REPORT

2017 ANNUAL GROUNDWATER MONITORING REPORT

LCL1 - Utility Waste Landfill Cell 1, Labadie Energy Center

Franklin County, Missouri, USA

Submitted To: Ameren Missouri
1901 Chouteau Avenue
St. Louis, Missouri 63103

Submitted By: Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA

Distribution: 1 Electronic Copy — Ameren Missouri
1 Hard Copy — Golder Associates

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1.0 INTRODUCTION

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§§ 257.90(e)). Ameren Missouri (Ameren) has determined that the Utility Waste Landfill (UWL) at the Labadie Energy Center (LEC) is subject to the requirements of the CCR Rule. The UWL currently only operates LCL1 (Cell 1) which is an on-site landfill cell and manages Coal Combustion Residuals (CCR) from the facility. This is the first Annual Report for the LCL1 and describes CCR Rule groundwater monitoring activities through December 31, 2017.

A groundwater monitoring well network was designed and installed for the LCL1 to meet the requirements of the CCR Rule. The well network consists of two background monitoring wells and four downgradient monitoring wells that were installed in March 2013, February 2016, and April 2016. Eight independent baseline sampling events were completed using this well network to sample and test for all Appendix III and Appendix IV parameters, as required by the CCR Rule. The first Detection Monitoring sampling event was completed November 7-8, 2017. Statistical analysis of the Detection Monitoring data will be performed in 2018. The LCL1 will continue Detection Monitoring on a semi-annual basis in accordance with the CCR Rule. As of December 31, 2017, the LCL1 groundwater monitoring program status remains in Detection Monitoring.

2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

In accordance with the CCR Rule, a groundwater monitoring system has been installed to monitor the LCL1. The groundwater monitoring system consists of six monitoring wells screened in the uppermost aquifer (alluvial aquifer). Two existing monitoring wells (MW-26 and TMW-1) were installed in March, 2013 by Reitz & Jens, INC. as a part of the state UWL monitoring program. These monitoring wells were constructed by Brotcke Well & Pump of Fenton, Missouri using hollow stem auger (HSA) drilling techniques with a Diedrich D-50 Turbo drill rig. The remaining four monitoring wells were installed by Cascade Drilling LP using rotosonic drilling techniques under the direct supervision of a Golder Geologist or Engineer. All wells were installed in accordance with Missouri Department of Natural Resources (MDNR) well construction rules (10 CSR 23-4.060 Construction Standards for Monitoring Wells). A summary of groundwater monitoring well construction details is provided in **Table 1** and **Appendix A**.

2.1 Background Monitoring Well Locations

Background Monitoring wells for the LCL1 consist of BMW-1S and BMW-2S. The Rule (§257.91(a)(1)) requires that background groundwater monitoring wells *"Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit."* The Rule allows background monitoring wells that are not hydraulically upgradient where hydrogeological conditions preclude it, and/or where sampling at other monitoring wells will provide an indication of background groundwater quality that is as representative as, or more representative than, that provided by upgradient monitoring well locations. The groundwater flow direction observed in the alluvial aquifer is generally from the bluffs area located south of the site toward the Missouri River to the north, however, alluvial aquifer flow is locally influenced by water levels in the Bottom Ash Surface Impoundment (LCPA) and the Missouri River level.

As shown in **Figure 1**, the background monitoring wells BMW-1S and BMW-2S are west of the UWL at a location approximately 2,000 to 3,000 feet from the Missouri River. These wells provide background groundwater quality representative of upgradient conditions in the alluvial aquifer.

2.2 Downgradient Monitoring Well Locations

Downgradient monitoring wells are located ringing the LCL1 to monitor downgradient water quality. **Figure 1** shows that the downgradient well network consists of four groundwater monitoring wells (TMW-1, TMW-2, TMW-3, and MW-26) around the LCL1 at locations that accurately represent the quality of groundwater passing the waste boundary of the CCR Unit.

3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

3.1 Baseline Sampling Events (Background Events)

As required by the CCR Rule, eight baseline sampling events were completed prior to October 17, 2017. Groundwater sampling was completed by Golder in accordance with the LCL1 Groundwater Monitoring Plan (GMP). As required by the CCR Rule, baseline sampling was completed for all Appendix III and Appendix IV parameters. Groundwater sampling and field parameter results from the initial baseline sampling are provided in **Appendix B and Tables 2-9**.

