REPORT

2020 Annual Groundwater Monitoring and Corrective Action Report

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

Submitted to:

Ameren Missouri
1901 Chouteau Avenue
St. Louis, Missouri 63103

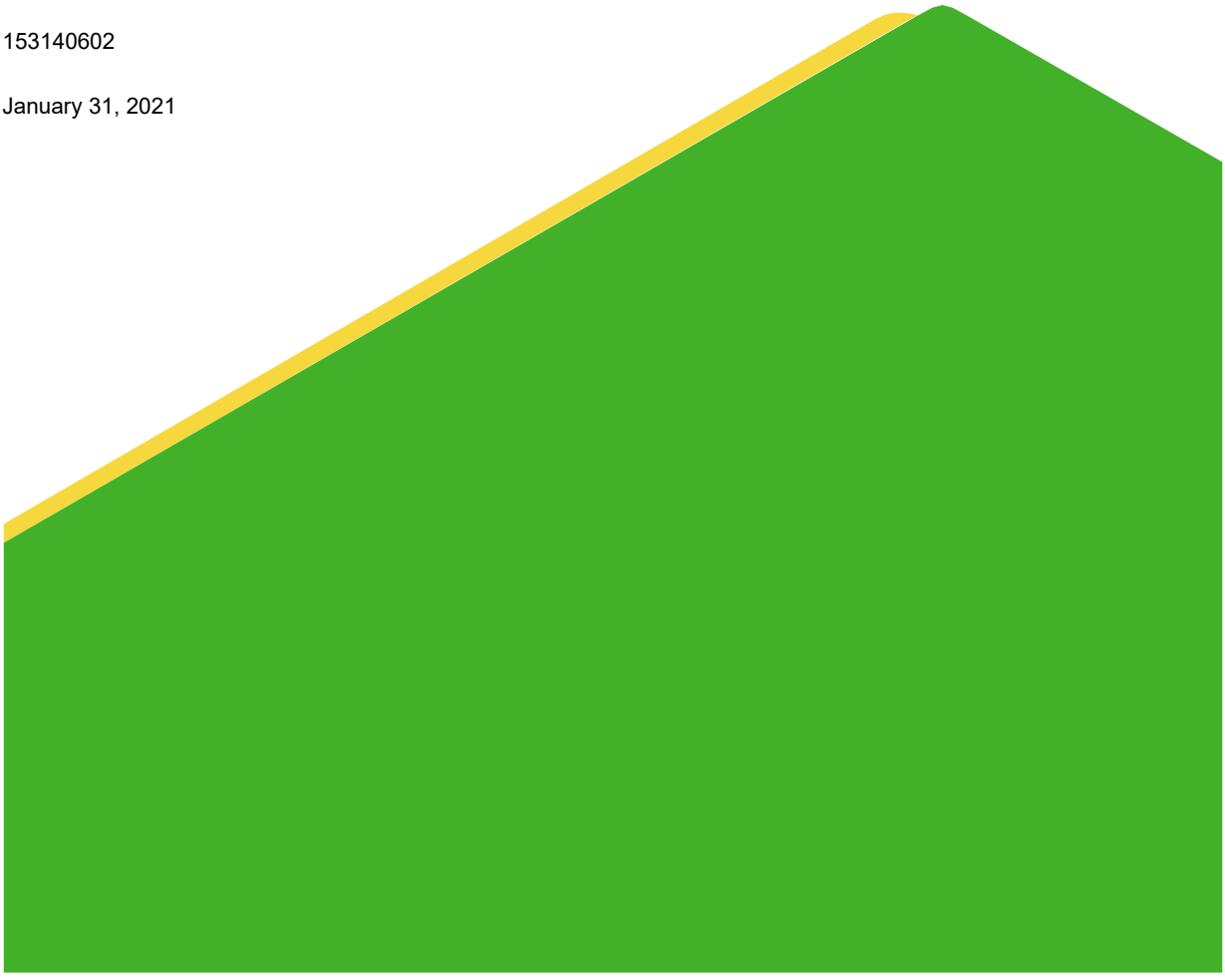
Submitted by:

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260, Ballwin, Missouri, USA 63021

+1 314 984-8800

153140602

January 31, 2021



1.0 EXECUTIVE SUMMARY AND STATUS OF THE LCPB 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 LCPB Coal Combustion Residuals (CCR) Surface Impoundment at the Labadie Energy Center (LEC) is subject to the requirements of the CCR Rule. This Annual Report for the LCPB describes CCR Rule groundwater monitoring activities from January 1, 2020 through December 31, 2020, including verification results related to late 2019 sampling.

Throughout 2020, the LCPB CCR unit has been operating under the Detection Monitoring Program (§257.94) which began October 17, 2017. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values that represent a Statistically Significant Increase (SSI) over background concentrations. SSIs have been determined during each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

Table 1 – Summary of 2020 LCPB Sampling Events, Previous Year Verification, and Statistical Evaluations

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Verified SSIs	SSI Determination Date	ASD Completion Date
November 2019 Sampling Event	Detection Monitoring, November 5-7, 2019	November 22, 2019	Appendix III, Major Cations and Anions	**pH:** LMW-2S **Boron:** LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-6S, LMW-7S, LMW-8S **Calcium:** LMW-1S **Chloride:** LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-6S, LMW-7S, LMW-8S **Fluoride:** LMW-8S **Sulfate:** LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-6S, LMW-7S, LMW-8S **TDS:** LMW-1S, LMW-7S, LMW-8S	February 20, 2020	May 19, 2020
	Verification Sampling, January 7-8, & February 6, 2020	January 17 & February 15, 2020	Detected Appendix III parameters (See Note 1)			
April 2020 Sampling Event	Detection Monitoring, April 14-20, 2020	May 22 & May 29, 2020 (See Note 2)	Appendix III, Major Cations and Anions	**pH:** LMW-2S **Boron:** LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-6S, LMW-7S, LMW-8S **Chloride:** LMW-2S, LMW-3S, LMW-4S, LMW-7S, LMW-8S **Fluoride:** LMW-4S, LMW-6S, LMW-8S **Sulfate:** LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-7S, LMW-8S **TDS:** LMW-1S, LMW-7S, LMW-8S	August 20, 2020	November 18, 2020
	Verification Sampling, May 26, 2020	July 15, 2020	Detected Appendix III parameters (See Note 1)			
November 2020 Sampling Event	Detection Monitoring, November 2-5, 2020	December 11, 2020	Appendix III, Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2021.		

Notes:
1) Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
2) Golder accessed the preliminary data from the April 2020 Detection Monitoring event online on May 22, 2020 so that verification sampling could occur on schedule and concurrently with the subsequent Corrective Action sampling event for the LCPA. The official data from the laboratory was provided to Golder on May 29, 2020 and supported the preliminary data.
3) SSI – Statistically Significant Increase.
4) ASD – Alternative Source Demonstration.
5) TDS – Total Dissolved Solids.

As outlined in section 257.94(e)(2) of the CCR Rule, the owner or operator may demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Alternative Source Demonstrations were prepared for each of these sampling events and are discussed further in this Annual Report.

There were no changes made to the monitoring system in 2020 with no new wells being installed or decommissioned. Additionally, substantial closure of the LCPB was completed in 2020, with the geomembrane liner system completed on December 15, 2020. Once closure is fully completed (anticipated Q2, 2021), the LCPA will transition into the post-closure care requirements of the CCR Rule. As outlined in §257.104 (Post-closure Care Requirements) of the CCR Rule, the monitoring system and programs must be maintained for at least 30 years.

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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 LCPB. The groundwater monitoring system consists of ten (10) groundwater monitoring wells screened in the uppermost aquifer and is displayed in **Figure 1**. No new monitoring wells were installed or decommissioned in 2020 as a part of the CCR Rule monitoring program for the LCPB. For more information on the groundwater monitoring network, details are provided in the previous Annual Groundwater Monitoring Reports for the LCPB.

3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the LCPB CCR Unit in 2020. **Table 2** below provides a summary of the groundwater samples collected in 2020 including the number of samples, the date of sample collection, and the monitoring program.

Table 2 – Summary of Groundwater Sampling Dates

Sampling Event	Groundwater Monitoring Wells										Monitoring Program
	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	
	Date of Sample Collection										
January-February 2020 Verification Sampling	-	-	-	-	-	1/7/2020	1/8/2020	2/6/2020	-	2/6/2020	Detection
April 2020 Detection Monitoring	4/14/2020	4/14/2020	4/16/2020	4/14/2020	4/20/2020	4/20/2020	4/20/2020	4/16/2020	4/16/2020	4/16/2020	Detection
May 2020 Verification Sampling	-	-	-	-	5/26/2020	5/26/2020	-	5/26/2020	-	5/26/2020	Detection
November 2020 Detection Monitoring	11/2/2020	11/2/2020	11/5/2020	11/5/2020	11/4/2020	11/4/2020	11/3/2020	11/5/2020	11/5/2020	11/5/2020	Detection
Total Number of Samples	2	2	2	2	3	4	3	4	2	4	NA

Notes:

1.) Detection Monitoring Events tested for Appendix III Parameters.

2.) Verification Sampling Events tested for Appendix III Parameters with initial exceedances that have not already been verified.

3.) "-" No sample collected.

4.) NA - Not applicable.

3.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 5-7, 2019. Verification sampling and the statistical analysis to evaluate for SSIs for the November 2019 event were not completed until 2020 and are, therefore, included in this report. Detections of Appendix III analytes triggered a verification sampling event, which was completed on January 7-8, 2020 and February 6, 2020 and verified SSIs. **Table 3** summarizes the results of the statistical analysis of the November 2019 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 these SSIs and is provided in **Appendix B**. This ASD demonstrates that SSIs at the monitoring wells around LCPB are not caused by the LCPB CCR Unit and the LCPB CCR Unit remains in Detection Monitoring.

Detection Monitoring samples were collected April 14-20, 2020, and testing was completed for all Appendix III analytes. Statistical analysis of the data determined SSIs. Detections of Appendix III analytes triggered Verification Sampling, which was completed May 26, 2020 and the testing results verified SSIs. **Table 4** summarizes the results of the statistical analysis of the April 2020 Detection Monitoring event and laboratory analytical data are provided in **Appendix A**. As with the November 2019 sampling event, SSIs reported for the monitoring data are not caused by the LCPB CCR Unit and an ASD for this is provided in **Appendix C**.

A Detection Monitoring sampling event was completed November 2-5, 2020, 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 2020 data were not completed in 2020 and the results will be provided in the 2021 Annual Report. **Table 5** summarizes the results of the November 2020 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 provided in **Appendix D**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in the water level in the adjacent Missouri River. Water flows into and out of the alluvial aquifer because of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. Overall, based on potentiometric surface maps, a general flow direction from the south/southwest (bluffs area) to the north/northeast (Missouri River) is observed under normal river conditions. However, during periods of high river levels, groundwater flow can temporarily reverse. During these times of high river stage and temporary flow direction changes, horizontal groundwater gradients generally decrease, and little net movement of groundwater occurs.

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

3.3 Sampling Issues

After the November 2019 Detection Monitoring event, LMW-6S and LMW-8S were not sampled to verify SSIs during the initial verification sampling on January 7-8, 2020. Upon further analysis, it was realized that LMW-6S and LMW-8S had initial exceedances for fluoride that required verification. Subsequently, verification sampling was completed on February 6, 2020.

The verification sampling for the April 2020 Detection Monitoring sampling event was scheduled to occur concurrently with the May 2020 sampling of the Corrective Action network for the nearby LCPA, including shared wells LMW-1S, LMW-2S, LMW-4S, LMW-7S, and LMW-8S. The laboratory had not provided data to Golder before the event was scheduled to occur. Therefore, Golder accessed the preliminary laboratory data using the laboratory’s online access tool on May 22, 2020. This allowed for verification sampling to occur as scheduled on May 26, 2020. The laboratory provided the official data to Golder on May 29, 2020 and that

data confirmed the initial exceedances previously identified for verification sampling using the preliminary data.

No additional notable sampling issues were encountered at the LCPB in 2020.

4.0 ACTIVITIES PLANNED FOR 2021

Detection Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2021. Statistical analysis of the November 2020 Detection Monitoring data will be completed in 2021 and included in the 2021 Annual Report.

Tables

Table 3
November 2019 Detection Monitoring Results
LCPB Surface Impoundment
Labadie Energy Center, Franklin County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS							
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S
November 2019 Detection Monitoring Event												
DATE	NA	NA	11/5/2019	11/5/2019	11/7/2019	11/7/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2020
pH	SU	6.132-7.436	6.83	7.08	6.87	9.80	7.41	7.00	6.76	6.94	6.89	7.11
BORON, TOTAL	µg/L	156.1	122	61.2 J	11,100	3,380	3,700	8,730	498	429	10,500	7,750
CALCIUM, TOTAL	µg/L	219,000	194,000	125,000	291,000 J	49,500	144,000	136,000	192,000	146,000	136,000	212,000
CHLORIDE, TOTAL	mg/L	8.317	4.8	3.3	16.8	20.1	42.8	25.2	8.8	20.9	22.9	19.5
FLUORIDE, TOTAL	mg/L	0.2535	ND	0.12 J	0.23	0.22	0.24	0.17 J	ND	0.28	0.24	0.31
SULFATE, TOTAL	mg/L	70.05	29.9	28.5	938	206	151	261	55.9	155	278	773
TOTAL DISSOLVED SOLIDS	mg/L	784	700	425	1,820	396	763	804	648	691	815	1,300
January-February 2020 Verification Sampling Event												
DATE	NA	NA						1/7/2020	1/8/2020	2/6/2020		2/6/2020
pH	SU	6.132-7.436										
BORON, TOTAL	µg/L	156.1							98.3 J			
CALCIUM, TOTAL	µg/L	219,000										
CHLORIDE, TOTAL	mg/L	8.317							3.3			
FLUORIDE, TOTAL	mg/L	0.2535								0.23		0.26
SULFATE, TOTAL	mg/L	70.05										
TOTAL DISSOLVED SOLIDS	mg/L	784						777				

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. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Prepared By: EMS
Checked By: BTT
Reviewed By: SCP

Table 4
April 2020 Detection Monitoring Results
LCPB Surface Impoundment
Labadie Energy Center, Franklin County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS							
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S
April 2020 Detection Monitoring Event												
DATE	NA	NA	4/14/2020	4/14/2020	4/16/2020	4/14/2020	4/20/2020	4/20/2020	4/20/2020	4/16/2020	4/16/2020	4/16/2020
pH	SU	6.132-7.436	6.62	6.98	6.95	9.74	7.05	6.68	6.89	6.90	6.86	7.23
BORON, TOTAL	µg/L	156.1	95.2 J	51.0 J	5,910	3,340	3,980	3,390	54.9 J	1,770	6,460	7,720
CALCIUM, TOTAL	µg/L	219,000	212,000	137,000	211,000	52,100	149,000	178,000	121,000	169,000	198,000	222,000
CHLORIDE, TOTAL	mg/L	8.317	3.7	4.0	8.0	19.2	27.8	38.5	3.5	3.7	14.8	18.9
FLUORIDE, TOTAL	mg/L	0.2535	0.16 J	0.14 J	0.19 J	0.21	0.25	0.28	0.24	0.37	0.23	0.41
SULFATE, TOTAL	mg/L	70.05	38.5	45.5	293	195	154	99.9	14	53.2	195	633
TOTAL DISSOLVED SOLIDS	mg/L	784	711	555	942	386	788	767	373	642	839	1,200
May 2020 Verification Sampling Event												
DATE	NA	NA					5/26/2020	5/26/2020		5/26/2020		5/26/2020
pH	SU	6.132-7.436										
BORON, TOTAL	µg/L	156.1										
CALCIUM, TOTAL	µg/L	219,000										209,000
CHLORIDE, TOTAL	mg/L	8.317										
FLUORIDE, TOTAL	mg/L	0.2535						0.28		0.35		
SULFATE, TOTAL	mg/L	70.05										
TOTAL DISSOLVED SOLIDS	mg/L	784					654					

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 and that had not already been verified were tested during Verification Sampling.

Prepared By: JSI
Checked By: BTT
Reviewed By: MNH

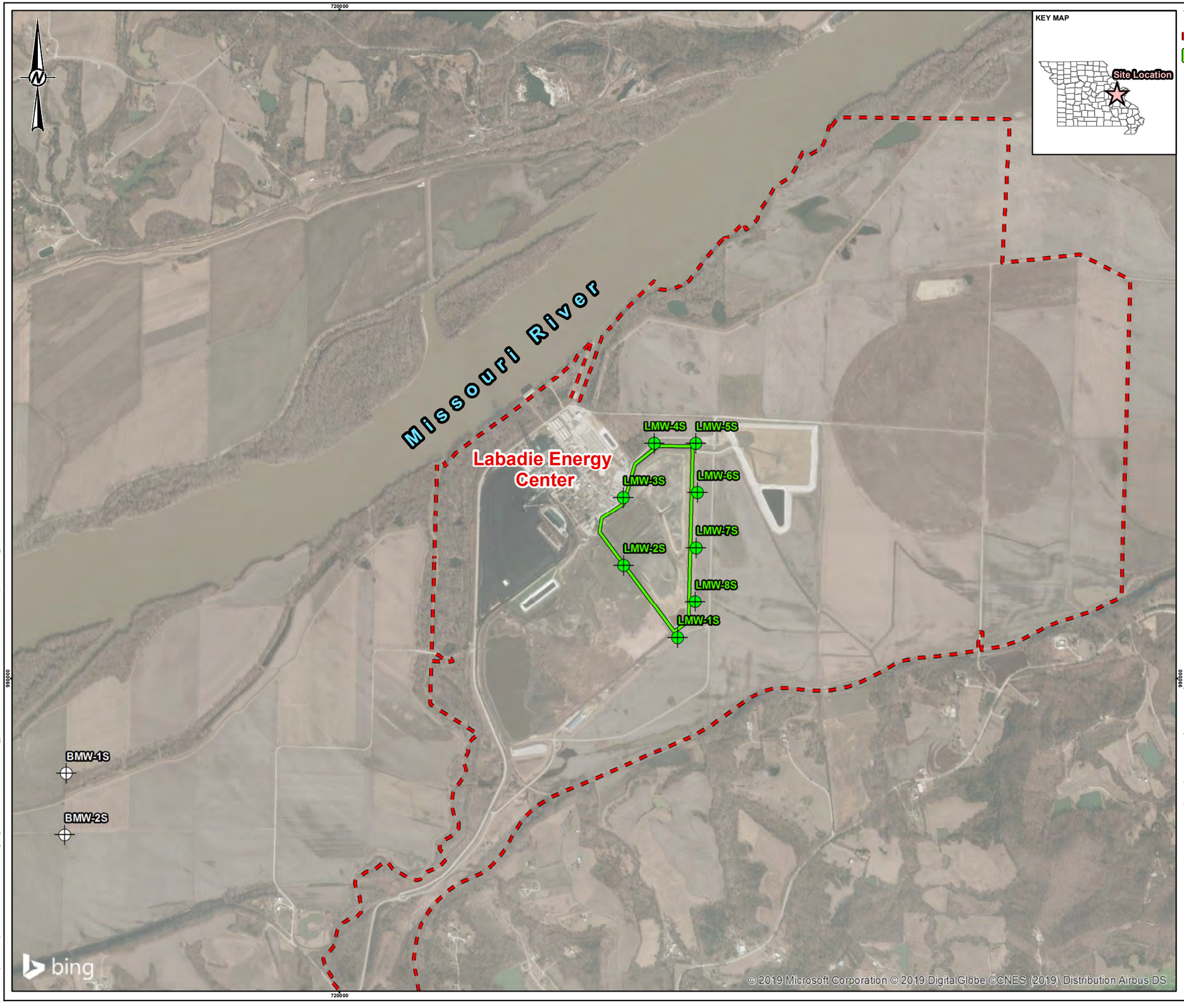
Table 5
November 2020 Detection Monitoring Results
LCPB Surface Impoundment
Labadie Energy Center, Franklin County, MO

		BACKGROUND		GROUNDWATER MONITORING WELLS							
ANALYTE	UNITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S
November 2020 Detection Monitoring Event											
DATE	NA	11/2/2020	11/2/2020	11/5/2020	11/5/2020	11/4/2020	11/4/2020	11/3/2020	11/5/2020	11/5/2020	11/5/2020
pH	SU	6.87	7.23	6.90	9.54	7.06	6.62	7.23	6.73	6.76	7.16
BORON, TOTAL	µg/L	99.0 J	45.2 J	4,390	3,150	3,840	3,120	62.0 J	3,900	7,010	2,570
CALCIUM, TOTAL	µg/L	216,000	142,000	158,000	61,900	127,000	183,000	78,200	156,000	173,000 J	70,800
CHLORIDE, TOTAL	mg/L	6.4	3.4	3.9	19.2	19.7	41.7	2.2	8.5	14.4	4.7
FLUORIDE, TOTAL	mg/L	0.17 J	0.22	0.32	0.23	0.39	0.11 J	0.37	0.29	0.31	0.53
SULFATE, TOTAL	mg/L	66.5	73.4	142	243	158	83.5	7.6	82.0	176	80.4
TOTAL DISSOLVED SOLIDS	mg/L	780	524	635	445	754	717	296	669	808	440

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.

