E871149 SEKS WET Texas Certification #: T104704407-19-12 Utah Certification #: KS000212019-9 Illinois Certification #: 004592 Kansas Field Laboratory Accreditation: # E-92587 Missouri SEKS Micro Certification: 10070



SAMPLE SUMMARY

Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60366588001	S-TMW-1	Water	04/13/21 10:24	04/14/21 03:50
60366588002	S-TMW-2	Water	04/13/21 11:25	04/14/21 03:50
60366588003	S-TMW-3	Water	04/13/21 12:08	04/14/21 03:50
60366588004	S-SCL4A-DUP-1	Water	04/13/21 00:00	04/14/21 03:50
60366588005	S-SCL4A-FB-1	Water	04/13/21 11:32	04/14/21 03:50
60366138013	S-UG-3	Water	04/13/21 13:25	04/14/21 03:50
60366138009	S-BMW-1S	Water	04/13/21 13:35	04/14/21 03:50
60366138010	S-BMW-3S	Water	04/13/21 12:17	04/14/21 03:50



SAMPLE ANALYTE COUNT

Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60366588001	S-TMW-1	EPA 200.7	JLH, TDS	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60366588002	S-TMW-2	EPA 200.7	JLH, TDS	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0366588003	S-TMW-3	EPA 200.7	JLH, TDS	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0366588004	S-SCL4A-DUP-1	EPA 200.7	JLH, TDS	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0366588005	S-SCL4A-FB-1	EPA 200.7	JLH, TDS	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0366138013	S-UG-3	EPA 200.7	JLH	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60366138009	S-BMW-1S	EPA 200.7	JLH	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0366138010	S-BMW-3S	EPA 200.7	JLH	7	PASI-K
		SM 2320B	MAP	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



04/22/21 02:16 14808-79-8

ANALYTICAL RESULTS

Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-TMW-1	Lab ID:	60366588001	Collected	d: 04/13/21	10:24	Received: 04/	(14/21 03:50 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	ity					
Boron	57.2J	ug/L	100	8.6	1	04/20/21 10:23	04/26/21 19:44	7440-42-8	
Calcium	93200	ug/L	200	75.4	1	04/20/21 10:23	04/26/21 19:44	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	04/20/21 10:23	04/26/21 19:44	7439-89-6	
Magnesium	16100	ug/L	50.0	31.4	1	04/20/21 10:23	04/26/21 19:44	7439-95-4	
Manganese	47.7	ug/L	5.0	0.74	1	04/20/21 10:23	04/26/21 19:44	7439-96-5	
Potassium	4540	ug/L	500	146	1	04/20/21 10:23	04/26/21 19:44	7440-09-7	
Sodium	2880	ug/L	500	254	1	04/20/21 10:23	04/27/21 11:24	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B						
-	Pace Anal	ytical Services	- Kansas Ci	ity					
Alkalinity, Total as CaCO3	298	mg/L	20.0	7.5	1		04/23/21 16:48		
2540C Total Dissolved Solids	Analytical	Method: SM 25	540C						
	Pace Anal	ytical Services	- Kansas Ci	ity					
Total Dissolved Solids	386	mg/L	5.0	5.0	1		04/20/21 12:50		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas Ci	ity					
Chloride	2.1	mg/L	1.0	0.39	1		04/22/21 02:00	16887-00-6	
Fluoride	0.41	mg/L	0.20	0.086	1		04/22/21 02:00		
- ···		3							

5.0

2.1

5

47.7

mg/L

REPORT OF LABORATORY ANALYSIS

Sulfate



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-TMW-2	Lab ID:	60366588002	Collected	1: 04/13/21	11:25	Received: 04/	14/21 03:50 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	76.0J	ug/L	100	8.6	1	04/20/21 10:23	04/26/21 19:47	7440-42-8	
Calcium	105000	ug/L	200	75.4	1	04/20/21 10:23	04/26/21 19:47	7440-70-2	
Iron	125	ug/L	50.0	21.4	1	04/20/21 10:23	04/26/21 19:47	7439-89-6	
Magnesium	18900	ug/L	50.0	31.4	1	04/20/21 10:23	04/26/21 19:47	7439-95-4	
Manganese	54.2	ug/L	5.0	0.74	1	04/20/21 10:23	04/26/21 19:47	7439-96-5	
Potassium	5010	ug/L	500	146	1	04/20/21 10:23	04/26/21 19:47	7440-09-7	
Sodium	3490	ug/L	500	254	1	04/20/21 10:23	04/27/21 11:27	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Alkalinity, Total as CaCO3	321	mg/L	20.0	7.5	1		04/23/21 16:54		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Total Dissolved Solids	439	mg/L	10.0	10.0	1		04/20/21 12:50		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	ytical Services	- Kansas Ci	ty					
Chloride	3.4	mg/L	1.0	0.39	1		04/22/21 02:32	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.086	1		04/22/21 02:32	16984-48-8	
Sulfate	64.8	mg/L	5.0	2.1	5		04/22/21 02:48	14808-79-8	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Lab ID:	60366588003	Collected	d: 04/13/2 ²	1 12:08	Received: 04/	14/21 03:50 Ma	atrix: Water		
Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
Analytical	Method: EPA 2	00.7 Prepa	ration Meth	nod: EP	A 200.7				
Pace Anal	Pace Analytical Services - Kansas City								
75.8J	ug/L	100	8.6	1	04/20/21 10:23	04/26/21 19:49	7440-42-8		
114000	ug/L	200	75.4	1	04/20/21 10:23	04/26/21 19:49	7440-70-2	M1	
142	ug/L	50.0	21.4	1	04/20/21 10:23	04/26/21 19:49	7439-89-6		
20700	ug/L	50.0	31.4	1	04/20/21 10:23	04/26/21 19:49	7439-95-4		
112	ug/L	5.0	0.74	1	04/20/21 10:23	04/26/21 19:49	7439-96-5		
5230	ug/L	500	146	1	04/20/21 10:23	04/26/21 19:49	7440-09-7		
4110	ug/L	500	254	1	04/20/21 10:23	04/27/21 11:29	7440-23-5		
Analytical	Method: SM 23	20B							
Pace Anal	ytical Services	- Kansas C	ity						
397	mg/L	20.0	7.5	1		04/23/21 16:59			
Analytical	Method: SM 25	40C							
Pace Anal	ytical Services	- Kansas C	ity						
445	mg/L	10.0	10.0	1		04/20/21 12:51			
Analytical	Method: EPA 3	00.0							
Pace Anal	ytical Services	- Kansas C	ity						
2.2	mg/L	1.0	0.39	1		04/22/21 16:50	16887-00-6	В	
0.32	mg/L	0.20	0.086	1		04/22/21 16:50	16984-48-8		
33.1	mg/L	5.0	2.1	5		04/22/21 18:25	14808-79-8		
	Results Analytical Pace Anal 75.8J 114000 142 20700 112 5230 4110 Analytical Pace Anal 397 Analytical Pace Anal 445 Analytical Pace Anal 22 0.32	Analytical Method: EPA 2 Pace Analytical Services 75.8.J ug/L 114000 ug/L 142 ug/L 20700 ug/L 112 ug/L 5230 ug/L 4110 ug/L Analytical Method: SM 23 Pace Analytical Services 397 mg/L Analytical Method: SM 25 Pace Analytical Services 445 mg/L Analytical Method: EPA 3 Pace Analytical Services 2.2 mg/L 0.32 mg/L	ResultsUnitsPQLAnalytical Method: EPA 200.7Prepara Pace Analytical Services - Kansas C75.8Jug/L100114000ug/L200142ug/L50.020700ug/L50.020700ug/L50.0112ug/L50.05230ug/L5004110ug/L500Analytical Method: SM 2320BPace Analytical Services - Kansas C397mg/L20.0Analytical Method: SM 2540CPace Analytical Services - Kansas C445mg/L10.0Analytical Method: EPA 300.0Pace Analytical Services - Kansas C2.2mg/L1.00.32mg/L0.20	ResultsUnitsPQLMDLAnalytical Method: EPA 200.7Preparation Meth Pace Analytical Services - Kansas City75.8Jug/L1008.6114000ug/L20075.4142ug/L50.021.420700ug/L50.031.4112ug/L5.00.745230ug/L5001464110ug/L500254Analytical Method: SM 2320BPace Analytical Services - Kansas City397mg/L20.07.5Analytical Method: SM 2540CPace Analytical Services - Kansas City445mg/L10.010.0Analytical Method: EPA 300.0Pace Analytical Services - Kansas City2.2mg/L1.00.390.32mg/L0.200.086	Results Units PQL MDL DF Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 100 8.6 1 1 114000 ug/L 200 75.4 1 1 12 ug/L 50.0 21.4 1 20700 ug/L 50.0 31.4 1 1 12 ug/L 50.0 31.4 1 1 12 ug/L 500 146 1 1 10 1 1 10 1 <	Results Units PQL MDL DF Prepared Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City 75.8J ug/L 100 8.6 1 04/20/21 10:23 114000 ug/L 200 75.4 1 04/20/21 10:23 114000 ug/L 200 75.4 1 04/20/21 10:23 12 ug/L 50.0 21.4 1 04/20/21 10:23 20700 ug/L 50.0 31.4 1 04/20/21 10:23 12 ug/L 5.0 0.74 1 04/20/21 10:23 5230 ug/L 500 254 1 04/20/21 10:23 4110 ug/L 500 254 1 04/20/21 10:23 Analytical Method: SM 2320B Pace Analytical Services - Kansas City 397 mg/L 20.0 7.5 1 Analytical Method: SM 2540C Pace Analytical Services - Kansas City 445 mg/L 10.0 10.0 1 Analytical	Results Units PQL MDL DF Prepared Analyzed Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City 04/26/21 10:23 04/26/21 19:49 114000 ug/L 200 75.4 1 04/20/21 10:23 04/26/21 19:49 114000 ug/L 200 75.4 1 04/20/21 10:23 04/26/21 19:49 1142 ug/L 50.0 21.4 1 04/20/21 10:23 04/26/21 19:49 20700 ug/L 50.0 31.4 1 04/20/21 10:23 04/26/21 19:49 112 ug/L 5.0 0.74 1 04/20/21 10:23 04/26/21 19:49 5230 ug/L 500 146 1 04/20/21 10:23 04/26/21 19:49 4110 ug/L 500 254 1 04/20/21 10:23 04/26/21 19:49 Analytical Method: SM 2320B Pace Analytical Services - Kansas City 397 mg/L 20.0 7.5 1 04/23/21 16:59 Analytical Method: SM 2540	Results Units PQL MDL DF Prepared Analyzed CAS No. Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City 75.8.J ug/L 100 8.6 1 04/20/21 10:23 04/26/21 19:49 7440-42-8 114000 ug/L 200 75.4 1 04/20/21 10:23 04/26/21 19:49 7440-70-2 142 ug/L 50.0 21.4 1 04/20/21 10:23 04/26/21 19:49 7439-89-6 20700 ug/L 50.0 31.4 1 04/20/21 10:23 04/26/21 19:49 7439-95-4 112 ug/L 50.0 31.4 1 04/20/21 10:23 04/26/21 19:49 7439-95-4 112 ug/L 50.0 146 1 04/20/21 10:23 04/26/21 19:49 7440-09-7 4110 ug/L 500 254 1 04/20/21 10:23 04/26/21 19:49 7440-23-5 Analytical Method: SM 2320B Pace Analytical Services - Kansas City 04/23/21 16:59 04/23/21 16:59	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-SCL4A-DUP-1	Lab ID:	60366588004	Collected	l: 04/13/21	00:00	Received: 04/	(14/21 03:50 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 Sodium	57.3J 92600 <21.4 16000 48.6 4510 2930	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500 500	8.6 75.4 21.4 31.4 0.74 146 254	1 1 1 1 1 1	04/20/21 10:23 04/20/21 10:23 04/20/21 10:23 04/20/21 10:23 04/20/21 10:23 04/20/21 10:23 04/20/21 10:23	04/26/21 20:04 04/26/21 20:04 04/26/21 20:04	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
2320B Alkalinity	Analytical Pace Anal	Method: SM 23 ytical Services	320B - Kansas Ci	ty		04/20/21 10.23			
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		7.5 ty	1		04/23/21 17:10		
Total Dissolved Solids 300.0 IC Anions 28 Days	,	mg/L Method: EPA 3 ytical Services		5.0 ty	1		04/20/21 12:51		
Chloride Fluoride Sulfate	2.1 0.42 46.2	mg/L mg/L mg/L	1.0 0.20 5.0	0.39 0.086 2.1	1 1 5		04/22/21 03:20 04/22/21 03:20 04/22/21 03:35	16984-48-8	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-SCL4A-FB-1	Lab ID:	60366588005	Collected	: 04/13/2	11:32	Received: 04/	14/21 03:50 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	<8.6 <75.4 <21.4	ug/L ug/L ug/L	100 200 50.0	8.6 75.4 21.4	1 1 1	04/20/21 10:23 04/20/21 10:23 04/20/21 10:23		7440-70-2 7439-89-6	
Magnesium Manganese Potassium Sodium	<31.4 <0.74 <146 <254	ug/L ug/L ug/L ug/L	50.0 5.0 500 500	31.4 0.74 146 254	1 1 1 1	04/20/21 10:23 04/20/21 10:23 04/20/21 10:23 04/20/21 10:23	04/26/21 20:07 04/26/21 20:07	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		7.5 y	1		04/23/21 17:15		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 ytical Services		5.0 y	1		04/20/21 12:51		
Chloride Fluoride Sulfate	<0.39 <0.086 <0.42	mg/L mg/L mg/L	1.0 0.20 1.0	0.39 0.086 0.42	1 1 1		04/22/21 03:51 04/22/21 03:51 04/22/21 03:51	16887-00-6 16984-48-8 14808-79-8	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-UG-3	Lab ID:	60366138013	Collected	d: 04/13/2	1 13:25	Received: 04/	/14/21 03:50 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	nod: EP	A 200.7			
	Pace Ana	lytical Services	- Kansas Ci	ty					
Boron	225	ug/L	100	8.6	1	04/22/21 11:30	05/07/21 07:19	7440-42-8	
Calcium	139000	ug/L	200	75.4	1	04/22/21 11:30	05/07/21 07:19	7440-70-2	
Iron	46.8J	ug/L	50.0	21.4	1	04/22/21 11:30	05/07/21 07:19	7439-89-6	
Magnesium	27700	ug/L	50.0	31.4	1	04/22/21 11:30	05/07/21 07:19	7439-95-4	
Manganese	285	ug/L	5.0	0.74	1	04/22/21 11:30	05/07/21 07:19	7439-96-5	
Potassium	5960	ug/L	500	146	1	04/22/21 11:30	05/07/21 07:19	7440-09-7	
Sodium	25600	ug/L	500	254	1	04/22/21 11:30	05/07/21 07:19	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
-	Pace Ana	lytical Services	- Kansas Ci	ty					
Alkalinity, Total as CaCO3	356	mg/L	20.0	7.5	1		04/22/21 19:25		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Ana	lytical Services	- Kansas Ci	ty					
Total Dissolved Solids	578	mg/L	10.0	10.0	1		04/20/21 12:47		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Ana	lytical Services	- Kansas Ci	ty					
Chloride	41.4	mg/L	5.0	1.9	5		04/23/21 20:00	16887-00-6	
Fluoride	0.38	mg/L	0.20	0.086	1		04/23/21 19:44	16984-48-8	
Sulfate	58.2	mg/L	5.0	2.1	5		04/23/21 20:00	14808-79-8	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-BMW-1S	Lab ID:	60366138009	Collected	d: 04/13/2 [,]	1 13:35	Received: 04/	/14/21 03:50 M	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Method: EPA 2 lytical Services	•		od: EP	A 200.7			
Boron Calcium Iron Magnesium Manganese Potassium	70.8J 149000 <21.4 28500 393 397J	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 500	8.6 75.4 21.4 31.4 0.74 146	1 1 1 1	04/22/21 11:30 04/22/21 11:30 04/22/21 11:30 04/22/21 11:30 04/22/21 11:30 04/22/21 11:30	04/30/21 23:41 04/30/21 23:41 04/30/21 23:41 04/30/21 23:41 04/30/21 23:41 04/30/21 23:41	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		254 ty	1	04/22/21 11:30	04/30/21 23:41	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 lytical Services		7.5 ty	1		04/22/21 19:06		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 lytical Services		10.0	1		04/20/21 12:47		
Chloride Fluoride Sulfate	8.2 0.36 29.4	mg/L mg/L mg/L	1.0 0.20 5.0	0.39 0.086 2.1	1 1 5		04/24/21 02:37 04/24/21 02:37 04/24/21 02:53	16984-48-8	



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

Sample: S-BMW-3S	Lab ID:	60366138010	Collected	d: 04/13/2 ⁻	12:17	Received: 04/	(14/21 03:50 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 Ci	ty					
Boron	74.2J	ug/L	100	8.6	1	04/22/21 11:30	04/30/21 23:43	7440-42-8	
Calcium	134000	ug/L	200	75.4	1	04/22/21 11:30	04/30/21 23:43	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	04/22/21 11:30	04/30/21 23:43	7439-89-6	
Magnesium	23800	ug/L	50.0	31.4	1	04/22/21 11:30	04/30/21 23:43	7439-95-4	
Manganese	161	ug/L	5.0	0.74	1	04/22/21 11:30	04/30/21 23:43	7439-96-5	
Potassium	520	ug/L	500	146	1	04/22/21 11:30	04/30/21 23:43	7440-09-7	
Sodium	5470	ug/L	500	254	1	04/22/21 11:30	04/30/21 23:43	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	vtical Services	- Kansas Ci	ty					
Alkalinity, Total as CaCO3	399	mg/L	20.0	7.5	1		04/22/21 19:12		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	vtical Services	- Kansas Ci	ty					
Total Dissolved Solids	509	mg/L	10.0	10.0	1		04/20/21 12:47		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	vtical Services	- Kansas Ci	ty					
Chloride	12.8	mg/L	1.0	0.39	1		04/24/21 03:09	16887-00-6	
Fluoride	0.39	mg/L	0.20	0.086	1		04/24/21 03:09	16984-48-8	
Sulfate	34.8	mg/L	2.0	0.84	2		04/24/21 03:25	14808-79-8	



Project:	AMEREN SEC SCL4A

Pace Project No.: 603665	88
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QC Batch:	715667	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60366588001, 60366588002, 60366588003, 60366588004, 60366588005

METHOD BLANK: 2879100

Associated Lab Samples: 60366588001, 60366588002, 60366588003, 60366588004, 60366588005

	Blank	Reporting			
Units	Result	Limit	MDL	Analyzed	Qualifiers
ug/L	<8.6	100	8.6	04/26/21 19:16	
ug/L	<75.4	200	75.4	04/26/21 19:16	
ug/L	<21.4	50.0	21.4	04/26/21 19:16	
ug/L	<31.4	50.0	31.4	04/26/21 19:16	
ug/L	<0.74	5.0	0.74	04/26/21 19:16	
ug/L	180J	500	146	04/26/21 19:16	
ug/L	<254	500	254	04/27/21 11:19	
	ug/L ug/L ug/L ug/L ug/L ug/L	Units Result ug/L <8.6 ug/L <75.4 ug/L <21.4 ug/L <31.4 ug/L <0.74 ug/L 180J	Units Result Limit ug/L <8.6	Units Result Limit MDL ug/L <8.6	Units Result Limit MDL Analyzed ug/L <8.6

Matrix: Water

LABORATORY CONTROL SAMPLE: 2879101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	920	92	85-115	
Calcium	ug/L	10000	9740	97	85-115	
Iron	ug/L	10000	9950	99	85-115	
Magnesium	ug/L	10000	9480	95	85-115	
Manganese	ug/L	1000	920	92	85-115	
Potassium	ug/L	10000	9400	94	85-115	
Sodium	ug/L	10000	11100	111	85-115	

	6	0366586001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Boron	ug/L	120	1000	1000	1050	1050	93	93	70-130	0	20	
Calcium	ug/L	80500	10000	10000	93800	92700	132	122	70-130	1	20	M1
Iron	ug/L	104	10000	10000	9490	9480	94	94	70-130	0	20	
Magnesium	ug/L	17800	10000	10000	27800	27400	100	96	70-130	1	20	
Manganese	ug/L	38.9	1000	1000	922	923	88	88	70-130	0	20	
Potassium	ug/L	3310	10000	10000	12500	12400	92	91	70-130	1	20	
Sodium	ug/L	5420	10000	10000	15400	15200	100	98	70-130	2	20	
MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 2879	104		2879127							
			MS	MSD								

Parameter	Units	60366588003 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Boron	ug/L	75.8J	1000	1000	1010	987	94	91	70-130	3	20		

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

REPORT OF LABORATORY ANALYSIS



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 2879			2879127							
Parameter	(Units	60366588003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	114000	10000	10000	125000	121000	106	66	70-130	3	20	M1
Iron	ug/L	142	10000	10000	9660	9400	95	93	70-130	3	20	
Magnesium	ug/L	20700	10000	10000	29700	28900	91	82	70-130	3	20	
Manganese	ug/L	112	1000	1000	990	964	88	85	70-130	3	20	
Potassium	ug/L	5230	10000	10000	14400	14200	91	89	70-130	1	20	
Sodium	ug/L	4110	10000	10000	14000	13600	98	95	70-130	3	20	

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Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

QC Batch:	716201	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Sam	ples: 60366138009, 60366138010, 6	0366138013	

METHOD BLANK: 28810	20	Matrix:	Water			
Associated Lab Samples:	60366138009, 60366138010,	60366138013				
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<8.6	100	8.6	04/30/21 23:10	
Calcium	ug/L	<75.4	200	75.4	04/30/21 23:10	
Iron	ug/L	<21.4	50.0	21.4	04/30/21 23:10	
Magnesium	ug/L	<31.4	50.0	31.4	04/30/21 23:10	
Manganese	ug/L	<0.74	5.0	0.74	04/30/21 23:10	
Potassium	ug/L	<146	500	146	04/30/21 23:10	
Sodium	ug/L	<254	500	254	05/07/21 07:17	

LABORATORY CONTROL SAMPLE: 2881021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	988	99	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	10100	101	85-115	
Magnesium	ug/L	10000	9920	99	85-115	
Manganese	ug/L	1000	984	98	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SP		_ICATE: 2881	022		2881023							
			MS	MSD								
		60366138006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	10400	1000	1000	11200	11000	78	50	70-130	3	20	M1
Calcium	ug/L	199000	10000	10000	215000	209000	166	105	70-130	3	20	M1
Iron	ug/L	45.0J	10000	10000	10000	9750	100	97	70-130	3	20	
Magnesium	ug/L	29400	10000	10000	40400	39200	110	98	70-130	3	20	
Manganese	ug/L	407	1000	1000	1390	1360	98	95	70-130	2	20	
Potassium	ug/L	9890	10000	10000	20700	20200	108	104	70-130	2	20	
Sodium	ug/L	70800	10000	10000	81200	78600	103	78	70-130	3	20	
MATRIX SPIKE SAMPLE:		2881024										
			60366	6138014	Spike	MS		MS	% Rec			
Parameter		Units	Re	esult	Conc.	Result	%	6 Rec	Limits		Quali	fiers
Boron		ug/L		6000	1000	7(050	105	70	-130		
Calcium		ug/L		144000	10000	1530	000	81	70	-130		

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REPORT OF LABORATORY ANALYSIS



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

MATRIX SPIKE SAMPLE:	2881024						
		60366138014	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	9430	10000	18900	95	70-130	
Magnesium	ug/L	35300	10000	45500	102	70-130	
Manganese	ug/L	1130	1000	2140	102	70-130	
Potassium	ug/L	5020	10000	15700	107	70-130	
Sodium	ug/L	22600	10000	32700	101	70-130	

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REPORT OF LABORATORY ANALYSIS