3.2 Detection Monitoring

Detection Monitoring samples were collected at the LEC from the groundwater monitoring wells on November 7-8, 2017**.** As required by the CCR Rule, testing was completed for all Appendix III analytes. Groundwater sampling and field parameter results from the November 2017 Detection Monitoring event are provided in **Appendix B** and **Table 10**. Statistical analyses to evaluate Statistically Significant Increases (SSI) over background for the November 2017 Detection Monitoring data were not completed in 2017. Results of the statistical evaluation will be included in the 2018 Annual Report.

3.3 Groundwater Elevation, Flow Rate and Direction

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

Groundwater elevations were used to generate potentiometric surface maps included in **Appendix C**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost 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 as a result 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 (bluffs area) to the north (Missouri River) under normal river conditions is expected. However, during periods of high river levels, groundwater flow can temporarily reverse and flow southward. 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 gradient were estimated for the downgradient CCR monitoring wells using the USEPA’s On-line Tool for Site Assessment Calculation for Hydraulic Gradient (Magnitude and Direction) (USEPA, 2016). Results from this assessment indicate that while groundwater flow direction is variable, the overall net groundwater flow at the LCL1 is generally towards the north, flowing from the bluffs towards the river. Horizontal gradients calculated by the program range from 0.0002 to 0.0008 feet/foot with an estimated net annual groundwater velocity of approximately 20 feet per year.

4.0 STATUS OF THE GROUNDWATER MONITORING PROGRAM

As required by the CCR Rule prior to the October 17, 2017 deadline, the following was completed; (1) a Groundwater Monitoring Well System was installed and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, and (3) a GMP was prepared recording the design, installation, development, sampling procedures, as well as statistical methods and placed in the owner's operating record. A summary including the number of groundwater samples that were collected for analysis, the dates the samples were collected, and whether the sample was required by baseline, detection, or assessment monitoring is provided below in **Table 11**. The first Detection Monitoring sampling event for the LEC was completed on November 7-8, 2017. According to the CCR Rule, statistical evaluation for these samples must be completed within 90 days of completing sampling and analysis. Verification sampling, if needed, and statistical analysis will be completed by January 15, 2018 and included in future reports and notifications as required by the CCR Rule. Semi-annual Detection Monitoring will continue as required by the CCR Rule. Section 5.0 provides discussion of activities planned for 2018.

Table 11 – Summary of Groundwater Sampling Dates

Sampling Event	BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3	Detection or Assessment Monitoring
	Date of Sample Collection						
Baseline Event 1	3/22/2016	3/22/2016	5/5/2016	5/5/2016	5/5/2016	5/6/2016	Baseline
Baseline Event 2	5/3/2016	5/4/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	Baseline
Baseline Event 3	7/11/2016	7/11/2016	7/12/2016	7/13/2016	7/13/2016	7/13/2016	Baseline
Baseline Event 4	9/13/2016	9/9/2016	9/13/2016	9/13/2016	9/12/2016	9/13/2016	Baseline
Baseline Event 5	11/11/2016	11/11/2016	11/15/2016	11/15/2016	11/15/2016	11/15/2016	Baseline
Baseline Event 6	1/16/2017	1/16/2017	1/16/2017	1/17/2017	1/17/2017	1/17/2017	Baseline
Baseline Event 7	3/1/2017	3/1/2017	3/3/2017	3/3/2017	3/3/2017	3/3/2017	Baseline
Baseline Event 8	5/31/2017	5/31/2017	6/2/2017	6/2/2017	6/2/2017	6/2/2017	Baseline
November 2017 Detection Monitoring Event	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017	Detection
Total Number of Samples Collected	9	9	9	9	9	9	NA

Notes:
1) Baseline Events sampled for all Appendix III and Appendix IV parameters.
2) The November 2017 Detection Monitoring Event sampled for Appendix III parameters.
3) NA – Not Applicable.

4.1 Sampling Issues

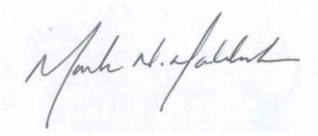
From approximately April 30, 2017 to May 8, 2017, some of the monitoring wells at the LEC were under water due to the flooding of the Missouri River. At the LCL1, the following wells were submerged by floodwater: MW-26, TMW-1, TMW-2, TMW-3, BMW-1S, and BMW-2S. On May 10, 2017, Golder performed a post-flood monitoring well inspection at the LEC and found that none of the LCL1 monitoring wells sustained flood damage. Due to access problems resulting from the flood, the wells were not able to be sampled until May 31, 2017. No other notable sampling issues were encountered.