Prepared By: JSI
Checked By: BTT
Reviewed By: MNH

Figures



KEY MAP

LEGEND

- Approximate Property Boundary
- LCPB - Fly Ash Surface Impoundment

Groundwater Monitoring Wells Used for LCPB CCR Rule Monitoring

- LCPB - Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well

0 1,000 2,000 3,000 4,000

Feet

NOTE(S)

1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

REFERENCE(S)

1.) ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
SITE LOCATION AERIAL MAP AND MONITORING WELL LOCATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-31
DESIGNED	JSI
PREPARED	JSI
REVIEWED	RJF
APPROVED	CMR

PROJECT NO.	CONTROL	REV.	FIGURE
153140601	1240	0.0	1

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APPENDIX A

Laboratory Analytical Data

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

January 17, 2020

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

RE: Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Dear Jeffrey Ingram:
Enclosed are the analytical results for sample(s) received by the laboratory on January 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
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 #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

Pace Analytical Services, LLC
9608 Loiret Blvd.
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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60326293001	**L-LMW-5S**	Water	01/08/20 08:25	01/10/20 03:14
60326293002	**L-LCPB-DUP-1**	Water	01/08/20 08:00	01/10/20 03:14
60326293003	**L-LMW-4S**	Water	01/07/20 11:30	01/10/20 03:14
60326293004	**L-LCPB-FB-1**	Water	01/07/20 11:40	01/10/20 03:14

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60326293001	**L-LMW-5S**	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K
60326293002	**L-LCPB-DUP-1**	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K
60326293003	**L-LMW-4S**	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K
60326293004	**L-LCPB-FB-1**	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K

Pace Analytical Services, LLC
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Lenexa, KS 66219
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Sample: L-LMW-5S **Lab ID: 60326293001** Collected: 01/08/20 08:25 Received: 01/10/20 03:14 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Boron	**98.3J**	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:44	7440-42-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**506**	mg/L	10.0	10.0	1		01/14/20 10:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.0	0.39	1		01/15/20 20:32	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Sample: L-LCPB-DUP-1 **Lab ID: 60326293002** Collected: 01/08/20 08:00 Received: 01/10/20 03:14 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Boron	**100**	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:47	7440-42-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**485**	mg/L	10.0	10.0	1		01/14/20 10:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.0	0.39	1		01/15/20 21:03	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Sample: L-LMW-4S **Lab ID: 60326293003** Collected: 01/07/20 11:30 Received: 01/10/20 03:14 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Boron	**6820**	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:49	7440-42-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**777**	mg/L	10.0	10.0	1		01/14/20 09:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**30.4**	mg/L	2.0	0.78	2		01/15/20 21:19	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Sample: L-LCPB-FB-1 **Lab ID: 60326293004** Collected: 01/07/20 11:40 Received: 01/10/20 03:14 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Boron	**<11.7**	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:57	7440-42-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		01/14/20 09:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.39**	mg/L	1.0	0.39	1		01/15/20 21:35	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

QC Batch: 632714 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60326293001, 60326293002, 60326293003, 60326293004

METHOD BLANK: 2576847 Matrix: Water
Associated Lab Samples: 60326293001, 60326293002, 60326293003, 60326293004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	01/14/20 14:55	

LABORATORY CONTROL SAMPLE: 2576848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	975	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2576849 2576850

Parameter	Units	60326269001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	ND	1000	1000	951	992	93	97	70-130	4	20	

MATRIX SPIKE SAMPLE: 2576851

Parameter	Units	60326111008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	95.2J	1000	1060	97	70-130	

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

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

QC Batch: 632924 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60326293003, 60326293004

METHOD BLANK: 2577333 Matrix: Water
Associated Lab Samples: 60326293003, 60326293004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/14/20 09:13	

LABORATORY CONTROL SAMPLE: 2577334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	985	98	80-120	

SAMPLE DUPLICATE: 2577335

Parameter	Units	60325852002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	888	909	2	10	

SAMPLE DUPLICATE: 2577336

Parameter	Units	60326252008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	964	1000	4	10	

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

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

QC Batch: 632925 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60326293001, 60326293002

METHOD BLANK: 2577337 Matrix: Water
Associated Lab Samples: 60326293001, 60326293002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/14/20 10:06	

LABORATORY CONTROL SAMPLE: 2577338

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

SAMPLE DUPLICATE: 2577339

Parameter	Units	60326112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4840	4600	5	10	

SAMPLE DUPLICATE: 2577340

Parameter	Units	60326248002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	235	230	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.

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

QC Batch: 632967 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60326293001, 60326293002, 60326293003, 60326293004

METHOD BLANK: 2577539 Matrix: Water
Associated Lab Samples: 60326293001, 60326293002, 60326293003, 60326293004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/15/20 13:58	

METHOD BLANK: 2579249 Matrix: Water
Associated Lab Samples: 60326293001, 60326293002, 60326293003, 60326293004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/16/20 14:00	

LABORATORY CONTROL SAMPLE: 2577540

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

LABORATORY CONTROL SAMPLE: 2579250

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2577541 2577542

Parameter	Units	60326375001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.5	5	5	19.6	19.4	103	99	80-120	1	15	

MATRIX SPIKE SAMPLE: 2577543

Parameter	Units	60326293001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.3	5	8.5	103	80-120	

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

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

QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

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.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60326293

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60326293001	**L-LMW-5S**	EPA 200.7	632714	EPA 200.7	632903
60326293002	**L-LCPB-DUP-1**	EPA 200.7	632714	EPA 200.7	632903
60326293003	**L-LMW-4S**	EPA 200.7	632714	EPA 200.7	632903
60326293004	**L-LCPB-FB-1**	EPA 200.7	632714	EPA 200.7	632903
60326293001	**L-LMW-5S**	SM 2540C	632925		
60326293002	**L-LCPB-DUP-1**	SM 2540C	632925		
60326293003	**L-LMW-4S**	SM 2540C	632924		
60326293004	**L-LCPB-FB-1**	SM 2540C	632924		
60326293001	**L-LMW-5S**	EPA 300.0	632967		
60326293002	**L-LCPB-DUP-1**	EPA 300.0	632967		
60326293003	**L-LMW-4S**	EPA 300.0	632967		
60326293004	**L-LCPB-FB-1**	EPA 300.0	632967		

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Sample Condition Upon Receipt

WO# : 60326293

60326293

Client Name: Golder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-299 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.7 **Corr. Factor** 0.2 **Corrected** 1.9

Date and initials of person examining contents: 1/10/20 a

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jami Church 1/10/20

Project Manager Review: _____ Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A
Required Client Information:

Company:	Golder Associates
Address:	13515 Barrett Parkway Drive, 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 B
Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Ryan Feldmann/Eric Schneider
Purchase Order No.:	
Project Name:	Ameren
Project Number:	153140601.0001

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	9285

REGULATORY AGENCY

NPDES · (GROUND WATER — circled) · DRINKING WATER
UST · RCRA · OTHER ______

Site Location STATE: MO

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	200.7 Boron	200.7 Calcium	Chloride	Fluoride	Sulfate	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60326293
1	L-LMW-5S	WT	G			1/8/20	1825		2	1		1							✓		✓			✓		001
2	L-LCPB-DUP-1	WT	G			⊥	—		⊥	⊥		⊥							⊥		⊥			⊥		002
3	L-LMW-4S	WT	G			1/7/20	1130		2	1		1							✓		✓			✓		003
4	L-LCPB-FB-1	WT	G			⊥	1140		⊥	⊥		⊥							⊥		⊥			⊥		004
5		WT	G																							
6		WT	G																							
7		WT	G																							
8		WT	G																							
9		WT	G																							
10		WT	G																							
11		WT	G																							
12		WT	G																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Eric Schneider / Golder	1/9/20	1315	[signature] / PACE	1/9/20	1315				
	[signature] / PACE	1/9/20	1700	[signature]	1/10/20	0834	1.9	✓	✓	✓
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 1/8/2020

MEMORANDUM

DATE January 31, 2020 **Project No.** 153140601

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Tommy Goodwin **EMAIL Tommy_Goodwin@golder.com**

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPB – VERIFICATION SAMPLING - DATA PACKAGE 60326293

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

- None.

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260,
Ballwin, Missouri, USA 63021

T: +1 314 984-8800 F: +1 314 984-8770

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: J Ingram
Project Name: Ameren - Labadie - LCPB
Project Number: 153140601
Reviewer: T Goodwin
Validation Date: 1/31/2020

Laboratory: Pace Analytical - KS
SDG #: 60326293
Analytical Method (type and no.): EPA 200.7 (Metals); SM2540C (Total Dissolved Solids); EPA 300.0 (Anions)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ _____
Sample Names L-LMW-5S, L-LCPB-DUP-1, L-LMW-4S, L-LCPB-FB-1

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			1/7-8/2019
b) Sampling team indicated?	x			
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			
f) Field QC noted?	x			
g) Field parameters collected (note types)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (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?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☒	☐	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☐	☒	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper analytes included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?				See Notes
	☒	☐	☐	
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☐	☒	☐	Unrelated Sample
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind 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?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☐	☒	Unrelated Sample
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☐	☐	☒	Unrelated Sample

Comments/Notes:

DUP-1 @ L-LMW-5S; FB-1 @ L-LMW-4S

Dilution: Chloride was diluted in L-LMW-4S; no qualification is necessary.

Max Field Duplicate RPD: 4% (Limit: 20%)

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
None				

Signature: Tommy J. Goodwin Jr Date: 1/31/2020

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

February 15, 2020

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

RE: Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Dear Jeffrey Ingram:
Enclosed are the analytical results for sample(s) received by the laboratory on February 07, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

REV-1, 2/15/20: Sample IDs updated.

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

Sincerely,

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

Enclosures

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

REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
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 #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60328460001	**L-LMW-8S**	Water	02/06/20 11:15	02/07/20 03:43
60328460002	**L-LMW-6S**	Water	02/06/20 12:45	02/07/20 03:43

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60328460001	**L-LMW-8S**	EPA 300.0	CNB	1	PASI-K
60328460002	**L-LMW-6S**	EPA 300.0	CNB	1	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Sample: L-LMW-8S **Lab ID: 60328460001** Collected: 02/06/20 11:15 Received: 02/07/20 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.26**	mg/L	0.20	0.075	1		02/11/20 21:56	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Sample: L-LMW-6S **Lab ID: 60328460002** Collected: 02/06/20 12:45 Received: 02/07/20 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.23**	mg/L	0.20	0.075	1		02/11/20 22:12	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

QC Batch: 637615 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60328460001, 60328460002

METHOD BLANK: 2593320 Matrix: Water
Associated Lab Samples: 60328460001, 60328460002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	02/11/20 14:32	

METHOD BLANK: 2594541 Matrix: Water
Associated Lab Samples: 60328460001, 60328460002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	02/12/20 17:27	

METHOD BLANK: 2595134 Matrix: Water
Associated Lab Samples: 60328460001, 60328460002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	02/13/20 09:41	

LABORATORY CONTROL SAMPLE: 2593321

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

LABORATORY CONTROL SAMPLE: 2594542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.3	93	90-110	

LABORATORY CONTROL SAMPLE: 2595135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	103	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

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2593322 2593323

Parameter	Units	60328321006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.9	2.9	112	114	80-120	2	15	

MATRIX SPIKE SAMPLE: 2593324

Parameter	Units	60328433003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	250	277	111	80-120	

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 LABADIE ENERGY CTR
Pace Project No.: 60328460

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.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR
Pace Project No.: 60328460

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60328460001	**L-LMW-8S**	EPA 300.0	637615		
60328460002	**L-LMW-6S**	EPA 300.0	637615		

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Sample Condition Upon Receipt

WO# : 60328460

60328460

Client Name: Golder Associates

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T-298 **Type of Ice:** (Wet) Blue None

#5

Cooler Temperature (°C): **As-read** 0.3 **Corr. Factor** +0.1 **Corrected** 0.4

Date and initials of person examining contents: 2.7.20

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix:	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

2/7/20

Project Manager Review: Jami Church Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A — Required Client Information:

Company:	Golder Associates
Address:	13515 Barrett Parkway Drive, 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 B — Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Ryan Feldmann/Eric Schneider
Purchase Order No.:	
Project Name:	Ameren
Project Number:	153140601.0001.00

Section C — Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	9285

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER ____

Site Location STATE: MO

Section D — Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	200.7 Boron	200.7 Calcium	Chloride	Fluoride	Sulfate	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-LMW-85	WT	G			2/6/20	1115		1	X								N				X				60328460
2	L-LMW-65	WT	G			〃	1245		〃	〃								N				〃				
3		WT	G															N								
4		WT	G															N								
5		WT	G															N								
6		WT	G															N								
7		WT	G															N								
8		WT	G															N								
9		WT	G															N								
10		WT	G															N								
11		WT	G															N								
12		WT	G															N								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Eric Schneider / Golder	2/6/20	1430	Angela Marcus	2/6	1435				
	Angela Marcus	2/6/20	1435	N Jane / Pace	2.7.20	0343	0.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	Eric Schneider		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY): 02/06/20				

MEMORANDUM

DATE February 15, 2020 **Project No.** 153140602

TO Project File
Golder Associates

CC Samantha DiCenso, Jeff Ingram

FROM Tommy Goodwin **EMAIL Tommy_Goodwin@golder.com**

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPB – VERIFICATION SAMPLING - DATA PACKAGE 60328460REV1

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

- None.

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260,
Ballwin, Missouri, USA 63021

T: +1 314 984-8800 F: +1 314 984-8770

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: J Ingram
Project Name: Ameren - Labadie - LCPB
Project Number: 153140602
Reviewer: T Goodwin
Validation Date: 2/15/2020

Laboratory: Pace Analytical - KS
SDG #: 60328460rev1
Analytical Method (type and no.): EPA 300.0 (Anions)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ _____
Sample Names L-LMW-8S, L-LMW-6S

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			2/6/2020
b) Sampling team indicated?	x			
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			
f) Field QC noted?	x			
g) Field parameters collected (note types)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (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?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?		x		
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☐	☒	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper analytes included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?				
	☐	☒	☐	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind 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?	☐	☐	☒	Unrelated Sample
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☐	☒	Unrelated Sample
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☐	☐	☒	Unrelated Sample

Comments/Notes:

None.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
None				

Signature: Tommy J. Hood Jr. Date: 2/15/2020

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

May 29, 2020

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

RE: Project: AMEREN LABADIE ENERGY CTR LCPB
Pace Project No.: 60334357

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 15, 2020 and April 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

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

Enclosures

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

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

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

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60334357003	**L-LMW-6S**	Water	04/16/20 14:35	04/17/20 02:25
60334357004	**L-LMW-FB-1**	Water	04/16/20 14:35	04/17/20 02:25
60334357005	**L-LMW-3S**	Water	04/20/20 09:31	04/22/20 02:38
60334357006	**L-LMW-5S**	Water	04/20/20 10:48	04/22/20 02:38
60334357007	**L-LMW-DUP-1**	Water	04/20/20 08:00	04/22/20 02:38
60334356001	**L-LMW-2S**	Water	04/14/20 11:25	04/15/20 02:25
60334356019	**L-LMW-1S**	Water	04/16/20 10:40	04/17/20 02:25
60334356020	**L-LMW-7S**	Water	04/16/20 13:25	04/17/20 02:25
60334356021	**L-LMW-8S**	Water	04/16/20 12:05	04/17/20 02:25
60334356032	**L-LMW-4S**	Water	04/20/20 12:43	04/22/20 02:38
60334356003	**L-BMW-1S**	Water	04/14/20 11:24	04/15/20 02:25
60334356004	**L-BMW-2S**	Water	04/14/20 11:39	04/15/20 02:25

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60334357003	**L-LMW-6S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
60334357004	**L-LMW-FB-1**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
60334357005	**L-LMW-3S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
60334357006	**L-LMW-5S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
60334357007	**L-LMW-DUP-1**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
60334356001	**L-LMW-2S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
60334356019	**L-LMW-1S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60334356020	**L-LMW-7S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60334356021	**L-LMW-8S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60334356032	**L-LMW-4S**	EPA 200.7	JLH	7	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	LDB	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR, MJK	3	PASI-K
60334356003	**L-BMW-1S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
60334356004	**L-BMW-2S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	MJK	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-6S **Lab ID: 60334357003** Collected: 04/16/20 14:35 Received: 04/17/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**1770**	ug/L	100	11.7	1	04/28/20 14:10	04/29/20 16:23	7440-42-8	
Calcium	**169000**	ug/L	200	32.4	1	04/28/20 14:10	04/29/20 16:23	7440-70-2	
Iron	**7670**	ug/L	50.0	26.8	1	04/28/20 14:10	04/29/20 16:23	7439-89-6	
Magnesium	**27700**	ug/L	50.0	19.7	1	04/28/20 14:10	04/29/20 16:23	7439-95-4	
Manganese	**1890**	ug/L	5.0	0.97	1	04/28/20 14:10	04/29/20 16:23	7439-96-5	
Potassium	**5300**	ug/L	500	189	1	04/28/20 14:10	04/29/20 16:23	7440-09-7	
Sodium	**39100**	ug/L	500	107	1	04/28/20 14:10	04/29/20 16:23	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**521**	mg/L	20.0	8.4	1		04/27/20 13:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**642**	mg/L	10.0	10.0	1		04/22/20 12:36		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.7**	mg/L	1.0	0.39	1		04/30/20 19:11	16887-00-6	B
Fluoride	**0.37**	mg/L	0.20	0.075	1		04/30/20 19:11	16984-48-8	
Sulfate	**53.2**	mg/L	5.0	1.4	5		04/30/20 19:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-FB-1 **Lab ID: 60334357004** Collected: 04/16/20 14:35 Received: 04/17/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**<11.7**	ug/L	100	11.7	1	04/28/20 14:10	04/29/20 16:26	7440-42-8	
Calcium	**<32.4**	ug/L	200	32.4	1	04/28/20 14:10	04/29/20 16:26	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	04/28/20 14:10	04/29/20 16:26	7439-89-6	
Magnesium	**<19.7**	ug/L	50.0	19.7	1	04/28/20 14:10	04/29/20 16:26	7439-95-4	
Manganese	**<0.97**	ug/L	5.0	0.97	1	04/28/20 14:10	04/29/20 16:26	7439-96-5	
Potassium	**<189**	ug/L	500	189	1	04/28/20 14:10	04/29/20 16:26	7440-09-7	
Sodium	**<107**	ug/L	500	107	1	04/28/20 14:10	04/29/20 16:26	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<8.4**	mg/L	20.0	8.4	1		04/27/20 13:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		04/22/20 12:36		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.39**	mg/L	1.0	0.39	1		04/30/20 19:44	16887-00-6	
Fluoride	**<0.075**	mg/L	0.20	0.075	1		04/30/20 19:44	16984-48-8	
Sulfate	**<0.28**	mg/L	1.0	0.28	1		04/30/20 19:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-3S **Lab ID: 60334357005** Collected: 04/20/20 09:31 Received: 04/22/20 02:38 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3980**	ug/L	100	11.7	1	04/28/20 14:10	04/29/20 16:47	7440-42-8	
Calcium	**149000**	ug/L	200	32.4	1	04/28/20 14:10	04/29/20 16:47	7440-70-2	
Iron	**13300**	ug/L	50.0	26.8	1	04/28/20 14:10	04/29/20 16:47	7439-89-6	
Magnesium	**16400**	ug/L	50.0	19.7	1	04/28/20 14:10	04/29/20 16:47	7439-95-4	
Manganese	**1200**	ug/L	5.0	0.97	1	04/28/20 14:10	04/29/20 16:47	7439-96-5	
Potassium	**9370**	ug/L	500	189	1	04/28/20 14:10	04/29/20 16:47	7440-09-7	
Sodium	**123000**	ug/L	500	107	1	04/28/20 14:10	04/29/20 16:47	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**502**	mg/L	20.0	8.4	1		04/28/20 10:26		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**788**	mg/L	13.3	13.3	1		04/23/20 15:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**27.8**	mg/L	5.0	1.9	5		05/01/20 01:15	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.075	1		05/01/20 00:59	16984-48-8	
Sulfate	**154**	mg/L	20.0	5.6	20		05/01/20 01:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-5S **Lab ID: 60334357006** Collected: 04/20/20 10:48 Received: 04/22/20 02:38 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**54.9J**	ug/L	100	11.7	1	04/28/20 14:10	04/29/20 16:49	7440-42-8	
Calcium	**121000**	ug/L	200	32.4	1	04/28/20 14:10	04/29/20 16:49	7440-70-2	
Iron	**71.6**	ug/L	50.0	26.8	1	04/28/20 14:10	04/29/20 16:49	7439-89-6	
Magnesium	**13400**	ug/L	50.0	19.7	1	04/28/20 14:10	04/29/20 16:49	7439-95-4	
Manganese	**23.5**	ug/L	5.0	0.97	1	04/28/20 14:10	04/29/20 16:49	7439-96-5	
Potassium	**2920**	ug/L	500	189	1	04/28/20 14:10	04/30/20 12:44	7440-09-7	
Sodium	**5560**	ug/L	500	107	1	04/28/20 14:10	04/29/20 16:49	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**336**	mg/L	20.0	8.4	1		04/28/20 10:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**373**	mg/L	10.0	10.0	1		04/23/20 15:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.5**	mg/L	1.0	0.39	1		05/01/20 01:48	16887-00-6	B
Fluoride	**0.24**	mg/L	0.20	0.075	1		05/01/20 01:48	16984-48-8	
Sulfate	**14.0**	mg/L	1.0	0.28	1		05/01/20 01:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-DUP-1 **Lab ID: 60334357007** Collected: 04/20/20 08:00 Received: 04/22/20 02:38 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**49.9J**	ug/L	100	11.7	1	04/28/20 14:10	04/29/20 16:51	7440-42-8	
Calcium	**122000**	ug/L	200	32.4	1	04/28/20 14:10	04/29/20 16:51	7440-70-2	
Iron	**82.3**	ug/L	50.0	26.8	1	04/28/20 14:10	04/29/20 16:51	7439-89-6	
Magnesium	**13400**	ug/L	50.0	19.7	1	04/28/20 14:10	04/29/20 16:51	7439-95-4	
Manganese	**26.2**	ug/L	5.0	0.97	1	04/28/20 14:10	04/29/20 16:51	7439-96-5	
Potassium	**2910**	ug/L	500	189	1	04/28/20 14:10	04/30/20 12:46	7440-09-7	
Sodium	**5610**	ug/L	500	107	1	04/28/20 14:10	04/29/20 16:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**334**	mg/L	20.0	8.4	1		04/28/20 10:37		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**355**	mg/L	10.0	10.0	1		04/23/20 15:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.4**	mg/L	1.0	0.39	1		05/01/20 02:22	16887-00-6	B
Fluoride	**0.24**	mg/L	0.20	0.075	1		05/01/20 02:22	16984-48-8	
Sulfate	**13.9**	mg/L	1.0	0.28	1		05/01/20 02:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-2S **Lab ID: 60334356001** Collected: 04/14/20 11:25 Received: 04/15/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3340**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 18:00	7440-42-8	
Calcium	**52100**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 18:00	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 18:00	7439-89-6	
Magnesium	**94.0**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 18:00	7439-95-4	
Manganese	**1.4J**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 18:00	7439-96-5	
Potassium	**8270**	ug/L	500	189	1	04/23/20 16:10	04/24/20 18:00	7440-09-7	
Sodium	**59000**	ug/L	500	107	1	04/23/20 16:10	04/24/20 18:00	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**29.8**	mg/L	20.0	8.4	1		04/23/20 12:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**386**	mg/L	5.0	5.0	1		04/20/20 11:44		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**19.2**	mg/L	2.0	0.78	2		04/21/20 23:08	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.075	1		04/21/20 22:52	16984-48-8	
Sulfate	**195**	mg/L	20.0	5.6	20		04/20/20 17:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-1S **Lab ID: 60334356019** Collected: 04/16/20 10:40 Received: 04/17/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**5910**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 19:03	7440-42-8	
Calcium	**211000**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 19:03	7440-70-2	
Iron	**8640**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 19:03	7439-89-6	
Magnesium	**38100**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 19:03	7439-95-4	
Manganese	**1660**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 19:03	7439-96-5	
Potassium	**5650**	ug/L	500	189	1	04/23/20 16:10	04/24/20 19:03	7440-09-7	
Sodium	**25000**	ug/L	500	107	1	04/23/20 16:10	04/24/20 19:03	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**422**	mg/L	20.0	8.4	1		04/27/20 12:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**942**	mg/L	10.0	10.0	1		04/22/20 12:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.0**	mg/L	1.0	0.39	1		04/25/20 18:48	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.075	1		04/25/20 18:48	16984-48-8	
Sulfate	**293**	mg/L	20.0	5.6	20		04/25/20 19:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-7S **Lab ID: 60334356020** Collected: 04/16/20 13:25 Received: 04/17/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**6460**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 19:14	7440-42-8	
Calcium	**198000**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 19:14	7440-70-2	
Iron	**6110**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 19:14	7439-89-6	
Magnesium	**44200**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 19:14	7439-95-4	
Manganese	**1980**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 19:14	7439-96-5	
Potassium	**6630**	ug/L	500	189	1	04/23/20 16:10	04/24/20 19:14	7440-09-7	
Sodium	**42500**	ug/L	500	107	1	04/23/20 16:10	04/24/20 19:14	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**487**	mg/L	20.0	8.4	1		04/27/20 12:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**839**	mg/L	10.0	10.0	1		04/22/20 12:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**14.8**	mg/L	1.0	0.39	1		04/25/20 19:20	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.075	1		04/25/20 19:20	16984-48-8	
Sulfate	**195**	mg/L	10.0	2.8	10		04/25/20 19:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-8S **Lab ID: 60334356021** Collected: 04/16/20 12:05 Received: 04/17/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**7720**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 19:16	7440-42-8	
Calcium	**222000**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 19:16	7440-70-2	
Iron	**12100**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 19:16	7439-89-6	
Magnesium	**41000**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 19:16	7439-95-4	
Manganese	**2260**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 19:16	7439-96-5	
Potassium	**7850**	ug/L	500	189	1	04/23/20 16:10	04/24/20 19:16	7440-09-7	
Sodium	**89400**	ug/L	500	107	1	04/23/20 16:10	04/24/20 19:16	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**248**	mg/L	20.0	8.4	1		04/27/20 12:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1200**	mg/L	10.0	10.0	1		04/22/20 12:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**18.9**	mg/L	1.0	0.39	1		04/25/20 19:52	16887-00-6	
Fluoride	**0.41**	mg/L	0.20	0.075	1		04/25/20 19:52	16984-48-8	
Sulfate	**633**	mg/L	50.0	13.9	50		04/25/20 20:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-LMW-4S **Lab ID: 60334356032** Collected: 04/20/20 12:43 Received: 04/22/20 02:38 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3390**	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 17:32	7440-42-8	
Calcium	**178000**	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 17:32	7440-70-2	
Iron	**4660**	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 17:32	7439-89-6	
Magnesium	**31400**	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 17:32	7439-95-4	
Manganese	**1180**	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 17:32	7439-96-5	
Potassium	**6540**	ug/L	500	189	1	04/29/20 13:20	04/30/20 17:32	7440-09-7	
Sodium	**71900**	ug/L	500	107	1	04/29/20 13:20	04/30/20 17:32	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**534**	mg/L	20.0	8.4	1		04/28/20 10:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**767**	mg/L	10.0	10.0	1		04/24/20 14:44		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**38.5**	mg/L	10.0	3.9	10		05/11/20 14:51	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.075	1		05/08/20 13:16	16984-48-8	
Sulfate	**99.9**	mg/L	10.0	2.8	10		05/11/20 14:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-BMW-1S **Lab ID: 60334356003** Collected: 04/14/20 11:24 Received: 04/15/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**95.2J**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 18:04	7440-42-8	
Calcium	**212000**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 18:04	7440-70-2	
Iron	**27900**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 18:04	7439-89-6	
Magnesium	**47100**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 18:04	7439-95-4	
Manganese	**2730**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 18:04	7439-96-5	
Potassium	**5180**	ug/L	500	189	1	04/23/20 16:10	04/24/20 18:04	7440-09-7	
Sodium	**15000**	ug/L	500	107	1	04/23/20 16:10	04/24/20 18:04	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**674**	mg/L	20.0	8.4	1		04/23/20 13:07		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**711**	mg/L	10.0	10.0	1		04/20/20 11:44		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.7**	mg/L	1.0	0.39	1		04/21/20 23:39	16887-00-6	B
Fluoride	**0.16J**	mg/L	0.20	0.075	1		04/21/20 23:39	16984-48-8	
Sulfate	**38.5**	mg/L	5.0	1.4	5		04/20/20 18:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Sample: L-BMW-2S **Lab ID: 60334356004** Collected: 04/14/20 11:39 Received: 04/15/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**51.0J**	ug/L	100	11.7	1	04/23/20 16:10	04/24/20 18:06	7440-42-8	
Calcium	**137000**	ug/L	200	32.4	1	04/23/20 16:10	04/24/20 18:06	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	04/23/20 16:10	04/24/20 18:06	7439-89-6	
Magnesium	**20400**	ug/L	50.0	19.7	1	04/23/20 16:10	04/24/20 18:06	7439-95-4	
Manganese	**<0.97**	ug/L	5.0	0.97	1	04/23/20 16:10	04/24/20 18:06	7439-96-5	
Potassium	**6800**	ug/L	500	189	1	04/23/20 16:10	04/24/20 18:06	7440-09-7	
Sodium	**7920**	ug/L	500	107	1	04/23/20 16:10	04/24/20 18:06	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**301**	mg/L	20.0	8.4	1		04/22/20 17:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**555**	mg/L	10.0	10.0	1		04/20/20 11:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**4.0**	mg/L	1.0	0.39	1		04/21/20 23:55	16887-00-6	B
Fluoride	**0.14J**	mg/L	0.20	0.075	1		04/21/20 23:55	16984-48-8	
Sulfate	**45.5**	mg/L	5.0	1.4	5		04/20/20 18:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650987
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356001, 60334356003, 60334356004