Project:	AMERI	EN SEC SC	L4A							
Pace Project No.:	603665	588								
QC Batch:	71634	45		Analysis Me	ethod:	SM 2320B				
QC Batch Method:	SM 2	320B		Analysis De	Analysis Description:					
				Laboratory:		Pace Analytic	al Sei	rvices - Kai	nsas C	ity
Associated Lab Sam	nples:	60366138	009, 6036613801	10, 60366138013						
METHOD BLANK:	288169	90		Matrix	: Water					
Associated Lab Sam	nples:	60366138	009, 6036613801	10, 60366138013						
				Blank	Reporting					
Param	neter		Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Alkalinity, Total as C	aCO3		mg/L	<7.5	20	.0	7.5	04/22/21	17:58	
LABORATORY CON	TROL	SAMPLE:	2881691							
				Spike	LCS	LCS	%	6 Rec		
Param	neter		Units	Conc.	Result	% Rec	L	imits	Qua	alifiers
Alkalinity, Total as C	aCO3		mg/L	500	511	102		90-110		
SAMPLE DUPLICAT	TE: 28	81692								
_				60366511001	Dup			Max		0 11/1
Param	neter		Units	Result	Result	RPD		RPD		Qualifiers
Alkalinity, Total as C	aCO3		mg/L	133	1:	29	3		10	
SAMPLE DUPLICAT	TE: 28	81693								
-				60366586001	Dup			Max		0 11
Param			Units	Result	Result	RPD		RPD		Qualifiers
Alkalinity, Total as C	aCO3		mg/L	257	20	63	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: Pace Project No.:	AMEREN SEC SC 60366588	CL4A						
QC Batch:	716534		Analysis M	ethod:	SM 2320B			
QC Batch Method:	SM 2320B		Analysis De	escription:	2320B Alkalin	ity		
			Laboratory	:	Pace Analytic	al Services - Ka	nsas Ci	ity
Associated Lab San	nples: 60366588	001, 60366588002	2, 60366588003,	60366588004,	60366588005	5		
METHOD BLANK:	2882533		Matrix	k: Water				
Associated Lab San	nples: 60366588	001, 60366588002	2, 60366588003,	60366588004,	60366588005	5		
			Blank	Reporting				
Paran	neter	Units	Result	Limit	MDL	Analyz	zed	Qualifiers
Alkalinity, Total as C	aCO3	mg/L	<7.5	5 20	.0	7.5 04/23/21	16:31	
LABORATORY CON	NTROL SAMPLE:	2882534						
			Spike	LCS	LCS	% Rec		
Paran	neter	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Alkalinity, Total as C	aCO3	mg/L	500	506	101	90-110		
SAMPLE DUPLICA	TE: 2882535							
			60366588003	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers
Alkalinity, Total as C	aCO3	mg/L	397	7 38	34	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:	AMERE	N SEC SCL	4A							
Pace Project No.:	603665	88								
QC Batch:	71564	6		Analysis M	ethod:	SM 2540C				
QC Batch Method:	SM 25	40C		Analysis D	escription:	2540C Total	Dissol	ved Solids		
				Laboratory	:	Pace Analyt	ical Se	rvices - Kar	nsas C	ity
Associated Lab Sam		6036613800 6036658800)9, 60366138010)5	, 60366138013,	6036658800	1, 603665880	02, 603	66588003,	60366	588004,
METHOD BLANK:	287903	5		Matri	x: Water					
Associated Lab Sam		6036613800 6036658800)9, 60366138010)5	, 60366138013,	6036658800	1, 603665880	02, 603	66588003,	60366	588004,
				Blank	Reporting	-				
Param	neter		Units	Result	Limit	MDI		Analyz	zed	Qualifiers
Total Dissolved Solic	ds		mg/L	<5.0	C	5.0	5.0	04/20/21	12:46	
LABORATORY CON	ITROL S	AMPLE: 2	2879036							
				Spike	LCS	LCS	9	6 Rec		
Param	neter		Units	Conc.	Result	% Rec	l	_imits	Qua	alifiers
Total Dissolved Solic	ds		mg/L	1000	1000	100)	80-120		
SAMPLE DUPLICAT	E: 287	' 9037								
				60366586001	Dup			Max		
Param	neter		Units	Result	Result	RPD)	RPD		Qualifiers
Total Dissolved Solic	ds		mg/L	37:	3 :	376	1		10	
SAMPLE DUPLICAT	E: 287	9038								
				60366588003	Dup			Max		
Param	neter		Units	Result	Result	RPD)	RPD		Qualifiers
Total Dissolved Solid	ds		mg/L	44	5 4	437	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:	715726		Analys	sis Metho	d: E	PA 300.0						
QC Batch Method:	EPA 300.0			sis Descri		00.0 IC An	ons					
			Labora					vices - Kans	as Citv			
Associated Lab Sa	mples: 603665880	001, 6036658800				,.						
METHOD BLANK:	2879432		Ν	Matrix: W	ater							
Associated Lab Sar	mples: 603665880	001, 6036658800	2, 60366588	8004, 603	66588005							
			Blank	c	Reporting							
Para	meter	Units	Resul	lt	Limit	MDI	-	Analyzed	d Qu	ualifiers		
Chloride		mg/L		<0.39	1.0)	0.39	04/21/21 15	5:58			
Fluoride		mg/L	<(0.086	0.20)	0.086	04/21/21 15	5:58			
Sulfate		mg/L		<0.42	1.0)	0.42	04/21/21 15	5:58			
METHOD BLANK:	2882319		N	Matrix: W	ater							
Associated Lab Sa		001,6036658800										
AUSOCIALOU LAD Odi	10000000		2, 00300300 Blank		Reporting							
Para	Parameter Unit		Resul		Limit	MDI	-	Analyzed	d Qu	ualifiers		
Chloride		mg/L		<0.39	1.0)	0.39	04/22/21 09	9:08			
Fluoride		mg/L	<(0.086	0.20)	0.086	04/22/21 09	9:08			
Sulfate		mg/L	•	<0.42	1.0)	0.42	04/22/21 09	9:08			
LABORATORY CO	NTROL SAMPLE:	2879433										
			Spike	LC	S	LCS	%	Rec				
Para	meter	Units	Spike Conc.	LC Res		LCS % Rec		Rec imits	Qualifiers			
	meter		Conc.	Res			Li		Qualifiers	_		
Chloride	meter	Units mg/L mg/L		Res	sult	% Rec	Li	imits	Qualifiers	_		
Chloride Fluoride	meter	mg/L	Conc.	Res	ult	% Rec 97	, <u>Li</u> 5	imits 90-110	Qualifiers	_		
Chloride Fluoride Sulfate		mg/L mg/L mg/L	Conc. 5 2.5	Res	4.8 2.4	% Rec 97 95	, <u>Li</u> 5	imits 90-110 90-110	Qualifiers	_		
Chloride Fluoride Sulfate		mg/L mg/L	5 2.5 5	Res	4.8 2.4 5.0	% Rec 97 95	Li	imits 90-110 90-110	Qualifiers	_		
Chloride Fluoride Sulfate LABORATORY CO		mg/L mg/L mg/L	Conc. 5 2.5	Res	sult 4.8 2.4 5.0	% Rec 97 95 95	- Li	imits 90-110 90-110 90-110	Qualifiers	_		
Chloride Fluoride Sulfate LABORATORY CO Para	NTROL SAMPLE:	mg/L mg/L mg/L 2882320 Units	Conc. 5 2.5 5 Spike Conc.	Res	sult	% Rec 97 98 98 99 99 99 99 99 99	Li	imits 90-110 90-110 90-110 90-110		_		
Chloride Fluoride Sulfate LABORATORY CO Parat	NTROL SAMPLE:	mg/L mg/L mg/L 2882320	Conc. 5 2.5 5 Spike	Res LC Res	sult 4.8 2.4 5.0	% Rec 97 95 98 LCS	Li	imits 90-110 90-110 90-110 90-110		_		
Chloride Fluoride Sulfate LABORATORY CO Para Chloride Sulfate	NTROL SAMPLE:	mg/L mg/L 2882320 Units mg/L mg/L		Res LC Res	sult 4.8 2.4 5.0 S S sult 4.9	% Rec 97 98 99 99 99 99 90 97 97 97	Li	imits 90-110 90-110 90-110 0 Rec imits 90-110		_		
Chloride Fluoride Sulfate LABORATORY CO Para Chloride Sulfate	NTROL SAMPLE: meter	mg/L mg/L 2882320 Units mg/L mg/L		Res LC Res	sult 4.8 2.4 5.0 S S S S Ult 4.9 4.6	% Rec 97 98 99 99 99 99 90 97 97 97	Li	imits 90-110 90-110 90-110 0 Rec imits 90-110		_		
Chloride Fluoride Sulfate LABORATORY CO Para Chloride Sulfate	NTROL SAMPLE: meter	mg/L mg/L 2882320 Units mg/L mg/L	Conc. 5 2.5 5 5 5 5 5 5 434 MS	Res LC Res	sult 4.8 2.4 5.0 S S S S Ult 4.9 4.6	% Rec 97 98 99 99 99 99 90 97 97 97	Li	imits 90-110 90-110 90-110 0 Rec imits 90-110		_	Max	
Chloride Fluoride Sulfate LABORATORY CO Para Chloride Sulfate	NTROL SAMPLE: meter	mg/L mg/L 2882320 Units mg/L LICATE: 2879 60366957002	Conc. 5 2.5 5 2.5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Res LC Res	sult	% Rec 97 96 99 99 99 90 90 97 90	Li 5 3 4 4 4 4 5 3	imits 90-110 90-110 90-110 90-110 90-110 90-110 MSD	Qualifiers	RPD	Max RPD	Qual
Chloride Fluoride Sulfate LABORATORY CO Paran Chloride Sulfate MATRIX SPIKE & M Paramete	NTROL SAMPLE: meter MATRIX SPIKE DUP	mg/L mg/L 2882320 Units mg/L mg/L LICATE: 2879 60366957002 Result	Conc. 5 2.5 5 2.5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Res LC Res MSD Spike	sult 4.8 2.4 5.0 S Sult 4.9 4.6 2879435 MS Result	% Rec 97 98 99 LCS % Rec 97 93 93 93 93		imits 90-110 90-110 90-110 90-110 90-110 90-110 MSD	Qualifiers % Rec Limits		RPD	Qual
Chloride Fluoride Sulfate LABORATORY CO Para Chloride Sulfate MATRIX SPIKE & N	NTROL SAMPLE: meter	mg/L mg/L 2882320 Units mg/L LICATE: 2879 60366957002 Result 1.7	Conc. 5 2.5 5 Spike Conc. 5 434 MS Spike Conc.	Res LC Res MSD Spike Conc.	sult 4.8 2.4 5.0 S S S S S S S S S S S S S S S S S S S	% Rec 97 96 99 99 99 90 97 97 97 97 97 97		imits 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110	Qualifiers % Rec Limits		RPD 15	Qual

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REPORT OF LABORATORY ANALYSIS



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

MATRIX SPIKE & MATRIX SP	PIKE DUPLIC	CATE: 2879	434		2881092							
	~	0000057000	MS	MSD	MC	MOD	MC	MCD	0/ Daa		Max	
	6	0366957002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.7	5	5	6.3	6.9	92	94	80-120	10	15	
Fluoride	mg/L	0.91		2.5	3.2	2.9		103		12	15	
Sulfate	mg/L	2.0	5	25	7.0	97.5	100	108	80-120	173	15	R1

MATRIX SPIKE SAMPLE:	2879436					_	
Parameter	Units	60366227002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	41.5	50	87.8	93	80-120	
Fluoride	mg/L	0.32	2.5	2.9	102	80-120	
Sulfate	mg/L	33.2	50	81.4	96	80-120	

MATRIX SPIKE SAMPLE:	2881093						
Parameter	Units	60366586001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.3	5	7.0	96	80-120	
Fluoride	mg/L	0.28	2.5	2.9	106	80-120	
Sulfate	mg/L	70.6	25	95.4	99	80-120	

SAMPLE DUPLICATE: 2880018

		60366586001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD Qualifier	S
Chloride	mg/L	2.3	2.3	0	15	
Fluoride	mg/L	0.28	0.22	26	15 D6	
Sulfate	mg/L	70.6	68.4	3	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.