5.0 ACTIVITIES PLANNED FOR 2018

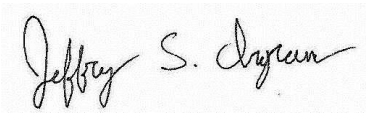
Detection Monitoring sampling is currently scheduled to be completed semi-annually in the second and fourth quarters of 2018, but may be changed due to site conditions (e.g., flooding, access, etc.). Statistical analysis of the November 2017 Detection Monitoring data will be completed by January 15, 2018. If it is determined that there is an SSI over background, Ameren will collect verification samples for all SSIs. Additionally, within 90 days of determining an SSI, Ameren would either establish an Assessment Monitoring program or demonstrate that the SSI was the result of error, or caused by an alternate source.

6.0 CLOSING

GOLDER ASSOCIATES INC.



Mark Haddock, P.E., R.G.
Principal, Practice Leader



Jeffrey Ingram, R.G.
Project Geologist

JSI/RJF/MNH

TABLES

Table 1
Monitoring Well Construction Details
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

Well ID	Date Installed	Location[4]		Top of Casing Elevation	Ground Surface Elevation	Top of Screen	Bottom of Screen	Base of Well	Total Depth
		Northing	Easting	(FT MSL)[5]	(FT MSL)[5]	(FT MSL)[5]	(FT MSL)[5]	(FT MSL)[5]	(FT BGS)[5]
MW-26*	3/20/2013	993976.5	726910.9	469.20	466.7	456.4	446.6	446.2	20.5
TMW-1*	3/19/2013	993782.9	728656.8	469.34	466.9	458.0	448.2	447.8	19.2
TMW-2	4/6/2016	994513.1	728663.8	470.40	468.0	452.8	443.0	442.6	25.4
TMW-3	4/6/2016	994635.7	727842.0	469.41	467.1	452.0	442.2	441.8	25.3
BMW-1S	2/1/2016	988310.0	715131.6	473.49	471.2	450.7	440.9	440.5	30.7
BMW-2S	2/2/2016	987210.1	715104.3	474.56	472.5	454.6	444.8	444.4	28.1

Notes:
1.) All elevations and coordinates were surveyed on February 11, 2016 and April 28th, 2016 by Zahner and Associates, Inc.
2.) FT MSL = Feet Above Mean Sea Level.
3.) FT BGS = Feet Below Ground Surface.
4.) Horizontal Datum: State Plane Coordinates NAD83 (2000) Missouri East Zone Feet.
5.) Vertical Datum: NAVD88 Feet.
6.) * - Groundwater monitoring wells installed by Reitz and Jens, Inc. and surveyed by KdG.