METHOD BLANK: 2641577 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	04/24/20 17:56	
Calcium	ug/L	<32.4	200	32.4	04/24/20 17:56	
Iron	ug/L	<26.8	50.0	26.8	04/24/20 17:56	
Magnesium	ug/L	<19.7	50.0	19.7	04/24/20 17:56	
Manganese	ug/L	<0.97	5.0	0.97	04/24/20 17:56	
Potassium	ug/L	<189	500	189	04/24/20 17:56	
Sodium	ug/L	<107	500	107	04/24/20 17:56	

LABORATORY CONTROL SAMPLE: 2641578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Iron	ug/L	10000	10200	102	85-115	
Magnesium	ug/L	10000	11000	110	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9870	99	85-115	
Sodium	ug/L	10000	10000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641579 2641580

Parameter	Units	60334356007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	11000	1000	1000	11600	11800	60	72	70-130	1	20	M1
Calcium	ug/L	82900	10000	10000	91700	93200	88	103	70-130	2	20	
Iron	ug/L	4720	10000	10000	14600	14700	99	100	70-130	0	20	
Magnesium	ug/L	20600	10000	10000	30300	30600	96	100	70-130	1	20	
Manganese	ug/L	212	1000	1000	1220	1210	101	100	70-130	1	20	
Potassium	ug/L	6200	10000	10000	16000	16200	98	100	70-130	1	20	
Sodium	ug/L	73500	10000	10000	81900	82800	84	94	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641581 2641582

Parameter	Units	60334356010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	74.5J	1000	1000	1120	1100	104	103	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641581 2641582

Parameter	Units	60334356010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	139000	10000	10000	151000	150000	120	109	70-130	1	20	
Iron	ug/L	8850	10000	10000	18900	18700	101	99	70-130	1	20	
Magnesium	ug/L	36400	10000	10000	47200	46900	108	105	70-130	1	20	
Manganese	ug/L	276	1000	1000	1300	1280	102	101	70-130	1	20	
Potassium	ug/L	4080	10000	10000	14200	13900	101	99	70-130	2	20	
Sodium	ug/L	11700	10000	10000	21900	21700	102	100	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650989
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356019, 60334356020, 60334356021

METHOD BLANK: 2641586 Matrix: Water
Associated Lab Samples: 60334356019, 60334356020, 60334356021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	04/24/20 18:46	
Calcium	ug/L	<32.4	200	32.4	04/24/20 18:46	
Iron	ug/L	<26.8	50.0	26.8	04/24/20 18:46	
Magnesium	ug/L	<19.7	50.0	19.7	04/24/20 18:46	
Manganese	ug/L	<0.97	5.0	0.97	04/24/20 18:46	
Potassium	ug/L	<189	500	189	04/24/20 18:46	
Sodium	ug/L	<107	500	107	04/24/20 18:46	

LABORATORY CONTROL SAMPLE: 2641587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Iron	ug/L	10000	10100	101	85-115	
Magnesium	ug/L	10000	10700	107	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	9850	99	85-115	
Sodium	ug/L	10000	9960	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641588 2641589

Parameter	Units	60334356016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	10200	1000	1000	11200	11500	99	127	70-130	2	20	
Calcium	ug/L	72400	10000	10000	82000	83000	95	106	70-130	1	20	
Iron	ug/L	3820	10000	10000	13900	13900	101	101	70-130	0	20	
Magnesium	ug/L	16200	10000	10000	26200	27000	100	108	70-130	3	20	
Manganese	ug/L	192	1000	1000	1200	1220	101	103	70-130	2	20	
Potassium	ug/L	5890	10000	10000	15900	16000	100	101	70-130	1	20	
Sodium	ug/L	83000	10000	10000	92100	93100	91	100	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651685
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334357003, 60334357004, 60334357005, 60334357006, 60334357007

METHOD BLANK: 2643997 Matrix: Water
Associated Lab Samples: 60334357003, 60334357004, 60334357005, 60334357006, 60334357007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	04/29/20 16:15	
Calcium	ug/L	<32.4	200	32.4	04/29/20 16:15	
Iron	ug/L	<26.8	50.0	26.8	04/29/20 16:15	
Magnesium	ug/L	<19.7	50.0	19.7	04/29/20 16:15	
Manganese	ug/L	<0.97	5.0	0.97	04/29/20 16:15	
Potassium	ug/L	<189	500	189	04/29/20 16:15	
Sodium	ug/L	<107	500	107	04/29/20 16:15	

LABORATORY CONTROL SAMPLE: 2643998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	85-115	
Calcium	ug/L	10000	10800	108	85-115	
Iron	ug/L	10000	10600	106	85-115	
Magnesium	ug/L	10000	11100	111	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	10700	107	85-115	
Sodium	ug/L	10000	10600	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2643999 2644000

Parameter	Units	60334358004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	86.8J	1000	1000	1050	1040	96	96	70-130	0	20	
Calcium	ug/L	169000	10000	10000	182000	180000	137	114	70-130	1	20	M1
Iron	ug/L	206	10000	10000	10500	10300	103	101	70-130	1	20	
Magnesium	ug/L	44300	10000	10000	54800	55300	105	111	70-130	1	20	
Manganese	ug/L	5360	1000	1000	6310	6350	95	99	70-130	1	20	
Potassium	ug/L	5100	10000	10000	15700	15500	106	104	70-130	1	20	
Sodium	ug/L	12600	10000	10000	23100	22800	105	103	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651904
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60334356032

METHOD BLANK: 2644803 Matrix: Water
Associated Lab Samples: 60334356032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	12.8J	100	11.7	04/30/20 17:09	
Calcium	ug/L	<32.4	200	32.4	04/30/20 17:09	
Iron	ug/L	<26.8	50.0	26.8	04/30/20 17:09	
Magnesium	ug/L	<19.7	50.0	19.7	04/30/20 17:09	
Manganese	ug/L	<0.97	5.0	0.97	04/30/20 17:09	
Potassium	ug/L	<189	500	189	04/30/20 17:09	
Sodium	ug/L	<107	500	107	04/30/20 17:09	

LABORATORY CONTROL SAMPLE: 2644804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	999	100	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Iron	ug/L	10000	9930	99	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9960	100	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2644805 2644806

Parameter	Units	60334356027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	7780	1000	1000	8480	8340	69	56	70-130	2	20	M1
Calcium	ug/L	95600	10000	10000	102000	103000	62	74	70-130	1	20	M1
Iron	ug/L	4560	10000	10000	14200	14600	97	100	70-130	3	20	
Magnesium	ug/L	15300	10000	10000	24400	24800	91	95	70-130	2	20	
Manganese	ug/L	266	1000	1000	1260	1280	100	102	70-130	2	20	
Potassium	ug/L	8110	10000	10000	18000	18200	98	101	70-130	2	20	
Sodium	ug/L	117000	10000	10000	124000	123000	68	64	70-130	0	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650660
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356004

METHOD BLANK: 2640387 Matrix: Water
Associated Lab Samples: 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	04/22/20 17:19	

LABORATORY CONTROL SAMPLE: 2640388

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

SAMPLE DUPLICATE: 2640389

Parameter	Units	60334977003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	152	154	1	10	

SAMPLE DUPLICATE: 2640390

Parameter	Units	60334689003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	515	546	6	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650869
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356001, 60334356003

METHOD BLANK: 2641105 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	04/23/20 11:43	

LABORATORY CONTROL SAMPLE: 2641106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	455	91	90-110	

SAMPLE DUPLICATE: 2641107

Parameter	Units	60334355001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	218	228	5	10	

SAMPLE DUPLICATE: 2641108

Parameter	Units	60334356007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	168	172	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651355 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356019, 60334356020, 60334356021, 60334357003, 60334357004

METHOD BLANK: 2643077 Matrix: Water
Associated Lab Samples: 60334356019, 60334356020, 60334356021, 60334357003, 60334357004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	04/27/20 11:43	

LABORATORY CONTROL SAMPLE: 2643078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	494	99	90-110	

SAMPLE DUPLICATE: 2643079

Parameter	Units	60335265001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	269	260	3	10	

SAMPLE DUPLICATE: 2643080

Parameter	Units	60334355014 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	460	476	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651437 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356032, 60334357005, 60334357006, 60334357007

METHOD BLANK: 2643271 Matrix: Water
Associated Lab Samples: 60334356032, 60334357005, 60334357006, 60334357007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	04/28/20 08:58	

LABORATORY CONTROL SAMPLE: 2643272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	495	99	90-110	

SAMPLE DUPLICATE: 2643273

Parameter	Units	60334997006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	95.3	91.7	4	10	

SAMPLE DUPLICATE: 2643274

Parameter	Units	60334356032 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	534	532	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650056
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356001, 60334356003, 60334356004

METHOD BLANK: 2638189 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/20/20 11:43	

LABORATORY CONTROL SAMPLE: 2638190

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	955	96	80-120	

SAMPLE DUPLICATE: 2638191

Parameter	Units	60334355006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10.0	12.0	18	10	D6

SAMPLE DUPLICATE: 2638192

Parameter	Units	60334359008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	715	752	5	10	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650572 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356019, 60334356020, 60334356021, 60334357003, 60334357004

METHOD BLANK: 2639958 Matrix: Water
Associated Lab Samples: 60334356019, 60334356020, 60334356021, 60334357003, 60334357004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/22/20 12:34	

LABORATORY CONTROL SAMPLE: 2639959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	984	98	80-120	

SAMPLE DUPLICATE: 2639960

Parameter	Units	60334356018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<5.0	15.0		10	

SAMPLE DUPLICATE: 2639961

Parameter	Units	60334355014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	469	463	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650766
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334357005, 60334357006, 60334357007

METHOD BLANK: 2640735 Matrix: Water
Associated Lab Samples: 60334357005, 60334357006, 60334357007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/23/20 15:36	

LABORATORY CONTROL SAMPLE: 2640736

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

SAMPLE DUPLICATE: 2640737

Parameter	Units	60334665002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	754	740	2	10	

SAMPLE DUPLICATE: 2640738

Parameter	Units	60334857003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5230	5740	9	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651085
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356032

METHOD BLANK: 2641960 Matrix: Water
Associated Lab Samples: 60334356032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/24/20 14:42	

LABORATORY CONTROL SAMPLE: 2641961

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	977	98	80-120	

SAMPLE DUPLICATE: 2641962

Parameter	Units	60334674001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4660	4530			H5

SAMPLE DUPLICATE: 2641963

Parameter	Units	60334997006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5090	5610	10	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 650170
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356001, 60334356003, 60334356004

METHOD BLANK: 2638395 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/20/20 10:38	
Fluoride	mg/L	<0.075	0.20	0.075	04/20/20 10:38	
Sulfate	mg/L	<0.28	1.0	0.28	04/20/20 10:38	

METHOD BLANK: 2638926 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.44J	1.0	0.39	04/16/20 09:12	
Fluoride	mg/L	<0.075	0.20	0.075	04/16/20 09:12	
Sulfate	mg/L	<0.28	1.0	0.28	04/16/20 09:12	

METHOD BLANK: 2639261 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/21/20 16:31	
Fluoride	mg/L	<0.075	0.20	0.075	04/21/20 16:31	
Sulfate	mg/L	<0.28	1.0	0.28	04/21/20 16:31	

METHOD BLANK: 2639859 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/22/20 12:52	
Fluoride	mg/L	<0.075	0.20	0.075	04/22/20 12:52	
Sulfate	mg/L	<0.28	1.0	0.28	04/22/20 12:52	

METHOD BLANK: 2641399 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/23/20 08:10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

METHOD BLANK: 2641399 Matrix: Water
Associated Lab Samples: 60334356001, 60334356003, 60334356004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	04/23/20 08:10	
Sulfate	mg/L	<0.28	1.0	0.28	04/23/20 08:10	

LABORATORY CONTROL SAMPLE: 2638396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

LABORATORY CONTROL SAMPLE: 2638927

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

LABORATORY CONTROL SAMPLE: 2639262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2639860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.3	91	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

LABORATORY CONTROL SAMPLE: 2641400

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

MATRIX SPIKE SAMPLE: 2638397

Parameter	Units	60334355007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	19.1	10	30.3	112	80-120	
Fluoride	mg/L	0.18J	2.5	2.7	102	80-120	
Sulfate	mg/L	222	100	325	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2638398 2638399

Parameter	Units	60334434003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	63.0	25	25	81.8	81.9	75	75	80-120	0	15	M1
Fluoride	mg/L	0.33	2.5	2.5	3.0	3.0	106	107	80-120	0	15	
Sulfate	mg/L	ND	5	5	5.3	5.3	101	101	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 651213
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356019, 60334356020, 60334356021

METHOD BLANK: 2642478 Matrix: Water
Associated Lab Samples: 60334356019, 60334356020, 60334356021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.51J	1.0	0.39	04/25/20 09:21	
Fluoride	mg/L	<0.075	0.20	0.075	04/25/20 09:21	
Sulfate	mg/L	<0.28	1.0	0.28	04/25/20 09:21	

METHOD BLANK: 2643227 Matrix: Water
Associated Lab Samples: 60334356019, 60334356020, 60334356021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/27/20 09:42	
Fluoride	mg/L	<0.075	0.20	0.075	04/27/20 09:42	
Sulfate	mg/L	<0.28	1.0	0.28	04/27/20 09:42	

LABORATORY CONTROL SAMPLE: 2642479

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

LABORATORY CONTROL SAMPLE: 2643228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2642480 2642481

Parameter	Units	60334355014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.4	10	10	33.9	33.8	115	114	80-120	0	15	
Fluoride	mg/L	0.20	2.5	2.5	2.9	2.9	109	109	80-120	1	15	
Sulfate	mg/L	<0.28	5	5	5.3	5.2	102	101	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2642482 2642483

Parameter	Units	60334356007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	19.0	10	10	30.2	29.6	112	107	80-120	2	15	
Fluoride	mg/L	0.32	2.5	2.5	3.1	3.1	110	110	80-120	0	15	
Sulfate	mg/L	245	250	250	488	491	97	99	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2642484 2642485

Parameter	Units	60334356010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.2	5	5	9.1	9.2	97	98	80-120	1	15	
Fluoride	mg/L	0.22	2.5	2.5	3.0	3.0	110	111	80-120	1	15	
Sulfate	mg/L	14.1	5	5	19.5	19.5	107	107	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 652203
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334357003, 60334357004, 60334357005, 60334357006, 60334357007

METHOD BLANK: 2645879 Matrix: Water
Associated Lab Samples: 60334357003, 60334357004, 60334357005, 60334357006, 60334357007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/30/20 14:29	
Fluoride	mg/L	<0.075	0.20	0.075	04/30/20 14:29	
Sulfate	mg/L	<0.28	1.0	0.28	04/30/20 14:29	

METHOD BLANK: 2646385 Matrix: Water
Associated Lab Samples: 60334357003, 60334357004, 60334357005, 60334357006, 60334357007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.44J	1.0	0.39	05/01/20 23:49	
Fluoride	mg/L	<0.075	0.20	0.075	05/01/20 23:49	
Sulfate	mg/L	<0.28	1.0	0.28	05/01/20 23:49	

LABORATORY CONTROL SAMPLE: 2645880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2646386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2645881 2645882

Parameter	Units	60334358004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.8	5	5	8.7	8.9	99	102	80-120	2	15	
Fluoride	mg/L	0.27	2.5	2.5	2.9	3.0	105	107	80-120	2	15	
Sulfate	mg/L	94.6	25	25	122	121	110	107	80-120	1	15	E

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

MATRIX SPIKE SAMPLE: 2645883

Parameter	Units	60334358007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	<0.39	5	4.9	93	80-120	
Fluoride	mg/L	<0.075	2.5	2.7	108	80-120	
Sulfate	mg/L	<0.28	5	5.4	107	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

QC Batch: 653569
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60334356032

METHOD BLANK: 2651339 Matrix: Water
Associated Lab Samples: 60334356032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/08/20 09:30	
Fluoride	mg/L	<0.075	0.20	0.075	05/08/20 09:30	
Sulfate	mg/L	<0.28	1.0	0.28	05/08/20 09:30	

METHOD BLANK: 2652710 Matrix: Water
Associated Lab Samples: 60334356032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/11/20 09:21	
Fluoride	mg/L	<0.075	0.20	0.075	05/11/20 09:21	
Sulfate	mg/L	<0.28	1.0	0.28	05/11/20 09:21	

METHOD BLANK: 2653309 Matrix: Water
Associated Lab Samples: 60334356032

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/12/20 09:16	
Fluoride	mg/L	<0.075	0.20	0.075	05/12/20 09:16	
Sulfate	mg/L	<0.28	1.0	0.28	05/12/20 09:16	

LABORATORY CONTROL SAMPLE: 2651340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 2652711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	94	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

LABORATORY CONTROL SAMPLE: 2653310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651341 2651342

Parameter	Units	60335360003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.5	5	5	6.0	6.1	89	92	80-120	2	15	
Fluoride	mg/L	0.40	2.5	2.5	2.9	2.9	99	100	80-120	2	15	
Sulfate	mg/L	33.8	25	25	58.2	58.1	98	97	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651343 2651344

Parameter	Units	60335359004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.2	5	5	10.1	10.2	98	99	80-120	1	15	
Fluoride	mg/L	0.28	2.5	2.5	2.7	2.8	98	99	80-120	1	15	
Sulfate	mg/L	58.3	25	25	83.0	82.3	99	96	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