QC Batch: 716230			Analy	sis Meth	od:	EPA 300.0						
QC Batch Method: EPA 300).0		Analy	sis Desc	iption:	300.0 IC Ani	ons					
			-	atory:		Pace Analyti	cal Serv	rices - Kansa	as City			
Associated Lab Samples: 6	036658800	3				2						
METHOD BLANK: 2881187				Matrix: V	Vater							
Associated Lab Samples: 6	036658800	3										
			Blan	k	Reporting							
Parameter		Units	Resu	ult	Limit	MDL		Analyzed	l Qu	alifiers		
Chloride		mg/L		<0.39	1.	0	0.39	04/22/21 13	:41			
Fluoride		mg/L	<	:0.086	0.2	0		04/22/21 13				
Sulfate		mg/L		<0.42	1.	0	0.42	04/22/21 13	:41			
METHOD BLANK: 2882315				Matrix: V	Vater							
Associated Lab Samples: 6	036658800	3										
, 0			Blan	k	Reporting							
Parameter		Units	Resu	ılt	Limit	MDL	-	Analyzed	l Qu	alifiers		
		~~~/l		0.55J	1.	0	0.39	04/23/21 08	:34			
Chloride		mg/L		0.000								
		mg/L		:0.086	0.2	0	0.086	04/23/21 08	:34			
Chloride Fluoride Sulfate		-	<					04/23/21 08 04/23/21 08				
Fluoride Sulfate	MPLE: 2	mg/L	<	:0.086	0.2							
Fluoride Sulfate LABORATORY CONTROL SA	MPLE: 2	mg/L mg/L 881188	Spike	:0.086 <0.42	0.2 1. CS	0 LCS	0.42	04/23/21 08 Rec	:34			
Fluoride Sulfate LABORATORY CONTROL SA Parameter	MPLE: 2	mg/L mg/L 881188 Units	Spike Conc.	:0.086 <0.42 L Re	0.2 1. CS ssult	0 LCS % Rec	0.42 % Lir	04/23/21 08 Rec mits				
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride	MPLE: 2	mg/L mg/L 881188 Units mg/L	Spike Conc.	:0.086 <0.42 L 	0.2 1. CS sult 4.7	0 LCS % Rec 94	0.42 % Lir	04/23/21 08 Rec mits 90-110	:34			
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride	MPLE: 2	mg/L mg/L 881188 Units mg/L mg/L	Spike Conc.	20.086 <0.42 L 5 5 5	0.2 1. CS esult 2.4	0 LCS % Rec 94 97	0.42	04/23/21 08 Rec mits 90-110 90-110	:34	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride	MPLE: 2	mg/L mg/L 881188 Units mg/L	Spike Conc.	:0.086 <0.42 L 	0.2 1. CS sult 4.7	0 LCS % Rec 94	0.42	04/23/21 08 Rec mits 90-110	:34	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate		mg/L mg/L 881188 Units mg/L mg/L	Spike Conc.	20.086 <0.42 L 5 5 5 5 5	0.2 1. CS isult 4.7 2.4 4.9	0 LCS % Rec 94 97 97	0.42	04/23/21 08 Rec mits 90-110 90-110 90-110	:34	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA		mg/L mg/L 881188 Units mg/L mg/L mg/L 882316	Spike Conc.	20.086 <0.42 L 5 5 5 5 L	0.2 1. CS sult 4.7 2.4 4.9 CS	0 LCS % Rec 97 97 97 LCS	0.42	04/23/21 08 Rec 90-110 90-110 90-110 Rec	:34 Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate		mg/L mg/L 881188 Units mg/L mg/L 882316 Units	Spike Conc.	20.086 <0.42 L 5 5 5 5 5 5 5	0.2 1. CS 4.7 2.4 4.9 CS esult	0 LCS % Rec 94 97 97 97 27 27 27 27 27 27 27 27 27 27 27 27 27	0.42	04/23/21 08 Rec 90-110 90-110 90-110 Rec mits	:34	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride		mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L	Spike Conc.	20.086 <0.42 L 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS ssult 4.7 2.4 4.9 CS ssult 4.8	0 LCS % Rec 94 97 97 97 97 20 97 97 97 97 97 97 97	0.42	04/23/21 08         Rec         mits         90-110         90-110         90-110         Rec         mits         90-110	:34 Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride		mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L	Spike Conc.	20.086 <0.42 L 5 5 5 5 5 5 5 5 5 5	0.2 1. CS ssult 4.7 2.4 4.9 CS ssult 4.8 2.5	0 LCS % Rec 94 97 97 97 97 97 97 97 97 97 97	0.42	04/23/21       08         Rec	:34 Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride		mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L	Spike Conc.	20.086 <0.42 L 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS ssult 4.7 2.4 4.9 CS ssult 4.8	0 LCS % Rec 94 97 97 97 97 20 97 97 97 97 97 97 97	0.42	04/23/21 08         Rec         mits         90-110         90-110         90-110         Rec         mits         90-110	:34 Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate		mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L mg/L	Spike Conc.	20.086 <0.42 L 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS ssult 4.7 2.4 4.9 CS ssult 4.8 2.5	0 LCS % Rec 94 97 97 97 97 97 97 97 97 100 100	0.42	04/23/21       08         Rec	:34 Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride		mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L mg/L mg/L mg/L	Spike Conc.	0.086 <0.42 L 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS sult 4.7 2.4 4.9 CS sult 4.8 2.5 5.0 2881190	0 LCS % Rec 94 97 97 97 97 97 100 100	0.42 % Lir , , , , , , ,	04/23/21 08 Rec 90-110 90-110 90-110 Rec mits 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-10 90-10 90-10 90-10 90-10 90-10 90-10 90-1	Qualifiers	_		
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SP	MPLE: 2	mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L mg/L CATE: 2881 60366588003	Spike Conc. 2.3 Spike Conc. 2.3 Spike 189 MS Spike	0.086 <0.42 L Re 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. 2.4 4.7 2.4 4.9 CS ssult 4.8 2.5 5.0 2881190 MS	0 LCS % Rec 94 97 97 97 97 97 97 97 97 97 97 97 97 97	0.42	04/23/21 08           Rec           mits           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           MSD	Qualifiers Qualifiers % Rec	_	Max	
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SP Parameter	MPLE: 2 IKE DUPLI	mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L mg/L CATE: 2881 60366588003 Result	Spike Conc. 2.5 Spike Conc. 189 MS Spike Conc.	C.0.086 <0.42 L Re 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS sult 4.7 2.4 4.9 CS sult 4.8 2.5 5.0 2881190 MS Result	0 LCS % Rec 94 97 97 97 97 97 97 97 97 97 97 97 97 97	0.42	04/23/21 08  Rec mits 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110 90-110	Qualifiers Qualifiers	RPD	RPD	Qua
Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SP	MPLE: 2	mg/L mg/L 881188 Units mg/L mg/L 882316 Units mg/L mg/L mg/L CATE: 2881 60366588003	Spike Conc. 2.3 Spike Conc. 2.3 Spike 189 MS Spike	0.086 <0.42 L Re 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.2 1. CS 4.7 2.4 4.9 CS esult 4.8 2.5 5.0 2881190 MS Result 6.7	0 LCS % Rec 94 97 97 97 97 97 97 97 97 97 97 97 97 97	0.42	04/23/21 08           Rec           mits           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110           90-110	Qualifiers Qualifiers Qualifiers		RPD 15	Qual

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 SEC SCL4A

Pace Project No.: 60366588

Fluoride

Sulfate

MATRIX SPIKE SAMPLE:	2881192						
		60365796004	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	45.7	25	71.2	102	80-120	
Fluoride	mg/L	0.32	2.5	3.0	109	80-120	
Sulfate	mg/L	211	250	449	95	80-120	
SAMPLE DUPLICATE: 2881191							
		60366588003	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	_
Chloride	mg/L	2.2	2.1	4	15		-

0.36

32.6

10

2

15

15

0.32

33.1

mg/L

mg/L

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: 716443		Analysis M	ethod:	EPA	300.0				
QC Batch Method: EPA 300.0		Analysis De			) IC Anions				
		Laboratory			Analytical Se	ervices - Kar	sas Citv		
Associated Lab Samples: 603661	38009, 60366138010	,			,		,		
METHOD BLANK: 2882108		Matrix	x: Water						
Associated Lab Samples: 603661	38009, 60366138010								
		Blank	Reportin	g					
Parameter	Units	Result	Limit		MDL	Analyz	ed	Qualifiers	
Chloride	mg/L	<0.39	Э	1.0	0.39	04/23/21	16:46		
Fluoride	mg/L	<0.086		0.20	0.086				
Sulfate	mg/L	<0.42	2	1.0	0.42	04/23/21	16:46		
METHOD BLANK: 2883765		Matrix	x: Water						
	38009, 60366138010		-						
		Blank	Reportin	a					
Parameter	Units	Result	Limit	0	MDL	Analyz	ed	Qualifiers	
Chloride	mg/L	<0.39	 Э	1.0	0.39	04/25/21	10:02		
Fluoride	mg/L	<0.086		0.20 0.086					
Sulfate	mg/L	<0.42	2	1.0	0.42	04/25/21	10:02		
LABORATORY CONTROL SAMPLE	. 2882109								
		Spike	LCS	LC	CS ·	% Rec			
Parameter	Units	Conc.	Result			Limits	Qualifi	iers	
Chloride	mg/L	5	4.8		96	90-110			
Fluoride	mg/L	2.5	2.5		99	90-110			
Sulfate	mg/L	5	5.0		99	90-110			
_ABORATORY CONTROL SAMPLE	: 2883766								
ABONATONT CONTROL SAMPLE	2000/00	Spike	LCS	LC	cs ·	% Rec			
	Units	Conc.	Result			Limits	Qualifi	iers	
Parameter		5	4.7		93	90-110			
	ma/l				91	90-110			
Chloride	mg/L mg/L		2.3			90-110			
Chloride Fluoride	mg/L mg/L mg/L	2.5 5	2.3 4.7		94	90-110			
Chloride Fluoride Sulfate	mg/L mg/L	2.5			94	90-110			
Chloride Fluoride Sulfate	mg/L	2.5 5	4.7				%	Rec	
Chloride Tuoride Sulfate	mg/L mg/L	2.5	4.7		94 MS Result	MS % Rec		5 Rec imits	Qualifiers
Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE: Parameter	mg/L mg/L 2882112 Units	2.5 5 6036613800 Result	4.7 02 Spike Conc.		MS Result	MS % Rec	L	imits	Qualifiers
Chloride Fluoride Sulfate MATRIX SPIKE SAMPLE:	mg/L mg/L 2882112	2.5 5 6036613800 Result	4.7 02 Spike Conc. 15.6 2	 25 .5	MS	MS % Rec	L		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.

#### REPORT OF LABORATORY ANALYSIS



Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

MATRIX SPIKE & MATRIX SP	PIKE DUPLI	CATE: 2882	113		2882114							
			MS	MSD								
	(	60367128001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	ND	10000	10000	15200	11400	152	114	80-120	28	15	M1,R1
Fluoride	mg/L	ND	5000	5000	7840	5920	157	118	80-120	28	15	M1,R1
Sulfate	mg/L	69000	50000	50000	114000	114000	90	91	80-120	0	15	

#### SAMPLE DUPLICATE: 2882115

		60367128001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	ND	<778		15	
Fluoride	mg/L	ND	<173		15	
Sulfate	mg/L	69000	65200	6	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.



	688													
QC Batch: 71644	17		Analy	sis Met	hod:	EPA	300.0							
QC Batch Method: EPA 3	300.0		-		scription:	300.	.0 IC Ani	ons						
			-	ratory:	•	Pace	e Analyti	cal Ser	vices - K	ansas	s City			
Associated Lab Samples:	6036613801	3		j							· - · <b>,</b>			
METHOD BLANK: 288212	21			Matrix:	Water									
Associated Lab Samples:	6036613801	3												
Parameter		Units	Blar Resi		Reporting Limit		MDL	_	Anal	yzed	Qu	alifiers		
Chloride		mg/L		0.51J		1.0		0.39	04/23/2	1 16:	 19			
Fluoride		mg/L		<0.086		.20		0.086	04/23/2					
Sulfate		mg/L		<0.42		1.0		0.42	04/23/2					
METHOD BLANK: 288375	9			Matrix:	Water									
Associated Lab Samples:	6036613801	3												
eap.00.	2000010001	~	Blar	ık	Reporting									
Parameter		Units	Res		Limit		MDL		Anal	yzed	Qu	alifiers		
Chloride		mg/L		<0.39		1.0		0.39	04/25/2					
Fluoride		mg/L	•	<0.086		.20		0.086	04/25/2					
Sulfate		mg/L		<0.42		1.0		0.42	04/25/2	1 10:0	02			
LABORATORY CONTROL S	SAMPLE: 28	882122												
LABORATORY CONTROL S	SAMPLE: 28	882122 Units	Spike Conc.		LCS Result		.CS Rec		6 Rec Limits		Qualifiers			
Parameter	SAMPLE: 2	Units	Conc.		Result		Rec	LL	imits		Qualifiers			
Parameter	SAMPLE: 28	Units mg/L	Conc.	5	Result 4.8		Rec 95		imits90-110	)	Qualifiers	_		
Parameter	SAMPLE: 28	Units	Conc2.	5	Result		Rec		imits	) )	Qualifiers	_		
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L mg/L	Conc2.	I 5 5	Result 4.8 2.4		Rec 95 98		imits 90-110 90-110	) )	Qualifiers	_		
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L	Conc2.	I 5 5 5	Result 4.8 2.4	%	Rec 95 98	L	imits 90-110 90-110	) )	Qualifiers			
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L mg/L	2.	I 5 5 5	Result 4.8 2.4 4.9	% 	Rec 95 98 98	L	imits 90-11( 90-11( 90-11(	- ) )	Qualifiers	_		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter		Units mg/L mg/L mg/L 883760 Units	Conc. 2. Spike Conc.	I 5 5 5 I	Result 4.8 2.4 4.9 LCS Result	% 	Rec 95 98 98 98 CS Rec	L	imits 90-11( 90-11( 90-11( 6 Rec	) ) )		_		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride		Units mg/L mg/L mg/L 883760	Conc. 2. Spike Conc.	I 5 5 5 I 5	Result 4.8 2.4 4.9	% 	Rec 95 98 98 08	L 3 3 3 3 3 3 3	imits 90-11( 90-11( 90-11( 6 Rec imits					
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride		Units mg/L mg/L mg/L 883760 Units mg/L	Conc. 2. Spike Conc. 2.	I 5 5 5 I 5	Result         4.8           2.4         4.9           LCS         Result           4.7         4.7	% 	Rec 95 98 98 CS Rec 93	L 3 3 3 3 3 3	imits 90-110 90-110 90-110 6 Rec imits 90-110			_		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate	SAMPLE: 28	Units mg/L mg/L mg/L 883760 Units mg/L mg/L mg/L	Conc. 2. Spike Conc. 2.	I 5 5 5 I 5 5 5	Result         4.8           2.4         4.9           LCS         4.7           2.3         4.7	% L	Rec         95           98         98           CS         98           Rec         93           93         91	L 3 3 3 3 3 3	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110			_		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate	SAMPLE: 28	Units mg/L mg/L 883760 Units mg/L mg/L mg/L mg/L	Conc. 2. Spike Conc. 2.	I 5 5 5 5 5 5 5 5 5 5 5 5	Result         4.8           4.8         2.4           4.9         4.9           LCS         4.7           4.3         4.7           4.7         4.7           2.3         4.7           288212         4.7	%  %	Rec         95           98         98           CS         93           91         94	L 3 3 3 4	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110	) ) ) ) )	Qualifiers	_		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX S	SAMPLE: 28	Units mg/L mg/L mg/L 883760 Units mg/L mg/L mg/L mg/L mg/L	Conc. 2. Spike Conc. 2. 124 MS Spike	I 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Result         4.8           4.8         2.4           4.9         4.9           LCS         4.7           2.3         4.7           2.3         4.7           288212         MS	% L %	Rec         95           98         98           CS         98           91         94           94         94	L 3 3 4 MS	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110 90-110	) ) ) ) ) ) )	Qualifiers % Rec	_	Max	
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate	SAMPLE: 28	Units mg/L mg/L 883760 Units mg/L mg/L mg/L mg/L	Conc. 2. Spike Conc. 2.	I 5 5 5 5 5 5 5 5 5 5 5 5	Result         4.8           4.8         2.4           4.9         4.9           LCS         4.7           2.3         4.7           2.3         4.7           288212         MS	% L %	Rec         95           98         98           CS         93           91         94	L 3 3 3 4	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110 90-110	) ) ) ) ) ) )	Qualifiers	RPD	Max RPD	Qua
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX S Parameter Chloride	SAMPLE: 24 SAMPLE: 24 SPIKE DUPLIC G Units mg/L	Units mg/L mg/L mg/L 883760 Units mg/L mg/L mg/L CATE: 2882 ⁻¹ 60367402001 Result 1140	Conc. 2. Spike Conc. 2. 124 MS Spike Conc. 1000	I 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Result         4.8           4.9         2.4           4.9         4.9           LCS         4.7           2.3         4.7           288212         MS           Result         2360	% LL % 225 	Rec         95           98         98           CS         93           91         94           MSD         esult           2220         -	MS % Rec 1	.imits 90-110 90-110 90-110 6 Rec .imits 90-110 90-110 90-110 90-110 90-110 90-110	GD 6D 108	Qualifiers % Rec Limits 80-120	6	RPD 15	
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX S	SAMPLE: 24 SAMPLE: 24 SPIKE DUPLIC	Units mg/L mg/L mg/L 883760 Units mg/L mg/L mg/L cATE: 2882 ⁻¹ 60367402001 Result	Conc. 2. Spike Conc. 2. 124 MS Spike Conc.	I 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Result         4.8           4.9         2.4           4.9         4.9           LCS         4.7           2.3         4.7           288212         MS           Result         00           2360         8.2	% LL % 225 M R( 2	Rec 95 98 98 CS Rec 93 91 94 94 MSD esult	L 3 3 4 MS % Red 1	.imits 90-110 90-110 90-110 6 Rec .imits 90-110 90-110 90-110 90-110 90-110	) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	Qualifiers % Rec Limits		RPD 15 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**



#### Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

MATRIX SPIKE SAMPLE:	2882126						
Demonster	11-24-	60366138022	Spike	MS	MS	% Rec	0
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	17.3	250	260	97	80-120	
Fluoride	mg/L	0.35	2.5	3.0	106	80-120	
Sulfate	mg/L	442	250	686	98	80-120	
SAMPLE DUPLICATE: 2882123							
		60367402001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
Chloride	mg/L	1140	1190	4	15		-
Fluoride	mg/L	5.9	6.0	1	15		
Sulfate	mg/L	1830	1950	7	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**



#### QUALIFIERS

#### Project: AMEREN SEC SCL4A

Pace Project No.: 60366588

#### 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.

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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 SEC SCL4A

Pace Project No.: 60366588

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60366138009	S-BMW-1S	EPA 200.7	716201	EPA 200.7	716306
60366138010	S-BMW-3S	EPA 200.7	716201	EPA 200.7	716306
60366138013	S-UG-3	EPA 200.7	716201	EPA 200.7	716306
60366588001	S-TMW-1	EPA 200.7	715667	EPA 200.7	715766
60366588002	S-TMW-2	EPA 200.7	715667	EPA 200.7	715766
60366588003	S-TMW-3	EPA 200.7	715667	EPA 200.7	715766
60366588004	S-SCL4A-DUP-1	EPA 200.7	715667	EPA 200.7	715766
60366588005	S-SCL4A-FB-1	EPA 200.7	715667	EPA 200.7	715766
60366138009	S-BMW-1S	SM 2320B	716345		
60366138010	S-BMW-3S	SM 2320B	716345		
60366138013	S-UG-3	SM 2320B	716345		
60366588001	S-TMW-1	SM 2320B	716534		
60366588002	S-TMW-2	SM 2320B	716534		
60366588003	S-TMW-3	SM 2320B	716534		
60366588004	S-SCL4A-DUP-1	SM 2320B	716534		
60366588005	S-SCL4A-FB-1	SM 2320B	716534		
60366138009	S-BMW-1S	SM 2540C	715646		
60366138010	S-BMW-3S	SM 2540C	715646		
60366138013	S-UG-3	SM 2540C	715646		
60366588001	S-TMW-1	SM 2540C	715646		
60366588002	S-TMW-2	SM 2540C	715646		
60366588003	S-TMW-3	SM 2540C	715646		
60366588004	S-SCL4A-DUP-1	SM 2540C	715646		
60366588005	S-SCL4A-FB-1	SM 2540C	715646		
60366138009	S-BMW-1S	EPA 300.0	716443		
60366138010	S-BMW-3S	EPA 300.0	716443		
60366138013	S-UG-3	EPA 300.0	716447		
60366588001	S-TMW-1	EPA 300.0	715726		
60366588002	S-TMW-2	EPA 300.0	715726		
60366588003	S-TMW-3	EPA 300.0	716230		
60366588004	S-SCL4A-DUP-1	EPA 300.0	715726		
60366588005	S-SCL4A-FB-1	EPA 300.0	715726		

3	$\sim$
1	Pace Analytical
1	

Sample Condition Upon Receipt

# WO#:60366588

Client Name: Golder's Associal	1.5	
Courier: FedEx UPS VIA Clay		Pace 🗆 Xroads 📉 Client 🗆 Other 🗆
Tracking #: Pa	ice Shipping Label Use	d? Yes □ No 🙀
Custody Seal on Cooler/Box Present: Yes 🕅 No 🗆	Seals intact: Yes	
Packing Material: Bubble Wrap  Bubble Bags	🗆 📃 Foam 🗆	None D Other A 7 plc
Thermometer Used: T298 Type of	of Ice: (Wet) Blue No	50
Cooler Temperature (°C): As-read 3.8 Corr. Fac		ted 3.8 Date and initials of person examining contents: 111/218
Temperature should be above freezing to 6°C 17, 8	0.0	17.8
Chain of Custody present:	Yes No N/A	
Chain of Custody relinquished:	No □N/A	
Samples arrived within holding time:	Yes No N/A	
Short Hold Time analyses (<72hr):	Yes No N/A	
Rush Turn Around Time requested:	Yes No N/A	
Sufficient volume:	Yes 🛛 No 🗆 N/A	
Correct containers used:	Yes No N/A	8
Pace containers used:	Yes No N/A	
Containers intact:	Yes No N/A	41
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	⊡Yes □No ÙN/A	
Filtered volume received for dissolved tests?	□Yes □No ÌN/A	
Sample labels match COC: Date / time / ID / analyses	Yes No N/A	Didn+rer sumplies for 5063
Samples contain multiple phases? Matrix: VH	Yes No N/A	Diant ray Sompus for S-Bmw. 35
Containers requiring pH preservation in compliance?	Yes No N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
(HNO3, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#	6031725	
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	□Yes □No	
Potassium iodide test strip turns blue/purple? (Preserve)	Yes No	
Trip Blank present:	Yes No N/A	
Headspace in VOA vials ( >6mm):	□Yes □No N/A	
Samples from USDA Regulated Area: State:	□Yes □No N/A	й
Additional labels attached to 5035A / TX1005 vials in the field		
Client Notification/ Resolution: Copy COC	to Client? Y / N	Field Data Required? Y / N
Person Contacted: Date/	Time:	
Comments/ Resolution:		
By jchurch at 8:41 am, 4/15/21 Project Manager Review:	Date	).
,	Date	

	Section A Required Cli Company: Address: Fmail To: Phone: 631	Pace Analytical" www.pacetas.com			i i						-Ilmont	The second se			
Memory methods         Memory method         Memory	Section A Required Clin Company: Address: Emaiñ To: Phone: 634 Requested E		Street co	191 B	Ine Cha	n-of-Custody I:	a LEGAL D(	CUMENT. All relev	ant fields must t	be completed a	ccurately.	14 F. F.			
Manual and the standing of the standing	Required Clif Company: Address: Email To: Phone: 63( Requested E			20-11							5	1000		80	
Conversion         Conver	Company: Address: Emaii To: Phone: 634		Section B Required Project Info				Section C		(- 24 -						
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			Andrea Name: An	neren Sioux Ene	rgy Center S	CL4A	Pace Project Manager,				Site Location				
			Project Number: 15.	3140602.0003D		-	Pace Profile #				STATE:	MO			
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1         S-TMW2         Wr         1         Mr         M		S-TMW-1	-			201	J .		-	Z.					121
4         STMU3         Wr         Composition         Composite toward         Compo		S-TMW-2	-			201									
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WT     G     L     L1     L1 <th< td=""><td>6</td><td>S-BMW-1S</td><td>_</td><td>-</td><td></td><td>335</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	6	S-BMW-1S	_	-		335									
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## **MEMORANDUM**

Project No. 153140603

DATE July 28, 2021

TO Project File Golder Associates

- **CC** Amanda Derhake, Jeff Ingram
- **FROM** Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

# DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCL4A – DETECTION MONITORING - DATA PACKAGE 60366588

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).

### **QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

Company Name: Golder Associates	Project Manager: <u>J. Ingram</u>
Project Name: Ameren - SEC - SCL4A	Project Number: 153140603
Reviewer: A. Muehlfarth	Validation Date: 7/28/2021