Prepared By: JSI
Checked By: JS
Reviewed By: MNH

Table 2
Baseline Sampling Event 1 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	3/22/2016	3/22/2016	5/5/2016	5/5/2016	5/5/2016	5/6/2016
DISSOLVED OXYGEN	mg/L	0.87	4.87	0.69	0.40	0.21	0.16
pH	SU	6.63	6.66	6.20	6.78	7.03	6.71
REDOX POTENTIAL	mV	-161.7	138.9	114.1	22.7	24.0	-46.2
SPECIFIC CONDUCTIVITY	mS/cm	1.268	1.363	1.344	1.169	1.304	1.322
TURBIDITY	NTU	4.25	1.09	4.52	4.84	4.82	4.99
APPENDIX III							
BORON, TOTAL	µg/L	96.5 J	52.2 J	95.4 J	81.6 J	99.8 J	116
CALCIUM, TOTAL	µg/L	191,000	133,000	141,000	150,000	171,000	179,000
CHLORIDE, TOTAL	mg/L	3.1	2.0	14.4	2.8	5.9	7.2
FLUORIDE, TOTAL	mg/L	0.19 J	0.23	0.12 J	0.18 J	0.13 J	0.11 J
SULFATE, TOTAL	mg/L	50.1	20.5	24.3	89.5	63.8	97.4
TOTAL DISSOLVED SOLIDS	mg/L	712	499	510	559	664	718
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.082 J	0.14 J	ND	0.074 J	ND
ARSENIC, TOTAL	µg/L	21.8	0.22 J	0.35 J	1.3	0.72 J	9.1
BARIUM, TOTAL	µg/L	340	247	219	252	194	313
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	0.091 J	0.066 J	0.052 J	0.044 J
CHROMIUM, TOTAL	µg/L	0.44 J	0.52 J	0.44 J	0.45 J	ND	1.4
COBALT, TOTAL	µg/L	1.4 J	ND	ND	ND	1.8 J	3.3 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	2.7 J	ND
LITHIUM, TOTAL	µg/L	21.1	17.3	35.3	39.1	49.0	54.6
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	ND	1.1 J	3.1 J	1.6 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	1.4	0.35 J	0.89 J	ND	0.51 J
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 3
Baseline Sampling Event 2 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	5/3/2016	5/4/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016
DISSOLVED OXYGEN	mg/L	0.91	1.83	8.90	0.92	0.38	0.53
pH	SU	6.40	6.12	7.17	6.95	7.04	7.00
REDOX POTENTIAL	mV	-73.5	207.1	-78.9	158.0	73.8	-71.2
SPECIFIC CONDUCTIVITY	mS/cm	1.890	1.155	0.819	0.796	0.903	1.000
TURBIDITY	NTU	4.52	1.76	2.37	1.37	2.37	4.69
APPENDIX III							
BORON, TOTAL	µg/L	112	54.5 J	84.7 J	83.6 J	91.3 J	107
CALCIUM, TOTAL	µg/L	196,000	123,000	140,000	147,000	175,000	173,000
CHLORIDE, TOTAL	mg/L	6.5	1.5	9.9	2.5	6.1	8.0
FLUORIDE, TOTAL	mg/L	0.12 J	0.16 J	0.18 J	0.21	0.20 J	0.15 J
SULFATE, TOTAL	mg/L	65.3 J	23.5	29.5	83.7	78.7	71.8
TOTAL DISSOLVED SOLIDS	mg/L	772	446	506	622	681	683
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.32 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	36.1	0.42 J	0.51 J	1.3	1.3	4.6
BARIUM, TOTAL	µg/L	366	276	203	245	202	286
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.047 J	0.044 J	ND	ND	0.041 J
CHROMIUM, TOTAL	µg/L	1.1	0.50 J	ND	0.77 J	ND	ND
COBALT, TOTAL	µg/L	0.84 J	0.84 J	ND	ND	1.6 J	2.6 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	2.6 J
LITHIUM, TOTAL	µg/L	28.4	25.7	27.1	32.9	40.1	41.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	0.68 J	2.7 J	ND	1.8 J	1.4 J	1.5 J
RADIUM [226 + 228]	pCi/L	1.725	1.189	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	0.56 J	1.9	1.4	ND	0.94 J
THALLIUM, TOTAL	µg/L	ND	ND	0.51 J	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 4
Baseline Sampling Event 3 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	7/11/2016	7/11/2016	7/12/2016	7/13/2016	7/13/2016	7/13/2016
DISSOLVED OXYGEN	mg/L	1.02	1.77	1.67	1.69	2.01	1.55
pH	SU	6.52	7.14	7.14	6.94	6.93	6.78
REDOX POTENTIAL	mV	-68.7	33.0	87.6	140.7	24.8	-32.2
SPECIFIC CONDUCTIVITY	mS/cm	1.242	0.758	0.700	0.832	0.931	0.949
TURBIDITY	NTU	4.56	2.35	4.06	3.20	4.47	2.52
APPENDIX III							
BORON, TOTAL	µg/L	120	58.2 J	77.9 J	83.4 J	88.8 J	112