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.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60334356001	**L-LMW-2S**	EPA 200.7	650987	EPA 200.7	651023
60334356003	**L-BMW-1S**	EPA 200.7	650987	EPA 200.7	651023
60334356004	**L-BMW-2S**	EPA 200.7	650987	EPA 200.7	651023
60334357003	**L-LMW-6S**	EPA 200.7	651685	EPA 200.7	651717
60334357004	**L-LMW-FB-1**	EPA 200.7	651685	EPA 200.7	651717
60334356019	**L-LMW-1S**	EPA 200.7	650989	EPA 200.7	651024
60334356020	**L-LMW-7S**	EPA 200.7	650989	EPA 200.7	651024
60334356021	**L-LMW-8S**	EPA 200.7	650989	EPA 200.7	651024
60334356032	**L-LMW-4S**	EPA 200.7	651904	EPA 200.7	651985
60334357005	**L-LMW-3S**	EPA 200.7	651685	EPA 200.7	651717
60334357006	**L-LMW-5S**	EPA 200.7	651685	EPA 200.7	651717
60334357007	**L-LMW-DUP-1**	EPA 200.7	651685	EPA 200.7	651717
60334356001	**L-LMW-2S**	SM 2320B	650869		
60334356003	**L-BMW-1S**	SM 2320B	650869		
60334356004	**L-BMW-2S**	SM 2320B	650660		
60334357003	**L-LMW-6S**	SM 2320B	651355		
60334357004	**L-LMW-FB-1**	SM 2320B	651355		
60334356019	**L-LMW-1S**	SM 2320B	651355		
60334356020	**L-LMW-7S**	SM 2320B	651355		
60334356021	**L-LMW-8S**	SM 2320B	651355		
60334356032	**L-LMW-4S**	SM 2320B	651437		
60334357005	**L-LMW-3S**	SM 2320B	651437		
60334357006	**L-LMW-5S**	SM 2320B	651437		
60334357007	**L-LMW-DUP-1**	SM 2320B	651437		
60334356001	**L-LMW-2S**	SM 2540C	650056		
60334356003	**L-BMW-1S**	SM 2540C	650056		
60334356004	**L-BMW-2S**	SM 2540C	650056		
60334357003	**L-LMW-6S**	SM 2540C	650572		
60334357004	**L-LMW-FB-1**	SM 2540C	650572		
60334356019	**L-LMW-1S**	SM 2540C	650572		
60334356020	**L-LMW-7S**	SM 2540C	650572		
60334356021	**L-LMW-8S**	SM 2540C	650572		
60334356032	**L-LMW-4S**	SM 2540C	651085		
60334357005	**L-LMW-3S**	SM 2540C	650766		
60334357006	**L-LMW-5S**	SM 2540C	650766		
60334357007	**L-LMW-DUP-1**	SM 2540C	650766		
60334356001	**L-LMW-2S**	EPA 300.0	650170		
60334356003	**L-BMW-1S**	EPA 300.0	650170		
60334356004	**L-BMW-2S**	EPA 300.0	650170		
60334357003	**L-LMW-6S**	EPA 300.0	652203		
60334357004	**L-LMW-FB-1**	EPA 300.0	652203		

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR LCL1
Pace Project No.: 60334357

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60334356019	**L-LMW-1S**	EPA 300.0	651213		
60334356020	**L-LMW-7S**	EPA 300.0	651213		
60334356021	**L-LMW-8S**	EPA 300.0	651213		
60334356032	**L-LMW-4S**	EPA 300.0	653569		
60334357005	**L-LMW-3S**	EPA 300.0	652203		
60334357006	**L-LMW-5S**	EPA 300.0	652203		
60334357007	**L-LMW-DUP-1**	EPA 300.0	652203		

Pace Analytical

Sample Condition Upon Receipt

WO# : 60334357

60334357

Client Name: Colder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ cyle

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.5 Corr. Factor +0.1 Corrected 0.6

Date and initials of person examining contents: 4.15.2020 JC

Temperature should be above freezing to 6°C 16.1 16.2

Chain of Custody present:	☒Yes ☐No ☐N/A	cooler with 16.2 temp
Chain of Custody relinquished	☒Yes ☐No ☐N/A	Rad only Radium
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	Fe +2
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	Did not receive sample for
Containers intact:	☒Yes ☐No ☐N/A	this COC
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot #'s 603173, 607222	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution _____

Jami Church 4/15/20

Project Manager Review: _____ Date _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Dr., Ste 260	Copy To:	Eric Schnieder, Ryan Feldman	Company Name:	Golder Associates Inc
	Ballwin, MO 63021			Address:	
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	COC #3	Pace Quote Reference:	
Phone:	636-724-9191 Fax: 636-724-9323	Project Name:	Ameren Labadie Energy Center LCPB	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153140602.0001B	Pace Profile #:	9285, line 3

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	Chloride/Fluoride/Sulfate N	App III and Cat/An Metals N	Alkalinity N	TDS N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~L-LMW-MS-1~~ L-BMW-1S	WT	G			4/14/20	1124		2	1		1							X	X	X	X		60334357
2	L-LMW-MSD-1 L-BMW-2S	WT	G			1	1239		1	1		1							1	1	1	1		
3		WT	G																					
4		WT	G																					
5		WT	G																					
6		WT	G																					
7		WT	G																					
8		WT	G																					
9		WT	G																					
10		WT	G																					
11		WT	G																					
12		WT	G																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
"App III and Cat/An Metals" - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B	Golder	4/14/20	1700	Rcipt	4.15.20	0225	0.6	Y	Y	Y
							16.2	N	L	U

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 04/14/20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60334357

60334357

Client Name: Golder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zip/C

Thermometer Used: T298 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 16.1 Corr. Factor +0.1 Corrected 16.2 1.1

Date and initials of person examining contents: 4-17-2020 MK

Temperature should be above freezing to 6°C 1.0

Chain of Custody present:	☒Yes ☐No ☐N/A	Cooler out of temp had only Radium
Chain of Custody relinquished	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	Fe+2
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot #603173, 603222	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jami Church 4/17/20 Date

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

Company: 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 B
Required Project Information:

Report To: Jeffrey Ingram
Copy To: Eric Schnieder, Ryan Feldman
Purchase Order No.: COC #3
Project Name: Ameren Labadie Energy Center LCPB
Project Number: 153140602.0001B

Section C
Invoice Information:

Attention:
Company Name: Golder Associates Inc
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #: 9285, line 3

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: MO

Section D
Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Chloride/Fluoride/Sulfate N; App III and Cat/An Metals N; Alkalinity N; TDS N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-LMW-1S	WT	G			4/16/20	1040		2	1		1							X	X	X	X		6035435 7
2	L-LMW-2S	WT	G																					
3	L-LMW-3S	WT	G																					
4	L-LMW-4S	WT	G																					
5	L-LMW-5S	WT	G																					
6	L-LMW-6S	WT	G			4/16/20	1435		2	1		1							X	X	X	X		
7	L-LMW-7S	WT	G				1325		2	1		1							X	X	X	X		
8	L-LMW-8S	WT	G				1205		2	1		1							X	X	X	X		
9	L-BMW-1S	WT	G																					
10	L-BMW-2S	WT	G																					
11	L-LMW-DUP-1	WT	G																					
12	L-LMW-FB-1	WT	G			4/16/20	1435		2	1		1							X	X	X	X		

ADDITIONAL COMMENTS

"App III and Cat/An Metals" - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Brendan Talbert	4-16-20	1650	Angela McManus	4-16-20	1655				
Angela McManus	4-16-20	1655	A. ... / Pace	4-17-20	0225	16.2	N	N	Y
						1.1	Y	↓	↓

SAMPLE NAME AND SIGNATURE

PRINT Name of SAMPLER: Brendan Talbert
SIGNATURE of SAMPLER: B. Talbert
DATE Signed (MM/DD/YY): 4-16-2020

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

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

Pace Analytical

Sample Condition Upon Receipt

WO# : 60334357

60334357

Client Name: Golder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Ziplock

Thermometer Used: T298 Type of Ice (Wet) Blue None

Cooler Temperature (°C): As-read 1.4 Corr. Factor +0.1 Corrected 1.5

Date and initials of person examining contents: 4.22.20 AA

Temperature should be above freezing to 6°C 0.4, 0.1 0.5, 0.2

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # 603173	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution _____

Project Manager Review: Jami Church 4/22/20 Date

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 1 of 2 1

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 B — Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Eric Schnieder, Ryan Feldman
Purchase Order No.:	COC #3
Project Name:	Ameren Labadie Energy Center LCPB
Project Number:	153140602.0001B

Section C — Invoice Information:

Attention:	
Company Name:	Golder Associates Inc
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	9285

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MO

Section D — Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		N	N	N	N	N		
1	L-LMW-MS-1	WT	G			4/20/20	0931		2	1		1							X	X	X	X		
2	L-LMW-MSD-1	WT	G				0931		1	1		1							1	1	1	1		
3	L-LMW-35	WT	G				0931		1	1		1							1	1	1	1		
4	L-LMW-55	WT	G				1048		1	1		1							1	1	1	1		
5	L-~~DUP~~ LMW-DUP-1	WT	G				—		1	1		1							1	1	1	1		
6	L-LMW-45	WT	G			4/20/20	1243		2	1		1							X	X	X	X		
7		WT	G																					
8		WT	G																					
9		WT	G																					
10		WT	G																					
11		WT	G																					
12		WT	G																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B	Golder	4/21/20	1234	PACE	4/21/20	1234				
	PACE	4/21/20	1700		4/22/20	0238	1.5	Y	Y	Y
							0.5			
							0.2			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 04/21/20

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

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60334356

60334356

Client Name: Golder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ cyl

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.5 **Corr. Factor** +0.1 **Corrected** 0.6

Date and initials of person examining contents: 4-15-2020 JK

Temperature should be above freezing to 6°C 16.1 16.2

Chain of Custody present:	☒Yes ☐No ☐N/A	cooler with 16.2 temp
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	Mag only Kadium
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	Fe +2
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot #603173, 607222	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jami Church 4/15/20

Project Manager Review: _____ Date

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

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 B Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Eric Schnieder, Ryan Feldman
Purchase Order No.:	COC #2
Project Name:	Ameren Labadie Energy Center LCPA-CA
Project Number:	153140602.0001A

Section C Invoice Information:

Attention:	
Company Name:	Golder Associates Inc
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	9285, line 1

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MO

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals*	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 226	Ferrous/Ferric Iron	SM4500-S2D Sulfide			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
				DATE	TIME	DATE	TIME												N	N	N	N	N	N	N	N	N	N				60174356
1	L-MW-26	WT	G																												
2	L-LMW-1S	WT	G																												
3	L-LMW-2S	WT	G			4/14/20	1125		6	2	3						1		X	X	X	X	X	X	X	X	X	X				
4	~~L-LMW-4S~~ L-LMW-FB-1	WT	G			↓	1130		↓	↓	↓						↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓				
5	L-LMW-7S	WT	G																												
6	L-LMW-8S	WT	G																												
7	L-BMW-1S	WT	G			4/14/20	1124		6	2	3						1		X	X	X	X	X	X	X	X	X	X				
8	L-BMW-2S	WT	G			↓	1239		↓	↓	↓						↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓				
9		WT	G																												
10		WT	G																												
11		WT	G																												
12		WT	G																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B		4/14/20	1700	Kept (Pas	4-15-20	0225	0.6	Y	Y	Y
**- App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo 200.8 Metals - Sb, As, Cd, Cr, Se, Tl							16.2	N	J	J

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 04/14/20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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

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

MEMORANDUM

DATE June 1, 2020 **Project No.** 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth **EMAIL AMuehlfarth@golder.com**

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPB – DETECTION MONITORING - DATA PACKAGE 60334357

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).

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260,
Ballwin, Missouri, USA 63021

T: +1 314 984-8800 F: +1 314 984-8770

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
Project Manager: J. Ingram
Project Name: Ameren - LEC - LCPB
Project Number: 153140602
Reviewer: A. Muehfarth
Validation Date: 06/01/2020

Laboratory: Pace Analytical
SDG #: 60334357
Analytical Method (type and no.): EPA 200.7 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐
Sample Names L-LMW-6S, L-LMW-FB-1, L-LMW-3S, L-LMW-5S, L-LMW-DUP-1, L-LMW-2S, L-LMW-1S, L-LMW-7S, L-LMW-8S, L-LMW-4S, L-BMW-1S, L-BMW-2S

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			04/14 - 04/20/2020
b) Sampling team indicated?	x			
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?		x		Pace did not receive samples for COC dated 04/14/2020
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (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?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?	x			See Notes

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		
c) Were analytes detected in the equipment blank(s)?			x	
d) Were analytes detected in the trip blank(s)?			x	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?	x			

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	x			L-LMW-DUP-1 @ L-LMW-5S
b) Were field dup. precision criteria met (note RPD)?	x			
c) Were lab duplicates analyzed (note original and duplicate samples)?	x			
d) Were lab dup. precision criteria met (note RPD)?		x		See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?		x		
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?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?	x			

Comments/Notes:

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

MB: 2644803: Boron (12.8 J), associated with sample -56032, detection in sample > RL, no qualification necessary

2639026: Chloride (0.44 J), associated with samples -56001, -56003, -56004, detections in samples > RL, no qualification necessary

2642478: Chloride (0.51 J), associated with samples -56019 through -56021, detections in samples > RL, no qualification necessary

2646385: Chloride (0.44 J), associated with samples -57003 through -57007, detections in samples > RL or non-detect, no qualification necessary

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Lab Duplicate: SAMPLE DUPLICATE 2638191: RPD exceeds limit (10%) for TDS, associated with sample -55006 (Unrelated sample)

MS/MSD: 2641579, 2641580: MS % Rec low for Boron, associated with sample -56007 (Unrelated sample)

26439999, 2644000: MS % Rec low for Calcium, associated with sample -58004 (Unrelated sample)

2644805, 2644806: MS/MSD % Rec low for Boron, Calcium, Sodium, associated with sample -56027 (Unrelated sample)

2638398, 2638399: MS/MSD % Rec low for Chloride, associated with sample -34003 (Unrelated sample)

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Ann Muhlfarth _____ Date: 06/01/2020

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

July 15, 2020

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

RE: Project: AMEREN LCPB
Pace Project No.: 60338349

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on May 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

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

Enclosures

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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CERTIFICATIONS

Project: AMEREN LCPB
Pace Project No.: 60338349

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

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SAMPLE SUMMARY

Project: AMEREN LCPB
Pace Project No.: 60338349

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60338349001	**L-LMW-3S**	Water	05/26/20 11:15	05/28/20 03:05
60338349002	**L-LMW-6S**	Water	05/26/20 15:15	05/28/20 03:05
60338349003	**L-LMW-DUP-1**	Water	05/26/20 08:00	05/28/20 03:05
60338349004	**L-LMW-FB-1**	Water	05/26/20 15:25	05/28/20 03:05
60338382004	**L-LMW-4S**	Water	05/26/20 10:00	05/28/20 03:05
60338382006	**L-LMW-8S**	Water	05/26/20 13:10	05/28/20 03:05

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPB
Pace Project No.: 60338349

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60338349001	**L-LMW-3S**	EPA 200.7	HKC	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60338349002	**L-LMW-6S**	EPA 300.0	JWR	1	PASI-K
60338349003	**L-LMW-DUP-1**	SM 2540C	MAP	1	PASI-K
60338349004	**L-LMW-FB-1**	EPA 300.0	JWR	1	PASI-K
60338382004	**L-LMW-4S**	EPA 300.0	JWR	1	PASI-K
60338382006	**L-LMW-8S**	EPA 200.7	HKC	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-3S **Lab ID: 60338349001** Collected: 05/26/20 11:15 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	**75600**	ug/L	200	32.4	1	05/29/20 11:30	06/01/20 12:29	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**654**	mg/L	10.0	10.0	1		06/01/20 11:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	**0.47**	mg/L	0.20	0.075	1		05/29/20 19:10	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-6S **Lab ID: 60338349002** Collected: 05/26/20 15:15 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	**0.35**	mg/L	0.20	0.075	1		05/29/20 20:33	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-DUP-1 **Lab ID: 60338349003** Collected: 05/26/20 08:00 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**653**	mg/L	10.0	10.0	1		06/01/20 11:09		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-FB-1 **Lab ID: 60338349004** Collected: 05/26/20 15:25 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	**<0.075**	mg/L	0.20	0.075	1		05/29/20 20:50	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-4S **Lab ID: 60338382004** Collected: 05/26/20 10:00 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	**0.28**	mg/L	0.20	0.075	1		06/08/20 21:45	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60338349

Sample: L-LMW-8S **Lab ID: 60338382006** Collected: 05/26/20 13:10 Received: 05/28/20 03:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	**209000**	ug/L	200	32.4	1	06/11/20 12:40	06/12/20 22:09	7440-70-2	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

QC Batch: 657374
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60338349001

METHOD BLANK: 2665880 Matrix: Water
Associated Lab Samples: 60338349001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<32.4	200	32.4	06/01/20 11:56	

LABORATORY CONTROL SAMPLE: 2665881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9790	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2665882 2665883

Parameter	Units	60338348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	71900	10000	10000	81200	81900	93	100	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2665884 2665885

Parameter	Units	60338349001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	75600	10000	10000	83400	86100	78	105	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

Pace Analytical Services, LLC
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Lenexa, KS 66219
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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

QC Batch: 659614
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60338382006

METHOD BLANK: 2674695 Matrix: Water
Associated Lab Samples: 60338382004, 60338382006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<32.4	200	32.4	06/15/20 15:04	

LABORATORY CONTROL SAMPLE: 2674696

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674697 2674698

Parameter	Units	60338382002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	175000	10000	10000	184000	184000	90	90	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674699 2674700

Parameter	Units	60338382007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	134000	10000	10000	145000	144000	119	110	70-130	1	20	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

QC Batch: 657597
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60338349001, 60338349003

METHOD BLANK: 2666982 Matrix: Water
Associated Lab Samples: 60338349001, 60338349003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/01/20 11:04	

LABORATORY CONTROL SAMPLE: 2666983

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

SAMPLE DUPLICATE: 2666984

Parameter	Units	60338179025 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	202000	224000	10	10	

SAMPLE DUPLICATE: 2666985

Parameter	Units	60338349001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	654	653	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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

QC Batch: 657410 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60338349001, 60338349002, 60338349004

METHOD BLANK: 2666088 — Matrix: Water
Associated Lab Samples: 60338349001, 60338349002, 60338349004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	05/29/20 08:05	

METHOD BLANK: 2667783 — Matrix: Water
Associated Lab Samples: 60338349001, 60338349002, 60338349004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	06/01/20 09:31	

METHOD BLANK: 2668608 — Matrix: Water
Associated Lab Samples: 60338349001, 60338349002, 60338349004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	06/02/20 09:28	

LABORATORY CONTROL SAMPLE: 2666089

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

LABORATORY CONTROL SAMPLE: 2667784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	106	90-110	

LABORATORY CONTROL SAMPLE: 2668609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	97	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

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2666090 2666091

Parameter	Units	60338348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.45	2.5	2.5	3.1	3.1	105	107	80-120	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2666092 2666093

Parameter	Units	60338349001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.47	2.5	2.5	3.1	3.2	106	108	80-120	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2666094 2666095

Parameter	Units	60338352001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.16J	2.5	2.5	2.7	2.7	101	101	80-120	0	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

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

QC Batch: 658871
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60338382004

METHOD BLANK: 2672128 Matrix: Water
Associated Lab Samples: 60338382004, 60338382006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	06/08/20 10:04	

METHOD BLANK: 2673583 Matrix: Water
Associated Lab Samples: 60338382004, 60338382006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	06/09/20 09:22	

LABORATORY CONTROL SAMPLE: 2672129

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

LABORATORY CONTROL SAMPLE: 2673584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.3	90	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2672134 2672135

Parameter	Units	60338825002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.91J	25	25	28.5	24.5	110	94	80-120	15	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2672136 2672137

Parameter	Units	60338382002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.22	2.5	2.5	2.6	2.8	97	102	80-120	4	15	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60338349

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2672138 2672139

Parameter	Units	60338382007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.22	2.5	2.5	2.6	2.7	96	99	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.

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN LCPB
Pace Project No.: 60338349

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.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPB
Pace Project No.: 60338349

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60338349001	**L-LMW-3S**	EPA 200.7	657374	EPA 200.7	657433
60338382006	**L-LMW-8S**	EPA 200.7	659614	EPA 200.7	659632
60338349001	**L-LMW-3S**	SM 2540C	657597		
60338349003	**L-LMW-DUP-1**	SM 2540C	657597		
60338349001	**L-LMW-3S**	EPA 300.0	657410		
60338349002	**L-LMW-6S**	EPA 300.0	657410		
60338349004	**L-LMW-FB-1**	EPA 300.0	657410		
60338382004	**L-LMW-4S**	EPA 300.0	658871		

Pace Analytical

Sample Condition Upon Receipt

WO#: 60338349

60338349

Client Name: Golder

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zip C

Thermometer Used: T219 Type of Ice: (Wet) Blue None

Cooler Temperature (°C): As-read 0.1 Corr. Factor +0.1 Corrected 0.2

Temperature should be above freezing to 6°C 1.8 1.9

Date and initials of person examining contents: 5.28.2020 KH

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # 603173	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution _____

Project Manager Review: Jami Church 5/29/20 Date

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Drive, Ste 260	Copy To:	Ryan Feldmann/Eric Schneider	Company Name:	
	Ballwin, MO 63021			Address:	
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	636-724-9191 Fax: 636-724-9323	Project Name:	Ameren LCPB	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153401602.001B	Pace Profile #:	9285

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER; UST RCRA OTHER ____

Site Location STATE: MO

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	200.7 Calcium	Fluoride	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WP; AR; OT; TS																	N	N	N	N		60339349
1	L-LMW-35	WT	G			5/26/20	1115		1	1										/			
2	L-LMW-65	WT	G				1515		1	1										/			
3	L-DMW-Dup-1	WT	G				—		1	1										/			
4	L-LMW-MS-1	WT	G				1115		2	1		1								/	/	/	
5	L-LMW-MSD-1	WT	G				1115		2	1		1								/	/	/	
6	~~EB~~ L-LMW-FB-1	WT	G			—	1525		1	1											/		
7	L-LMW-45	WT	G			5/26/20	1060		1	1											/		
8	L-LMW-85	WT	G			5/26/20	1310		1			1								/			
9		WT	G																				
10		WT	G																				
11		WT	G																				
12		WT	G																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Katherine Bartels	5/27/20	1520	UPS	5-28-20	0730	0.0	Y	Y	Y
							1.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Katherine Bartels

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 5/27/20

MEMORANDUM

DATE July 16, 2020 **Project No.** 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth **EMAIL AMuehlfarth@golder.com**

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPB – VERIFICATON SAMPLING - DATA PACKAGE 60338349

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

- None.