Laboratory: Pace Analytical Analytical Method (type and no.): EPA 200.7 (Total Metals); SM23 Matrix: Air Soil/Sed. Water Waste Sample Names S-TMW-1, S-TMW-2, S-TMW-3, S-SCL4A-DUP-1, S-	]

#### 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?	x			4/13/2021
b)	Sampling team indicated?	x			EMS/SMK
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)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h)	Field Calibration within control limits?	х			
i)	Notations of unacceptable field conditions/performa	nces fr	om field lo	ogs or field r	notes?
			x		
j)	Does the laboratory narrative indicate deficiencies?			x	
	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?	x			
c)	Were samples received in good condition?	x			
•		VEO	NO		
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?	x			
f)	Were any sample dilutions noted?	x			See Notes
	were any sample unutions noted?				

#### **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)?		x		S-SCL4A-FB-1 @ S-TMW-2
c)	Were analytes detected in the equipment blank(s)?			X	
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?	×			
b)	Were the proper analytes included in the LCS?	×			
c)	Was the LCS accuracy criteria met?	×			
Dunlin		YES	NO	NA	COMMENTS
Duplica					COMMENTS
a)	Were field duplicates collected (note original and du				S-SCL4A-DUP-1 @ S-TMW-1
b)	Ware field due presiden aritaria mat (note BPD)?	×			Max RPD: 3.2% [<20%]
b)	Were field dup, precision criteria met (note RPD)?				
c)	Were lab duplicates analyzed (note original and dup			_	
d)	Were lab dup. precision criteria met (note RPD)?	×	×		See Notes
u)	were lab dup, precision chiena met (note KFD)?		<u>^</u>		
Blind S	itandards	YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			х	
	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?		x		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?			×	
c)	Were MS/MSD precision criteria met?		x		See Notes
	•				

#### Comments/Notes:

Sulfate and chloride were diluted in several samples, no qualification necessary.

#### Method Blanks:

2879100: Potassium (180J). Associated with samples 60366588001 through 60366588005. Sample results >RL and 10x blank or non-detect, no qualification necessary.

2882315: Chloride (0.55J). Associated with sample 60366588003. Sample result >RL but <10x blank, qualified as estimate.

#### **QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

#### Comments/Notes:

2882121: Chloride (0.51J). Associated with sample 60366138013. Sample result >RL and 10x blank, no qualification necessary.

Laboratory Duplicates:

2880018: DUP RPD exceeds limit (15%) for Fluoride (26%). Associated with unrelated sample, no qualification necessary.

#### MS/MSD:

2879104/2879127: MSD % recovery low for Calcium. Associated with sample 60366588003. Only 1 QC indicator outside control limits, no qualification necessary.

2881022/2881023: MSD % recovery low for Boron; MS % recovery high for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2879434/2881092: RPD exceeds limit for Sulfate. MS/MSD performed on unrelated sample, no qualification necessary.

2882113/2882114: MS % recovery and RPD high for Chloride and Fluoride. MS/MSD performed on unrelated sample, no qualification necessary.

2882124/2882125: MS % recovery high for Chloride and Sulfate. MS/MSD performed on unrelated sample, no qualification necessary.

2879102/2879103: MS % recovery high for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

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# **QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

#### Data Qualification:

	Sample Name	Constituent(s)	Result	Qualifier	Reason
	S-TMW-3	Chloride	2.2	J	Detected in blank, 10x blank > Sample > F
	$\searrow$				
	$ \longrightarrow $				
				<u> </u>	
					$\searrow$
					<u>_</u>
					<u>_</u>
Signature: (Imm //////////		Ann Muhlforth			7/28/2021



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

June 18, 2021

Jeffrey Ingram Golder Associates 13515 Barrett Parkway Drive Suite 260 Ballwin, MO 63021

RE: Project: AMEREN-VS-SCL4A Pace Project No.: 60371261

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on June 04, 2021. 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,

Parmi Church

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

Enclosures

cc: Ryan Feldmann, Golder Mark Haddock, Golder Associates Eric Schneider, Golder Associates Brendan Talbert, Golder Associates





#### CERTIFICATIONS

Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 200030 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Nevada Certification #: KS000212020-2 Oklahoma Certification #: 9205/9935 Florida: Cert E871149 SEKS WET Texas Certification #: T104704407-19-12 Utah Certification #: KS000212019-9 Illinois Certification #: 004592 Kansas Field Laboratory Accreditation: # E-92587 Missouri SEKS Micro Certification: 10070



# SAMPLE SUMMARY

Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60371261001	S-UG-3	Water	06/02/21 10:14	06/04/21 04:25
60371261002	S-TMW-2	Water	06/02/21 09:55	06/04/21 04:25
60371261003	S-SCL4A-FB-1	Water	06/02/21 10:25	06/04/21 04:25
60371261004	S-SCL4A-DUP-1	Water	06/02/21 08:00	06/04/21 04:25



# SAMPLE ANALYTE COUNT

Project: AMEREN-VS-SCL4A Pace Project No.: 60371261

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60371261001	S-UG-3	EPA 300.0	CRN2	2	PASI-K
60371261002	S-TMW-2	EPA 300.0	CRN2	2	PASI-K
60371261003	S-SCL4A-FB-1	EPA 300.0	CRN2	2	PASI-K
60371261004	S-SCL4A-DUP-1	EPA 300.0	CRN2	2	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

Sample: S-UG-3	<b>Lab ID: 60371261001</b> Collected: 06/02/21 10:14 Received: 0				Received: 06	6/04/21 04:25 Ma	atrix: Water		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	,	Method: EPA 3 lytical Services		ity					
Fluoride Sulfate	0.33 62.3	mg/L mg/L	0.20 10.0	0.086 4.2	1 10		06/16/21 11:24 06/17/21 17:48	16984-48-8 14808-79-8	



Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

Sample: S-TMW-2	TMW-2 Lab ID: 60371261002 Collected: 06/02/21 09:55 Received			Received: 06	6/04/21 04:25 Ma	atrix: Water			
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Method: EPA 3 lytical Services		ty					
Fluoride	0.38 64.0	mg/L mg/L	0.20 5.0	0.086 2.1	1 5		06/16/21 16:33 06/16/21 17:10		



Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

Sample: S-SCL4A-FB-1	Lab ID:	60371261003	Collecte	d: 06/02/21	10:25	Received: 06	6/04/21 04:25 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	, , , , , , , , , , , , , , , , , , ,	Method: EPA 3 lytical Services		ity					
Fluoride Sulfate	<0.086 <0.42	mg/L mg/L	0.20 1.0	0.086 0.42	1 1		06/16/21 17:22 06/16/21 17:22		



Project: AMEREN-VS-SCL4A

Pace Project No.: 60371261

Sample: S-SCL4A-DUP-1	Lab ID:	60371261004	Collected	d: 06/02/21	08:00	Received: 06	6/04/21 04:25 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	,	Method: EPA 3 lytical Services		ity					
Fluoride Sulfate	0.38 64.2	mg/L mg/L	0.20 5.0	0.086 2.1	1 5		06/16/21 17:34 06/16/21 17:46		



Pace Project No.: 60	371261											
QC Batch: 7	26410		Analy	sis Metho	d:	EPA 300.0						
QC Batch Method: E	EPA 300.0		Analy	sis Descri	ption:	300.0 IC A	nions					
				ratory:		Pace Analy	/tical Se	rvices - Kans	sas City			
Associated Lab Sample	es: 603712610	002, 6037126100	3, 6037126	1004								
METHOD BLANK: 29	18610			Matrix: W	/ater							
Associated Lab Sample	es: 60371261	002, 6037126100	3, 6037126	1004								
_			Blan		Reporting							
Paramete	er	Units	Resu		Limit	M		Analyze		Qualifiers		
Fluoride		mg/L	<	<0.086	0.2		0.086	06/16/21 1				
Sulfate		mg/L		<0.42	1	.0	0.42	06/16/21 1	2:20			
METHOD BLANK: 29	21617			Matrix: W	/ater							
Associated Lab Sample	es: 60371261	002, 6037126100	3, 6037126	1004								
			Blan		Reporting							
Paramete	er	Units	Resu	ult	Limit	M	DL	Analyze	ed C	Qualifiers		
Fluoride		mg/L	<	<0.086	0.2		0.086	06/17/21 0				
Sulfate		mg/L		<0.42	1	.0	0.42	06/17/21 0	8:37			
LABORATORY CONTR	OL SAMPLE:	2918611										
			Spike	LC	s	LCS	9	% Rec				
Paramete	er	Units	Conc.	Res	sult	% Rec	L	_imits	Qualifiers			
Fluoride		mg/L	2.	5	2.4	9	98	90-110				
Sulfate		mg/L		5	4.7	ç	95	90-110				
LABORATORY CONTR	OL SAMPLE:	2921618										
			Spike	LC	S	LCS	9	% Rec				
Paramete	er	Units	Conc.	Res	sult	% Rec	L	_imits	Qualifiers			
Fluoride		mg/L	2.	5	2.5	1(	00	90-110				
Sulfate		mg/L		5	5.0	ŝ	99	90-110				
MATRIX SPIKE & MAT		LICATE: 2918	613		291861	4						
		2010	MS	MSD								
		60371252002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Re	c % Rec	Limits	RPD	RPD	Qua
Fluoride	mg/L		2.5	2.5	2.5	2.6	1		02 80-12			_
Sulfate	mg/L	717	5	5	721	721		80 8	82 80-12	0 0	15	E

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-VS-SCL4A

Pace Project No.: 60371261

MATRIX SPIKE SAMPLE:	2918615						
Deveneter	l la ita	60371258001	Spike	MS	MS % Dec	% Rec	Qualifian
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Fluoride	mg/L	0.39	2.5	2.9	100	80-120	
Sulfate	mg/L	52.6	25	76.9	97	80-120	
SAMPLE DUPLICATE: 2918612							
		60371252002	Dup		Max		
						<b>•</b>	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	_
Fluoride	Units mg/L	Result <0.086	Result <0.086	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.



Project: AMEREN-VS-SCL	_4A							
Pace Project No.: 60371261								
QC Batch: 726411		Analysis I	Method:	EPA 300.	0			
QC Batch Method: EPA 300.0		Analysis I	Description:	300.0 IC	Anions			
		Laborator	ry:	Pace Ana	alytical Se	rvices - Kar	nsas City	
Associated Lab Samples: 60371261	001							
METHOD BLANK: 2918617		Mat	rix: Water					
Associated Lab Samples: 60371261	001							
Devenueter	Linita	Blank	Reportin	-		A se e h se	I	Qualifiana
Parameter	Units	Result	Limit		IDL	Analyz		Qualifiers
Fluoride	mg/L	<0.0		0.20	0.086	06/16/21		
Sulfate	mg/L	<0.4	42	1.0	0.42	06/16/21	10:51	
METHOD BLANK: 2921626		Mat	rix: Water					
Associated Lab Samples: 60371261	001							
•		Blank	Reportin	g				
Parameter	Units	Result	Limit		1DL	Analyz	ed	Qualifiers
Fluoride	mg/L	<0.0	86	0.20	0.086	06/17/21	08:37	
Sulfate	mg/L	<0.4	42	1.0	0.42	06/17/21		
METHOD BLANK: 2922025		Mot	rix: Water					
Associated Lab Samples: 60371261	001	Mat	IIX. Water					
	001	Blank	Reportin	a				
Parameter	Units	Result	Limit	-	1DL	Analyz	ed	Qualifiers
Fluoride	mg/L	<0.08	86	0.20	0.086	06/18/21		
Sulfate	mg/L	<0.0		1.0	0.080	06/18/21		
	· <del>3</del> , –			-				
LABORATORY CONTROL SAMPLE:	2918618							
_		Spike	LCS	LCS		% Rec	_	
Parameter	Units	Conc	Result	% Rec	I	Limits	Qualifi	iers
Fluoride	mg/L	2.5	2.4		97	90-110		
Sulfate	mg/L	5	4.9		97	90-110		
LABORATORY CONTROL SAMPLE:	2921627							
		Spike	LCS	LCS		% Rec		
Parameter	Units	Conc.	Result	% Rec	I	Limits	Qualifi	iers
Fluoride	mg/L	2.5	2.5		100	90-110		
Sulfate	mg/L	5	5.0		99	90-110		

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-VS-SCL4A

Pace Project No.: 60371261

LABORATORY CONTROL SA	AMPLE:	2922026										
			Spike	LC	-	LCS	% Re					
Parameter		Units	Conc.	Res	sult	% Rec	Limi	ts	Qualifiers	_		
Fluoride		mg/L	2	.5	2.7	109	9	90-110				
Sulfate		mg/L		5	4.8	96	; (	90-110				
MATRIX SPIKE & MATRIX S	PIKE DUPL	-ICATE: 2918	620		2918621							
			MS	MSD								
		60371261001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride	mg/L	0.33	2.5	2.5	2.9	2.9	101	101	80-120	0	15	
Sulfate	mg/L	62.3	50	50	104	111	84	98	80-120	7	15	
MATRIX SPIKE SAMPLE:		2918622										
			60371	916004	Spike	MS		MS	% Rec			
Parameter		Units	Re	esult	Conc.	Result	%	Rec	Limits		Qualit	iers
				0.000	0.5		2.6	101	80	-120		
Fluoride		mg/L		<0.086	2.5		2.0	101	00			
Fluoride Sulfate		mg/L mg/L		<0.086 19.8	2.5 1000		2.0	98		-120		
	8619	0						-		-120		
Sulfate	8619	0	603712	19.8				-		-120		
Sulfate	8619	0	603712 Res	19.8	1000		000	98		_		
Sulfate	8619	mg/L		19.8	1000 Dup	10 	000	98 Max	Qualif	_		

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-VS-SCL4A

Pace Project No.: 60371261

#### 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.

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

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



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN-VS-SCL4A Pace Project No.: 60371261

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60371261001	S-UG-3	EPA 300.0	726411		
60371261002	S-TMW-2	EPA 300.0	726410		
60371261003	S-SCL4A-FB-1	EPA 300.0	726410		
60371261004	S-SCL4A-DUP-1	EPA 300.0	726410		



Sample Condition Upon Receipt

# WO#:60371261

Client Name: Golder Associa	tes	
Courier: FedEx UPS VIA Clay		Pace 🗆 Xroads 🍡 Client 🗆 Other 🗆
Tracking #:	Pace Shipping Label Use	
Custody Seal on Cooler/Box Present: Yes 🕅 No 🗆		
Packing Material: Bubble Wrap  Bubble Ba		•
Thermometer Used: 1298 Typ	e of Ice Web Blue No	None Other Zplc
Cooler Temperature (°C): As-read 1.4 Corr. F	actor <u>0, 0</u> Correc	Cted 1.4 Date and initials of person examining contents: Q 4 21 S
Chain of Custody present:		
Chain of Custody relinquished:	Yes DNo DN/A	
Samples arrived within holding time:		
Short Hold Time analyses (<72hr):	TYes NO DNA	
Rush Turn Around Time requested:	TYes No IN/A	
Sufficient volume:		
Correct containers used:	Yes 🗆 No 🗆 N/A	
Pace containers used:	Yes ONO ON/A	
Containers intact:	Yes INO IN/A	
Inpreserved 5035A / TX1005/1006 soils frozen in 48hrs?		
iltered volume received for dissolved tests?		
ample labels match COC: Date / time / ID / analyses		
amples contain multiple phases? Matrix: WT	□Yes NNo □N/A	
ontainers requiring pH preservation in compliance? NO₃, H₂SO₄, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide)	Yes No N/A	List sample IDs, volumes, lot #'s of preservative and the
xceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#	403173	date/time added.
vanide water sample checks:		
ead acetate strip turns dark? (Record only) otassium iodide test strip turns blue/purple? (Preserve)	□Yes □No	
p Blank present:	Yes No	
adspace in VOA vials ( >6mm):	Yes No N/A	
	Yes No N/A	
ditional labels attached to 5035A / TX1005 vials in the field ent Notification/ Resolution: Copy COC		
	to Client? Y / N Time:	Field Data Required? Y / N
mments/ Resolution	THINK .	
ject Manager Revis		
, magor torio	Date	

Pace Analytical

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information: Company: Golder Associates	ociates	Report To: Jeffrey Ingram	oject Ir. effrey	nformation					At At	Section C Invoice Infor Attention:	Section C Invoice Information: Attention:	Ë					Г					Page:	-	đ	-
13515 Bari	13515 Barrett Parkway Dr., Ste 260	Copy To: E	Eric Sc	chniede	ir, Ryan	Feldma	n, Brend	Eric Schnieder, Ryan Feldman, Brendan Talbert		Company Name:	Name:	Golde	Golder Associates Inc	ciates	po										
Ballwin, MO 63021	D 63021								Ad	Address:													L.		
jeffrey ing	jeffrey ingram@golder.com	Purchase Order No.:	der No	COC #1	:#1				Pa	Pace Quote Reference:						þ		UST	3T 12		RCRA		L.	OTHER	
636-724-9191	Fax: 636-724-9323	Project Name:		Ameren - Verification Sampling	- Verifica	ttion Sa		-SULAR		Pace Project Manager:	1	Jamie Church	hurch					Site L	Site Location	L					
Requested Due Date/TAT:	Standard	Project Number:		153140603 · occ 3D	03 . 00	030			а Д	Pace Profile #:		9285, line 1	e 1				T		STATE:	ļ	Mo				
			$\left  \right $	-										1	α -	senbe	ted A	nalysi	s Filte	Requested Analysis Filtered (Y/N)	Î				
Section D Required Client Information	Valid Matrix C MATRIX DRINKING WATER	odes CODE		(dwo		COLLECTED	TED				Pre	Preservatives	ives	N /A	z	z z	z	z z	z z z	z z	_				
	WATER WASTE WATER PRODUCT SOIL/SOLID OIL	N N N N N N N N N N N N N N N N N N N	see valid codes	S =CKAB C=C	COMPOSITE START	АЯТ	COMPOSITE END/GRAB	1TE VB						1								(N/X)			
AMIPLE IU (A-Z, 0-9 / ,-) Sample IDS MUST BE UNIQUE	<b>LE IU</b> -9 / ,-) 17 BE UNIQUE	100		=9) =~										test a	_			_				əninolr			
_		- ar - Chaide V F S	SAMPLE TYF	DAMPLE TYF		TIME	DATE	TIME	AMPLE TEN	H OF CONT.	HNO ³ H ⁵ SO [¢]	N ^g OH HCI	Methanol Ionsdag	<b>1 Analysis</b> Other	Chloride	=luoride = sulfate	Sar	Calcium Soron				10 IsubisəA	Bac	Proied	20571261 Pace Project No / Jahl D
S - U	NG - 3	~	WT 0	U		و.	12-2-9	1014	F	-				-	-	-		-	F	Poz:U	5	F			
S-TMW-	nw-2	~	WT 0	U				2260	-	-				-		-		-							
S-SCL	- SCL4A-FB-1	~	۵ ۲	U				1025		-						1									
S-Scl	-SCLYA-DUP-1	>	5 F	U	_											11									
	-ScryA-ms-1	>	TN 0	U				1014								11									
S-SCI	- SclyA-mso-1	>	۲ ۲	U	-	-	7	FIOI		-						$\overline{)}$			-	¥					
		>	M M	U	-				-	$\neg$															
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		>	5 F	U		-										_			_						
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		Buende	M	verden Taileert / bride	+16	cide		6-3-21		345	1.0	Dur	202	5	$\triangleleft$		$\left  \right $	e.	3	14	1400				
		NY.	No.	K V V	ار			63		¥	0	9	0	achoo	Bue	3		3	لعانجان	0425		1,4	×	7	7
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						R   N	INT Name SNATURE	PRINT Name of SAMPLER: SIGNATURE of SAMPLER:		Brend	1de	16	1 h	3	DAT	DATE Signed	pa					lī qm∋T	beviece N\Y)	Cooler ( Sooler (	səlqme
										131	5	12	5		WV)	V/DD/V	٥ ټ	9	06/05/21				эЯ	) 10	S

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

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



# **MEMORANDUM**

Project No. 153140603

DATE July 20, 2021

TO Project File Golder Associates

- **CC** Amanda Derhake, Jeff Ingram
- **FROM** Katie Bartels

# EMAIL Kbartels@golder.com

# DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCL4A – VERIFICATION SAMPLING - DATA PACKAGE 60371261

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

None.

# **QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

Company Name: Golder Associates	Project Manager: <u>J. Ingram</u>
Project Name: <u>Ameren- Sioux - SCL4A</u>	Project Number:
Reviewer: K. Bartels	Validation Date: 07/20/2021
Laboratory: Pace Analytical Services - Kansas City Analytical Method (type and no.): EPA 300.0 (Anions)	SDG #: 60371261
Matrix: Air Soil/Sed. Water Waste	
Sample Names S-UG-3, S-TMW-2, S-SCL4A-FB-1, S-SCL4A-DUP-1	

# 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?	х			6/2/2021
b)	Sampling team indicated?	х			BTT/SSS
c)	Sample location noted?	х			
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, S.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 field	d notes?
			×		
j)	Does the laboratory narrative indicate deficiencies?			x	
	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				
6)	and laboratory personnel?	х			
c)	Were samples received in good condition?	х			
Gener	al (reference QAPP or Method)	YES	NO	NA	COMMENTS
a)	Were hold times met for sample pretreatment?	X			
,	Were hold times met for sample analysis?	×			
b)		_			
c)	Were the correct preservatives used?	×			
d)	Was the correct method used?	×			
e)	Were appropriate reporting limits achieved?	×			
f)	Were any sample dilutions noted?	x			See Notes
g)	Were any matrix problems noted?		×		

# **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		S-SCL4A-FB-1 @ S-UG-3
c)	Were analytes detected in the equipment blank(s)?			х	
d)	Were analytes detected in the trip blank(s)?			Х	
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			
Duplica	ates	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du	uplicate	sample n	ames)?	
		X			S-SCL4A-DUP-1 @ S-TMW-2
b)	Were field dup. precision criteria met (note RPD)?	x			Max RPD: 0.3% [<20%]
c)	Were lab duplicates analyzed (note original and dup	olicate	samples)?	<b>)</b>	
		X			
d)	Were lab dup. precision criteria met (note RPD)?	X			Max RPD: 2% [<15%]
Blind S	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?			х	
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?			х	
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:

Sulfate diluted in samples -001, -002, and -004, no qualification necessary.

# **QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

# **Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
	$\mathbf{X}$			
			$\vdash$	

Signature: _____ August _____ Date: 07/20/2021



December 28, 2021

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

RE: Project: AMEREN SCL4A Pace Project No.: 60385861

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on November 10, 2021. 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 Indianapolis
- Pace Analytical Services Kansas City
- Pace Analytical Services Greensburg

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

Sincerely,

Parmi Church

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

Enclosures

cc: Ryan Feldmann, Golder Mark Haddock, Golder Associates Eric Schneider, Golder Associates Brendan Talbert, Golder Associates





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

#### CERTIFICATIONS

Project: AMEREN SCL4A Pace Project No.: 60385861

#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601 ANAB DOD-ELAP Rad Accreditation #: L2417 Alabama Certification #: 41590 Arizona Certification #: AZ0734 Arkansas Certification California Certification #: 04222CA Colorado Certification #: PA01547 Connecticut Certification #: PH-0694 **Delaware Certification** EPA Region 4 DW Rad Florida/TNI Certification #: E87683 Georgia Certification #: C040 Florida: Cert E871149 SEKS WET **Guam Certification** Hawaii Certification Idaho Certification **Illinois Certification** Indiana Certification Iowa Certification #: 391 Kansas/TNI Certification #: E-10358 Kentucky Certification #: KY90133 KY WW Permit #: KY0098221 KY WW Permit #: KY0000221 Louisiana DHH/TNI Certification #: LA180012 Louisiana DEQ/TNI Certification #: 4086 Maine Certification #: 2017020 Maryland Certification #: 308 Massachusetts Certification #: M-PA1457 Michigan/PADEP Certification #: 9991

#### Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268 Illinois Accreditation #: 200074 Indiana Drinking Water Laboratory #: C-49-06 Kansas/TNI Certification #: E-10177 Kentucky UST Agency Interest #: 80226 Kentucky WW Laboratory ID #: 98019