CALCIUM, TOTAL	µg/L	219,000	136,000	132,000	142,000	168,000	176,000
CHLORIDE, TOTAL	mg/L	6.0	8.2	5.2	2.6	6.1	7.7
FLUORIDE, TOTAL	mg/L	0.12 J	0.15 J	0.14 J	0.18 J	0.14 J	0.12 J
SULFATE, TOTAL	mg/L	51.9	24.8	27.1	76.7	71.9	72.9
TOTAL DISSOLVED SOLIDS	mg/L	780	494	491	611	668	695
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.24 J	0.14 J	0.068 J	ND	0.064 J
ARSENIC, TOTAL	µg/L	34.0	0.41 J	0.49 J	1.4	1.1	4.1
BARIUM, TOTAL	µg/L	334	245	190	222	178	270
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.045 J	0.051 J	0.035 J	ND	0.084 J
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.43 J
COBALT, TOTAL	µg/L	ND	ND	ND	ND	2.0 J	3.4 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	20.0	19.2	28.7	34.6	43.0	46.3
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	2.9 J	0.55 J	ND	1.2 J	1.9 J
RADIUM [226 + 228]	pCi/L	2.492	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	0.75 J	2.7	1.2	ND	0.36 J
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 5
Baseline Sampling Event 4 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	9/13/2016	9/9/2016	9/13/2016	9/13/2016	9/12/2016	9/13/2016
DISSOLVED OXYGEN	mg/L	0.61	1.37	0.67	0.96	0.47	1.03
pH	SU	6.80	6.99	7.21	6.85	7.09	6.85
REDOX POTENTIAL	mV	-90.9	163.0	118.1	168.2	7.1	24.9
SPECIFIC CONDUCTIVITY	mS/cm	1.401	0.832	0.848	0.994	1.197	1.060
TURBIDITY	NTU	4.26	3.15	3.87	1.35	2.83	2.93
APPENDIX III							
BORON, TOTAL	µg/L	103	61.0 J	75.6 J	85.6 J	92.6 J	104
CALCIUM, TOTAL	µg/L	188,000	137,000	130,000	138,000	170,000	152,000
CHLORIDE, TOTAL	mg/L	5.0	1.9	4.3	2.3	6.6	6.7
FLUORIDE, TOTAL	mg/L	0.069 J	0.14 J	0.14 J	0.18 J	0.14 J	0.13 J
SULFATE, TOTAL	mg/L	50.0	15.4	27.3	63.4	78.5	32.3
TOTAL DISSOLVED SOLIDS	mg/L	752	480	496	647	743	604
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.20 J	0.17 J	0.068 J	ND	0.12 J
ARSENIC, TOTAL	µg/L	29.4	0.49 J	0.59 J	1.2	1.0	1.0
BARIUM, TOTAL	µg/L	338	249	188	248	188	239
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.040 J	0.034 J	0.069 J	ND	0.073 J
CHROMIUM, TOTAL	µg/L	0.39 J	ND	0.56 J	0.36 J	ND	ND
COBALT, TOTAL	µg/L	0.78 J	ND	ND	ND	3.4 J	1.6 J
LEAD, TOTAL	µg/L	ND	ND	ND	2.6 J	ND	3.0 J
LITHIUM, TOTAL	µg/L	16.1	17.6	27.3	33.0	39.4	34.5
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	0.54 J	0.91 J	1.6 J	0.56 J
RADIUM [226 + 228]	pCi/L	3.620	2.126	ND	1.722	1.712	1.708
SELENIUM, TOTAL	µg/L	ND	0.75 J	3.0	4.2	ND	0.47 J
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 6
Baseline Sampling Event 5 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	11/11/2016	11/11/2016	11/15/2016	11/15/2016	11/15/2016	11/15/2016
DISSOLVED OXYGEN	mg/L	0.47	3.26	3.98	0.72	0.41	0.21
pH	SU	6.59	6.86	7.09	6.90	6.79	6.97
REDOX POTENTIAL	mV	-105.3	171.6	127.0	9.1	3.8	-83.0
SPECIFIC CONDUCTIVITY	mS/cm	1.219	0.628	0.845	0.910	1.138	1.097
TURBIDITY	NTU	2.45	2.78	3.05	1.73	3.00	4.97
APPENDIX III							
BORON, TOTAL	µg/L	88.1 J	ND	65.2 J	93.8 J	117	115
CALCIUM, TOTAL	µg/L	200,000	119,000	144,000	149,000	172,000	191,000
CHLORIDE, TOTAL	mg/L	5.3	2.0	4.1	1.5	5.9	7.1
FLUORIDE, TOTAL	mg/L	0.11 J	0.16 J	0.17 J	0.19 J	0.14 J	0.14 J
SULFATE, TOTAL	mg/L	43.1	12.3	24.7	38.4	88.9	89.9
TOTAL DISSOLVED SOLIDS	mg/L	692	405	505	578	698	717
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.22 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	22.9	0.41 J	ND	ND	ND	3.9
BARIUM, TOTAL	µg/L	338	218	208	275	193	324
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.036 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.48 J	0.64 J	ND	0.45 J	ND	ND
COBALT, TOTAL	µg/L	1.8 J	ND	ND	ND	4.5 J	3.1 J