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260,
Ballwin, Missouri, USA 63021

T: +1 314 984-8800 F: +1 314 984-8770

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
Project Manager: J. Ingram
Project Name: Ameren - LEC - LCPB
Project Number: 153140602
Reviewer: A. Muehlfarth
Validation Date: 07/16/2020

Laboratory: Pace Analytical
SDG #: 60338349
Analytical Method (type and no.): EPA 200.7 (Total Metals); EPA 300.0 (Anions); SM 2540C (TDS)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ _____
Sample Names L-LMW-3S, L-LMW-6S, L-LMW-DUP-1, L-LMW-FB-1, L-LMW-4S, L-LMW-8S

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			05/26/2020
b) Sampling team indicated?	x			
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (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?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?		x		
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☒	☐	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☐	☒	

Laboratory Control Sample (LCS)	**YES**	**NO**	**NA**	**COMMENTS**
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper analytes included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were field duplicates collected (note original and duplicate sample names)?				L-LMW-DUP-1 @ L-LMW-3S
	☒	☐	☐	
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☒	☐	☐	

Blind 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?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☒	☐	☐	

Comments/Notes:

L-LMW-FB-1 @ L-LMW-6S

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: Ann Muehlforth   Date: 07/16/2020

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

December 11, 2020

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

RE: Project: AMEREN LCPB
Pace Project No.: 60353402

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between November 04, 2020 and November 06, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: AMEREN LCPB
Pace Project No.: 60353402

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

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

SAMPLE SUMMARY

Project: AMEREN LCPB
Pace Project No.: 60353402

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60353402001	**L-LMW-5S**	Water	11/03/20 14:45	11/04/20 03:50
60353749001	**L-LMW-6S**	Water	11/05/20 10:05	11/06/20 04:09
60353749002	**L-LMW-FB-1**	Water	11/05/20 10:20	11/06/20 04:09
60353749003	**L-LMW-3S**	Water	11/04/20 11:25	11/06/20 04:09
60353749004	**L-LMW-DUP-1**	Water	11/04/20 08:00	11/06/20 04:09
60353399002	**L-BMW-1S**	Water	11/02/20 10:20	11/04/20 03:50
60353399003	**L-BMW-2S**	Water	11/02/20 11:53	11/04/20 03:50
60353399026	**L-LMW-2S**	Water	11/05/20 10:15	11/06/20 04:09
60353399027	**L-LMW-4S**	Water	11/04/20 10:35	11/06/20 04:09
60353399028	**L-LMW-7S**	Water	11/05/20 11:05	11/06/20 04:09
60353399029	**L-LMW-8S**	Water	11/05/20 12:15	11/06/20 04:09
60353399030	**L-LMW-1S**	Water	11/05/20 12:15	11/06/20 04:09

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

SAMPLE ANALYTE COUNT

Project: AMEREN LCPB
Pace Project No.: 60353402

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60353402001	**L-LMW-5S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60353749001	**L-LMW-6S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60353749002	**L-LMW-FB-1**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60353749003	**L-LMW-3S**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60353749004	**L-LMW-DUP-1**	EPA 200.7	HKC	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60353399002	**L-BMW-1S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60353399003	**L-BMW-2S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60353399026	**L-LMW-2S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60353399027	**L-LMW-4S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2, LDB	3	PASI-K
60353399028	**L-LMW-7S**	EPA 200.7	JLH	7	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LCPB
Pace Project No.: 60353402

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60353399029	**L-LMW-8S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2, LDB	3	PASI-K
60353399030	**L-LMW-1S**	EPA 200.7	JLH	7	PASI-K
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-5S **Lab ID: 60353402001** Collected: 11/03/20 14:45 Received: 11/04/20 03:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**62.0J**	ug/L	100	11.7	1	11/06/20 09:35	11/09/20 17:00	7440-42-8	
Calcium	**78200**	ug/L	200	32.4	1	11/06/20 09:35	11/09/20 17:00	7440-70-2	
Iron	**62.4**	ug/L	50.0	26.8	1	11/06/20 09:35	11/09/20 17:00	7439-89-6	
Magnesium	**8000**	ug/L	50.0	19.7	1	11/06/20 09:35	11/09/20 17:00	7439-95-4	
Manganese	**32.7**	ug/L	5.0	0.97	1	11/06/20 09:35	11/09/20 17:00	7439-96-5	
Potassium	**3260**	ug/L	500	189	1	11/06/20 09:35	11/09/20 17:00	7440-09-7	
Sodium	**23700**	ug/L	500	107	1	11/06/20 09:35	11/09/20 17:00	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**275**	mg/L	20.0	8.4	1		11/06/20 09:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**296**	mg/L	5.0	5.0	1		11/06/20 08:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**2.2**	mg/L	1.0	0.36	1		11/10/20 18:23	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.085	1		11/10/20 18:23	16984-48-8	
Sulfate	**7.6**	mg/L	1.0	0.42	1		11/10/20 18:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-6S **Lab ID: 60353749001** Collected: 11/05/20 10:05 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3900**	ug/L	100	11.7	1	11/11/20 11:55	11/12/20 12:09	7440-42-8	
Calcium	**156000**	ug/L	200	32.4	1	11/11/20 11:55	11/12/20 12:09	7440-70-2	
Iron	**6090**	ug/L	50.0	26.8	1	11/11/20 11:55	11/12/20 12:09	7439-89-6	
Magnesium	**26600**	ug/L	50.0	19.7	1	11/11/20 11:55	11/12/20 12:09	7439-95-4	
Manganese	**1690**	ug/L	5.0	0.97	1	11/11/20 11:55	11/12/20 12:09	7439-96-5	
Potassium	**6660**	ug/L	500	189	1	11/11/20 11:55	11/12/20 12:09	7440-09-7	
Sodium	**44000**	ug/L	500	107	1	11/11/20 11:55	11/12/20 12:09	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**530**	mg/L	20.0	8.4	1		11/09/20 10:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**669**	mg/L	13.3	13.3	1		11/12/20 08:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.5**	mg/L	1.0	0.39	1		11/11/20 01:34	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.075	1		11/11/20 01:34	16984-48-8	
Sulfate	**82.0**	mg/L	5.0	1.4	5		11/11/20 01:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-FB-1 **Lab ID: 60353749002** Collected: 11/05/20 10:20 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**21.1J**	ug/L	100	11.7	1	11/11/20 11:55	11/12/20 12:16	7440-42-8	
Calcium	**<32.4**	ug/L	200	32.4	1	11/11/20 11:55	11/12/20 12:16	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	11/11/20 11:55	11/12/20 12:16	7439-89-6	
Magnesium	**<19.7**	ug/L	50.0	19.7	1	11/11/20 11:55	11/12/20 12:16	7439-95-4	
Manganese	**<0.97**	ug/L	5.0	0.97	1	11/11/20 11:55	11/12/20 12:16	7439-96-5	
Potassium	**<189**	ug/L	500	189	1	11/11/20 11:55	11/12/20 12:16	7440-09-7	
Sodium	**266J**	ug/L	500	107	1	11/11/20 11:55	11/12/20 12:16	7440-23-5	B
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<8.4**	mg/L	20.0	8.4	1		11/09/20 11:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**9.0**	mg/L	5.0	5.0	1		11/12/20 08:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.39**	mg/L	1.0	0.39	1		11/11/20 02:04	16887-00-6	
Fluoride	**<0.075**	mg/L	0.20	0.075	1		11/11/20 02:04	16984-48-8	
Sulfate	**<0.28**	mg/L	1.0	0.28	1		11/11/20 02:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-3S **Lab ID: 60353749003** Collected: 11/04/20 11:25 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3840**	ug/L	100	11.7	1	11/11/20 11:55	11/12/20 12:26	7440-42-8	
Calcium	**127000**	ug/L	200	32.4	1	11/11/20 11:55	11/12/20 12:26	7440-70-2	
Iron	**11600**	ug/L	50.0	26.8	1	11/11/20 11:55	11/12/20 12:26	7439-89-6	
Magnesium	**15400**	ug/L	50.0	19.7	1	11/11/20 11:55	11/12/20 12:26	7439-95-4	
Manganese	**1130**	ug/L	5.0	0.97	1	11/11/20 11:55	11/12/20 12:26	7439-96-5	
Potassium	**7980**	ug/L	500	189	1	11/11/20 11:55	11/12/20 12:26	7440-09-7	
Sodium	**113000**	ug/L	500	107	1	11/11/20 11:55	11/12/20 12:26	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**460**	mg/L	20.0	8.4	1		11/09/20 11:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**754**	mg/L	10.0	10.0	1		11/10/20 10:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**19.7**	mg/L	2.0	0.78	2		11/11/20 02:33	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.075	1		11/11/20 02:19	16984-48-8	
Sulfate	**158**	mg/L	20.0	5.6	20		11/11/20 02:48	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-DUP-1 **Lab ID: 60353749004** Collected: 11/04/20 08:00 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**4020**	ug/L	100	11.7	1	11/11/20 11:55	11/12/20 12:29	7440-42-8	
Calcium	**133000**	ug/L	200	32.4	1	11/11/20 11:55	11/12/20 12:29	7440-70-2	
Iron	**12100**	ug/L	50.0	26.8	1	11/11/20 11:55	11/12/20 12:29	7439-89-6	
Magnesium	**16100**	ug/L	50.0	19.7	1	11/11/20 11:55	11/12/20 12:29	7439-95-4	
Manganese	**1180**	ug/L	5.0	0.97	1	11/11/20 11:55	11/12/20 12:29	7439-96-5	
Potassium	**8340**	ug/L	500	189	1	11/11/20 11:55	11/12/20 12:29	7440-09-7	
Sodium	**118000**	ug/L	500	107	1	11/11/20 11:55	11/12/20 12:29	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**482**	mg/L	20.0	8.4	1		11/09/20 11:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**743**	mg/L	10.0	10.0	1		11/10/20 10:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**21.1**	mg/L	2.0	0.78	2		11/11/20 20:11	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.075	1		11/11/20 03:03	16984-48-8	
Sulfate	**156**	mg/L	20.0	5.6	20		11/11/20 03:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-BMW-1S **Lab ID: 60353399002** Collected: 11/02/20 10:20 Received: 11/04/20 03:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**99.0J**	ug/L	100	11.7	1	12/01/20 15:10	12/02/20 20:11	7440-42-8	
Calcium	**216000**	ug/L	200	32.4	1	12/01/20 15:10	12/02/20 20:11	7440-70-2	
Iron	**26000**	ug/L	50.0	26.8	1	12/01/20 15:10	12/02/20 20:11	7439-89-6	
Magnesium	**44600**	ug/L	50.0	19.7	1	12/01/20 15:10	12/02/20 20:11	7439-95-4	
Manganese	**2600**	ug/L	5.0	0.97	1	12/01/20 15:10	12/02/20 20:11	7439-96-5	
Potassium	**5350**	ug/L	500	189	1	12/01/20 15:10	12/02/20 20:11	7440-09-7	
Sodium	**15600**	ug/L	500	107	1	12/01/20 15:10	12/02/20 20:11	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**742**	mg/L	20.0	8.4	1		11/06/20 14:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**780**	mg/L	13.3	13.3	1		11/05/20 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**6.4**	mg/L	1.0	0.39	1		11/25/20 19:37	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.075	1		11/25/20 19:37	16984-48-8	
Sulfate	**66.5**	mg/L	5.0	1.4	5		11/25/20 19:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-BMW-2S **Lab ID: 60353399003** Collected: 11/02/20 11:53 Received: 11/04/20 03:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**45.2J**	ug/L	100	11.7	1	12/01/20 15:10	12/02/20 20:13	7440-42-8	
Calcium	**142000**	ug/L	200	32.4	1	12/01/20 15:10	12/02/20 20:13	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	12/01/20 15:10	12/02/20 20:13	7439-89-6	
Magnesium	**20900**	ug/L	50.0	19.7	1	12/01/20 15:10	12/02/20 20:13	7439-95-4	
Manganese	**2.1J**	ug/L	5.0	0.97	1	12/01/20 15:10	12/02/20 20:13	7439-96-5	
Potassium	**5040**	ug/L	500	189	1	12/01/20 15:10	12/02/20 20:13	7440-09-7	
Sodium	**3570**	ug/L	500	107	1	12/01/20 15:10	12/02/20 20:13	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**359**	mg/L	20.0	8.4	1		11/06/20 14:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**524**	mg/L	10.0	10.0	1		11/05/20 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.4**	mg/L	1.0	0.39	1		11/25/20 20:06	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.075	1		11/25/20 20:06	16984-48-8	
Sulfate	**73.4**	mg/L	5.0	1.4	5		11/25/20 20:20	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-2S **Lab ID: 60353399026** Collected: 11/05/20 10:15 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3150**	ug/L	100	11.7	1	12/01/20 15:10	12/02/20 22:51	7440-42-8	
Calcium	**61900**	ug/L	200	32.4	1	12/01/20 15:10	12/02/20 22:51	7440-70-2	
Iron	**<26.8**	ug/L	50.0	26.8	1	12/01/20 15:10	12/02/20 22:51	7439-89-6	
Magnesium	**111**	ug/L	50.0	19.7	1	12/01/20 15:10	12/02/20 22:51	7439-95-4	
Manganese	**1.1J**	ug/L	5.0	0.97	1	12/01/20 15:10	12/02/20 22:51	7439-96-5	
Potassium	**9230**	ug/L	500	189	1	12/01/20 15:10	12/02/20 22:51	7440-09-7	
Sodium	**62800**	ug/L	500	107	1	12/01/20 15:10	12/02/20 22:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**31.8**	mg/L	20.0	8.4	1		11/16/20 09:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**445**	mg/L	10.0	10.0	1		11/10/20 10:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**19.2**	mg/L	1.0	0.39	1		11/26/20 01:30	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.075	1		11/26/20 01:30	16984-48-8	
Sulfate	**243**	mg/L	20.0	5.6	20		11/26/20 01:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-4S **Lab ID: 60353399027** Collected: 11/04/20 10:35 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**3120**	ug/L	100	11.7	1	12/01/20 15:10	12/02/20 22:54	7440-42-8	
Calcium	**183000**	ug/L	200	32.4	1	12/01/20 15:10	12/02/20 22:54	7440-70-2	
Iron	**5140**	ug/L	50.0	26.8	1	12/01/20 15:10	12/02/20 22:54	7439-89-6	
Magnesium	**30900**	ug/L	50.0	19.7	1	12/01/20 15:10	12/02/20 22:54	7439-95-4	
Manganese	**1730**	ug/L	5.0	0.97	1	12/01/20 15:10	12/02/20 22:54	7439-96-5	
Potassium	**6420**	ug/L	500	189	1	12/01/20 15:10	12/02/20 22:54	7440-09-7	
Sodium	**44600**	ug/L	500	107	1	12/01/20 15:10	12/02/20 22:54	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**566**	mg/L	20.0	8.4	1		11/12/20 10:33		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**717**	mg/L	10.0	10.0	1		11/10/20 10:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**41.7**	mg/L	5.0	1.8	5		12/01/20 09:58	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.075	1		11/26/20 02:01	16984-48-8	
Sulfate	**83.5**	mg/L	5.0	2.1	5		12/01/20 09:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-7S **Lab ID: 60353399028** Collected: 11/05/20 11:05 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**7010**	ug/L	100	11.7	1	12/01/20 17:41	12/02/20 23:15	7440-42-8	
Calcium	**173000**	ug/L	200	32.4	1	12/01/20 17:41	12/02/20 23:15	7440-70-2	M1
Iron	**3900**	ug/L	50.0	26.8	1	12/01/20 17:41	12/02/20 23:15	7439-89-6	
Magnesium	**37600**	ug/L	50.0	19.7	1	12/01/20 17:41	12/02/20 23:15	7439-95-4	
Manganese	**1580**	ug/L	5.0	0.97	1	12/01/20 17:41	12/02/20 23:15	7439-96-5	
Potassium	**7650**	ug/L	500	189	1	12/01/20 17:41	12/02/20 23:15	7440-09-7	
Sodium	**54500**	ug/L	500	107	1	12/01/20 17:41	12/02/20 23:15	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**511**	mg/L	20.0	8.4	1		11/16/20 09:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**808**	mg/L	10.0	10.0	1		11/10/20 10:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**14.4**	mg/L	1.0	0.39	1		11/26/20 03:04	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	0.075	1		11/26/20 03:04	16984-48-8	
Sulfate	**176**	mg/L	20.0	5.6	20		11/26/20 03:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-8S **Lab ID: 60353399029** Collected: 11/05/20 12:15 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**2570**	ug/L	100	11.7	1	12/01/20 17:41	12/02/20 23:20	7440-42-8	
Calcium	**70800**	ug/L	200	32.4	1	12/01/20 17:41	12/02/20 23:20	7440-70-2	
Iron	**1850**	ug/L	50.0	26.8	1	12/01/20 17:41	12/02/20 23:20	7439-89-6	
Magnesium	**12700**	ug/L	50.0	19.7	1	12/01/20 17:41	12/02/20 23:20	7439-95-4	
Manganese	**744**	ug/L	5.0	0.97	1	12/01/20 17:41	12/02/20 23:20	7439-96-5	
Potassium	**5310**	ug/L	500	189	1	12/01/20 17:41	12/02/20 23:20	7440-09-7	
Sodium	**50800**	ug/L	500	107	1	12/01/20 17:41	12/02/20 23:20	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**273**	mg/L	20.0	8.4	1		11/16/20 09:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**440**	mg/L	10.0	10.0	1		11/10/20 10:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**4.7**	mg/L	1.0	0.39	1		11/26/20 03:35	16887-00-6	B
Fluoride	**0.53**	mg/L	0.20	0.075	1		11/26/20 03:35	16984-48-8	
Sulfate	**80.4**	mg/L	5.0	2.1	5		12/01/20 10:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LCPB
Pace Project No.: 60353402

Sample: L-LMW-1S **Lab ID: 60353399030** Collected: 11/05/20 12:15 Received: 11/06/20 04:09 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	**4390**	ug/L	100	11.7	1	12/01/20 17:41	12/02/20 23:22	7440-42-8	
Calcium	**158000**	ug/L	200	32.4	1	12/01/20 17:41	12/02/20 23:22	7440-70-2	
Iron	**2570**	ug/L	50.0	26.8	1	12/01/20 17:41	12/02/20 23:22	7439-89-6	
Magnesium	**28300**	ug/L	50.0	19.7	1	12/01/20 17:41	12/02/20 23:22	7439-95-4	
Manganese	**1090**	ug/L	5.0	0.97	1	12/01/20 17:41	12/02/20 23:22	7439-96-5	
Potassium	**4830**	ug/L	500	189	1	12/01/20 17:41	12/02/20 23:22	7440-09-7	
Sodium	**10400**	ug/L	500	107	1	12/01/20 17:41	12/02/20 23:22	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**402**	mg/L	20.0	8.4	1		11/16/20 09:44		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**635**	mg/L	10.0	10.0	1		11/12/20 08:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.9**	mg/L	1.0	0.39	1		11/26/20 04:06	16887-00-6	B
Fluoride	**0.32**	mg/L	0.20	0.075	1		11/26/20 04:06	16984-48-8	
Sulfate	**142**	mg/L	20.0	5.6	20		11/26/20 04:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687666
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60353402001

METHOD BLANK: 2779116 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	11/09/20 16:40	
Calcium	ug/L	<32.4	200	32.4	11/09/20 16:40	
Iron	ug/L	<26.8	50.0	26.8	11/09/20 16:40	
Magnesium	ug/L	<19.7	50.0	19.7	11/09/20 16:40	
Manganese	ug/L	<0.97	5.0	0.97	11/09/20 16:40	
Potassium	ug/L	<189	500	189	11/09/20 16:40	
Sodium	ug/L	<107	500	107	11/09/20 16:40	

LABORATORY CONTROL SAMPLE: 2779117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	971	97	85-115	
Calcium	ug/L	10000	9870	99	85-115	
Iron	ug/L	10000	9920	99	85-115	
Magnesium	ug/L	10000	9830	98	85-115	
Manganese	ug/L	1000	981	98	85-115	
Potassium	ug/L	10000	9920	99	85-115	
Sodium	ug/L	10000	9890	99	85-115	

MATRIX SPIKE SAMPLE: 2779118

Parameter	Units	60353118001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	6960	1000	8190	123	70-130	
Calcium	ug/L	23800	10000	32700	89	70-130	
Iron	ug/L	11400	10000	20900	95	70-130	
Magnesium	ug/L	4100	10000	13300	92	70-130	
Manganese	ug/L	333	1000	1310	98	70-130	
Potassium	ug/L	18500	10000	33500	149	70-130	M1
Sodium	ug/L	1170000	10000	1240000	660	70-130	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779119 2779120

Parameter	Units	60353402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	62.0J	1000	1000	1040	1050	98	99	70-130	1	20	
Calcium	ug/L	78200	10000	10000	87200	89500	90	113	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779119 2779120

Parameter	Units	60353402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	62.4	10000	10000	9930	9980	99	99	70-130	1	20	
Magnesium	ug/L	8000	10000	10000	17500	17700	95	97	70-130	1	20	
Manganese	ug/L	32.7	1000	1000	1000	1020	97	99	70-130	1	20	
Potassium	ug/L	3260	10000	10000	13100	13300	99	100	70-130	1	20	
Sodium	ug/L	23700	10000	10000	33000	32600	93	89	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 688572
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

METHOD BLANK: 2782538 Matrix: Water
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	11/12/20 11:56	
Calcium	ug/L	<32.4	200	32.4	11/12/20 11:56	
Iron	ug/L	<26.8	50.0	26.8	11/12/20 11:56	
Magnesium	ug/L	<19.7	50.0	19.7	11/12/20 11:56	
Manganese	ug/L	<0.97	5.0	0.97	11/12/20 11:56	
Potassium	ug/L	<189	500	189	11/12/20 11:56	
Sodium	ug/L	329J	500	107	11/12/20 11:56	

LABORATORY CONTROL SAMPLE: 2782539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	963	96	85-115	
Calcium	ug/L	10000	9820	98	85-115	
Iron	ug/L	10000	9900	99	85-115	
Magnesium	ug/L	10000	9860	99	85-115	
Manganese	ug/L	1000	960	96	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2782540 2782541

Parameter	Units	60353749001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	3900	1000	1000	4720	4890	82	99	70-130	3	20	
Calcium	ug/L	156000	10000	10000	164000	169000	73	129	70-130	3	20	
Iron	ug/L	6090	10000	10000	15400	15900	93	98	70-130	4	20	
Magnesium	ug/L	26600	10000	10000	35700	37000	91	104	70-130	4	20	
Manganese	ug/L	1690	1000	1000	2600	2700	92	102	70-130	4	20	
Potassium	ug/L	6660	10000	10000	16400	16900	97	102	70-130	3	20	
Sodium	ug/L	44000	10000	10000	53000	54800	90	107	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 692094
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399002, 60353399003