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 2000302021-3 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Missouri Certification #: 235 Montana Certification #: Cert0082 Nebraska Certification #: NE-OS-29-14 Nevada Certification #: PA014572018-1 New Hampshire/TNI Certification #: 297617 New Jersey/TNI Certification #: PA051 New Mexico Certification #: PA01457 New York/TNI Certification #: 10888 North Carolina Certification #: 42706 North Dakota Certification #: R-190 Ohio EPA Rad Approval: #41249 Oregon/TNI Certification #: PA200002-010 Pennsylvania/TNI Certification #: 65-00282 Puerto Rico Certification #: PA01457 Rhode Island Certification #: 65-00282 South Dakota Certification Tennessee Certification #: 02867 Texas/TNI Certification #: T104704188-17-3 Utah/TNI Certification #: PA014572017-9 USDA Soil Permit #: P330-17-00091 Vermont Dept. of Health: ID# VT-0282 Virgin Island/PADEP Certification Virginia/VELAP Certification #: 9526 Washington Certification #: C868 West Virginia DEP Certification #: 143 West Virginia DHHR Certification #: 9964C Wisconsin Approve List for Rad Wyoming Certification #: 8TMS-L

Michigan Drinking Water Laboratory #9050 Ohio VAP Certified Laboratory #: CL0065 Oklahoma Laboratory #: 9204 Texas Certification #: T104704355 Wisconsin Laboratory #: 999788130 USDA Soil Permit #: P330-19-00257

Nevada Certification #: KS000212020-2 Oklahoma Certification #: 9205/9935 Florida: Cert E871149 SEKS WET Texas Certification #: T104704407-19-12 Utah Certification #: KS000212019-9 Illinois Certification #: 004592 Kansas Field Laboratory Accreditation: # E-92587 Missouri SEKS Micro Certification: 10070



# SAMPLE SUMMARY

Project: AMEREN SCL4A

Pace Project No.: 60385861

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60385861001	S-TMW-1	Water	11/09/21 10:30	11/10/21 05:17
60385861002	S-TMW-2	Water	11/09/21 12:00	11/10/21 05:17
60385861003	S-TMW-3	Water	11/09/21 13:35	11/10/21 05:17
60385861004	S-SCL4A-DUP-1	Water	11/09/21 00:00	11/10/21 05:17
60385861005	S-SCL4A-FB-1	Water	11/09/21 13:50	11/10/21 05:17
60385860001	S-BMW-1S	Water	11/08/21 14:41	11/10/21 05:17
60385860002	S-BMW-3S	Water	11/08/21 15:15	11/10/21 05:17
60385860009	S-UG-3	Water	11/09/21 10:20	11/10/21 05:17



# SAMPLE ANALYTE COUNT

Project: AMEREN SCL4A

Pace Project No.: 60385861

∟ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60385861001	S-TMW-1	EPA 200.7	MA1	7	PASI-K
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60385861002	S-TMW-2	EPA 200.7	MA1	7	PASI-K
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60385861003	S-TMW-3	EPA 200.7	MA1	7	PASI-K
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
0385861004	S-SCL4A-DUP-1	EPA 200.7	MA1	7	PASI-K
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
0385861005	S-SCL4A-FB-1	EPA 200.7	MA1	7	PASI-K
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
0385860001	S-BMW-1S	EPA 200.7	MA1	7	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	MAW	3	PASI-K
0385860002	S-BMW-3S	EPA 200.7	MA1	7	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	MAW	3	PASI-K
60385860009	S-UG-3	EPA 200.7	MA1	7	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K



# SAMPLE ANALYTE COUNT

Project: AMEREN SCL4A Pace Project No.: 60385861

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	MAW	3	PASI-K

PASI-I = Pace Analytical Services - Indianapolis

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-TMW-1	Lab ID:	60385861001	Collected	I: 11/09/21	10:30	Received: 11/	10/21 05:17 M	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			
	Pace Anal	ytical Services	- Kansas Ci	ty					
Boron	69.8J	ug/L	100	8.6	1	11/19/21 15:00	11/23/21 16:36	7440-42-8	
Calcium	111000	ug/L	1000	377	5	11/19/21 15:00	11/24/21 13:35	7440-70-2	
Iron	33.5J	ug/L	50.0	21.4	1	11/19/21 15:00	11/23/21 16:36	7439-89-6	
Magnesium	19100	ug/L	50.0	31.4	1	11/19/21 15:00	11/23/21 16:36	7439-95-4	
Manganese	260	ug/L	5.0	0.74	1	11/19/21 15:00	11/23/21 16:36	7439-96-5	
Potassium	5490	ug/L	500	146	1	11/19/21 15:00	11/23/21 16:36	7440-09-7	
Sodium	3050	ug/L	500	254	1	11/19/21 15:00	11/23/21 16:36	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B						
	Pace Anal	ytical Services	- Indianapol	is					
Alkalinity, Total as CaCO3	286	mg/L	2.0	2.0	1		11/16/21 11:33		
2540C Total Dissolved Solids	Analytical	Method: SM 25	540C						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Total Dissolved Solids	390	mg/L	5.0	5.0	1		11/16/21 09:56		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Anal	ytical Services	- Kansas Ci	ty					
Chloride	1.9	mg/L	1.0	0.39	1		11/18/21 20:03	16887-00-6	В
Fluoride	0.46	mg/L	0.20	0.086	1		11/18/21 20:03	16984-48-8	D6
Sulfate	41.5	mg/L	5.0	2.1	5		11/20/21 17:33	14808-79-8	



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Lab ID:	60385861002	Collected	: 11/09/21	12:00	Received: 11/	10/21 05:17 M	atrix: Water	
Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>,</b>				od: EP/	A 200.7			
86.9J	•	100	., 8.6	1	11/19/21 15:00	11/23/21 16:46	7440-42-8	
115000	ug/L	1000	377	5	11/19/21 15:00	11/24/21 13:41	7440-70-2	
1270	ug/L	50.0	21.4	1	11/19/21 15:00	11/23/21 16:46	7439-89-6	
20300	ug/L	50.0	31.4	1	11/19/21 15:00	11/23/21 16:46	7439-95-4	
503	ug/L	5.0	0.74	1	11/19/21 15:00	11/23/21 16:46	7439-96-5	
5070	ug/L	500	146	1	11/19/21 15:00	11/23/21 16:46	7440-09-7	
3630	ug/L	500	254	1	11/19/21 15:00	11/23/21 16:46	7440-23-5	
Analytical	Method: SM 23	20B						
Pace Anal	vtical Services	- Indianapol	is					
309	mg/L	2.0	2.0	1		11/16/21 11:33		
Analytical	Method: SM 25	40C						
Pace Anal	vtical Services	- Kansas Cit	ty .					
423	mg/L	5.0	5.0	1		11/16/21 09:55		
Analytical	Method: EPA 3	00.0						
Pace Anal	vtical Services	- Kansas Cit	ty .					
1.8	mg/L	1.0	0.39	1		11/17/21 20:55	16887-00-6	
0.36	mg/L	0.20	0.086	1		11/17/21 20:55	16984-48-8	
46.0	mg/L	5.0	2.1	5		11/17/21 21:50	14808-79-8	
	Results Analytical Pace Analy 86.9J 115000 1270 20300 503 5070 3630 Analytical Pace Analy 423 Analytical Pace Analy 1.8 0.36	Analytical Method: EPA 2 Pace Analytical Services 86.9J ug/L 115000 ug/L 20300 ug/L 503 ug/L 5070 ug/L 3630 ug/L Analytical Method: SM 23 Pace Analytical Services 309 mg/L Analytical Method: SM 25 Pace Analytical Services 423 mg/L Analytical Method: EPA 3 Pace Analytical Services 1.8 mg/L 0.36 mg/L	ResultsUnitsPQLAnalytical Method: EPA 200.7Prepare Pace Analytical Services - Kansas Cit 86.9Jug/L100 100115000ug/L1000 1270ug/L50.0 50.020300ug/L50.0 503ug/L500 5005070ug/L500 3630ug/L500 500Analytical Method: SM 2320B Pace Analytical Services - Indianapoli 309mg/L2.0 2.0Analytical Method: SM 2540C Pace Analytical Services - Kansas Cit 423mg/L5.0 5.0Analytical Method: EPA 300.0 Pace Analytical Services - Kansas Cit 423mg/L1.0 0.20	ResultsUnitsPQLMDLAnalytical Method: EPA 200.7Preparation Meth Pace Analytical Services - Kansas City $86.9J$ ug/L1008.6 $115000$ ug/L1000377 $1270$ ug/L50.021.4 $20300$ ug/L50.031.4 $503$ ug/L50.031.4 $5070$ ug/L500146 $3630$ ug/L500254Analytical Method: SM 2320BPace Analytical Services - Indianapolis309mg/L $309$ mg/L2.02.0Analytical Method: SM 2540CPace Analytical Services - Kansas City423mg/L $423$ mg/L5.05.0Analytical Method: EPA 300.0Pace Analytical Services - Kansas City1.8mg/L $1.8$ mg/L1.00.39 $0.36$ mg/L0.200.086	ResultsUnitsPQLMDLDFAnalytical Method: EPA 200.7Preparation Method: EPA Pace Analytical Services - Kansas City86.9Jug/L1008.61115000ug/L100037751270ug/L50.021.4120300ug/L50.021.41111503ug/L50.031.41115070ug/L500146133630ug/L50025411Analytical Method: SM 2320BPace Analytical Services - Indianapolis309mg/L2.02.01Analytical Method: SM 2540CPace Analytical Services - Kansas City1423mg/L5.05.01Analytical Method: EPA 300.0Pace Analytical Services - Kansas City1.8mg/L1.00.3910.36mg/L0.200.0861111	Results         Units         PQL         MDL         DF         Prepared           Analytical Method: EPA 200.7         Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         86.9J         ug/L         100         8.6         1         11/19/21 15:00           115000         ug/L         1000         377         5         11/19/21 15:00           1270         ug/L         50.0         21.4         1         11/19/21 15:00           20300         ug/L         50.0         31.4         1         11/19/21 15:00           503         ug/L         50.0         31.4         1         11/19/21 15:00           503         ug/L         500         254         1         11/19/21 15:00           3630         ug/L         500         254         1         11/19/21 15:00           3630         ug/L         500         254         1         11/19/21 15:00           Analytical Method: SM 2320B         Pace Analytical Services - Indianapolis         309         mg/L         2.0         2.0         1           Analytical Method: SM 2540C         Pace Analytical Services - Kansas City         1         423         mg/L         5.0         5.0         1	Results         Units         PQL         MDL         DF         Prepared         Analyzed           Analytical Method: EPA 200.7         Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         86.9J         ug/L         100         8.6         1         11/19/21 15:00         11/23/21 16:46           115000         ug/L         1000         377         5         11/19/21 15:00         11/23/21 16:46           20300         ug/L         50.0         21.4         1         11/19/21 15:00         11/23/21 16:46           503         ug/L         50.0         31.4         1         11/19/21 15:00         11/23/21 16:46           503         ug/L         5.0         0.74         1         11/19/21 15:00         11/23/21 16:46           5070         ug/L         500         146         1         11/19/21 15:00         11/23/21 16:46           3630         ug/L         500         254         1         11/19/21 15:00         11/23/21 16:46           Analytical Method: SM 2320B         Pace Analytical Services - Indianapolis         309         mg/L         2.0         1         11/16/21 11:33           Analytical Method: SM 2540C         Pace Analytical Services - Kansas City         11/16/21 09:55	Results         Units         PQL         MDL         DF         Prepared         Analyzed         CAS No.           Analytical Method: EPA 200.7         Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         86.9J         ug/L         100         8.6         1         11/19/21 15:00         11/23/21 16:46         7440-42-8           115000         ug/L         1000         377         5         11/19/21 15:00         11/23/21 16:46         7440-70-2           1270         ug/L         50.0         21.4         1         11/19/21 15:00         11/23/21 16:46         7439-89-6           20300         ug/L         50.0         31.4         1         11/19/21 15:00         11/23/21 16:46         7439-95-4           503         ug/L         5.0         0.74         1         11/19/21 15:00         11/23/21 16:46         7439-96-5           5070         ug/L         500         254         1         11/19/21 15:00         11/23/21 16:46         7440-23-5           Analytical Method: SM 2320B         Pace Analytical Services - Indianapolis         1         11/19/21 15:00         11/23/21 16:46         7440-23-5           Analytical Method: SM 2540C         Pace Analytical Services - Kansas City         1         1 <td< td=""></td<>



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-TMW-3	Lab ID:	60385861003	Collected	: 11/09/21	13:35	Received: 11/	10/21 05:17 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	96.5J 126000 1710 22600 780 6360	ug/L ug/L ug/L ug/L ug/L ug/L	100 1000 50.0 50.0 5.0 500	8.6 377 21.4 31.4 0.74 146	1 5 1 1 1	11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00	11/23/21 16:48 11/24/21 13:43 11/23/21 16:48 11/23/21 16:48 11/23/21 16:48 11/23/21 16:48	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	- Indianapol		1	11/19/21 15:00	11/23/21 16:48	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		2.0 ty	1		11/16/21 11:33		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 ytical Services		10.0	1		11/16/21 09:56		
Chloride Fluoride Sulfate	2.6 0.32 34.6	mg/L mg/L mg/L	1.0 0.20 5.0	0.39 0.086 2.1	1 1 5		11/17/21 22:45 11/17/21 22:45 11/17/21 23:04	16984-48-8	



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-SCL4A-DUP-1	Lab ID:	60385861004	Collected	l: 11/09/21	00:00	Received: 11/	10/21 05:17 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	nod: EP/	A 200.7			
	Pace Anal	tical Services	- Kansas Ci	ty					
Boron	85.8J	ug/L	100	8.6	1	11/19/21 15:00	11/23/21 16:50	7440-42-8	
Calcium	115000	ug/L	1000	377	5	11/19/21 15:00	11/24/21 13:45	7440-70-2	
Iron	1180	ug/L	50.0	21.4	1	11/19/21 15:00	11/23/21 16:50	7439-89-6	
Magnesium	20700	ug/L	50.0	31.4	1	11/19/21 15:00	11/23/21 16:50	7439-95-4	
Manganese	509	ug/L	5.0	0.74	1	11/19/21 15:00	11/23/21 16:50	7439-96-5	
Potassium	5160	ug/L	500	146	1	11/19/21 15:00	11/23/21 16:50	7440-09-7	
Sodium	3640	ug/L	500	254	1	11/19/21 15:00	11/23/21 16:50	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B						
	Pace Anal	tical Services	- Indianapol	is					
Alkalinity, Total as CaCO3	322	mg/L	2.0	2.0	1		11/16/21 11:33		
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C						
	Pace Anal	tical Services	- Kansas Ci	ty					
Total Dissolved Solids	422	mg/L	5.0	5.0	1		11/16/21 09:56		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
-	Pace Anal	tical Services	- Kansas Ci	ty					
Chloride	4.1	mg/L	1.0	0.39	1		11/29/21 10:31	16887-00-6	В
Fluoride	0.36	mg/L	0.20	0.086	1		11/29/21 10:31	16984-48-8	
Sulfate	49.1	mg/L	5.0	2.1	5		11/27/21 12:35	14808-79-8	



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-SCL4A-FB-1	Lab ID:	60385861005	Collected	d: 11/09/21	13:50	Received: 11/	10/21 05:17 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	<8.6 <75.4 <21.4 <31.4 <0.74 <146	ug/L ug/L ug/L ug/L ug/L ug/L	100 200 50.0 50.0 5.0 5.0	8.6 75.4 21.4 31.4 0.74 146	1 1 1 1 1	11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00 11/19/21 15:00	11/23/21 16:52 11/23/21 16:52 11/23/21 16:52 11/23/21 16:52 11/23/21 16:52 11/23/21 16:52	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	- Indianapo		1	11/19/21 15:00	11/23/21 16:52	7440-23-5	
Alkalinity, Total as CaCO3 2540C Total Dissolved Solids		mg/L Method: SM 25 ytical Services		2.0	1		11/16/21 11:33		
Total Dissolved Solids 300.0 IC Anions 28 Days	,	mg/L Method: EPA 3 ytical Services		5.0	1		11/16/21 09:57		
Chloride Fluoride Sulfate	0.55J <0.086 <0.42	mg/L mg/L mg/L	1.0 0.20 1.0	0.39 0.086 0.42	1 1 1		11/20/21 16:22 11/20/21 16:22 11/20/21 16:22	16887-00-6 16984-48-8 14808-79-8	



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

			d: 11/08/21	14:41	Received: 11/	10/21 05:17 Ma	atrix: Water	
sults	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
				od: EP	A 200.7			
Pace Ana	ytical Services	- Kansas C	ity					
66.9J	ug/L	100	8.6	1	12/03/21 10:02	12/07/21 18:12	7440-42-8	
160000	ug/L	2000	754	10	12/03/21 10:02	12/08/21 12:34	7440-70-2	
<21.4	ug/L	50.0	21.4	1	12/03/21 10:02	12/07/21 18:12	7439-89-6	
29800	ug/L	50.0	31.4	1	12/03/21 10:02	12/07/21 18:12	7439-95-4	
895	ug/L	5.0	0.74	1	12/03/21 10:02	12/07/21 18:12	7439-96-5	
470J	ug/L	500	146	1	12/03/21 10:02	12/07/21 18:12	7440-09-7	
4840	ug/L	500	254	1	12/03/21 10:02	12/07/21 18:12	7440-23-5	
Analytical	Method: SM 23	20B						
Pace Ana	ytical Services	- Indianapo	lis					
426	mg/L	2.0	2.0	1		11/16/21 11:33		
Analytical	Method: SM 25	40C						
Pace Ana	ytical Services	- Kansas Ci	ity					
534	mg/L	10.0	10.0	1		11/15/21 09:45		
Analytical	Method: EPA 3	00.0						
Pace Ana	ytical Services	- Kansas Ci	ity					
7.4	mg/L	1.0	0.39	1		11/22/21 10:15	16887-00-6	
<0.086	mg/L	0.20	0.086	1		11/22/21 10:15	16984-48-8	
31.8	mg/L	5.0	2.1	5		11/22/21 10:27	14808-79-8	
	Analytical Pace Anal 66.9J 160000 <21.4 29800 895 470J 4840 Analytical Pace Anal 426 Analytical Pace Anal 534 Analytical Pace Anal 234 <0.086	Analytical Method: EPA 2 Pace Analytical Services 66.9J ug/L (160000 ug/L (21.4 ug/L 29800 ug/L 895 ug/L 470J ug/L 4840 ug/L Analytical Method: SM 23 Pace Analytical Services 426 mg/L Analytical Method: SM 25 Pace Analytical Services 534 mg/L Analytical Method: EPA 3 Pace Analytical Services 7.4 mg/L (0.086 mg/L	Analytical Method: EPA 200.7 Prepa           Pace Analytical Services - Kansas Ci           66.9J         ug/L         100           160000         ug/L         2000           <21.4	Analytical Method: EPA 200.7 Preparation Meth         Pace Analytical Services - Kansas City         66.9.J       ug/L       100       8.6         160000       ug/L       2000       754         <21.4	Analytical Method: EPA 200.7 Preparation Method: EPA         Pace Analytical Services - Kansas City         66.9J       ug/L       100       8.6       1         160000       ug/L       2000       754       10         <21.4	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         66.9J       ug/L       100       8.6       1       12/03/21       10:02         160000       ug/L       2000       754       10       12/03/21       10:02         2160000       ug/L       50.0       21.4       1       12/03/21       10:02         29800       ug/L       50.0       31.4       1       12/03/21       10:02         29800       ug/L       50.0       31.4       1       12/03/21       10:02         495       ug/L       500       146       1       12/03/21       10:02         470J       ug/L       500       146       1       12/03/21       10:02         4840       ug/L       500       254       1       12/03/21       10:02         Analytical Method: SM 2320B       Pace Analytical Services - Indianapolis       426       mg/L       2.0       2.0       1         Analytical Method: SM 2540C       Pace Analytical Services - Kansas City       534       mg/L       10.0       10.0       1         Analytical Method: EPA 300.0       Pace Analytical Services - Kansas City       7.4       mg/L       1.	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         66.9J       ug/L       100       8.6       1       12/03/21       10:02       12/07/21       18:12         160000       ug/L       2000       754       10       12/03/21       10:02       12/07/21       18:12         2160000       ug/L       2000       754       10       12/03/21       10:02       12/07/21       18:12         29800       ug/L       50.0       21.4       1       12/03/21       10:02       12/07/21       18:12         29800       ug/L       50.0       31.4       1       12/03/21       10:02       12/07/21       18:12         29800       ug/L       50.0       0.74       1       12/03/21       10:02       12/07/21       18:12         470J       ug/L       500       254       1       12/03/21       10:02       12/07/21       18:12         4840       ug/L       500       254       1       12/03/21       10:02       12/07/21       18:12         Analytical Method: SM 2320B       1       12/03/21       10:02       12/07/21       18:12         Pace Analytical Services - Ka	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7         Pace Analytical Services - Kansas City         66.9J       ug/L       100       8.6       1       12/03/21       10:02       12/07/21       18:12       7440-42-8         160000       ug/L       2000       754       10       12/03/21       10:02       12/07/21       18:12       7440-42-8         160000       ug/L       2000       754       10       12/03/21       10:02       12/07/21       18:12       7439-89-6         29800       ug/L       50.0       31.4       1       12/03/21       10:02       12/07/21       18:12       7439-95-4         895       ug/L       5.0       0.74       1       12/03/21       10:02       12/07/21       18:12       7439-96-5         470J       ug/L       500       146       1       12/03/21       10:02       12/07/21       18:12       7440-09-7         4840       ug/L       500       254       1       12/03/21       10:02       12/07/21       18:12       7440-23-5         Analytical Method: SM 2320B



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-BMW-3S	Lab ID:	60385860002	Collected	d: 11/08/21	15:15	Received: 11/	10/21 05:17 M	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			
		ytical Services							
Boron	67.8J	ug/L	100	8.6	1	12/03/21 10:02	12/07/21 18:14		
Calcium	137000	ug/L	2000	754	10	12/03/21 10:02	12/08/21 12:36		
Iron	56.3	ug/L	50.0	21.4	1	12/03/21 10:02	12/07/21 18:14		
Magnesium	23500	ug/L	50.0	31.4	1	12/03/21 10:02	12/07/21 18:14		
Manganese	364	ug/L	5.0	0.74	1	12/03/21 10:02	12/07/21 18:14		
Potassium	533	ug/L	500	146	1	12/03/21 10:02	12/07/21 18:14		
Sodium	5710	ug/L	500	254	1	12/03/21 10:02	12/07/21 18:14	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B						
-	Pace Anal	ytical Services	- Indianapo	lis					
Alkalinity, Total as CaCO3	356	mg/L	2.0	2.0	1		11/16/21 11:33		
2540C Total Dissolved Solids	Analytical	Method: SM 25	540C						
	Pace Anal	ytical Services	- Kansas Ci	ity					
Total Dissolved Solids	461	mg/L	10.0	10.0	1		11/15/21 09:45		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0						
	Pace Anal	ytical Services	- Kansas Ci	ity					
Chloride	12.0	mg/L	1.0	0.39	1		11/22/21 10:38	16887-00-6	
Fluoride	0.46	mg/L	0.20	0.086	1		11/22/21 10:38	16984-48-8	
Sulfate	31.2	0	5.0	2.1	5		11/22/21 10:50	14808-79-8	
		mg/L							



#### Project: AMEREN SCL4A

Pace Project No.: 60385861

Sample: S-UG-3	Lab ID:	60385860009	Collected	11/09/21	10:20	Received: 11/	10/21 05:17 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	210 126000 <21.4 24000 614 5570	ug/L ug/L ug/L ug/L ug/L ug/L	100 2000 50.0 50.0 5.0 5.0	8.6 754 21.4 31.4 0.74 146	1 10 1 1 1 1	12/03/21 10:02 12/03/21 10:02 12/03/21 10:02 12/03/21 10:02 12/03/21 10:02 12/03/21 10:02	12/07/21 18:35	7440-70-2 7439-89-6 7439-95-4 7439-96-5 7440-09-7	
Sodium 2320B Alkalinity Alkalinity, Total as CaCO3		ug/L Method: SM 23 ytical Services mg/L		254 s 2.0	1	12/03/21 10:02	12/07/21 18:35	7440-23-5	
2540C Total Dissolved Solids	Analytical	Method: SM 25 ytical Services	40C		ļ		11/10/21 11:33		
Total Dissolved Solids 300.0 IC Anions 28 Days		mg/L Method: EPA 3 ytical Services		10.0 y	1		11/16/21 09:55		
Chloride Fluoride Sulfate	24.5 0.38 66.0	mg/L mg/L mg/L	2.0 0.20 10.0	0.78 0.086 4.2	2 1 10		11/23/21 18:00 11/23/21 17:48 11/22/21 17:09	16887-00-6 16984-48-8 14808-79-8	