METHOD BLANK: 2795352 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	12/02/20 20:03	
Calcium	ug/L	<32.4	200	32.4	12/02/20 20:03	
Iron	ug/L	<26.8	50.0	26.8	12/02/20 20:03	
Magnesium	ug/L	35.6J	50.0	19.7	12/02/20 20:03	
Manganese	ug/L	<0.97	5.0	0.97	12/02/20 20:03	
Potassium	ug/L	<189	500	189	12/02/20 20:03	
Sodium	ug/L	<107	500	107	12/02/20 20:03	

LABORATORY CONTROL SAMPLE: 2795353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	978	98	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Iron	ug/L	10000	9920	99	85-115	
Magnesium	ug/L	10000	9960	100	85-115	
Manganese	ug/L	1000	990	99	85-115	
Potassium	ug/L	10000	9850	99	85-115	
Sodium	ug/L	10000	9840	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795354 2795355

Parameter	Units	60353399005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	63.6J	1000	1000	1080	1080	101	101	70-130	0	20	
Calcium	ug/L	119000	10000	10000	129000	130000	93	103	70-130	1	20	
Iron	ug/L	<26.8	10000	10000	10100	10000	101	100	70-130	0	20	
Magnesium	ug/L	21700	10000	10000	31600	31600	98	99	70-130	0	20	
Manganese	ug/L	127	1000	1000	1130	1120	100	100	70-130	0	20	
Potassium	ug/L	3900	10000	10000	14000	14100	102	102	70-130	0	20	
Sodium	ug/L	5210	10000	10000	15100	15200	99	100	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795356 2795357

Parameter	Units	60353399008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	67.9J	1000	1000	1060	1070	100	100	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795356 2795357

Parameter	Units	60353399008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	141000	10000	10000	150000	147000	87	65	70-130	1	20	M1
Iron	ug/L	8540	10000	10000	18400	18100	98	96	70-130	1	20	
Magnesium	ug/L	35200	10000	10000	44700	44500	95	94	70-130	0	20	
Manganese	ug/L	242	1000	1000	1220	1220	98	98	70-130	0	20	
Potassium	ug/L	4420	10000	10000	14500	14400	100	100	70-130	0	20	
Sodium	ug/L	12900	10000	10000	22700	22500	98	96	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 692096
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399026, 60353399027

METHOD BLANK: 2795363 Matrix: Water
Associated Lab Samples: 60353399026, 60353399027

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	12/02/20 21:34	
Calcium	ug/L	<32.4	200	32.4	12/02/20 21:34	
Iron	ug/L	<26.8	50.0	26.8	12/02/20 21:34	
Magnesium	ug/L	<19.7	50.0	19.7	12/02/20 21:34	
Manganese	ug/L	<0.97	5.0	0.97	12/02/20 21:34	
Potassium	ug/L	<189	500	189	12/02/20 21:34	
Sodium	ug/L	<107	500	107	12/02/20 21:34	

LABORATORY CONTROL SAMPLE: 2795364

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	968	97	85-115	
Calcium	ug/L	10000	9910	99	85-115	
Iron	ug/L	10000	9940	99	85-115	
Magnesium	ug/L	10000	9830	98	85-115	
Manganese	ug/L	1000	982	98	85-115	
Potassium	ug/L	10000	9940	99	85-115	
Sodium	ug/L	10000	9740	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795365 2795366

Parameter	Units	60353401003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	96.9J	1000	1000	1090	1080	99	99	70-130	0	20	
Calcium	ug/L	120000	10000	10000	126000	128000	63	81	70-130	1	20	M1
Iron	ug/L	24100	10000	10000	33300	33600	91	94	70-130	1	20	
Magnesium	ug/L	32200	10000	10000	41200	41500	90	93	70-130	1	20	
Manganese	ug/L	376	1000	1000	1360	1350	98	98	70-130	0	20	
Potassium	ug/L	4240	10000	10000	14200	14300	100	101	70-130	0	20	
Sodium	ug/L	13800	10000	10000	23200	23400	94	96	70-130	1	20	

MATRIX SPIKE SAMPLE: 2795367

Parameter	Units	60353399027 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	3120	1000	4130	101	70-130	
Calcium	ug/L	183000	10000	192000	95	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

MATRIX SPIKE SAMPLE: 2795367

Parameter	Units	60353399027 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	5140	10000	15000	98	70-130	
Magnesium	ug/L	30900	10000	40800	99	70-130	
Manganese	ug/L	1730	1000	2730	100	70-130	
Potassium	ug/L	6420	10000	16500	100	70-130	
Sodium	ug/L	44600	10000	54500	100	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 692098
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399028, 60353399029, 60353399030

METHOD BLANK: 2795371 Matrix: Water
Associated Lab Samples: 60353399028, 60353399029, 60353399030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	12/02/20 23:10	
Calcium	ug/L	40.5J	200	32.4	12/02/20 23:10	
Iron	ug/L	<26.8	50.0	26.8	12/02/20 23:10	
Magnesium	ug/L	<19.7	50.0	19.7	12/02/20 23:10	
Manganese	ug/L	<0.97	5.0	0.97	12/02/20 23:10	
Potassium	ug/L	<189	500	189	12/02/20 23:10	
Sodium	ug/L	<107	500	107	12/02/20 23:10	

LABORATORY CONTROL SAMPLE: 2795372

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Iron	ug/L	10000	10100	101	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	9930	99	85-115	

MATRIX SPIKE SAMPLE: 2795373

Parameter	Units	60353399028 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	7010	1000	7950	95	70-130	
Calcium	ug/L	173000	10000	180000	68	70-130	M1
Iron	ug/L	3900	10000	13600	97	70-130	
Magnesium	ug/L	37600	10000	47200	96	70-130	
Manganese	ug/L	1580	1000	2560	99	70-130	
Potassium	ug/L	7650	10000	17600	100	70-130	
Sodium	ug/L	54500	10000	64000	95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795374 2795375

Parameter	Units	60354082002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	9060	1000	1000	10000	9780	98	72	70-130	3	20	
Calcium	ug/L	239000	10000	10000	246000	239000	67	-3	70-130	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795374 2795375

Parameter	Units	60354082002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	24700	10000	10000	33900	33100	92	84	70-130	2	20	
Magnesium	ug/L	59400	10000	10000	69500	67400	101	80	70-130	3	20	
Manganese	ug/L	954	1000	1000	1960	1920	101	96	70-130	2	20	
Potassium	ug/L	7360	10000	10000	17500	17200	101	99	70-130	1	20	
Sodium	ug/L	40600	10000	10000	50600	49500	101	89	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687538
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60353402001

METHOD BLANK: 2778499 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/06/20 09:43	

LABORATORY CONTROL SAMPLE: 2778500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	499	100	90-110	

SAMPLE DUPLICATE: 2778501

Parameter	Units	60353402001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	275	277	1	10	

SAMPLE DUPLICATE: 2778502

Parameter	Units	60353404001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	499	510	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687540
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399002, 60353399003

METHOD BLANK: 2778511 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/06/20 13:23	

LABORATORY CONTROL SAMPLE: 2778512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	510	102	90-110	

SAMPLE DUPLICATE: 2778513

Parameter	Units	60353399005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	374	371	1	10	

SAMPLE DUPLICATE: 2778514

Parameter	Units	60353399008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	528	547	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687922 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

METHOD BLANK: 2780521 Matrix: Water
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/09/20 10:05	

LABORATORY CONTROL SAMPLE: 2780522

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

SAMPLE DUPLICATE: 2780523

Parameter	Units	60353696004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	491	486	1	10	

SAMPLE DUPLICATE: 2780524

Parameter	Units	60353401003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	465	455	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 688396
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60353399027

METHOD BLANK: 2782151 Matrix: Water
Associated Lab Samples: 60353399027

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/12/20 08:49	

LABORATORY CONTROL SAMPLE: 2782152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	499	100	90-110	

SAMPLE DUPLICATE: 2782153

Parameter	Units	60353399012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	146	146	0	10	

SAMPLE DUPLICATE: 2782154

Parameter	Units	60353401013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	90.2	91.1	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 689409 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399026, 60353399028, 60353399029, 60353399030

METHOD BLANK: 2785624 Matrix: Water
Associated Lab Samples: 60353399026, 60353399028, 60353399029, 60353399030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/16/20 08:45	

LABORATORY CONTROL SAMPLE: 2785625

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

SAMPLE DUPLICATE: 2785626

Parameter	Units	60353401012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	52.8	52.5	1	10	

SAMPLE DUPLICATE: 2785627

Parameter	Units	60354300003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	226	230	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687484
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399002, 60353399003

METHOD BLANK: 2778180 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/05/20 13:56	

LABORATORY CONTROL SAMPLE: 2778181

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

SAMPLE DUPLICATE: 2778491

Parameter	Units	60353399005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	420	430	2	10	

SAMPLE DUPLICATE: 2778492

Parameter	Units	60353399008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	527	561	6	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687684
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353402001

METHOD BLANK: 2779174 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/06/20 08:46	

LABORATORY CONTROL SAMPLE: 2779175

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

SAMPLE DUPLICATE: 2779176

Parameter	Units	60353402001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	296	300	2	10	

SAMPLE DUPLICATE: 2779177

Parameter	Units	60353404001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	579	562	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 688297 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353749003, 60353749004

METHOD BLANK: 2781788 Matrix: Water
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353749003, 60353749004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/10/20 10:52	

LABORATORY CONTROL SAMPLE: 2781789

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

SAMPLE DUPLICATE: 2781790

Parameter	Units	60353401009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	601	613	2	10	

SAMPLE DUPLICATE: 2781791

Parameter	Units	60353399032 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	670	622	7	10	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 688790
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399030, 60353749001, 60353749002

METHOD BLANK: 2783368 Matrix: Water
Associated Lab Samples: 60353399030, 60353749001, 60353749002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/12/20 08:31	

LABORATORY CONTROL SAMPLE: 2783369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	994	99	80-120	

SAMPLE DUPLICATE: 2783370

Parameter	Units	60353629001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11700	10800	8	10	

SAMPLE DUPLICATE: 2783371

Parameter	Units	60353711008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	366	371	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 687877
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60353402001

METHOD BLANK: 2779939 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	11/10/20 13:20	
Fluoride	mg/L	<0.085	0.20	0.085	11/10/20 13:20	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/20 13:20	

METHOD BLANK: 2782514 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	11/11/20 09:01	
Fluoride	mg/L	<0.085	0.20	0.085	11/11/20 09:01	
Sulfate	mg/L	<0.42	1.0	0.42	11/11/20 09:01	

METHOD BLANK: 2783729 Matrix: Water
Associated Lab Samples: 60353402001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	11/12/20 09:08	
Fluoride	mg/L	<0.085	0.20	0.085	11/12/20 09:08	
Sulfate	mg/L	<0.42	1.0	0.42	11/12/20 09:08	

LABORATORY CONTROL SAMPLE: 2779940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	5.4	108	90-110	

LABORATORY CONTROL SAMPLE: 2782515

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	103	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

LABORATORY CONTROL SAMPLE: 2783730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	103	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779941 2779942

Parameter	Units	60353402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.2	5	5	7.0	7.0	96	96	80-120	0	15	
Fluoride	mg/L	0.37	2.5	2.5	2.8	2.8	96	96	80-120	0	15	
Sulfate	mg/L	7.6	5	5	12.8	12.8	103	103	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779943 2779944

Parameter	Units	60353404001 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	6.5	6.5	93	94	80-120	0	15	
Fluoride	mg/L	0.33	2.5	2.5	2.6	2.6	92	92	80-120	0	15	
Sulfate	mg/L	30.9	25	25	56.6	56.7	103	103	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779945 2779946

Parameter	Units	60352861002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.5	5	5	6.7	6.7	100	100	80-120	0	15	
Fluoride	mg/L	0.57	2.5	2.5	3.1	3.1	102	103	80-120	1	15	
Sulfate	mg/L	3.8	5	5	7.5	7.5	108	108	80-120	0	15	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 688352
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

METHOD BLANK: 2782044 Matrix: Water
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/20 15:56	
Fluoride	mg/L	<0.075	0.20	0.075	11/10/20 15:56	
Sulfate	mg/L	<0.28	1.0	0.28	11/10/20 15:56	

METHOD BLANK: 2782521 Matrix: Water
Associated Lab Samples: 60353749001, 60353749002, 60353749003, 60353749004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/11/20 17:16	
Fluoride	mg/L	<0.075	0.20	0.075	11/11/20 17:16	
Sulfate	mg/L	<0.28	1.0	0.28	11/11/20 17:16	

LABORATORY CONTROL SAMPLE: 2782045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2782522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	104	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2782046 2782047

Parameter	Units	60353048001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.1	5	5	7.0	7.0	98	98	80-120	0	15	
Fluoride	mg/L	0.10J	2.5	2.5	3.4	3.5	133	134	80-120	0	15	M1
Sulfate	mg/L	0.50J	5	5	5.7	5.7	104	105	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

MATRIX SPIKE SAMPLE: 2782048

Parameter	Units	60353711005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	19.3	10	30.1	108	80-120	
Fluoride	mg/L	ND	2.5	2.8	108	80-120	
Sulfate	mg/L	4.5	5	9.9	108	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 691503
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399002, 60353399003

METHOD BLANK: 2793442 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/25/20 16:29	
Fluoride	mg/L	<0.075	0.20	0.075	11/25/20 16:29	
Sulfate	mg/L	<0.28	1.0	0.28	11/25/20 16:29	

METHOD BLANK: 2794765 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/30/20 09:10	
Fluoride	mg/L	<0.075	0.20	0.075	11/30/20 09:10	
Sulfate	mg/L	<0.28	1.0	0.28	11/30/20 09:10	

METHOD BLANK: 2794769 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/30/20 09:07	
Fluoride	mg/L	<0.075	0.20	0.075	11/30/20 09:07	
Sulfate	mg/L	<0.28	1.0	0.28	11/30/20 09:07	

METHOD BLANK: 2796664 Matrix: Water
Associated Lab Samples: 60353399002, 60353399003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/18/20 16:09	
Fluoride	mg/L	<0.075	0.20	0.075	11/18/20 16:09	
Sulfate	mg/L	<0.28	1.0	0.28	11/18/20 16:09	

LABORATORY CONTROL SAMPLE: 2793443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.5	98	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

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

LABORATORY CONTROL SAMPLE: 2793443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2794766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 2794770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2796665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793444 2793445

Parameter	Units	60353386001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.1	5	5	17.0	16.8	98	94	80-120	1	15	
Fluoride	mg/L	0.34	2.5	2.5	2.5	2.5	88	86	80-120	2	15	
Sulfate	mg/L	121	50	50	176	174	110	107	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793456 2793457

Parameter	Units	60353399005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.9	5	5	10.5	10	90	81	80-120	5	15	
Fluoride	mg/L	0.22	2.5	2.5	2.5	2.3	89	81	80-120	8	15	
Sulfate	mg/L	29.8	10	10	41.3	41.5	115	117	80-120	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

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

SAMPLE DUPLICATE: 2793458

Parameter	Units	60353399005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	5.9	5.9	0	15	
Fluoride	mg/L	0.22	0.23	1	15	
Sulfate	mg/L	29.8	29.5	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

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

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

QC Batch: 691514 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353399030

METHOD BLANK: 2793489 Matrix: Water
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353399030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.59J	1.0	0.39	11/25/20 15:37	
Fluoride	mg/L	<0.075	0.20	0.075	11/25/20 15:37	
Sulfate	mg/L	<0.28	1.0	0.28	11/25/20 15:37	

METHOD BLANK: 2794508 Matrix: Water
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353399030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/30/20 09:10	
Fluoride	mg/L	<0.075	0.20	0.075	11/30/20 09:10	
Sulfate	mg/L	<0.28	1.0	0.28	11/30/20 09:10	

METHOD BLANK: 2795690 Matrix: Water
Associated Lab Samples: 60353399026, 60353399027, 60353399028, 60353399029, 60353399030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/01/20 08:26	
Fluoride	mg/L	<0.075	0.20	0.075	12/01/20 08:26	
Sulfate	mg/L	<0.28	1.0	0.28	12/01/20 08:26	

LABORATORY CONTROL SAMPLE: 2793490

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2794509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	5.3	106	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

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LCPB
Pace Project No.: 60353402

LABORATORY CONTROL SAMPLE: 2795691

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2793491 2793492

Parameter	Units	60353401009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.5	5	5	16.9	17.3	88	95	80-120	2	15	
Fluoride	mg/L	0.32	2.5	2.5	2.3	2.5	81	87	80-120	7	15	
Sulfate	mg/L	53.7	25	25	81.5	81.6	111	112	80-120	0	15	

MATRIX SPIKE SAMPLE: 2793493

Parameter	Units	60353399023 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.9	5	18.3	107	80-120	
Fluoride	mg/L	0.33	2.5	2.7	94	80-120	
Sulfate	mg/L	126	100	233	107	80-120	

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

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

QUALIFIERS

Project: AMEREN LCPB
Pace Project No.: 60353402

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.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPB
Pace Project No.: 60353402

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60353399002	L-BMW-1S	EPA 200.7	692094	EPA 200.7	692180
60353399003	L-BMW-2S	EPA 200.7	692094	EPA 200.7	692180
60353402001	L-LMW-5S	EPA 200.7	687666	EPA 200.7	687768
60353399026	L-LMW-2S	EPA 200.7	692096	EPA 200.7	692181
60353399027	L-LMW-4S	EPA 200.7	692096	EPA 200.7	692181
60353399028	L-LMW-7S	EPA 200.7	692098	EPA 200.7	692249
60353399029	L-LMW-8S	EPA 200.7	692098	EPA 200.7	692249
60353399030	L-LMW-1S	EPA 200.7	692098	EPA 200.7	692249
60353749001	L-LMW-6S	EPA 200.7	688572	EPA 200.7	688668
60353749002	L-LMW-FB-1	EPA 200.7	688572	EPA 200.7	688668
60353749003	L-LMW-3S	EPA 200.7	688572	EPA 200.7	688668
60353749004	L-LMW-DUP-1	EPA 200.7	688572	EPA 200.7	688668
60353399002	L-BMW-1S	SM 2320B	687540		
60353399003	L-BMW-2S	SM 2320B	687540		
60353402001	L-LMW-5S	SM 2320B	687538		
60353399026	L-LMW-2S	SM 2320B	689409		
60353399027	L-LMW-4S	SM 2320B	688396		
60353399028	L-LMW-7S	SM 2320B	689409		
60353399029	L-LMW-8S	SM 2320B	689409		
60353399030	L-LMW-1S	SM 2320B	689409		
60353749001	L-LMW-6S	SM 2320B	687922		
60353749002	L-LMW-FB-1	SM 2320B	687922		
60353749003	L-LMW-3S	SM 2320B	687922		
60353749004	L-LMW-DUP-1	SM 2320B	687922		
60353399002	L-BMW-1S	SM 2540C	687484		
60353399003	L-BMW-2S	SM 2540C	687484		
60353402001	L-LMW-5S	SM 2540C	687684		
60353399026	L-LMW-2S	SM 2540C	688297		
60353399027	L-LMW-4S	SM 2540C	688297		
60353399028	L-LMW-7S	SM 2540C	688297		
60353399029	L-LMW-8S	SM 2540C	688297		
60353399030	L-LMW-1S	SM 2540C	688790		
60353749001	L-LMW-6S	SM 2540C	688790		
60353749002	L-LMW-FB-1	SM 2540C	688790		
60353749003	L-LMW-3S	SM 2540C	688297		
60353749004	L-LMW-DUP-1	SM 2540C	688297		
60353399002	L-BMW-1S	EPA 300.0	691503		
60353399003	L-BMW-2S	EPA 300.0	691503		
60353402001	L-LMW-5S	EPA 300.0	687877		
60353399026	L-LMW-2S	EPA 300.0	691514		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LCPB
Pace Project No.: 60353402

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60353399027	**L-LMW-4S**	EPA 300.0	691514		
60353399028	**L-LMW-7S**	EPA 300.0	691514		
60353399029	**L-LMW-8S**	EPA 300.0	691514		
60353399030	**L-LMW-1S**	EPA 300.0	691514		
60353749001	**L-LMW-6S**	EPA 300.0	688352		
60353749002	**L-LMW-FB-1**	EPA 300.0	688352		
60353749003	**L-LMW-3S**	EPA 300.0	688352		
60353749004	**L-LMW-DUP-1**	EPA 300.0	688352		

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Sample Condition Upon Receipt

WO# : 60353402

60353402

Client Name: Coolder Assoc.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zplc

Thermometer Used: T199 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.7 **Corr. Factor** +0.2 **Corrected** 2.9

Date and initials of person examining contents: 11-4-2020 ka

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 603173	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution:

REVIEWED
By jchurch at 10:09 am, 11/5/20

Project Manager Review: _____ Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:

Company:	Golder Associates
Address:	13515 Barrett Parkway Drive, 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 B Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Ryan Feldmann/Eric Schneider
Purchase Order No.:	
Project Name:	Ameren LCBP Labadie Energy Center
Project Number:	153-140602.0001B (COC #3)

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	9285

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER _____

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N	N	N	N		60353402
1	L-LMW-1S	WT	G																									
2	L-LMW-2S	WT	G																									
3	L-LMW-3S	WT	G																									
4	L-LMW-4S	WT	G																									
5	L-LMW-5S	WT	G			11/3/20	1445		3	1		2							/	/	/	/						L-LMW-MS/MSD-1
6	L-LMW-6S	WT	G																									
7	L-LMW-7S	WT	G																									
8	L-LMW-8S	WT	G																									
9	L-BMW-1S	WT	G			11/2/20	1000		3	1		2							/	/	/	/						
10	L-BMW-2S	WT	G			"	1153		"	"		"							/	/	/	/						
11	L-LMW-DUP-1	WT	G																									
12	L-LMW-FB-1	WT	G																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B	Eric Schneider/Golder	11/3/20	1650	Weipt/1	11.4.20	0750	2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 11/3/20

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A Required Client Information:

Company:	Golder Associates
Address:	13515 Barrett Parkway Drive, 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 B Required Project Information:

Report To:	Jeffrey Ingram
Copy To:	Ryan Feldmann/Eric Schneider
Purchase Order No.:	
Project Name:	Ameren LCBP Labadie Energy Center
Project Number:	153-140602.0001B (COC #3)

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference	
Pace Project Manager	Jamie Church
Pace Profile #	9285

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER _____

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228					Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N	N	N	N				
1	L-LMW-MS-1	WT	G			11/3/20	1445		3	6		2						/	/	/	/								at L-LMW-55
2	L-LMW-MSD-1	WT	G			"	"		3	1		1						/	/	/	/								at L-LMW-55
3		WT	G																										
4		WT	G																										
5		WT	G																										
6		WT	G																										
7		WT	G																										
8		WT	G																										
9		WT	G																										
10		WT	G																										
11		WT	G																										
12		WT	G																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B	[signature] / Golder	11/3/20	1650				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/03/20

Temp In °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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Sample Condition Upon Receipt

WO# : 60353749

60353749

Client Name: Cooler Assoc.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zplc

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

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

Date and initials of person examining contents: 11.6.2020

Temperature should be above freezing to 6°C 0.7

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 60373	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution:

REVIEWED
By jchurch at 4:51 pm, 11/6/20

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical
www.pacelabs.com

Page: 1 of 1

Section A Required Client Information		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Drive, Ste 260	Copy To:	Ryan Feldmann/Eric Schneider	Company Name:	
	Ballwin, MO 63021			Address:	
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	LCPB	Pace Quote Reference:	
Phone:	636-724-9191 Fax: 636-724-9323	Project Name:	Ameren ~~Labadie~~ Labadie Energy Center	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-140602.0001B (COC #2)	Pace Profile #:	9285

REGULATORY AGENCY: NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER _____

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals*	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
	Analysis Test Y/N																		N	N	N	N	N	N	N	N		60353749
1	L-CA-DUP-3	WT	G																									
2	L-CA-FB-1	WT	G																									
3	L-CA-FB-2	WT	G																									
4	~~L-CA-FB-3~~ L-LMW-1S	WT	G			11/5/20	1215		3	1		2						/	/	/	/							
5	~~L-MS-1~~ L-LMW-2S	WT	G			11/5/20	1015		3	1		2						/	/	/	/							
6	~~L-MSD-1~~ L-LMW-4S	WT	G			11/4/20	1035		3	1		2						/	/	/	/							
7	~~L-MS-2~~ L-LMW-7S	WT	G			11/5/20	1105		3	1		2						/	/	/	/							
8	~~L-MSD-2~~ L-LMW-8S	WT	G			11/5/20	1215		3	1		2						/	/	/	/							
9	L-LMW-10S	WT	G			11/5/20	1005		3	1		2						/	/	/	/							
10	L-LMW-FB-1	WT	G			11/5/20	1020		3	1		2						/	/	/	/							
11	L-LMW-3S	WT	G			11/4/20	1125		3	1		2						/	/	/	/							
12	L-LMW-DUP-1	WT	G			11/4/20	—		3	1		2						/	/	/	/							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B	Brendan Talbert/Golder	11/5/20	1420	Angela McM	11/5	1425				
~~**EPA 200.8: Be, Li, Mo~~	Angela McM	11/5/20	14:25	[illegible]	11.6.20	0409	1.1	Y	Y	Y
~~**EPA 200.8: Sb, As, Cr, Se~~							0.9	/	/	/
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brendan Talbert

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/5/2020

MEMORANDUM

DATE December 14, 2020 **Project No.** 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth **EMAIL AMuehlfarth@golder.com**

DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCPB – DETECTION MONITORING - DATA PACKAGE 60353402

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

- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).

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Ballwin, Missouri, USA 63021

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QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
Project Manager: J. Ingram
Project Name: Ameren - LEC - LCPB
Project Number: 153140602
Reviewer: A. Muehlfarth
Validation Date: 12/14/2020

Laboratory: Pace Analytical Services, LLC
SDG #: 60353402
Analytical Method (type and no.): EPA 200.7 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐
Sample Names L-LMW-5S, L-LMW-6S, L-LMW-FB-1, L-LMW-3S, L-LMW-DUP-1, L-BMW-1S, L-BMW-2S, L-LMW-2S, L-LMW-4S, L-LMW-7S, L-LMW-8S, L-LMW-1S

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			11/02/2020 - 11/05/2020
b) Sampling team indicated?	x			EMS/BTT
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Sp.Cond, ORP, Temp, DO, Turb
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (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?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?	x			See Notes

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	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?	x			

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	x			L-LMW-DUP-1 @ L-LMW-3S
b) Were field dup. precision criteria met (note RPD)?	x			Max RPD: 6.7% (<20%)
c) Were lab duplicates analyzed (note original and duplicate samples)?	x			
d) Were lab dup. precision criteria met (note RPD)?	x			Max RPD: 8% (<10%)

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?		x		
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?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?	x			

Comments/Notes:

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

Method Blanks:

2782538: Sodium (329J), associated with samples 60353749001 through 60353749004.

2795352: Magnesium (35.6J), associated with samples 60353399002 and 60353399003. Sample results >10x blank result, no qualification necessary.

2795371: Calcium (40.5J), associated with samples 60353399028 through 60353399030. Sample results >10x blank result, no qualification necessary.

2793489: Chloride (0.59J), associated with samples 60353399026 through 60353399030. Sample results greater than reporting limit, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field Blanks:

L-LMW-FB-1 @ L-LMW-6S: Boron (21.1 J), Sodium (266 J), TDS (9.0). Results in associated sample >10x blank result, no qualification necessary.

MS/MSD:

2779118: MS % recovery high for Potassium and Sodium. MS performed on unrelated sample, no qualification necessary.

2795356/2795357: MSD % recovery low for Calcium. MSD performed on unrelated sample, no qualification necessary.

2795365/2795366: MS % recovery low for Calcium. MS performed on unrelated sample, no qualification necessary.

2795373: MS % recovery low for Calcium. Associated with sample L-LMW-7S.

2795374/2795375: MS/MSD % recovery low for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2782046/2782047: MS/MSD % recovery high for Fluoride. 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
L-LMW-FB-1	Sodium	500	UJ	Detected in method blank
L-LMW-7S	Calcium	173000	J	MS % recovery low

Signature: Ann Muehlforth

Date: 12/14/2020

APPENDIX B

Alternative Source Demonstration – November 2019 Sampling Event

TECHNICAL MEMORANDUM

DATE May 19, 2020 **Project No.** 153140602

TO Ameren Missouri
1901 Chouteau Ave, St. Louis, Mo 63103

FROM Mark Haddock, PE, Jeffrey Ingram

LCPB – ATERNATIVE SOURCE DEMONSTRATION – NOVEMBER 2019 SAMPLING EVENT

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), Golder Associates Inc. ("Golder") has prepared this Technical Memorandum that indicates Statistically Significant Increases (SSIs) calculated at Ameren Missouri's (Ameren) Labadie Energy Center (LEC), fly ash surface impoundment (LCPB) result from an alternative source. This LCPB Alternative Source Demonstration (ASD) satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 BACKGROUND

In November 2017, the first round of detection monitoring was completed at the Labadie Energy Center's LCPB Coal Combustion Residual (CCR) Unit in Franklin County, Missouri. This sampling was completed in accordance with the CCR Rule and SSIs were identified and verified. In February/March 2018, additional drilling and a detailed analysis of results were completed for the LCPB and it was determined that the SSIs in the CCR Rule groundwater monitoring wells at the LCPB were not caused by impacts from the LCPB. The SSIs observed in LCPB wells were caused by an alternative source that was determined to be the adjacent LCPA surface impoundment as documented in previous ASDs. A copy of the ASD report for the November 2017 sampling event is provided in Appendix B of the 2018 LCPB Annual Groundwater Monitoring and Corrective Action Report.

3.0 NOVEMBER 2019 SAMPLING EVENT

A summary of the November 2019 sampling results can be found in **Table 1**. **Figure 1** of this Technical Memorandum displays a comparison of November 2019 LCPB CCR Rule groundwater monitoring well data to cation and anion data for the LCPA pore-water, LCPB pore-water, and background groundwater zones. As shown in this figure, the November 2019 LCPB monitoring well sample results plot between the background groundwater quality and the LCPA pore-water on the piper diagram. This indicates that the impacts originate from LCPA and are mixing with groundwater as they migrate. Like the November 2017 Sampling Event ASD, results from this diagram demonstrate that groundwater quality in the monitoring wells around the LCPB is impacted by the LCPA and not the LCPB.

Golder Associates Inc.
13515 Barrett Parkway Drive, Suite 260, Ballwin, Missouri, USA 63021 T: +1 314 984-8800 F: +1 314 984-8770

Additional supporting lines of evidence from the previous ASDs are also applicable in this November 2019 Sampling Event ASD. Additional evidence includes:

- Potentiometric surface mapping from 2018, 2019, and 2020 continue to show that while groundwater conditions can be variable, net groundwater flow is toward the north/northeast, flowing from the bluffs toward the Missouri River. This supports the conclusion that the unlined LCPA is the source of impacts at the downgradient monitoring wells because impacted monitoring wells around the LCPB are generally located downgradient from the LCPA.
- The LCPB was constructed with an engineered liner system consisting of a 60-mil High Density Polyethylene (HDPE) geomembrane liner with a bottom elevation of approximately 460 feet above mean sea level (FT MSL) at its lowest point. The low permeability HDPE liner system in the LCPB is a barrier to CCR impact migration and provides containment for CCR.
- The LCPA was built in the early 1970's and has a bottom elevation estimated to be at approximately 410 FT MSL, which is much deeper than the LCPB. In addition to the different pore-water fingerprints, there are elevated concentrations of CCR impact indicators in the intermediate and deep zones of groundwater in the alluvial aquifer as shown in the LCPA Annual reports. Since impacts are present in the shallow, intermediate (middle), and deep alluvial zones and are not isolated to the shallow zone where LCPB impacts would most readily occur, the impacts are most likely from the LCPA, which extends to deeper depths in the aquifer.

In summary, groundwater chemistry, pore-water chemistry fingerprints, cell construction and hydrogeological evidence all demonstrate that impacts (SSIs) calculated during the November 2019 Sampling Event for the LCPB CCR Unit were not caused by impacts from the LCPB surface impoundment, and the LCPA surface impoundment is the source of the LCPB SSIs.

CERTIFICATION STATEMENT

This *LCPB – Alternative Source Demonstration – November 2019 Sampling Event 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 *LCPB – Alternative Source Demonstration – November 2019 Sampling Event* located at 226 Labadie Power Plant Road, Labadie Missouri 63055 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

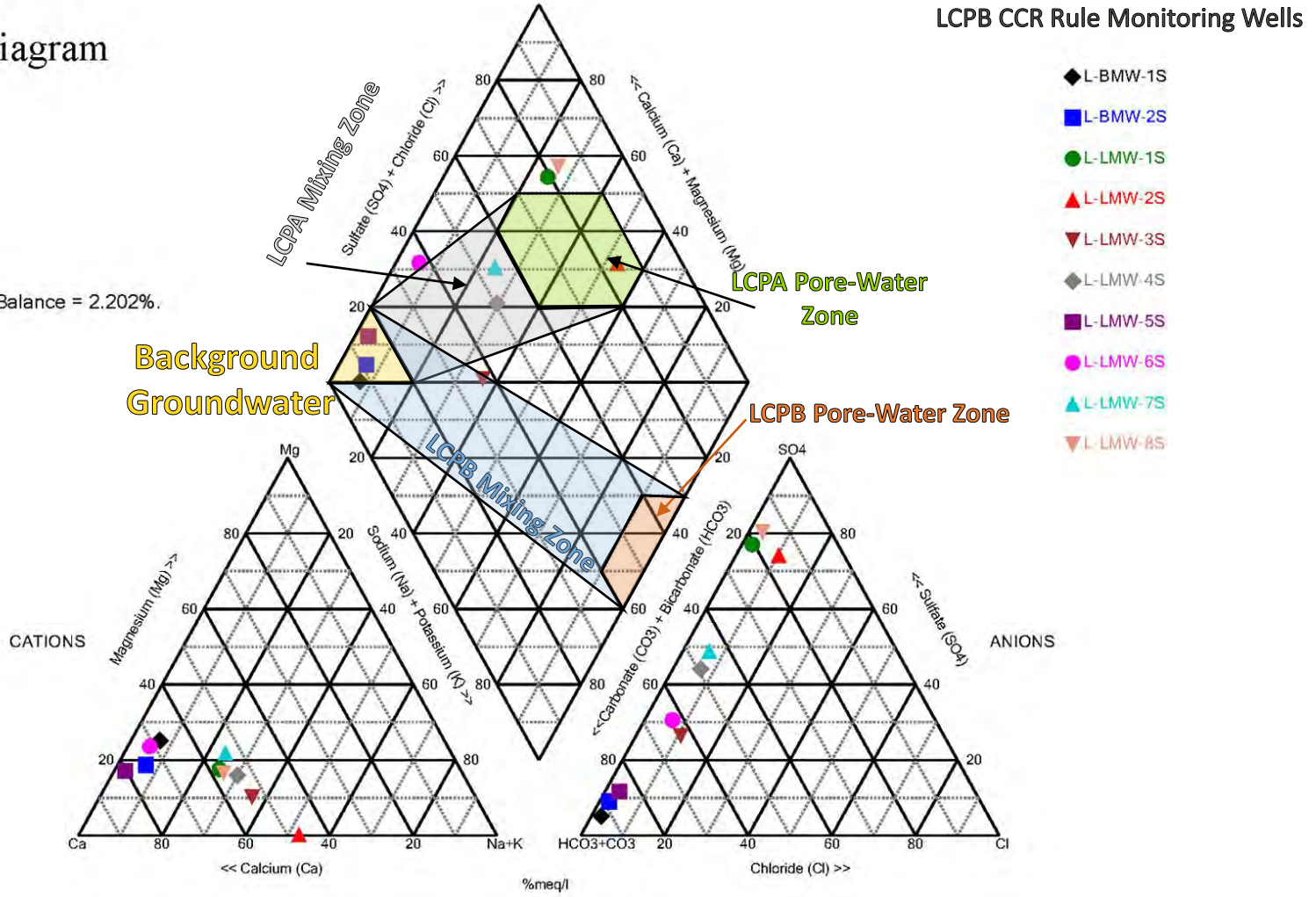
Table 1
November 2019 Detection Monitoring Results
LCPB Surface Impoundment
Labadie Energy Center, Franklin County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS							
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S
November 2019 Detection Monitoring Event												
DATE	NA	NA	11/5/2019	11/5/2019	11/7/2019	11/7/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2020
pH	SU	6.132-7.436	6.83	7.08	6.87	9.80	7.41	7.00	6.76	6.94	6.89	7.11
BORON, TOTAL	µg/L	156.1	122	61.2 J	11,100	3,380	3,700	8,730	498	429	10,500	7,750
CALCIUM, TOTAL	µg/L	219,000	194,000	125,000	291,000 J	49,500	144,000	136,000	192,000	146,000	136,000	212,000
CHLORIDE, TOTAL	mg/L	8.317	4.8	3.3	16.8	20.1	42.8	25.2	8.8	20.9	22.9	19.5
FLUORIDE, TOTAL	mg/L	0.2535	ND	0.12 J	0.23	0.22	0.24	0.17 J	ND	0.28	0.24	0.31
SULFATE, TOTAL	mg/L	70.05	29.9	28.5	938	206	151	261	55.9	155	278	773
TOTAL DISSOLVED SOLIDS	mg/L	784	700	425	1,820	396	763	804	648	691	815	1,300
January-February 2020 Verification Sampling Event												
DATE	NA	NA						1/7/2020	1/8/2020	2/6/2020		2/6/2020
pH	SU	6.132-7.436										
BORON, TOTAL	µg/L	156.1							98.3 J			
CALCIUM, TOTAL	µg/L	219,000										
CHLORIDE, TOTAL	mg/L	8.317							3.3			
FLUORIDE, TOTAL	mg/L	0.2535								0.23		0.26
SULFATE, TOTAL	mg/L	70.05										
TOTAL DISSOLVED SOLIDS	mg/L	784						777				

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. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Prepared By: EMS
Checked By: BTT
Reviewed By: SCP

Piper Diagram



Notes

1) Piper diagram generated using Sanitas Software.
2) Data used to generate diagram available in LCPB Annual Report.

CLIENT/PROJECT					TITLE					
AMEREN MISSOURI LABADIE LCPB ASD				GOLDER	**LCPB PIPER DIAGRAM FOR NOVEMBER 2019**					
PREPARED	CHECKED	REVIEWED	DATE	SCALE	FILE NO.	PROJECT NO.	DRAWING NO.	SUBTITLE	REV. NO.	FIGURE
JSI	KAB	MNH	2020/05/04	NA	NA	153-140602	NA	NA	0	1

APPENDIX C

Alternative Source Demonstration – April 2020 Sampling Event

TECHNICAL MEMORANDUM

DATE November 18, 2020 **Project No.** 153140602

TO Ameren Missouri
1901 Chouteau Ave, St. Louis, Mo 63103

FROM Mark Haddock, PE, Jeffrey Ingram

LCPB – ATERNATIVE SOURCE DEMONSTRATION – APRIL 2020 SAMPLING EVENT

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), Golder Associates Inc. ("Golder") has prepared this Technical Memorandum that indicates Statistically Significant Increases (SSIs) calculated at Ameren Missouri's (Ameren) Labadie Energy Center (LEC), fly ash surface impoundment (LCPB) result from an alternative source. This LCPB Alternative Source Demonstration (ASD) satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 BACKGROUND

In November 2017, the first round of detection monitoring was completed at the Labadie Energy Center's LCPB Coal Combustion Residual (CCR) Unit in Franklin County, Missouri. This sampling was completed in accordance with the CCR Rule and SSIs were identified and verified. In February/March 2018, additional drilling and a detailed analysis of results were completed for the LCPB and it was determined that the SSIs in the CCR Rule groundwater monitoring wells at the LCPB were not caused by impacts from the LCPB. The SSIs observed in LCPB wells were caused by an alternative source that was determined to be the adjacent LCPA surface impoundment as documented in previous ASDs. A copy of the ASD report for the November 2017 sampling event is provided in Appendix B of the 2018 LCPB Annual Groundwater Monitoring and Corrective Action Report.

3.0 APRIL 2020 SAMPLING EVENT

A summary of the April 2020 sampling results can be found in **Table 1**. **Figure 1** of this Technical Memorandum displays a comparison of April 2020 LCPB CCR Rule groundwater monitoring well data to cation and anion data for the LCPA pore-water, LCPB pore-water, and background groundwater zones. As shown in this figure, the April 2020 LCPB monitoring well sample results plot between the background groundwater quality and the LCPA pore-water on the piper diagram. This indicates that the impacts originate from LCPA and are mixing with groundwater as they migrate. Like the November 2017 Sampling Event ASD, results from this diagram demonstrate that groundwater quality in the monitoring wells around the LCPB is impacted by the LCPA and not the LCPB.

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Additional supporting lines of evidence from the previous ASDs are also applicable in this April 2020 Sampling Event ASD. Additional evidence includes:

- Potentiometric surface mapping from 2018, 2019, and 2020 continue to show that while groundwater conditions can be variable, net groundwater flow is toward the north/northeast, flowing from the bluffs toward the Missouri River. This supports the conclusion that the unlined LCPA is the source of impacts at the downgradient monitoring wells because impacted monitoring wells around the LCPB are generally located downgradient from the LCPA.
- The LCPB was constructed with an engineered liner system consisting of a 60-mil High Density Polyethylene (HDPE) geomembrane liner with a bottom elevation of approximately 460 feet above mean sea level (FT MSL) at its lowest point. The low permeability HDPE liner system in the LCPB is a barrier to CCR impact migration and provides containment for CCR.
- The LCPA was built in the early 1970's and has a bottom elevation estimated to be at approximately 410 FT MSL, which is much deeper than the LCPB. In addition to the different pore-water fingerprints, there are elevated concentrations of CCR impact indicators in the intermediate and deep zones of groundwater in the alluvial aquifer as shown in the LCPA Annual reports. Since impacts are present in the shallow, intermediate (middle), and deep alluvial zones and are not isolated to the shallow zone where LCPB impacts would most readily occur, the impacts are most likely from the LCPA, which extends to deeper depths in the aquifer.

In summary, groundwater chemistry, pore-water chemistry fingerprints, cell construction and hydrogeological evidence all demonstrate that impacts (SSIs) calculated during the April 2020 Sampling Event for the LCPB CCR Unit were not caused by impacts from the LCPB surface impoundment, and the LCPA surface impoundment is the source of the LCPB SSIs.