Project:	AMEREN S	SCL4A							
Pace Project No.:	60385861								
QC Batch:	757476		Analysis Me	ethod:	EPA 200.7				
QC Batch Method	: EPA 200.	7	Analysis De	escription:	200.7 Metal	s, Total			
			Laboratory:		Pace Analy	ical Se	rvices - Kar	nsas City	
Associated Lab S	amples: 603	385861001, 60385861002	2, 60385861003,	6038586100	4, 603858610	05		-	
METHOD BLANK	: 3031144		Matrix	: Water					
Associated Lab S	amples: 603	385861001, 60385861002	2, 60385861003,	6038586100	4, 603858610	05			
			Blank	Reportin	g				
Par	ameter	Units	Result	Limit	MD	L	Analyz	zed	Qualifiers
Boron		ug/L		;	100	8.6	11/23/21	16:31	
Calcium		ug/L	<75.4	Ļ	200	75.4	11/23/21	16:31	
Iron		ug/L	<21.4	ł	50.0	21.4	11/23/21	16:31	
Magnesium		ug/L	<31.4		50.0	31.4	11/23/21	16:31	
Manganese		ug/L	<0.74	Ļ	5.0	0.74	11/23/21	16:31	
Potassium		ug/L	<146		500	146	11/23/21		
Sodium		ug/L	<254	Ļ	500	254	11/23/21	16:31	
LABORATORY C	ONTROL SAM	IPLE: 3031145							
			Spike	LCS	LCS	9	% Rec		
Par	ameter	Units	Conc.	Result	% Rec		Limits	Qualifie	ers
Boron		ug/L	1000	968	9	7	85-115		
Calcium		ug/L	10000	9780	9	В	85-115		
Iron		ug/L	10000	9960	10		85-115		
Magnesium		ug/L	10000	10100	10		85-115		
Manganese		ug/L	1000	981	9		85-115		
Potassium		ug/L	10000	10000	10		85-115		
Sodium		ug/L	10000	10100	10	1	85-115		

			MS	MSD								
		60385861001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	69.8J	1000	1000	1040	1060	97	99	70-130	2	20	
Calcium	ug/L	111000	10000	10000	118000	123000	77	128	70-130	4	20	
Iron	ug/L	33.5J	10000	10000	9840	9920	98	99	70-130	1	20	
Magnesium	ug/L	19100	10000	10000	26600	27200	76	81	70-130	2	20	
Manganese	ug/L	260	1000	1000	1210	1230	95	97	70-130	1	20	
Potassium	ug/L	5490	10000	10000	15500	16000	100	105	70-130	3	20	
Sodium	ug/L	3050	10000	10000	13000	13400	100	104	70-130	3	20	

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

# **REPORT OF LABORATORY ANALYSIS**



Project: Pace Project No.:	AMEREN SCL4A 60385861										
QC Batch:	759536		Analysis Met	hod:	EPA 200.7						
QC Batch Method:	EPA 200.7		Analysis Des	cription:	200.7 Metals, 1	als, Total					
Associated Lab Sa	mples: 60385860	0001, 60385860002	Laboratory: 2, 60385860009		Pace Analytica	l Sei	vices - Kansas City	/			
METHOD BLANK:	3038952		Matrix:	Water							
Associated Lab Sa	mples: 60385860	0001, 60385860002	2, 60385860009								
			Blank	Reporting							
Para	meter	Units	Result	Limit	MDL		Analyzed	Qualifiers			
Boron		ug/L	<8.6	10	00	8.6	12/07/21 18:04				

DOION	ug/L	<0.0	100	0.0	12/07/21 16.04	
Calcium	ug/L	<75.4	200	75.4	12/07/21 18:04	
Iron	ug/L	<21.4	50.0	21.4	12/07/21 18:04	
Magnesium	ug/L	<31.4	50.0	31.4	12/07/21 18:04	
Manganese	ug/L	<0.74	5.0	0.74	12/07/21 18:04	
Potassium	ug/L	<146	500	146	12/07/21 18:04	
Sodium	ug/L	<254	500	254	12/07/21 18:04	

#### LABORATORY CONTROL SAMPLE: 3038953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	85-115	
Calcium	ug/L	10000	9980	100	85-115	
Iron	ug/L	10000	10000	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 3038			3038957							
Parameter	6 Units	0385860004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	22500	1000	1000	25100	24300	259	181	70-130	3	20	M1
Calcium	ug/L	291000	10000	10000	304000	303000	131	123	70-130	0	20	M1
Iron	ug/L	43.0J	10000	10000	10500	10300	105	103	70-130	2	20	
Magnesium	ug/L	71300	10000	10000	84000	82600	127	113	70-130	2	20	
Manganese	ug/L	509	1000	1000	1590	1550	108	104	70-130	3	20	
Potassium	ug/L	4790	10000	10000	15800	15300	110	105	70-130	3	20	
Sodium	ug/L	97500	10000	10000	115000	111000	170	130	70-130	4	20	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**



Project:	AMER	EN SCL4A							
Pace Project No.:	603858	361							
QC Batch:	6506	30		Analysis Me	ethod:	SM 2320B			
QC Batch Method:	SM 2	320B		Analysis De	escription:	2320B Alkalin	iity		
				Laboratory:		Pace Analytic	al Services - In	dianapo	blis
Associated Lab San	nples:	60385860001 60385861005		, 60385860009,	60385861001	, 60385861002	2, 60385861003	8, 60385	5861004,
METHOD BLANK:	29986	39		Matrix	: Water				
Associated Lab San	nples:	60385860001 60385861005		, 60385860009,			2, 60385861003	8, 60385	5861004,
5				Blank	Reporting				0 11
Paran			Units	Result	Limit	MDL	Analy	zed	Qualifiers
Alkalinity, Total as C	aCO3		mg/L	<2.0	) :	2.0	2.0 11/16/2	11:33	
LABORATORY CON	NTROL	SAMPLE: 29	98640						
Paran	neter		Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qu	alifiers
Alkalinity, Total as C	aCO3		mg/L	50	48.8	98	90-110		
SAMPLE DUPLICA	TE: 29	98641							
_				60385860003	Dup		Max		
Paran			Units	Result	Result	RPD	RPD		Qualifiers
Alkalinity, Total as C	aCO3		mg/L	310	) 3	516	2	20	
SAMPLE DUPLICA	TE: 29	98642							
Paran	neter		Units	60385860004 Result	Dup Result	RPD	Max RPD		Qualifiers
Alkalinity, Total as C	aCO3		mg/L	342		57	4	20	
SAMPLE DUPLICA	TE: 29	98643		60385861001	Dup		Мах		
Paran	neter		Units	Result	Result	RPD	RPD		Qualifiers
Alkalinity, Total as C	aCO3		mg/L	286	5 2	.98	4	20	

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

# **REPORT OF LABORATORY ANALYSIS**



### **QUALITY CONTROL DATA**

Project:	AMEREN SCI	L4A							
Pace Project No.:	60385861								
QC Batch:	756220		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total [				
			Laboratory:		Pace Analytic	al Serv	ices - Kar	nsas Ci	ity
Associated Lab San	nples: 60385	5860001, 60385860002							
METHOD BLANK:	3026260		Matrix	: Water					
Associated Lab San	nples: 60385	5860001, 60385860002							
			Blank	Reporting					
Paran	neter	Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Total Dissolved Solie	ds	mg/L	<5.0	)	5.0	5.0	11/15/21	09:44	
LABORATORY COM	NTROL SAMPL	E: 3026261							
			Spike	LCS	LCS		Rec		
Paran	neter	Units	Conc.	Result	% Rec	Li	mits	Qua	alifiers
Total Dissolved Solie	ds	mg/L	1000	981	98		80-120		
SAMPLE DUPLICA	TE: 3026262								
_			60385853001	Dup			Max		0 11/1
Paran		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solie	ds	mg/L	489	) 4	84	1		10	
SAMPLE DUPLICA	TE: 3026263								
_			60385573006		_		Max		
Paran	neter	Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solie	ds	mg/L	371	3	49	6		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 SCL4A							
Pace Project No.:	60385861							
QC Batch:	756566		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total E			
			Laboratory:		Pace Analytic	al Services - Ka	nsas Ci	ity
Associated Lab Sam	ples: 60385860	009, 6038586100	2, 60385861003,	60385861004				
METHOD BLANK:	3027452		Matrix	: Water				
Associated Lab Sam	ples: 60385860	009, 6038586100	2, 60385861003,	60385861004				
			Blank	Reporting				
Param	eter	Units	Result	Limit	MDL	Analy	zed	Qualifiers
Total Dissolved Solid	s	mg/L	<5.0	ŧ	5.0	5.0 11/16/21	09:52	
LABORATORY CON	TROL SAMPLE:	3027453						
_			Spike	LCS	LCS	% Rec	-	
Param	eter	Units	Conc	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Solid	S	mg/L	1000	981	98	80-120		
SAMPLE DUPLICAT	E: 3027454							
-			60385860003	Dup		Max		
Param		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	S	mg/L	1620	16	30	0	10	
SAMPLE DUPLICAT	E: 3027455							
5	-1	11-20-	60385860004	Dup	000	Max		Qualifian
Param		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	S	mg/L	1570	16	00	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.



### **QUALITY CONTROL DATA**

Project: A	MEREN SCL4A								
Pace Project No.: 6	60385861								
QC Batch:	756569		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total D				
			Laboratory:	:	Pace Analytic	al Serv	/ices - Kar	nsas C	ity
Associated Lab Samp	oles: 60385861	001, 60385861005							
METHOD BLANK: 3	3027456		Matrix	k: Water					
Associated Lab Samp	oles: 60385861	001, 60385861005							
			Blank	Reporting					
Parame	eter	Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Total Dissolved Solids	6	mg/L	<5.0	) 5	5.0	5.0	11/16/21	09:56	
LABORATORY CONT	ROL SAMPLE:	3027457							
			Spike	LCS	LCS		Rec		
Parame	eter	Units	Conc.	Result	% Rec	Li	mits	Qua	alifiers
Total Dissolved Solids	3	mg/L	1000	989	99		80-120		
SAMPLE DUPLICATE	: 3027458								
-			60385861001	Dup			Max		0
Parame		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solids	5	mg/L	390	) 3	84	2		10	
SAMPLE DUPLICATE	: 3027459								
5			60385866001	Dup	000		Max		0 11
Parame		Units	Result	Result	RPD		RPD		Qualifiers
Total Dissolved Solids	6	mg/L	461	4	74	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: AMEF						
Pace Project No.: 60385						
QC Batch: 756	748	Analysis Meth	nod: Ef	PA 300.0		
QC Batch Method: EPA	300.0	Analysis Desc	cription: 30	0.0 IC Anions		
		Laboratory:	Pa	ace Analytical Ser	vices - Kansas City	/
Associated Lab Samples:	60385861002, 60385861003	, 60385861005				
METHOD BLANK: 30283	317	Matrix:	Water			
Associated Lab Samples:	60385861002, 60385861003	, 60385861005				
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.53J	1.0	0.39	11/17/21 19:42	
Fluoride	mg/L	<0.086	0.20	0.086	11/17/21 19:42	
Sulfate	mg/L	<0.42	1.0	0.42	11/17/21 19:42	
METHOD BLANK: 30320	80	Matrix:	Water			
Associated Lab Samples:	60385861002, 60385861003					
Lessonated Lab Gampios.	0000001002,00000001003	Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L		1.0	0.39	11/19/21 08:48	
Fluoride	mg/L	<0.086	0.20	0.086	11/19/21 08:48	
Sulfate	mg/L	<0.000	1.0	0.000	11/19/21 08:48	
Junate	ing/L	<b>NO.42</b>	1.0	0.42	11/13/21 00.40	
METHOD BLANK: 30322	296	Matrix:	Water			
Associated Lab Samples:	60385861002, 60385861003	, 60385861005				
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.58J	1.0	0.39	11/20/21 09:52	
Fluoride	mg/L	<0.086	0.20	0.086	11/20/21 09:52	
Sulfate	mg/L	<0.42	1.0	0.42	11/20/21 09:52	
METHOD BLANK: 30330	016	Matrix:	Water			
	60385861002, 60385861003	, 60385861005				
	60385861002, 60385861003	, 60385861005 Blank	Reporting			
	60385861002, 60385861003			MDL	Analyzed	Qualifiers
Associated Lab Samples: Parameter Chloride		Blank	Reporting	0.39	Analyzed 11/21/21 13:18	Qualifiers
Associated Lab Samples: Parameter Chloride Fluoride	Units mg/L mg/L	Blank Result <0.39 <0.086	Reporting Limit 1.0 0.20	0.39 0.086	11/21/21 13:18 11/21/21 13:18	Qualifiers
Associated Lab Samples: Parameter Chloride Fluoride	Units mg/L	Blank Result <0.39	Reporting Limit 1.0	0.39	11/21/21 13:18	Qualifiers
Associated Lab Samples:	Units mg/L mg/L mg/L	Blank Result <0.39 <0.086	Reporting Limit 1.0 0.20 1.0	0.39 0.086	11/21/21 13:18 11/21/21 13:18	Qualifiers
Associated Lab Samples: Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	Blank Result <0.39 <0.086 <0.42	Reporting Limit 1.0 0.20 1.0	0.39 0.086	11/21/21 13:18 11/21/21 13:18	Qualifiers
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 30352	Units mg/L mg/L mg/L	Blank Result <0.39 <0.086 <0.42	Reporting Limit 1.0 0.20 1.0	0.39 0.086	11/21/21 13:18 11/21/21 13:18	Qualifiers
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 30352	Units mg/L mg/L mg/L	Blank Result <0.39 <0.086 <0.42 Matrix: , 60385861005	Reporting Limit 1.0 0.20 1.0 Water	0.39 0.086	11/21/21 13:18 11/21/21 13:18	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.

### REPORT OF LABORATORY ANALYSIS



Project: AMEREN SCL4A

Pace Project No.: 60385861

METHOD BLANK: 3035242		Matrix	: Water				
Associated Lab Samples: 6038586	1002, 6038586100	03, 60385861005					
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analyz	ed	Qualifiers
Fluoride	mg/L	<0.086	0.2	20 0.08	6 11/24/21 (		
Sulfate	mg/L	<0.42		.0 0.4	2 11/24/21 (	07:22	
LABORATORY CONTROL SAMPLE:	3028318						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier	s
Chloride	mg/L	5	4.8	96	90-110		
Fluoride	mg/L	2.5	2.7	106	90-110		
Sulfate	mg/L	5	5.0	100	90-110		
	-						
LABORATORY CONTROL SAMPLE:	3032081						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier	S
Chloride	mg/L	5	4.9	98	90-110		
Fluoride	mg/L	2.5	2.7	108	90-110		
Sulfate	mg/L	5	5.2	103	90-110		
	-						
LABORATORY CONTROL SAMPLE:	3032297						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier	S
Chloride	mg/L	5	5.2	104	90-110		
Fluoride	mg/L	2.5	2.7	107	90-110		
Sulfate	mg/L	5	5.4	108	90-110		
LABORATORY CONTROL SAMPLE:	3033017						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier	S
Chloride	mg/L	5	4.8	95	90-110		
Fluoride	mg/L	2.5	2.5	101	90-110		
Sulfate	mg/L	5	4.9	98	90-110		
LABORATORY CONTROL SAMPLE:	3035243						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier	S
Chloride	mg/L	5	4.8	96	90-110		
Fluoride	mg/L	2.5	2.5	100	90-110		
Sulfate	mg/L	5	5.0	100	90-110		

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 SCL4A Pace Project No.: 60385861

MATRIX SPIKE & MATRIX SP		CATE: 3028	319		3028320							
Parameter	6 Units	0385861002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.8	5	5	6.1	6.2	85	87	80-120	2	15	
Fluoride	mg/L	0.36	2.5	2.5	2.8	2.9	99	103	80-120	3	15	
Sulfate	mg/L	46.0	25	25	71.5	70.9	102	100	80-120	1	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**



60385861									
756749		Analysis Meth	nod.	EPA 300.0					
756749 EPA 300.0		Analysis Metr		300.0 IC Anions					
EPA 300.0		•	•						
ples: 60385861	001	Laboratory:		Pace Analytical Sel	vices - Kansas City	/			
3028333		Matrix:	Water						
ples: 60385861	001								
		Blank	Reporting						
eter	Units	Result	Limit	MDL	Analyzed	Qualifiers			
	mg/L		1.	0 0.39	11/18/21 19:27				
	-	<0.086	0.2		11/18/21 19:27				
	mg/L	<0.42	1.	0 0.42	11/18/21 19:27				
3032298		Matrix:	Water						
ples: 60385861	001								
		Blank	Reporting						
eter	Units	Result	Limit	MDL	Analyzed	Qualifiers			
	ma/l	0.55.1	1	0 0.39	-				
	-								
	-								
	····ə· —	E							
3033018		Matrix:	Water						
ples: 60385861	001								
eter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers			
	mg/L	<0.39	1.	0 0.39	11/19/21 06:44				
	mg/L	<0.086			11/19/21 06:44				
	mg/L	<0.42			11/19/21 06:44				
3035246		Matrix:	Water						
ples: 60385861	001								
		Blank	Reporting						
eter	Units	Result	Limit	MDL	Analyzed	Qualifiers			
	ma/L	<0.39	1.	0 0.39	11/24/21 07:22				
	-								
	mg/L	<0.42			11/24/21 07:22				
3035260		Matrix:	Water						
ples: 60385861	.001								
		Blank	Reporting						
eter	Units	Result	Limit	MDL	Analyzed	Qualifiers			
	ma/l		1	0 0.30	11/21/21 12.18				
	3028333 aples: 60385861 aeter 3032298 aples: 60385861 aeter 3033018 aples: 60385861 aeter 3035246 aples: 60385861 aeter 3035246 aples: 60385861 aeter	3028333         aples:       60385861001         meter       Units         mg/L       mg/L         mg/L       mg/L         3032298	3028333         Matrix:           aples:         60385861001         Blank           neter         Units         Result           mg/L         0.62J         mg/L           mg/L         c0.086         mg/L           3032298         Matrix:           aples:         60385861001         Blank           nples:         60385861001         Blank           mg/L         0.55J         mg/L           mg/L         0.55J         mg/L           3033018         Matrix:           ples:         60385861001         Blank           mg/L         <0.086	Barles:         60385861001           3028333         Matrix:         Water           piles:         60385861001         Blank         Reporting           mg/L         0.62J         1.           mg/L         0.62J         1.           mg/L         <0.086	Inples:         60385861001         Matrix:         Water           3028333         Matrix:         Water           ples:         60385861001         Blank         Reporting         Imit         MDL           eter         Units         Result         Limit         MDL         0.39           mg/L         0.62J         1.0         0.39         0.42           3032298         Matrix:         Water         0.42         0.42           303298         Matrix:         Water         0.39         0.39           mg/L         0.55J         1.0         0.39           mg/L         <0.42	Bark         Result         Mole         Analyzed           3028333         Matrix:         Water         Mole         Analyzed           inter         Units         Result         Limit         MDL         Analyzed           mg/L         0.62J         1.0         0.39         11/18/21 19:27           mg/L         <0.42			

### **REPORT OF LABORATORY ANALYSIS**



Project: AMEREN SCL4A

Pace Project No.: 60385861

METHOD BLANK: 3035260		Matri	x: Water				
Associated Lab Samples: 60385867	1001						
		Blank	Reporting	9			
Parameter	Units	Result	Limit	MDL	Analyz	ed Qu	ualifiers
Fluoride	mg/L	<0.08	6	0.20 0.0		13:18	
Sulfate	mg/L	<0.42			.42 11/21/21		
	Ũ						
ABORATORY CONTROL SAMPLE:	3028334						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5	5.0	101	90-110		_
Fluoride	mg/L	2.5	2.7	110	90-110		
Sulfate	mg/L	5	5.5	110	90-110		
	<u>g</u> , <u>_</u>	Ũ	010		00 110		
LABORATORY CONTROL SAMPLE:	3032299						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5	5.2	104	90-110		
Sulfate	mg/L	5	5.4	104	90-110		
Gunate	ing/L	5	5.4	100	30 110		
LABORATORY CONTROL SAMPLE:	3033019						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5	5.1	102	90-110		
Fluoride	mg/L	2.5	2.7	109	90-110		
Sulfate	mg/L	5	5.2	105	90-110		
		-					
LABORATORY CONTROL SAMPLE:	3035247						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5	4.8	96	90-110		_
Fluoride	mg/L	2.5	2.5	100	90-110		
Sulfate	mg/L	5	5.0	100	90-110		
	g/ <b>L</b>	U	0.0	100	50 110		
LABORATORY CONTROL SAMPLE:	3035261						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Chloride	mg/L	5	4.8	95	90-110		
Fluoride	mg/L	2.5	2.5	101	90-110		
Sulfate	mg/L	5	4.9	98	90-110		
	····9/ =	•			300		

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 SCL4A

Pace Project No.: 60385861

MATRIX SPIKE & MATRIX SP	PIKE DUPLI	CATE: 3028	335		3028336							
			MS	MSD								
	6	0385861001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.9	5	5	6.4	6.4	91	91	80-120	0	15	
Fluoride	mg/L	0.46	2.5	2.5	3.2	3.1	108	107	80-120	1	15	
Sulfate	mg/L	41.5	25	25	68.8	68.9	109	109	80-120	0	15	

MATRIX SPIKE & MATRIX SI	PIKE DUPLI	CATE: 3028	338		3028339							
Parameter	e Units	60385866001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	33.7	25	25	59.8	60.3	104	106	80-120	1	15	
Fluoride	mg/L	0.23	2.5	2.5	3.0	2.8	110	104	80-120	5	15	
Sulfate	mg/L	41.7	25	25	68.1	68.4	105	107	80-120	1	15	

### SAMPLE DUPLICATE: 3028337

		60385861001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	1.9	1.8	2	15	5
Fluoride	mg/L	0.46	0.39	18	15	5 D6
Sulfate	mg/L	41.5	41.7	0	15	5

### SAMPLE DUPLICATE: 3028340

		60385866001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	 mg/L	33.7	33.2	2	15	
Fluoride	mg/L	0.23	0.24	4	15	
Sulfate	mg/L	41.7	42.4	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.



QC Batch: 757720		Analysis Me	thod:	EPA 300.0				
QC Batch Method: EPA 30	0.0	Analysis De	scription:	300.0 IC A	nions			
		Laboratory:		Pace Anal	tical Se	rvices - Kar	nsas City	
Associated Lab Samples: 6	0385860001, 6038586000	2, 60385860009						
IETHOD BLANK: 3032270		Matrix	Water					
Associated Lab Samples: 6	0385860001, 6038586000	2, 60385860009						
Parameter	Units	Blank Result	Reportin Limit	-	DL	Analyz	ed	Qualifiers
Chloride	mg/L			1.0	0.39	11/22/21	07:09	
Fluoride	mg/L	<0.086	(	0.20	0.086	11/22/21	07:09	
Sulfate	mg/L	<0.42		1.0	0.42	11/22/21	07:09	
METHOD BLANK: 3035149		Matrix	Water					
Associated Lab Samples: 6	0385860001, 6038586000	2, 60385860009						
		Blank	Reportin	g				
Parameter	Units	Result	Limit	M	DL	Analyz	ed	Qualifiers
Chloride	mg/L	0.69J		1.0	0.39	11/23/21	16:29	
Fluoride	mg/L	<0.086	(	0.20	0.086	11/23/21		
Vulfata	ma/l	< 0.42		1.0	0.42	11/23/21	16.29	
Sulfate	mg/L	<b>NO.42</b>		1.0	•••		10.20	
METHOD BLANK: 3035264		Matrix	: Water					
IETHOD BLANK: 3035264		Matrix 2, 60385860009						
METHOD BLANK: 3035264		Matrix	: Water Reportin Limit			Analyz		Qualifiers
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride	0385860001, 6038586000 Units mg/L	Matrix 2, 60385860009 Blank <u>Result</u> <0.39	Reportin Limit	g 1.0	DL 0.39	Analyz	red	Qualifiers
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride	50385860001, 6038586000 Units mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086	Reportin Limit	g 1.0 0.20	DL 0.39 0.086	Analyz 11/24/21 11/24/21	ed 08:56 08:56	Qualifiers
METHOD BLANK: 3035264 Associated Lab Samples: 6	0385860001, 6038586000 Units mg/L	Matrix 2, 60385860009 Blank <u>Result</u> <0.39	Reportin Limit	g 1.0	DL 0.39	Analyz	ed 08:56 08:56	Qualifiers
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride	00385860001, 6038586000 Units mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42	Reportin Limit	g 1.0 0.20 1.0	DL 0.39 0.086 0.42	Analyz 11/24/21 11/24/21 11/24/21	ed 08:56 08:56	Qualifiers
AETHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Sulfate ABORATORY CONTROL SA	S0385860001, 6038586000 Units mg/L mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike	Reportin Limit (	g <u>M</u> 1.0 0.20 1.0 LCS	DL 0.39 0.086 0.42	Analyz 11/24/21 11/24/21 11/24/21 % Rec	red 08:56 08:56 08:56	
AETHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate ABORATORY CONTROL SA Parameter	50385860001, 6038586000 Units mg/L mg/L mg/L MPLE: 3032271 Units	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc.	LCS Result	g 1.0 0.20 1.0 LCS % Rec	DL 0.39 0.086 0.42	Analyz 11/24/21 11/24/21 11/24/21 11/24/21 % Rec Limits	ed 08:56 08:56	
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride	50385860001, 6038586000 Units mg/L mg/L MPLE: 3032271 Units mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5	LCS Result 4.8	g 1.0 0.20 1.0 LCS % Rec	DL 0.39 0.086 0.42	Analyz 11/24/21 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110	red 08:56 08:56 08:56	
AETHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Chloride Sulfate ABORATORY CONTROL SA Parameter Chloride Chloride	0385860001, 6038586000 Units mg/L mg/L MPLE: 3032271 Units mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5 2.5	LCS Result 4.8 2.7	g 1.0 0.20 1.0 LCS % Rec 1	DL 0.39 0.086 0.42 	Analyz 11/24/21 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110 90-110	red 08:56 08:56 08:56	
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate LABORATORY CONTROL SA Parameter Chloride Fluoride	50385860001, 6038586000 Units mg/L mg/L MPLE: 3032271 Units mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5	LCS Result 4.8	g 1.0 0.20 1.0 LCS % Rec 1	DL 0.39 0.086 0.42	Analyz 11/24/21 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110	red 08:56 08:56 08:56	
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate _ABORATORY CONTROL SA	00385860001, 6038586000 Units mg/L mg/L mg/L MPLE: 3032271 Units mg/L mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5 2.5 5	LCS Result 4.8 2.7 4.8	g 1.0 0.20 1.0 LCS % Rec 1	DL 0.39 0.086 0.42 	Analyz 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110 90-110 90-110	red 08:56 08:56 08:56	
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate ABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate	S0385860001, 6038586000 Units mg/L mg/L mg/L MPLE: 3032271 Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5 2.5 5 5 Spike	LCS Result 4.8 LCS	g <u>M</u> 1.0 0.20 1.0 LCS % Rec 1 LCS	DL 0.39 0.086 0.42 95 95 99 97	Analyz 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110 90-110 90-110	ed 08:56 08:56 08:56 Qualif	iers
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate ABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate	00385860001, 6038586000 Units mg/L mg/L mg/L MPLE: 3032271 Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5 2.5 5 5 Spike Conc.	LCS Result 4.8 2.7 4.8 LCS Result	g Mi 1.0 0.20 1.0 LCS % Rec 1 LCS % Rec	DL 0.39 0.086 0.42 95 99 97	Analyz 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110 90-110 90-110 90-110	red 08:56 08:56 08:56	iers
METHOD BLANK: 3035264 Associated Lab Samples: 6 Parameter Chloride Fluoride Sulfate ABORATORY CONTROL SA Parameter Chloride Fluoride Sulfate	S0385860001, 6038586000 Units mg/L mg/L mg/L MPLE: 3032271 Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Matrix 2, 60385860009 Blank Result <0.39 <0.086 <0.42 Spike Conc. 5 2.5 5 5 Spike	LCS Result 4.8 LCS	g Mi 1.0 0.20 1.0 LCS % Rec 1 LCS % Rec 1	DL 0.39 0.086 0.42 95 95 99 97	Analyz 11/24/21 11/24/21 11/24/21 % Rec Limits 90-110 90-110 90-110	ed 08:56 08:56 08:56 Qualif	iers

### REPORT OF LABORATORY ANALYSIS



### Project: AMEREN SCL4A

Pace Project No.: 60385861

LABORATORY CONTROL SAMPLE:	3035265					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SP	PIKE DUPLI	CATE: 3032	272		3032273							
			MS	MSD								
	(	60385860003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	21.8	25	25	45.8	46.3	96	98	80-120	1	15	
Fluoride	mg/L	0.55	2.5	2.5	3.0	3.0	97	99	80-120	1	15	
Sulfate	mg/L	835	500	500	1440	1410	121	116	80-120	2	15	M1

MATRIX SPIKE & MATRIX SP	PIKE DUPLI	CATE: 3032	274		3032275							
			MS	MSD								
	6	0385860004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	3.3	5	5	8.6	7.5	107	86	80-120	13	15	
Fluoride	mg/L	<0.086	2.5	2.5	2.9	2.9	116	115	80-120	1	15	
Sulfate	mg/L	809	500	500	1330	1350	104	108	80-120	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.



QC Batch: 758485	5		Analys	sis Metho	d: E	PA 300.0								
QC Batch Method: EPA 30	0.0		-	sis Descri		300.0 IC Anions								
			Labor			Pace Analyti	cal Ser	vices - Kan	sas City					
Associated Lab Samples: 6	6038586100	4		•		-								
METHOD BLANK: 3035488			l	Matrix: W	ater									
Associated Lab Samples: 6	6038586100	4												
Parameter		Units	Blan Resu		Reporting Limit	MDL		Analyze	ed G	ualifiers				
Chloride		mg/L		0.71J	1.(	 )	0.39	11/27/21 0	9:35					
Fluoride		mg/L		0.086	0.20		0.086	11/27/21 0						
Sulfate		mg/L		<0.42	1.(	)	0.42	11/27/21 0	9:35					
METHOD BLANK: 3036469	)			Matrix: W	ater									
Associated Lab Samples:	6038586100	4												
			Blan	k	Reporting									
Parameter		Units	Resu		Limit	MDL		Analyze	ed C	ualifiers				
Chloride		mg/L		<0.39	1.(	 )	0.39	11/29/21 0	9:05					
Fluoride		mg/L	<	0.086	0.20	) (	0.086	11/29/21 0	9:05					
Sulfate		mg/L		<0.42	1.(	)	0.42	11/29/21 0	9:05					
LABORATORY CONTROL SA	AMPLE: 3	035489												
LABORATORY CONTROL SA	AMPLE: 3	035489 Units	Spike Conc.	LC		LCS % Rec		6 Rec Limits	Qualifiers					
Parameter	AMPLE: 30	Units	Conc.	Res	sult	% Rec	L	imits	Qualifiers					
Parameter	AMPLE: 30		Conc.				L		Qualifiers					
Parameter Chloride Fluoride	AMPLE: 30	Units mg/L	Conc.	Re: 5 5	sult	% Rec 97	L	_imits 	Qualifiers					
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L	Conc.	Re: 5 5	4.8 2.7	% Rec 97 107	L	-imits 90-110 90-110	Qualifiers					
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L mg/L	Conc.	Re: 5 5	4.8 4.7 4.7	% Rec 97 107	L	-imits 90-110 90-110	Qualifiers					
Parameter Chloride Fluoride Sulfate		Units mg/L mg/L mg/L	Conc.	Res	sult 4.8 2.7 4.7 SS	% Rec 97 107 94	L	imits 90-110 90-110 90-110	Qualifiers					
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter		Units mg/L mg/L mg/L 036470	Conc.	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	sult 4.8 2.7 4.7 SS	% Rec 97 107 94 LCS	 % 	imits 90-110 90-110 90-110 6 Rec						
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride		Units mg/L mg/L mg/L 036470 Units mg/L mg/L	Spike Conc.		sult 4.8 2.7 4.7 5:S sult 4.9 2.5	% Rec 97 107 94 LCS % Rec 99 99	L	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110						
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride		Units mg/L mg/L mg/L 036470 Units mg/L	Spike Conc.		sult 4.8 2.7 4.7 5:S sult 4.9	% Rec 97 107 94 LCS % Rec 99	L	imits 90-110 90-110 90-110 6 Rec imits 90-110						
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride Sulfate	AMPLE: 3	Units mg/L mg/L mg/L 036470 Units mg/L mg/L mg/L	Spike Conc.	Res	sult 4.8 2.7 4.7 5:S sult 4.9 2.5	% Rec 97 107 94 LCS % Rec 99 99	L	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110						
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride Sulfate		Units mg/L mg/L 036470 Units mg/L mg/L mg/L mg/L	Conc. 2.5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Res LC Res MSD	sult 4.8 2.7 4.7 3035491	% Rec 97 107 94 LCS % Rec 99 99 102	L	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110 90-110	Qualifiers					
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride Sulfate		Units mg/L mg/L mg/L 036470 Units mg/L mg/L mg/L	Conc.	Res	sult 4.8 2.7 4.7 SS sult 4.9 2.5 5.1	% Rec 97 107 94 LCS % Rec 99 99	L	imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110 90-110 90-110	Qualifiers % Rec		Max RPD	Qual		
Parameter Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SF Parameter	AMPLE: 3	Units mg/L mg/L mg/L 036470 Units mg/L mg/L mg/L mg/L mg/L	Conc. 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	Action of the second se	sult 4.8 2.7 4.7 3035491 MS	% Rec 97 107 94 LCS % Rec 99 99 102 MSD		.imits 90-110 90-110 90-110 6 Rec .imits 90-110 90-110 90-110 90-110 90-110	Qualifiers % Rec		RPD	Qual		
Chloride Fluoride Sulfate LABORATORY CONTROL S/ Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SF		Units mg/L mg/L mg/L 036470 Units mg/L mg/L mg/L CATE: 30354 50386062007 Result	Conc.	MSD Spike Conc.	Sult 4.8 2.7 4.7 5:S Sult 4.9 2.5 5.1 3035491 MS Result	% Rec 97 107 94 LCS % Rec 99 99 102 MSD Result		imits 90-110 90-110 90-110 6 Rec imits 90-110 90-110 90-110 90-110 90-110 90-110	Qualifiers % Rec Limits	) 2	RPD 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**



### QUALIFIERS

### Project: AMEREN SCL4A

Pace Project No.: 60385861

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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 SCL4A Pace Project No.: 60385861

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch			
60385860001	S-BMW-1S	EPA 200.7	759536	EPA 200.7	759739			
60385860002	S-BMW-3S	EPA 200.7	759536	EPA 200.7	759739			
60385860009	S-UG-3	EPA 200.7	759536	36 EPA 200.7				
60385861001	S-TMW-1	EPA 200.7	757476	EPA 200.7	757597			
60385861002	S-TMW-2	EPA 200.7	757476	EPA 200.7	757597			
60385861003	S-TMW-3	EPA 200.7	757476	EPA 200.7	757597			
60385861004	S-SCL4A-DUP-1	EPA 200.7	757476	EPA 200.7	757597			
60385861005	S-SCL4A-FB-1	EPA 200.7	757476	EPA 200.7	757597			
0385860001	S-BMW-1S	EPA 903.1	475137					
60385860002	S-BMW-3S	EPA 903.1	475137					
60385860009	S-UG-3	EPA 903.1	475137					
60385860001	S-BMW-1S	EPA 904.0	475138					
60385860002	S-BMW-3S	EPA 904.0	475138					
60385860009	S-UG-3	EPA 904.0	475138					
60385860001	S-BMW-1S	SM 2320B	650630					
60385860002	S-BMW-3S	SM 2320B	650630					
60385860009	S-UG-3	SM 2320B	650630					
60385861001	S-TMW-1	SM 2320B	650630					
60385861002	S-TMW-2	SM 2320B	650630					
60385861003	S-TMW-3	SM 2320B	650630					
60385861004	S-SCL4A-DUP-1	SM 2320B	650630					
60385861005	S-SCL4A-FB-1	SM 2320B	650630					
60385860001	S-BMW-1S	SM 2540C	756220					
60385860002	S-BMW-3S	SM 2540C	756220					
60385860009	S-UG-3	SM 2540C	756566					
60385861001	S-TMW-1	SM 2540C	756569					
60385861002	S-TMW-2	SM 2540C	756566					
60385861003	S-TMW-3	SM 2540C	756566					
60385861004	S-SCL4A-DUP-1	SM 2540C	756566					
60385861005	S-SCL4A-FB-1	SM 2540C	756569					
60385860001	S-BMW-1S	EPA 300.0	757720					
60385860002	S-BMW-3S	EPA 300.0	757720					
60385860009	S-UG-3	EPA 300.0	757720					
60385861001	S-TMW-1	EPA 300.0	756749					
60385861002	S-TMW-2	EPA 300.0	756748					
60385861003	S-TMW-3	EPA 300.0	756748					
60385861004	S-SCL4A-DUP-1	EPA 300.0	758485					
60385861005	S-SCL4A-FB-1	EPA 300.0	756748					

Pace Analytical Sample Condition	Upon Receipt	WO#:60385861
Client Name: (added Assoc		
Courier: FedEx UPS VIA Clay		Pace 🗆 Xroads 🗹 Client 🗆 Other 🗆
Tracking #: Pa	ace Shipping Label Use	d? Yes □ No,⊉
Custody Seal on Cooler/Box Present: Yes Z No 🗆	Seals intact: Yes J	Ź No □
Packing Material: Bubble Wrap D Bubble Bags	🗋 🛛 🛛 Foam 🗆	None 🗆 Other 🛛 Pik
Thermometer Used: 1240 3.3, gType	of Ice Wet Blue No	one 31,2,0 Petr and bible of another
Cooler Temperature (°C): As-read	ctor _o, ~ Correc	ted $\frac{19.17}{(4.3)}$ Date and initials of person examining contents: $\boxed{10}$ (1// $\boxed{12}$
Temperature should be above freezing to 6°C		1
Chain of Custody present:	,ÆYes □No □N/A	
Chain of Custody relinquished:	Yes No N/A	
Samples arrived within holding time:	Vies 🗆 No 🗆 N/A	
Short Hold Time analyses (<72hr):	□Yes INO □N/A	TDS exp 11/15
Rush Turn Around Time requested:		
Sufficient volume:	Yes DNo DN/A	
Correct containers used:	Yes No N/A	
Pace containers used:	Kyes □No □N/A	
Containers intact:	∠Yes □No □N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	□Yes □No ₽N/A	
Filtered volume received for dissolved tests?	□Yes □No ØN/A	
Sample labels match COC: Date / time / ID / analyses	∕ZYes □No □N/A	
Samples contain multiple phases? Matrix: U+	□Yes ØNo □N/A	
Cyanide water sample checks:	Øyes []No []N/A 603(73	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Lead acetate strip turns dark? (Record only)	□Yes □No	
Potassium iodide test strip turns blue/purple? (Preserve)	Yes No	
Trip Blank present:		
Headspace in VOA vials ( >6mm):	□Yes □No ØN/A	
Samples from USDA Regulated Area: State:	_ □Yes □No ZN/A	
Additional labels attached to 5035A / TX1005 vials in the field Client Notification/ Resolution: Copy COC		Field Data Required? Y / N
Person Contacted: Date/		
Comments/ Resolution: REVIEWED By ichurch at 2:37 pm, 11/12/21 Project Manager Review:	Date	

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# CHAIN-OF-CUSTODY / Analytical Request Document

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT, All relevant fields must be completed accurately.	Section C Invoice Information:		.60 Copy To: Ryan Feldmann/Eric Schneider Company Name: REGULATORY AGENCY	Address: Address: GROUND WATER C DRINKING WATER	Purchase Order No.; Pase Quote Cater No.; OTHER COTER OTHER	Project Name: Ameren SCL4A Pare Project Jamie Church Site Location	9285	Requested Analysis Filtered (YIN)	o left) CODE	Service Services Serv	چ کو کو کو CODE (د CODE (د CODE (с Сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопенски сопен	SAMPLE DATE DATE DATE DATE DATE DATE DATE DAT			WT G	WT G IO20 V IO V I	WT G	WT G I350 I I I I I I I I I I I I I I I I I I I	WT G 1030	-	G   -8-2		-	RELINQUISHED BY / AFFILIATION DATE TIME ACCEPTED BY / AFFILIATION DATE TIME SAMPLE CONDITIONS	Snorth Shortde/ Cacher 11/9/21 1530 augu to MMA 11/19/1535 1.9 4 4 4	N NW 11/10/1535		SAMPLER NAME AND SIGNATURE	()
CHAI The Chai	Section B Required Project Information:	Report To: Jeffrey Ingram			Purchase Order No.;		Project Number: 153-140632.0003D (COC #11)	-	o left) CODE CODE	0 % WW 7	TODE (	алямаг DATE TM TM TM	0	-			_	_	_	U	Ű	0 (	-	RELINQUISHED BY / AFFILIATION	Shrids/	VI NICA	-	SAMPLER NAME	
Pace Analytical -	Section A Required Client Information.	Company: Golder Associates	Address: 13515 Barrett Parkway Dr., Ste 260	Ballwin, MO 63021	Email To: jeffrey ingram@golder.com	Phone: 636-724-9191 Fax: 636-724-9323	Requested Due Date/TAT: Standard		Section D Valid Matrix Codes Required Client Information MATRIX COL	DRINKING WATER WATER WASTE WATER PRODUCT SOILSOLID OIL	SAMPLE ID (A-Z, C-9/,-) Sample IDs MUST BE UNIQUE	#WƏLI	1 S-TMW-1	2 S-TMW-2	3 S-TMW-3	4 S-UG-3	5 S-SCL4A-DUP-1	6 S-SCL4A-FB-1	7 S-SCL4A-MS-1	8 S-SCL4A-MSD-1		10 S-BMW-3S	12	ADDITIONAL COMMENTS	-EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B				

F-ALL-Q-020rev_08, 12-Oct-2007

"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 involces not paid within 30 days.



**MEMORANDUM** 

Project No. 153140603

DATE January 11, 2022

TO Project File Golder Associates

- **CC** Amanda Derhake, Jeff Ingram
- **FROM** Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

# DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCL4A – DETECTION MONITORING - DATA PACKAGE 60385861

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

### **QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

Company Name: Golder Associates	Project Manager: <u>J. Ingram</u>
Project Name: Ameren- Sioux - SCL4A	Project Number: <u>153140603</u>
Reviewer: A. Muehlfarth	Validation Date: 1/11/2022
Laboratory: Pace Analytical Services - Kansas City	SDG #:_60385861
Analytical Method (type and no.): EPA 200.7 (Total Metals); SM2	2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions)
Matrix: Air Soil/Sed. Water Waste	]
Sample Names S-TMW-1, S-TMW-2, S-TMW-3, S-SCL4A-DUP-1, S	-SCL4A-FB-1, S-BMW-1S, S-BMW-3S, S-UG-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?	х			11/8/2021 - 11/9/2021
b)	Sampling team indicated?	x			SSS/ETF
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)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h)	Field Calibration within control limits?	×			
i)	Notations of unacceptable field conditions/performa	nces fro	om field lo	ogs or field no	ites?
			х		
j)	Does the laboratory narrative indicate deficiencies?			x	
	Note Deficiencies:				
Chain-	of-Custody (COC)	YES	NO	NA	COMMENTS
					COMMENTS
a)	Was the COC properly completed?	YES ×	NO		COMMENTS
					COMMENTS
a)	Was the COC properly completed? Was the COC signed by both field	x			COMMENTS
a) b)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel?	×			COMMENTS
a) b) c)	Was the COC properly completed? Was the COC signed by both field and laboratory personnel?	×			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?	× × ×			
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?	× × × YES			
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?	× × ×			
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? Were hold times met for sample analysis? Were the correct preservatives used?	× × × YES	□ □ ■ ■		
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 ×	□ □ □ 0 □		
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 ×	□ □ ■ ■ □		COMMENTS
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)?	x			See Notes
c)	Were analytes detected in the equipment blank(s)?			x	
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?	x			
b)	Were the proper analytes included in the LCS?	х			
c)	Was the LCS accuracy criteria met?	х			
Duplica	itas	YES	NO	NA	COMMENTS
a)	Were field duplicates collected (note original and du				COMMENTS
a)		Ipilcate ⊠			See Notes
b)	Were field dup. precision criteria met (note RPD)?		×		See Notes
c)	Were lab duplicates analyzed (note original and dup				
0)					
d)	Were lab dup, precision criteria met (note RPD)?		×		See Notes
u)	were has dup, precision oftend met (hote ru D).				
Blind S	tandards	YES	NO	NA	COMMENTS
a)	Was a blind standard used (indicate name,			x	
	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?		x		See Notes
	Recovery could not be calculated since sample contained high concentration of analyte?			х	
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		See Notes

### Comments/Notes:

Calcium, sulfate, and chloride analyzed at a dilution in multiple samples. No qualification necessary.

### Blanks:

3028317/3032080/3032296: Chloride (0.53J/0.54J/0.58J). Associated with samples -61002, -61003, and -61005.

Results >RL but <10x blank qualified as estimates. Results <RL reported at RL and qualified as estimate.

3028333/3032298: Chloride (0.62J/0.55J). Associated with samples -61001. Result >RL but <10x blank qualified as estimate.

### **QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

### Comments/Notes:

3035149: Chloride (0.69J). Associated with samples -60001, -60002, -60009. Results >RL and 10x blank, no qualification necessary.

3035488: Chloride (0.71J). Associated with sample -61004. Result >RL but <10x blank, qualified as estimate.

S-SCL4A-FB-1 @ S-TMW-3: Alkalinity (2.2), chloride (0.55J). Results >RL but <10x blank, qualified as estimate. Results >RL and 10x blank not qualified.

**Duplicates:** 

S-SCL4A-DUP-1 @ S-TMW-2: RPD for chloride (78.0%) exceeds limit (20%).

Laboratory analyzed duplicates for alkalinity, TDS, and anions.

3028337: RPD for fluoride (18%) exceeds limit (15%). Associated with sample -61001.

MS/MSD:

3038956/3038957: MS % recovery limit high for calcium and sodium. MS/MSD % recovery high for boron. MS/MSD performed on unrelated sample, no qualification necessary.

3032272/3032273: MS % recovery high for sulfate. MS performed on unrelated sample, no qualification necessary.

3035490/3035491: MS/MSD % recovery high for chloride and fluoride. MSD % recovery high and RPD exceeds limit for sulfate. MS/MSD performed on unrelated sample, no qualification necessary.

### **QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

### Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-TMW-3	Chloride	2.6	J	Detected in MB, 10x blank > result > RL
S-TMW-1	"	1.9	J	п
S-SCL4A-FB-1	"	1.0	U	Detected in MB, RL > results > MDL
S-SCL4A-DUP-1	"	4.1	J	Detected in MB/FB, 10x blank > result > RL; dup RPD exceeds limit
S-TMW-2	"	1.8	J	Detected in MB, 10x blank > result > RL; dup RPD exceeds limit
S-TMW-1	Fluoride	0.46	J	Lab duplicate RPD exceeds limit
		$\overline{\mathbf{N}}$		
	1 MIII	#	I	1/11/2022
Signature:	Ann Muchtor	Mi		Date: 1/11/2022

APPENDIX B

Alternative Source Demonstration - April 2021 Sampling Event





### REPORT

# SCL4A - Alternative Source Demonstration

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

Submitted to:

### Ameren Missouri

1901 Chouteau Avenue, St. Louis, MO, 63103

Submitted by:

### Golder Associates Inc.

13515 Barrett Parkway Drive, Suite 260, Ballwin, Missouri, USA 63021

+1 314 984-8800

153140603

November 19, 2021

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### **1.0 CERTIFICATION STATEMENT**

This SCL4A – 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 Golder Associates Inc.

I hereby certify that this SCL4A – 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).

### **GOLDER ASSOCIATES INC.**



Mark Haddock, P.E., R.G.

Principal, Practice Leader

### 2.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), this SCL4A – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for Statistically Significant Increases (SSIs) identified for Ameren Missouri's (Ameren) Sioux Energy Center (SEC), Utility Waste Landfill (UWL) Cell 4A - SCL4A. 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 the SSIs and that the apparent SSIs were 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 the SCL4A. 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 SCL4A 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 which lie unconformably on top of bedrock. These alluvial deposits, which can range from approximately 100 to 130 feet thick, make up the uppermost aquifer called the alluvial aquifer. Overall, this aquifer is described as a fining upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Drilling in the alluvial aquifer identified different sub-units, including floodplain deposits, natural levee deposits, and channel deposits along with volumetrically less important loess deposits. Grain sizes of these alluvial deposits are highly variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region includes Mississippian-aged rocks of the Meramecian Series. Formations include primarily limestone, dolomite, and shale and are comprised of the Salem Formation overlying the Warsaw Formation and the Burlington-Keokuk Formation.

# 3.2 Utility Waste Landfill Cell 4A – SCL4A

UWL Cell 4A is referred to by Ameren as the SCL4A, or "Landfill Cell 4A." The SCL4A is approximately 15 acres in size and is located south of the generating plant on the south side of Highway 94 (**Figure 1**). The CCR Unit manages CCR from the SEC including "fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels" (Gredell and Reitz & Jens, 2014). These wastes are managed using a dry disposal process and are moisture



conditioned (30-40% moisture content) to minimize dust and facilitate disposal. The CCR waste is trucked across Highway 94 from the plant and disposed in the SCL4A.

The SCL4A 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 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 in order 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 seasonal low elevation for groundwater. Quarterly groundwater samples have been collected at UG-3 since June 2008 for the analysis of state required UWL parameters, and TMW-1, TMW-2, and TMW-3 have been sampled since May 2016.