CERTIFICATION STATEMENT

This *LCPB – Alternative Source Demonstration – April 2020 Sampling Event 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 *LCPB – Alternative Source Demonstration – April 2020 Sampling Event* located at 226 Labadie Power Plant Road, Labadie Missouri 63055 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

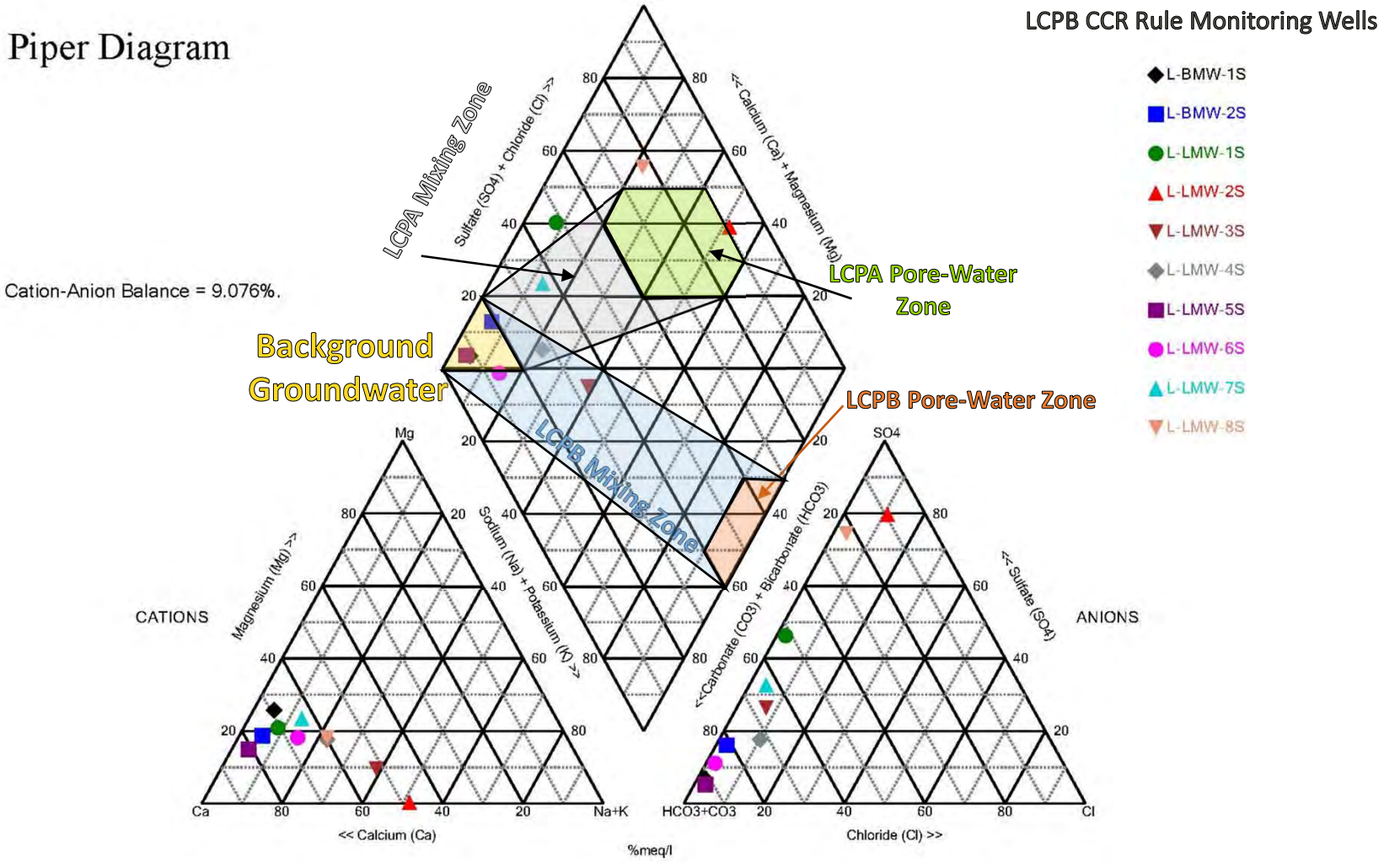
Table 1
April 2020 Detection Monitoring Results
LCPB Surface Impoundment
Labadie Energy Center, Franklin County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS							
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1S	BMW-2S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S
April 2020 Detection Monitoring Event												
DATE	NA	NA	4/14/2020	4/14/2020	4/16/2020	4/14/2020	4/20/2020	4/20/2020	4/20/2020	4/16/2020	4/16/2020	4/16/2020
pH	SU	6.132-7.436	6.62	6.98	6.95	9.74	7.05	6.68	6.89	6.90	6.86	7.23
BORON, TOTAL	µg/L	156.1	95.2 J	51.0 J	5,910	3,340	3,980	3,390	54.9 J	1,770	6,460	7,720
CALCIUM, TOTAL	µg/L	219,000	212,000	137,000	211,000	52,100	149,000	178,000	121,000	169,000	198,000	222,000
CHLORIDE, TOTAL	mg/L	8.317	3.7	4.0	8.0	19.2	27.8	38.5	3.5	3.7	14.8	18.9
FLUORIDE, TOTAL	mg/L	0.2535	0.16 J	0.14 J	0.19 J	0.21	0.25	0.28	0.24	0.37	0.23	0.41
SULFATE, TOTAL	mg/L	70.05	38.5	45.5	293	195	154	99.9	14	53.2	195	633
TOTAL DISSOLVED SOLIDS	mg/L	784	711	555	942	386	788	767	373	642	839	1,200
May 2020 Verification Sampling Event												
DATE	NA	NA					5/26/2020	5/26/2020		5/26/2020		5/26/2020
pH	SU	6.132-7.436										
BORON, TOTAL	µg/L	156.1										
CALCIUM, TOTAL	µg/L	219,000										209,000
CHLORIDE, TOTAL	mg/L	8.317										
FLUORIDE, TOTAL	mg/L	0.2535						0.28		0.35		
SULFATE, TOTAL	mg/L	70.05										
TOTAL DISSOLVED SOLIDS	mg/L	784					654					

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 and that had not already been verified were tested during Verification Sampling.

Prepared By: JSI
Checked By: BTT
Reviewed By: MNH

Piper Diagram



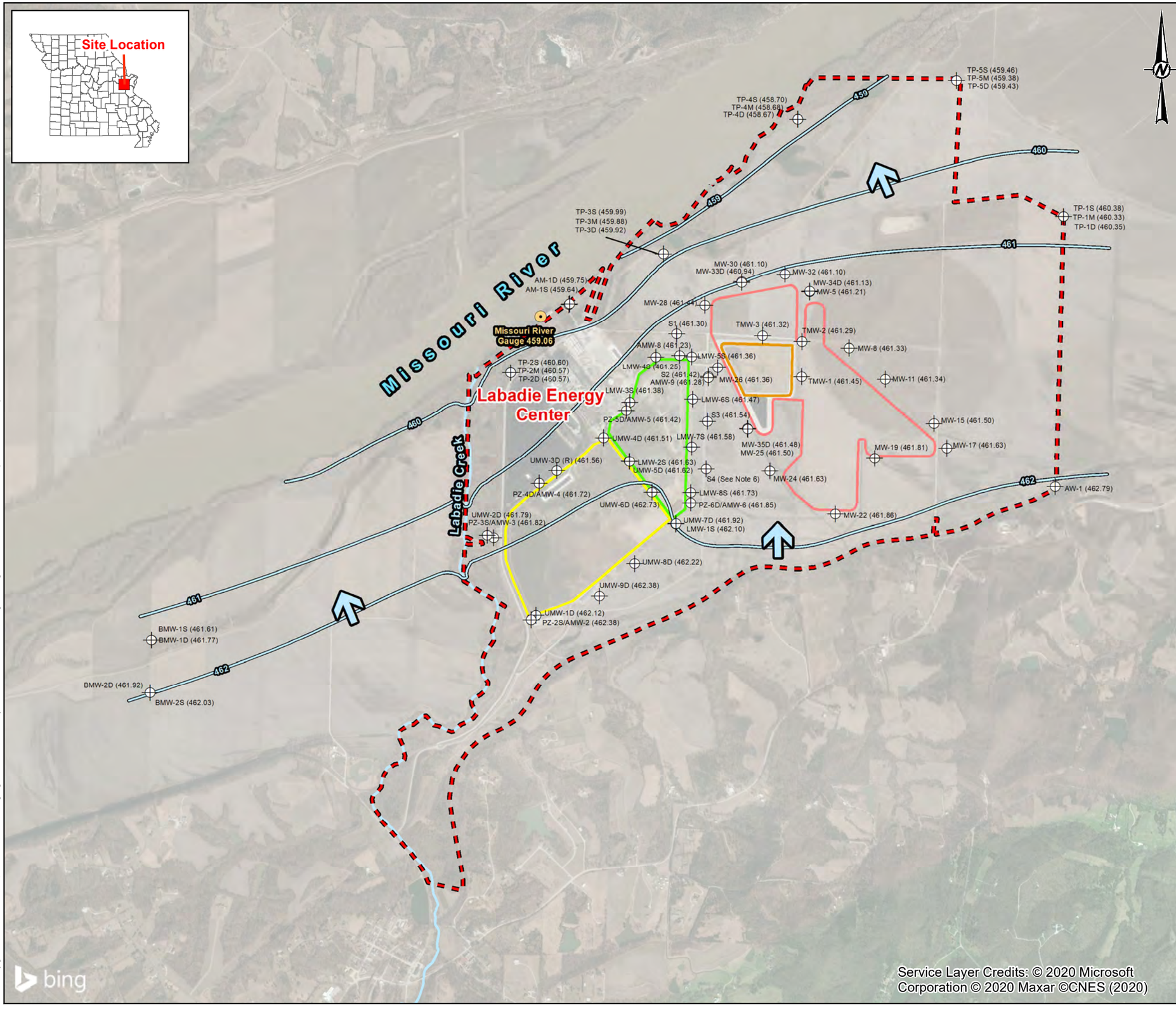
Notes

1) Piper diagram generated using Sanitas Software.
2) Data used to generate diagram available in LCPB Annual Report.

CLIENT/PROJECT **AMEREN MISSOURI LABADIE LCPB ASD**				GOLDER				TITLE **LCPB PIPER DIAGRAM FOR APRIL 2020**		
PREPARED EMS	CHECKED JSI	REVIEWED MNH	DATE 2020/10/12	SCALE NA	FILE NO. NA	PROJECT NO. 153-140602	DRAWING NO. NA	SUBTITLE NA	REV. NO. 0	FIGURE 1

APPENDIX D

2020 Potentiometric Surface Maps



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Final UWL Fence Perimeter
- LCL1 - Utility Waste Landfill Cell 1

Surface Impoundments

- LCPA - Bottom Ash Surface Impoundment
- LCPB - Fly Ash Surface Impoundment

Monitoring Well or Piezometer

- Monitoring Well or Piezometer

Surface Water Elevation Measurement Location

- Missouri River Gauge

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
4. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
5. THE UWL BOUNDARIES AND DESIGNATIONS ARE BASED ON AMEREN LABADIE CONSTRUCTION PERMIT APPLICATION DRAWINGS.
6. MONITORING WELL S4 WAS NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING DUE TO MEASUREMENT ERROR.

REFERENCES

1. ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.
3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 1,000 2,000 3,000 4,000 5,000 6,000

Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
JANUARY 6, 2020 POTENTIOMETRIC SURFACE MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-06
PREPARED	EMS
DESIGN	JSI
REVIEW	BTT
APPROVED	MNH

PROJECT No. 153-140602
PHASE 0001
FIGURE **D1**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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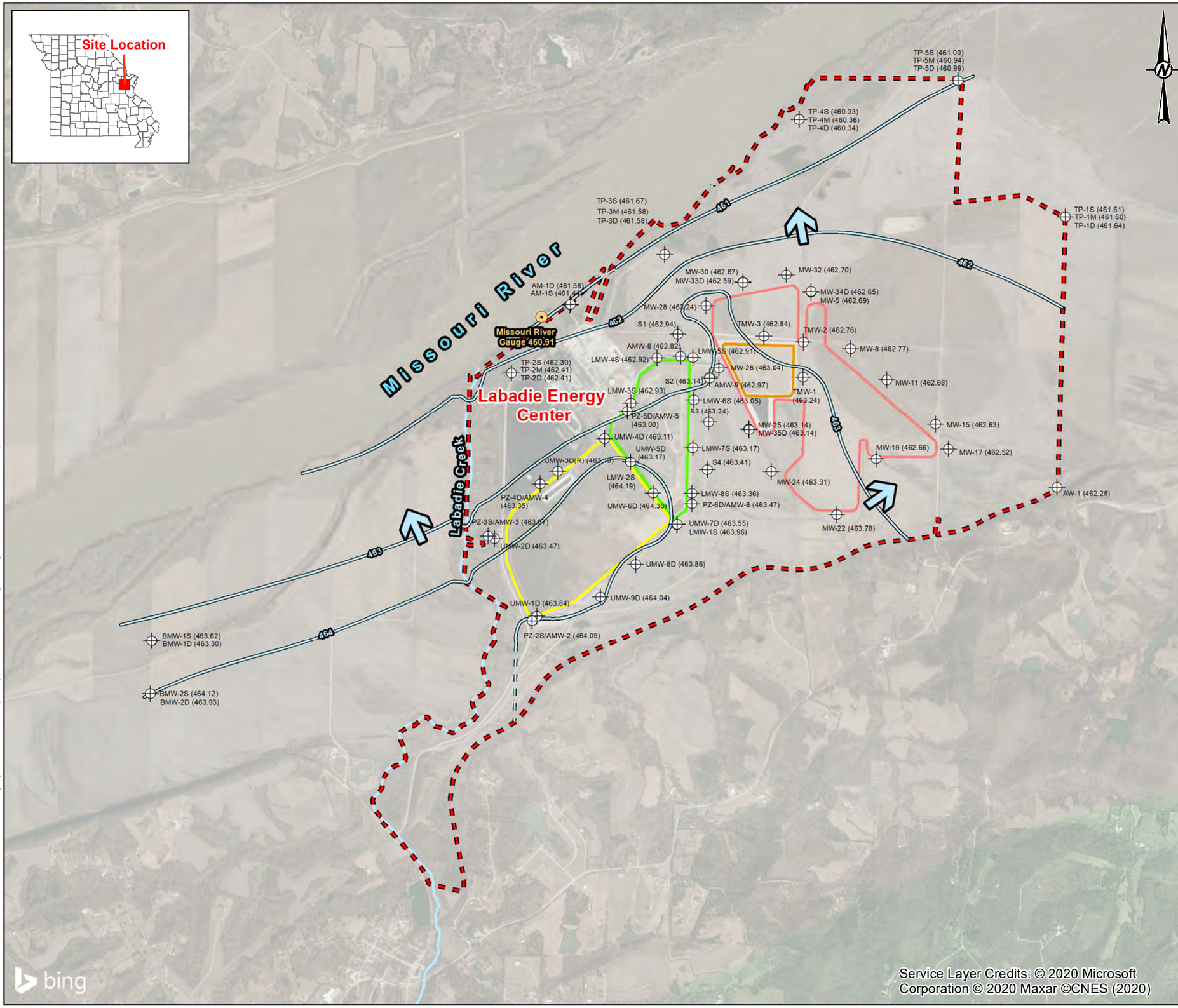

LEGEND

Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

Proposed Final UWL Fence Perimeter

LCL1 - Utility Waste Landfill Cell 1

Surface Impoundments

LCPA - Bottom Ash Surface Impoundment

LCPB - Fly Ash Surface Impoundment

Monitoring Well or Piezometer

Monitoring Well or Piezometer

Surface Water Elevation Measurement Location

Missouri River Gauge

Groundwater Elevation Contours

Groundwater Elevation Contour (FT MSL)

Inferred Groundwater Elevation Contour (FT MSL)

Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
4. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
5. THE UWL BOUNDARIES AND DESIGNATIONS ARE BASED ON AMEREN LABADIE CONSTRUCTION PERMIT APPLICATION DRAWINGS.

REFERENCES

1. ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.
3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
APRIL 13, 2020 POTENTIOMETRIC SURFACE MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-04-13
PREPARED	BTT
DESIGN	JSI
REVIEW	KAB
APPROVED	MNH

PROJECT No. 153-140602
PHASE 0001
FIGURE **D2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
1 in
0

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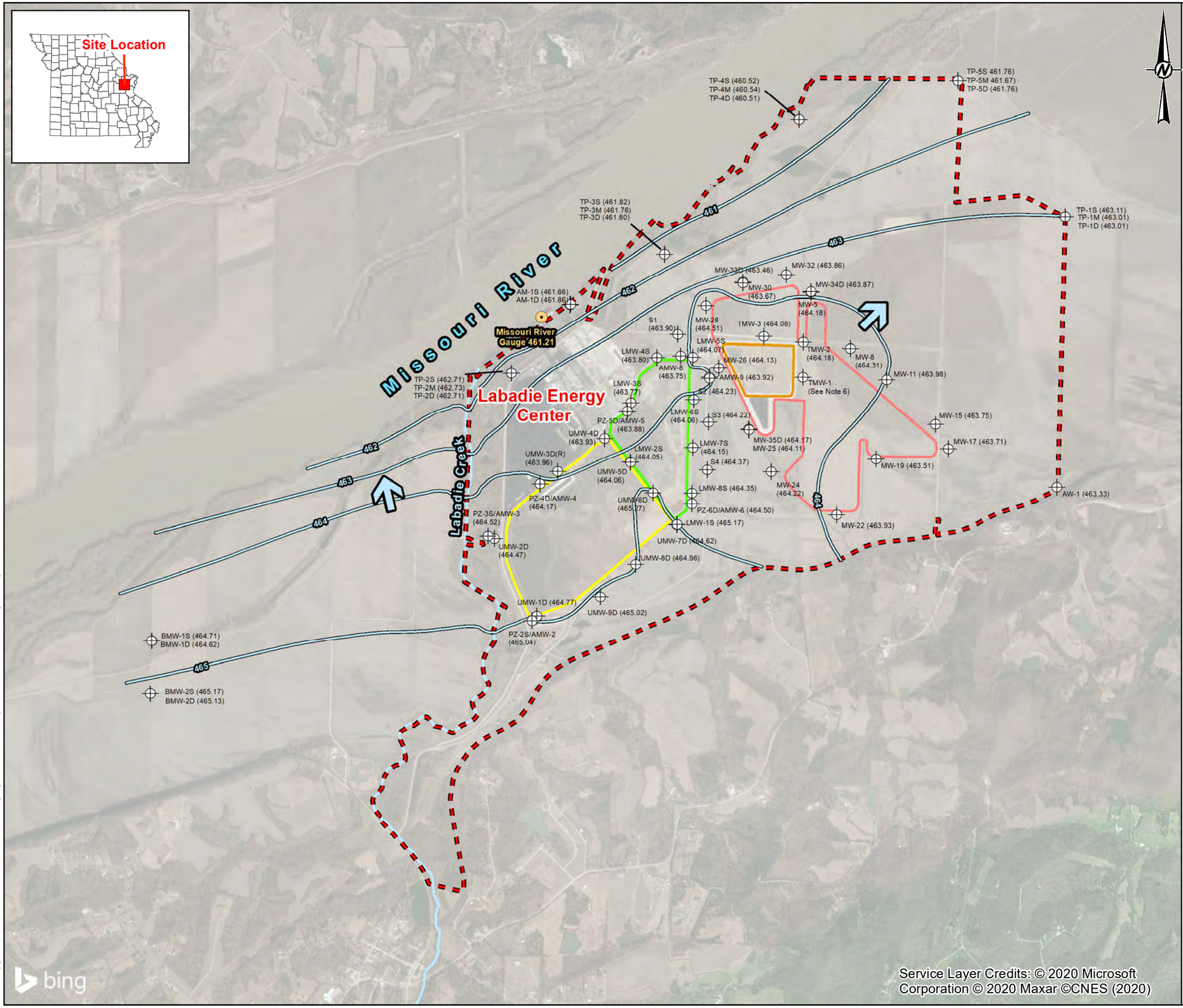

LEGEND

Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

Proposed Final UWL Fence Perimeter

LCL1 - Utility Waste Landfill Cell 1

Surface Impoundments

LCPA - Bottom Ash Surface Impoundment

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Monitoring Well or Piezometer

Surface Water Elevation Measurement Location

Missouri River Gauge

Groundwater Elevation Contours

Groundwater Elevation Contour (FT MSL)

Groundwater Flow Direction

NOTES

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5. THE UWL BOUNDARIES AND DESIGNATIONS ARE BASED ON AMEREN LABADIE CONSTRUCTION PERMIT APPLICATION DRAWINGS.
6. TMW-1 WAS NOT USED IN POTENTIOMETRIC SURFACE CONTOURING DUE TO MEASUREMENT ERROR.

REFERENCES

1. ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.
3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
MAY 26, 2020 POTENTIOMETRIC SURFACE MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-06-03
PREPARED	BTT
DESIGN	JSI
REVIEW	KAB
APPROVED	MNH

PROJECT No. 153-140602
PHASE 0001
FIGURE **D3**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 0 1in

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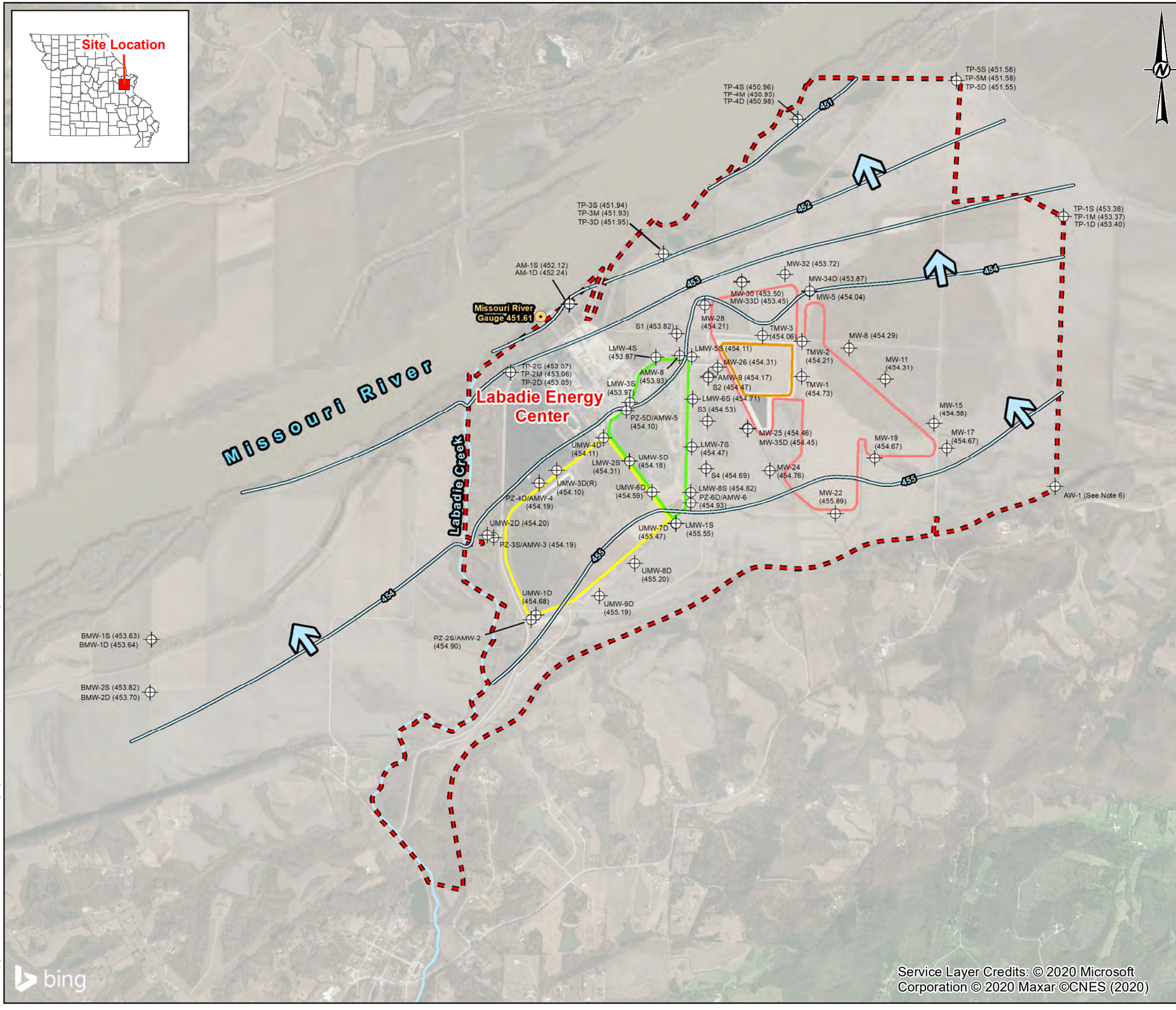

LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

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- LCL1 - Utility Waste Landfill Cell 1

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5. THE UWL BOUNDARIES AND DESIGNATIONS ARE BASED ON AMEREN LABADIE CONSTRUCTION PERMIT APPLICATION DRAWINGS.
6. AW-1 WAS NOT USED IN POTENTIOMETRIC SURFACE CONTOURING DUE TO MEASUREMENT ERROR.

REFERENCES

1. ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.
3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
OCTOBER 30, 2020 POTENTIOMETRIC SURFACE MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-11-25
PREPARED	BTT
DESIGN	JSI
REVIEW	EMS
APPROVED	MNH

PROJECT No. 153-140602
PHASE 0001
FIGURE **D4**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in 0

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