The permit for the Sioux UWL was issued July 30, 2010 (permit #0918301) for the SCPC (Cell 1). Nine (9) sampling events were performed prior to July 30, 2010 and represent groundwater quality prior to CCR placement in the SCPC. The SCL4A was the second cell that was constructed at this UWL. The SCL4A construction was not completed until 2014 and no CCR was placed in the unit until after the final revisions to the Proposed Construction Permit Modification on August 16, 2014. 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) the required eight (8) baseline groundwater sampling events were completed for all Appendix III and Appendix IV parameters of the CCR Rule.

The groundwater monitoring system for the SCL4A consists of six (6) monitoring wells screened in the uppermost aquifer (alluvial aquifer) as shown on **Figure 1**. One (1) existing monitoring well (UG-3) was installed by Gredell Engineering Resources, Inc., in December 2007 as a part of the state UWL monitoring program. The remaining monitoring wells (TMW-1, TMW-2, TMW-3, BMW-1S, and BMW-3S) were installed by Golder in 2015 and 2016 for CCR Rule groundwater monitoring purposes. More information on the design and installation of the monitoring wells is provided in the SCL4A GMP and the SCL4A 2017 Annual Report.

Between May 2016 and June 2017, eight (8) baseline sampling events were completed for the SCL4A. After baseline sampling, the first Detection Monitoring event was completed in November 2017 and Detection Monitoring has continued on a semi-annual basis thereafter. Laboratory testing was performed for the following Appendix III constituents during Detection Monitoring:

- Boron
- Calcium
- Chloride
- 🔹 pH
- Sulfate
- Total dissolved solids (TDS)

### Fluoride

In January 2018, background results from the eight (8) 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 from Detection Monitoring were higher than the calculated UPL, it was considered an initial exceedance, in which case a verification sample was then collected and tested in accordance with the SCL4A Statistical Analysis Plan. The following provide a summary of the detection monitoring results to date:

- In November 2017, there were no initial exceedances.
- In May 2018, three (3) initial exceedances were identified including chloride at UG-3; as well as sulfate and TDS at TMW-2. Verification sampling results confirmed all three (3) SSIs. All three (3) SSIs were determined to be from an alternate source and the ASD for the May 2018 sampling event can be found in the 2018 Annual Report for the SCL4A.
- In November 2018, one (1) initial exceedance was identified, sulfate at TMW-2. Verification sampling did not confirm the initial exceedance and no SSIs were identified for the November 2018 event.
- In May 2019, six (6) initial exceedances were identified including boron, calcium, chloride, and TDS at UG-3; as well as sulfate and TDS at TMW-2. Verification sampling results confirmed all six (6) SSIs. All six (6) SSIs were determined to be from an alternate source and the ASD for the May 2019 sampling event can be found in the 2019 Annual Report for the SCL4A.
- In November 2019, five (5) initial exceedances were identified including sulfate and TDS at UG-3; as well as chloride, sulfate, and TDS at TMW-2. Only the initial three (3) exceedances at TMW-2 were verified in the subsequent verification sampling event. All three (3) SSIs were determined to be from an alternative source, as described in the ASD for the November 2019 sampling event, dated June 5, 2020.
- In April 2020, three (3) initial exceedances were identified including fluoride at UG-3; as well as sulfate and TDS at TMW-2. Only fluoride at UG-3 was confirmed by verification sampling and this SSI was determined to be from an alternative source and is described in the ASD for the April 2020 sampling event, which can be found in the 2020 Annual report for the SCL4A.
- In November 2020, four (4) initial exceedances were identified including calcium and fluoride at TMW-1, TDS at TMW-2, and fluoride at TMW-3. Subsequent verification sampling did not confirm the initial exceedance and no SSIs were identified for the November 2020 event.
- In April 2021, three (3) initial exceedances were identified including fluoride at UG-3, fluoride at TMW-2, and sulfate at TMW-2. Only sulfate at TMW-2 was confirmed by verification sampling. The results from the April 2021 detection monitoring event are summarized in Table 1.

### 4.0 REVIEW OF THE STATISTICALLY SIGNIFICANT INCREASE

The SSI for sulfate occurred at monitoring well TMW-2. TMW-2 is screened in the upper portion of the alluvial aquifer just below the average seasonal low for groundwater. As shown in **Figure 1**, TMW-2 is located south of the SCL4A and Highway 94, and north of Dwiggins Road.

Based on Golder's review of the pre-disposal data (discussed in Section 3.2 above), as well as our comparison of those pre-disposal data with the results from the eight CCR-rule baseline events, it was concluded that the

groundwater at the SCL4A contained low-level pre-existing impacts from CCR that pre-dated SCL4A operation. As a result of these pre-existing impacts, the SCL4A statistical analysis plan uses intrawell upper prediction limits (UPL) 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.

The intrawell UPL for sulfate at TMW-2 was 37.9 milligrams per liter (mg/L) based on the results from the initial eight (8) baseline sampling events that ranged from 30.0 to 35.5 mg/L, as summarized in **Table 2** and **Figure 2**. The results from this small dataset were normally distributed, and a calculated UPL was used. In August 2019, the baseline data set was expanded to include the next four (4) sampling events, and the UPL changed from 37.9 to 52.1 mg/L. During the April 2021 detection monitoring event, a concentration of 64.8 mg/L was reported for sulfate in TMW-2, which was confirmed in June by a verification result of 64.0 mg/L.

### **Table 2: Review of Statistically Significant Increase**

Constituent	Well ID	UPL Based on Baseline Events	August 2019 Updated UPL	Baseline Sampling Event Range	Detection Monitoring Sampling Range (November 2017 - January 2021)		June 2021 Results
Sulfate (mg/L)	TMW-2	37.9	52.1	30.0-35.5	26.4-85.8	64.8	64.0

Notes:

- 1) mg/L milligrams per liter.
- 2) UPL upper prediction limit.
- 3) UPLs calculated using Sanitas[™] software.
- 4) UWL Utility Waste Landfill.

# 5.0 EVIDENCE OF SSI FROM ALTERNATIVE SOURCE

Several different lines of evidence indicate that the SSI at the SCL4A is not caused by a release from the SCL4A, but rather from an alternative source. The following section describes the different lines of evidence, listed below, that demonstrate this position.

- Documentation of pre-existing, low-level concentrations of CCR indicators in groundwater that pre-date the SCL4A operation, especially on the northern side of the SCL4A.
- Review of concentrations in nearby and background monitoring wells.
- Review of historical and current sulfate concentrations at TMW-2.
- Documentation of the construction of the SCL4A with a 60-mil geomembrane liner and a 2-foot thick clay barrier.

### 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.	<ul> <li>Boron</li> <li>Molybdenum</li> <li>Lithium</li> <li>Sulfate</li> </ul>
Boiler Slag / Bottom Ash	Molten bottom ash from the slag tap and cyclone type furnaces that turns into pellets that have a smooth glassy appearance after quenching with water.	<ul> <li>Bromide</li> <li>Potassium</li> <li>Sodium</li> <li>Fluoride</li> </ul>
Flue Gas Desulfurization Material (FGD)	A material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler that can be a wet sludge consisting of calcium sulfite or calcium sulfate or a dry powdered material that is a mixture of sulfites and sulfates.	<ul> <li>Sulfate</li> <li>Fluoride</li> <li>Calcium</li> <li>Boron</li> <li>Bromide</li> <li>Chloride</li> </ul>

### 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 SCL4A has historically received fly ash. FGD type wastes at the SEC are managed at the SCPC, located to the west of the SCL4A.

### 5.2 Evaluation of SSI

### 5.2.1 Boron Concentrations

Boron is typically the key indicator for fly ash and boiler slag/bottom ash impacts because it is typically present in the leachate from these types of waste, is not a common anthropogenic contaminant, and is non-reactive and mobile in most hydrogeological environments (EPRI 2012). This non-reactive and mobile nature makes boron an early indicator of impacts from a CCR Unit. If groundwater was impacted by the SCL4A, current boron concentrations should be statistically elevated with respect to pre-CCR placement, background monitoring wells, and compared to those in the baseline sampling.

**Figure 2** displays historical boron concentrations at TMW-2, as well as background wells BMW-1S and BMW-3S and nearby wells TMW-1 and TMW-3. If the SSI at TMW-2 was caused by impacts from the SCL4A, boron concentrations would be expected to increase as a first indicator of CCR influence on the groundwater. **Figure 2** demonstrates that current boron concentrations are similar to those from previous sampling events and are similar to background levels. This information displays that TMW-2 does not have boron impacts, and therefore, a source other than CCR is likely the cause of the SSI at TMW-2.

### 5.2.2 Sulfate Concentrations

Sulfate, much like boron, is a key indicator for potential CCR impacts because sulfate is highly mobile in most hydrogeological environments, except where conditions are strongly reducing. The groundwater around the SCL4A does not demonstrate strongly reducing conditions, such as negative oxidation reduction potential (ORP) and dissolved iron concentrations above 1 mg/L. No hydrogen sulfide odors have been reported at the SCL4A. Therefore, if the SSI was caused by impacts from the SCL4A, it would be expected that sulfate values would increase following placement of CCR. Given that boron concentrations are not indicative of CCR impacts, it follows that the elevated sulfate values in well TMW-2 are from an alternative source.

As displayed on **Figure 3**, during baseline sampling at TMW-2, sulfate ranged from 30.0 to 35.5 mg/L. During the subsequent sampling events sulfate concentrations at TMW-2 have ranged from 26.4 to 85.8 mg/L. The time series plot on **Figure 3** shows the high degree of variability in sulfate concentrations at TMW-2 since the onset of detection monitoring. This figure provides further evidence that the limited number of data points used to calculate the intrawell UPL for sulfate at TMW-2 do not accurately reflect the natural geochemical variability within the well. Two other compliance monitoring wells are located within 350 feet to the east and west of TMW-2 as displayed in **Figure 1**; TMW-1 (west) and TMW-3 (east). Sulfate concentrations in these monitoring wells ranged from 23.2 to 60.9 mg/L during the baseline sampling events, and UPLs for these monitoring wells are 50.29 mg/L at TMW-1 and 60.9 mg/L at TMW-3. Based on the sulfate concentration range of the nearby wells, the sulfate concentration in TMW-2 for April 2021 is within the range of historical concentrations for adjacent wells, which indicates that the SSI for sulfate in TMW-2 is likely the result of a limited baseline sampling period that did not capture the full range of natural geochemical variability within the shallow zone of the alluvial aquifer at TMW-3.

To further investigate the geochemical variability of sulfate in the area of the SCL4A, the historical data from the state UWL wells [located on the south side of the UWL, outside the zone of impact from the SCPA] were reviewed. These UWL wells (labeled "DG-xx") were installed and sampled on multiple occasions prior to the receipt of CCR at the SCL4A. These DG-xx monitoring wells are screened at approximately the same depth as TMW-2 in the shallow zone of the alluvial aquifer. **Figure 4** displays a box and whisker plot of the natural variability of the sulfate concentrations within the alluvial aquifer prior to the receipt of CCR in the SCL4A for these wells. As shown on **Figure 4**, the recent results from TMW-2 are within range of concentrations for the DG-xx wells, which represent groundwater quality from a period that occurred prior to the receipt of CCR in SCL4A.

The lines of evidence listed above indicate that the higher sulfate concentration in TMW-2 in April 2021 is not the result of a release from the SCL4A, but instead can be attributed to variability in the alluvial aquifer combined with the limited dataset used for the calculation of the previous sulfate UPLs in TMW-2.

### 6.0 DEMONSTRATION THAT SSI WAS NOT CAUSED BY SCL4A IMPACT

Based on the information presented in Section 5.1.1, above, the SSI reported for the April 2021 monitoring event at TMW-2 is not a result of impacts from the SCL4A. The SSI appears to be a result of numerous factors, including (1) pre-existing low concentrations of CCR indicators from the upgradient SCPA that predate the SCL4A, (2) relatively low calculated UPLs, and (3) a relatively small set of baseline data that do not reflect the full natural temporal and spatial variability within the aquifer. Only twelve (12) samples have been used thus far to calculate the intrawell UPLs in TMW-2. It can take many years of data gathering to observe the range of variability in groundwater concentrations that are representative of natural conditions or pre-existing impacts for any given aquifer. The results gathered thus far have obviously not captured the full extent of the spatial and temporal variability in the downgradient alluvial aquifer monitoring wells at the SEC.

Along with the lines of evidence listed above, SCL4A is constructed with 2-feet of compacted clay baseliner which is overlain by a 60-mil HDPE liner. These components act to limit the potential that the SSI reported for sulfate in TMW-2 during April 2021 is a result of influence from the SCL4A. The SSI observed in TMW-2 is not caused by impacts from the SCL4A, but is a result natural variability and/or pre-existing impacts within the alluvial aquifer at the site.

### 7.0 REFERENCES

- Ameren Missouri. 2016. Structural Integrity Criteria & Hydrologic/Hydraulic Capacity Assessment, Sioux Energy Center.
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# Tables



### Table 1 April 2021 Detection Monitoring Results SCL4A - Landfill Cell 4A Sioux Energy Center, St. Charles County, MO

		BACKGROUND GROUNDWATER MONITORING WELLS									
ANALYTE	UNITS	BMW-1S	BMW-3S	Prediction Limit UG-3	UG-3	Prediction Limit TMW-1	TMW-1	Prediction Limit TMW-2	TMW-2	Prediction Limit TMW-3	TMW-3
				April 2021 D	etection Mon	itoring Event					
DATE	NA	4/13/2021	4/13/2021	NA	4/13/2021	NA	4/13/2021	NA	4/13/2021	NA	4/13/2021
pН	SU	6.85	6.98	6.243-7.648	7.08	6.216-7.528	7.07	6.441-7.519	6.99	6.337-7.638	6.99
BORON, TOTAL	μg/L	70.8 J	74.2J	1,027	225	DQR	57.2 J	DQR	76.0 J	114.8	75.8 J
CALCIUM, TOTAL	μg/L	149,000	134,000	160,085	139,000	115,800	93,200	134,272	105,000	150,887	114,000
CHLORIDE, TOTAL	mg/L	8.2	12.8	102.2	41.4	4.463	2.1	3.954	3.4	3.1	2.2 J
FLUORIDE, TOTAL	mg/L	0.36	0.39	0.3772	0.38	0.4264	0.41	0.4061	0.43	0.3573	0.32
SULFATE, TOTAL	mg/L	29.4	34.8	165.7	58.2	50.29	47.7	52.1	64.8	60.9	33.1
TOTAL DISSOLVED SOLIDS	mg/L	579	509	698.7	578	485.1	386	495.8	439	505.9	445
				June 2021 V	erification Sa	mpling Event					
DATE	NA				6/2/2021				6/2/2021		
pН	SU										
BORON, TOTAL	μg/L										
CALCIUM, TOTAL	μg/L										
CHLORIDE, TOTAL	mg/L										
FLUORIDE, TOTAL	mg/L				0.33				0.38		
SULFATE, TOTAL	mg/L								64.0		
TOTAL DISSOLVED SOLIDS	mg/L										

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. Prediction Limits calculated using Sanitas Software.

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

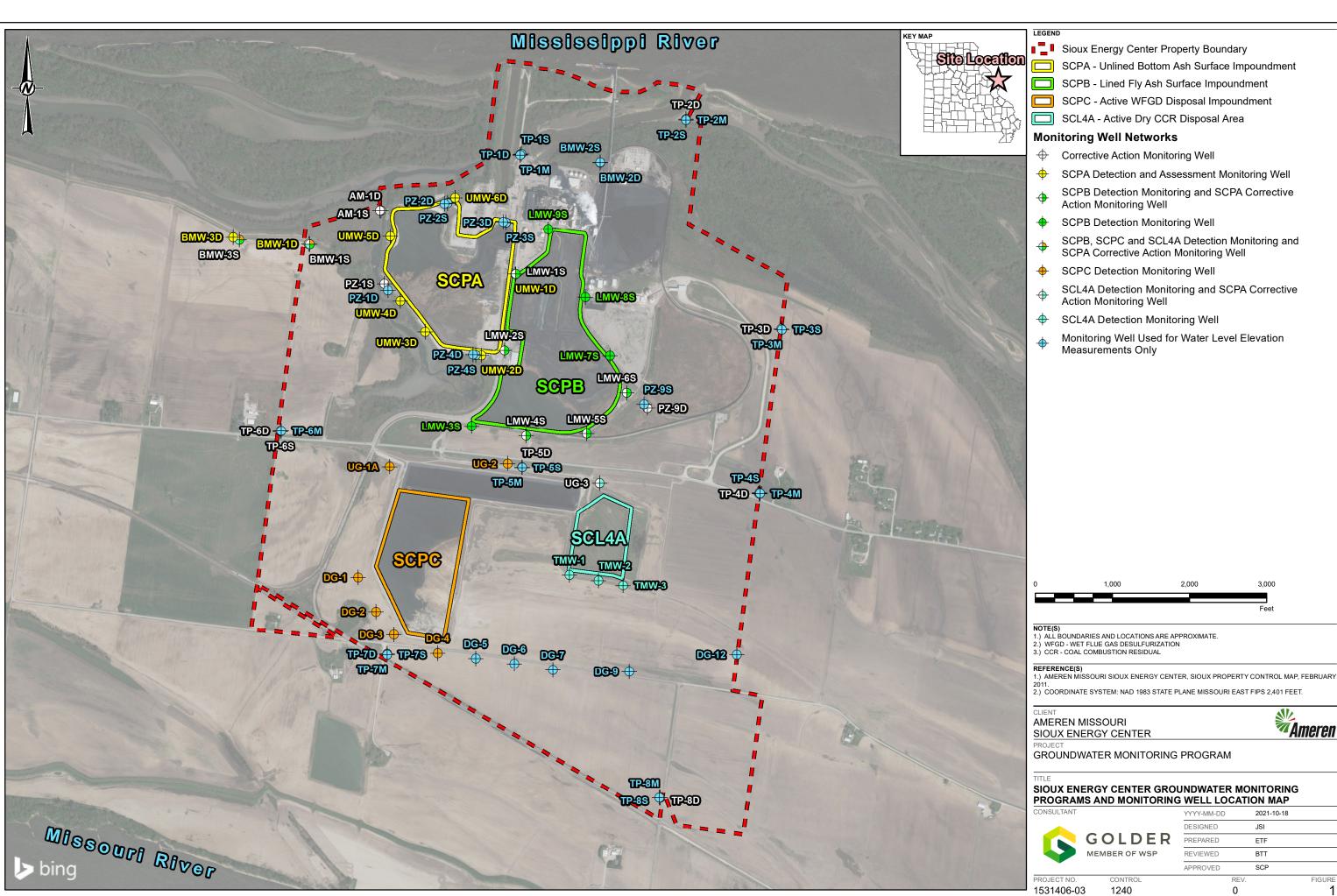
6. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).

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

8. If all background values are less than the Practical Quantitation Limit (PQL) then the Double Quantification Rule (DQR) is used.

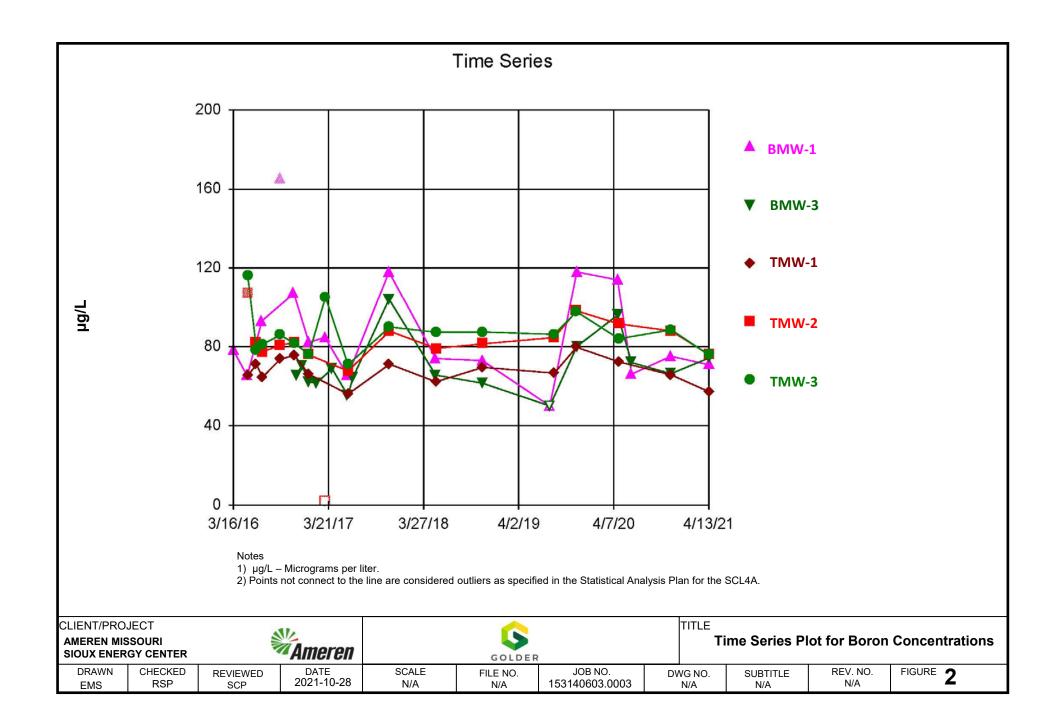
# Figures

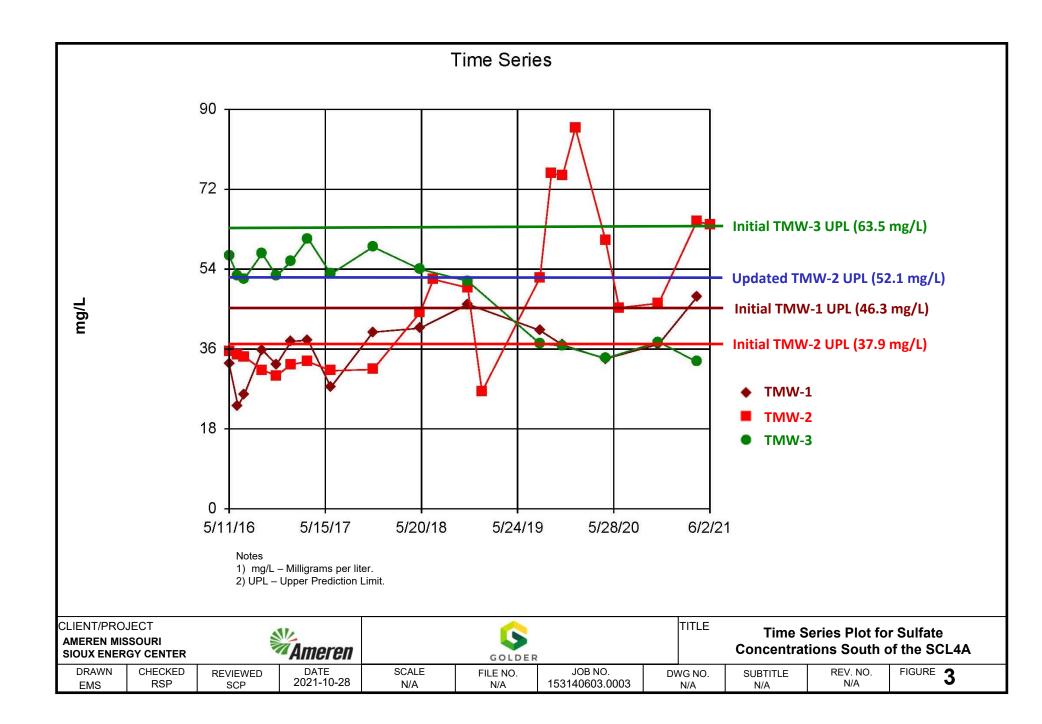


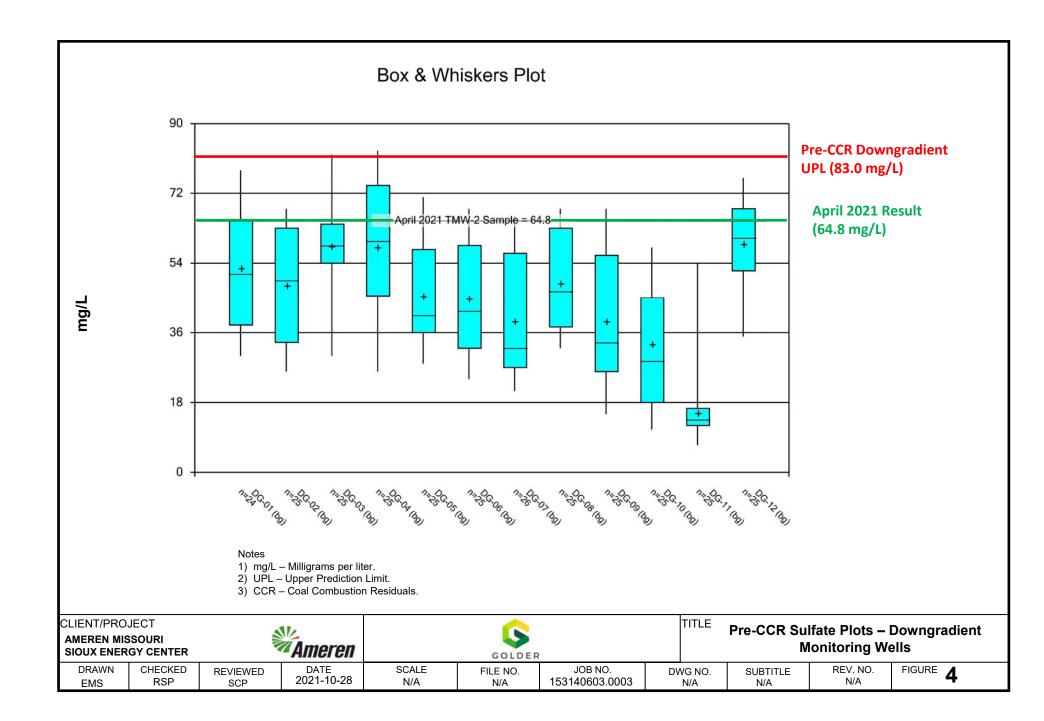


0	1,000	2,000	3,000
			Feet

WELL LOCATION MAP						
YYYY-MM-DD		2021-10-18				
DESIGNED		JSI				
PREPARED		ETF				
REVIEWED		BTT				
APPROVED		SCP				
	REV.		FIGURE			
	0		1			







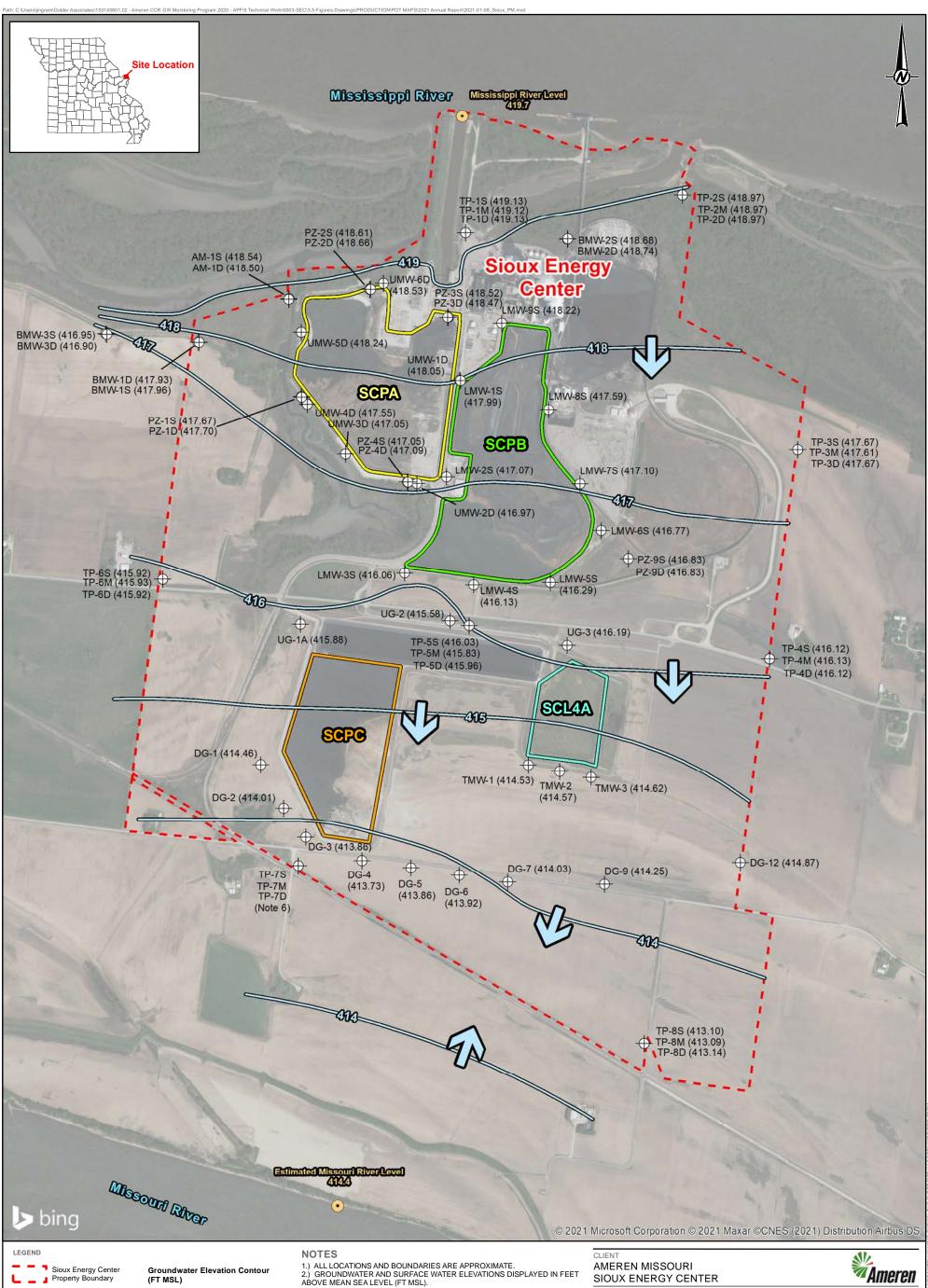


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APPENDIX C

# 2021 Potentiometric Surface Maps





223	Sioux Energy Center Property Boundary	Groundw (FT MSL)	ater Elevation Contour	
CCR Uni	ts		Groundwater Elevation Contour (FT MSL)	
	SCPA - Bottom Ash Surface Impoundment		Inferred Groundwater	
	SCPB - Fly Ash Surface Impoundment		Elevation Contour (FT MSL)	
	SCPC - WFGD Surface Impoundmet	Ground/Surface Water Measurement Locations		
	SCL4A - Dry CCR Disposal Area	$\bullet$	River Gauge Location	
	Groundwater Flow Direction	¢	Monitoring Well or Piezometer	

GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.

6.) TP-75, TP-7M, AND TP-7D WERE NOT USED IN POTENTIOMETRIC CONTOURING DUE TO MEASUREMENT ERROR. 7.) WFGD - WEF FLUE GAS DESULURIZATION.

### REFERENCE

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL AP, FEBRUARY 2011. 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS

Feet

2 401 FEET

2,401 FEEL 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

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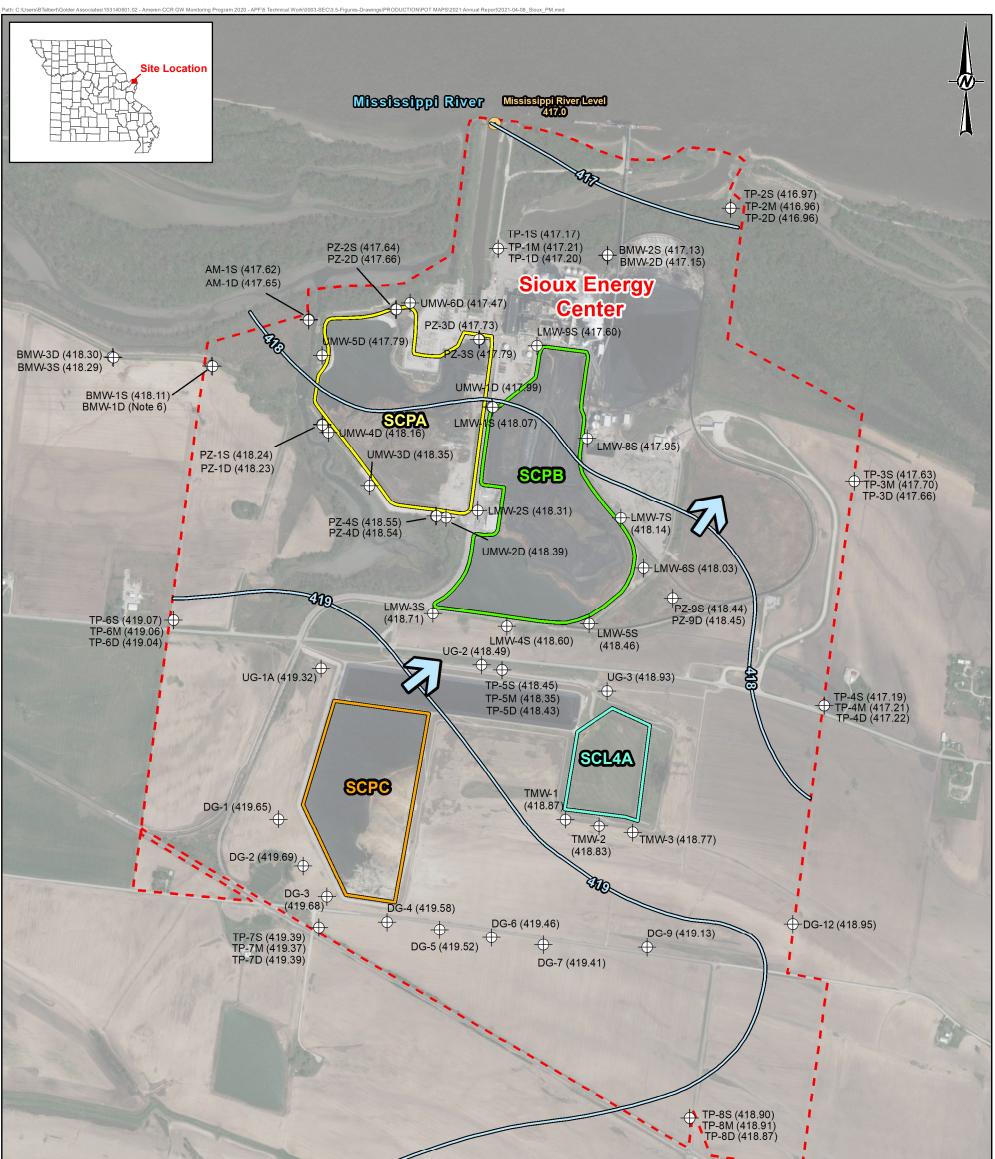
### PROJE

CCR GROUNDWATER MONITORING PROGRAM

### TITLE

### **JANUARY 8, 2021 POTENTIOMETRIC SURFACE MAP**

CONSULTANT		YYYY-MM-DD	2021-01-28	
		PREPARED	BTT	
	GOLDER	DESIGN	JSI	
	MEMBER OF WSP	REVIEW	EMS	
		APPROVED	MNH	
PROJECT No.	PHASE			FIGURE
153-140603	0003			C1



				EN MODIFIED FROM:
Missouri River	Estimated Missouri River Level 418.3	e 2021 Misrooft Corpora	tion © 2021 Maxar ©CNES (2021) Distribution A	

### LEGEND

223	Sioux Energy Center Property Boundary	Groundw (FT MSL)	ater Elevation Contour
CCR Unit	s		Groundwater Elevation Contour (FT MSL)
	SCPA - Bottom Ash Surface Impoundment		Inferred Groundwater
	SCPB - Fly Ash Surface Impoundment		Elevation Contour (FT MSL)
	SCPC - WFGD Surface Impoundmet		Surface Water nent Locations
	SCL4A - Dry CCR Disposal Area	$\bullet$	River Gauge Location
	Groundwater Flow Direction	¢	Monitoring Well or Piezometer

### NOTES

1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE. 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET GROUNDWATER AND SORFACE WATER ELEVATIONS DISPLATED IN FE ABOVE MEAN SEA LEVEL (FT MSL).
 GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI. MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSIONI.
 BMW-1D IS NOT USED FOR POTENTIOMETRIC CONTOURING DUE TO MEASUREMENT ERROR.
 WFGD - WET FLU GAS DESULURIZATION.
 REFERENCE 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL COMAP, 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) 0 500 1,000 1,500 2,000 Feet

### CLIENT AMEREN MISSOURI SIOUX ENERGY CENTER



PROJEC

### CCR GROUNDWATER MONITORING PROGRAM

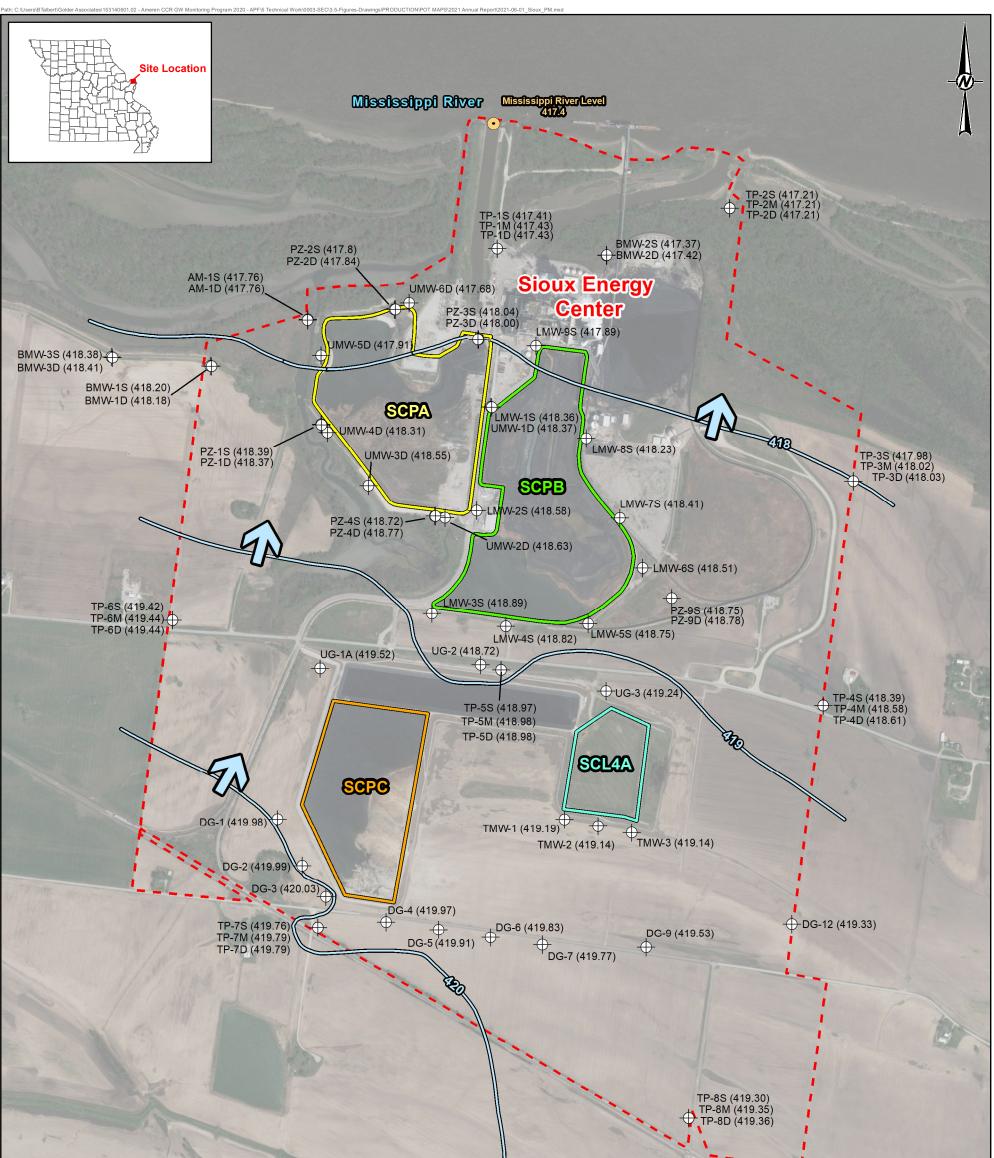
TITLE

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### **APRIL 8, 2021 POTENTIOMETRIC SURFACE MAP**

ONSULTANT		YYYY-MM-DD	2021-05-10	
		PREPARED	BTT	
	GOLDER	DESIGN	JSI	
	MEMBER OF WSP	REVIEW	EMS	
		APPROVED	MNH	
ROJECT No.	PHASE			FIGURE
53-140603	3 0003			C2



And and a second se			*
Missount River	Estimated Missouri River Level 420.6	II II II II II II II II II II II II II	ar ©CNES (2022) Distribution Airbus DS
LEGEND	NOTES	CLIENT	

223	Sioux Energy Center Property Boundary	Groundwater Elevation Contour (FT MSL)		
CCR Units			Groundwater Elevation	
	SCPA - Bottom Ash Surface Impoundment		Contour (FT MSL) Inferred Groundwater	
	SCPB - Fly Ash Surface Impoundment		Elevation Contour (FT MSL)	
	SCPC - WFGD Surface Impoundmet	Ground/Surface Water Measurement Locations		
	SCL4A - Dry CCR Disposal Area	$\bullet$	River Gauge Location	
	Groundwater Flow Direction	¢	Monitoring Well or Piezometer	

ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 CROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 MISSOURI RIVER CAS DECINI UNITATION

6.) WFGD - WET FLUE GAS DESULURIZATION.

### REFERENCE

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1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL CONSULTANT 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)

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### AMEREN MISSOURI SIOUX ENERGY CENTER



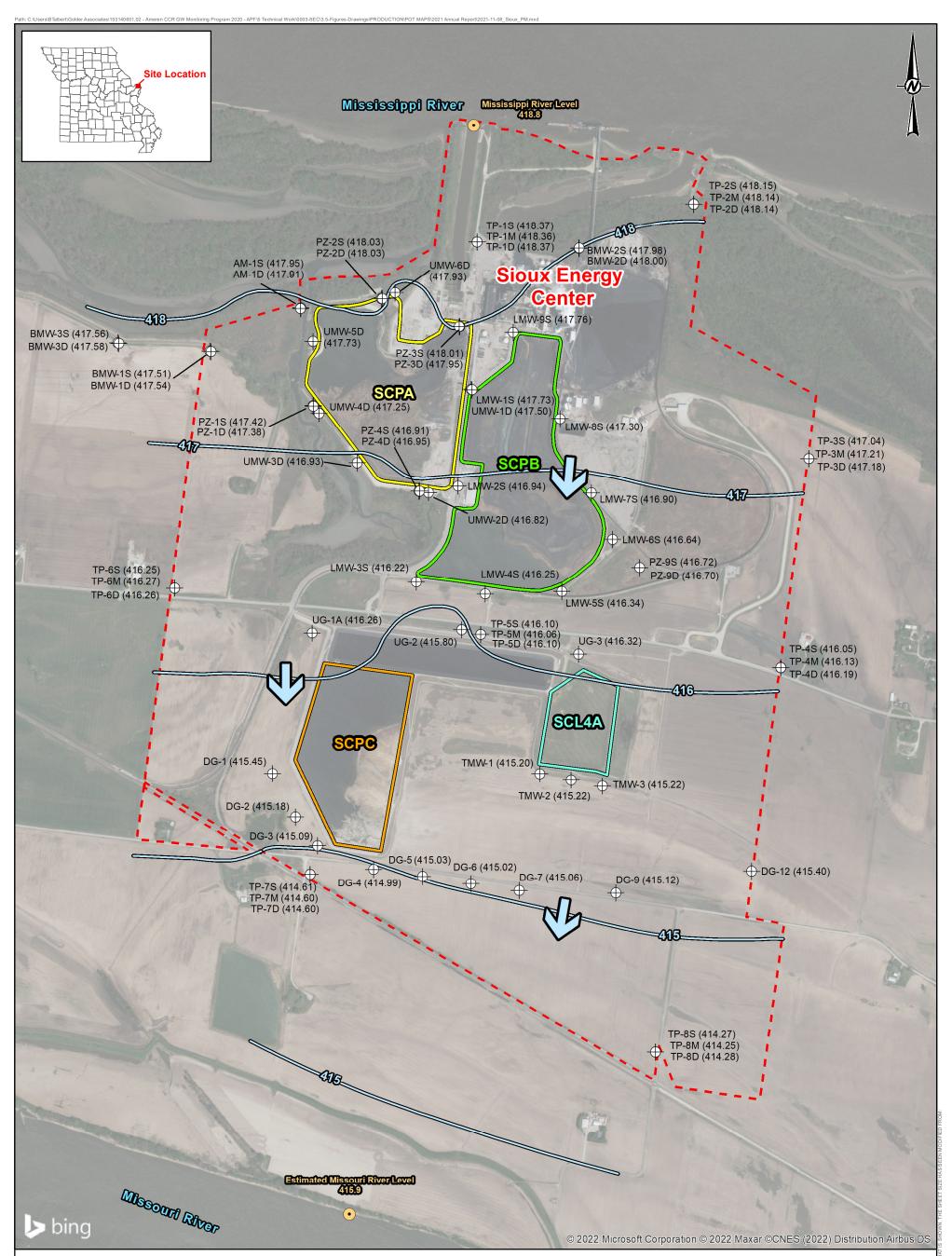
PROJEC

CCR GROUNDWATER MONITORING PROGRAM

TITLE

### JUNE 1, 2021 POTENTIOMETRIC SURFACE MAP

YYYY-MM-DD 2021-10-11 PREPARED ETF GOLDER DESIGN JSI MEMBER OF WSP REVIEW EMS MNH APPROVED PROJECT No PHASE 153-140603 0003 C3



### LEGEND

223	Sioux Energy Center Property Boundary	Groundw (FT MSL)	ater Elevation Contour	
CCR Units			Groundwater Elevation	
	SCPA - Bottom Ash Surface Impoundment		Contour (FT MSL)	
	SCPB - Fly Ash Surface Impoundment		Elevation Contour (FT MSL)	
	SCPC - WFGD Surface Impoundmet	Ground/Surface Water Measurement Locations		
	SCL4A - Dry CCR Disposal Area	$\bullet$	River Gauge Location	
$\overline{\mathcal{A}}$	Groundwater Flow Direction	÷	Monitoring Well or Piezometer	

### NOTES

ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 MISSISSIPPI RIVER CAS DECINE UNDIGATION.

6.) WFGD - WET FLUE GAS DESULURIZATION.

### REFERENCE

0

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL CONSULTANT 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)

Feet

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### CLIEN

AMEREN MISSOURI SIOUX ENERGY CENTER



### PROJE

CCR GROUNDWATER MONITORING PROGRAM

### TITLE

### **NOVEMBER 8, 2021 POTENTIOMETRIC SURFACE MAP**

YYYY-MM-DD 2021-12-02 PREPARED ETF GOLDER DESIGN JSI MEMBER OF WSP REVIEW BTT MNH APPROVED PROJECT No PHASE 153-140603 0003 C4



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