LEAD, TOTAL	µg/L	ND	ND	ND	2.6 J	ND	ND
LITHIUM, TOTAL	µg/L	20.0	19.2	25.8	33.3	52.6	55.2
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
RADIUM [226 + 228]	pCi/L	2.091	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	1.3	14.8	7.7	ND	0.27 J
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 7
Baseline Sampling Event 6 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	1/16/2017	1/16/2017	1/16/2017	1/17/2017	1/17/2017	1/17/2017
DISSOLVED OXYGEN	mg/L	0.52	1.83	1.18	1.54	0.65	0.60
pH	SU	6.93	7.36	7.44	7.16	7.14	7.07
REDOX POTENTIAL	mV	-44.1	-18.2	-34.2	42.7	41.3	24.1
SPECIFIC CONDUCTIVITY	mS/cm	1.253	0.681	0.860	0.992	1.157	1.116
TURBIDITY	NTU	1.62	0.50	1.88	3.21	0.90	3.03
APPENDIX III							
BORON, TOTAL	µg/L	105	ND	59.4 J	97.1 J	118	124
CALCIUM, TOTAL	µg/L	204,000	116,000	143,000	137,000	156,000	166,000
CHLORIDE, TOTAL	mg/L	7.4	2.5	4.6	2.0	6.3	6.6
FLUORIDE, TOTAL	mg/L	0.13 J	0.18 J	0.17 J	0.21	0.15 J	0.15 J
SULFATE, TOTAL	mg/L	42.9	12.8	28.4	47.1	92.5	73.5
TOTAL DISSOLVED SOLIDS	mg/L	704	366	493	576	683	668
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.18 J	0.079 J	ND	ND	ND
ARSENIC, TOTAL	µg/L	22.4	0.26 J	ND	3.2	0.91 J	5.6
BARIUM, TOTAL	µg/L	359	232	192	250	156	271
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.054 J	0.066 J	0.047 J	ND	0.073 J
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	0.81 J	ND	ND	ND	3.8 J	2.8 J
LEAD, TOTAL	µg/L	2.7 J	3.1 J	ND	2.5 J	ND	ND
LITHIUM, TOTAL	µg/L	17.6	16.6	24.5	30.0	50.6	45.0
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	1.9 J	0.55 J	0.76 J	0.69 J	0.79 J
RADIUM [226 + 228]	pCi/L	1.410	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	1.7	18.2	9.3	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 8
Baseline Sampling Event 7 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	3/1/2017	3/1/2017	3/3/2017	3/3/2017	3/3/2017	3/3/2017
DISSOLVED OXYGEN	mg/L	0.30	1.95	1.30	1.91	0.32	0.47
pH	SU	6.71	7.12	7.07	6.81	6.84	6.77
REDOX POTENTIAL	mV	-96.4	14.4	38.0	113.6	120.1	27.3
SPECIFIC CONDUCTIVITY	mS/cm	1.257	0.709	0.761	0.935	1.098	1.070
TURBIDITY	NTU	0.60	0.90	4.04	1.95	1.90	4.33
APPENDIX III							
BORON, TOTAL	µg/L	102	49.1 J	64.0 J	107	124	132
CALCIUM, TOTAL	µg/L	209,000	131,000	137,000	163,000	174,000	186,000
CHLORIDE, TOTAL	mg/L	6.3	2.2	4.4	2.6	6.6	7.0
FLUORIDE, TOTAL	mg/L	0.14 J	0.17 J	0.16 J	0.19 J	0.16 J	0.14 J
SULFATE, TOTAL	mg/L	53.3	14.3	29.6	67.2	99.8	71.8
TOTAL DISSOLVED SOLIDS	mg/L	748	413	489	642	737	684
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	0.027 J	0.21 J	0.14 J	0.063 J	0.052 J	0.055 J
ARSENIC, TOTAL	µg/L	27.1	0.46 J	ND	2.6	ND	7.5
BARIUM, TOTAL	µg/L	351	250	208	286	173	303
BERYLLIUM, TOTAL	µg/L	ND	0.25 J	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.033 J	0.10 J	0.055 J	0.070 J	0.048 J
CHROMIUM, TOTAL	µg/L	2.2	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	0.88 J	ND	ND	1.5 J	3.7 J	3.3 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	18.9	17.9	30.6	40.1	57.5	54.3
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	2.3 J	ND	1.4 J	1.6 J	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	1.6	14.9	9.5	0.097 J	ND
THALLIUM, TOTAL	µg/L	ND	ND	0.041 J	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

Table 9
Baseline Sampling Event 8 Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	5/31/2017	5/31/2017	6/2/2017	6/2/2017	6/2/2017	6/2/2017
DISSOLVED OXYGEN	mg/L	0.12	0.14	1.41	1.26	1.11	0.03
pH	SU	6.66	6.95	6.70	6.58	6.42	6.88
REDOX POTENTIAL	mV	-89.8	16.4	45.8	-36.6	-3.1	-60.6
SPECIFIC CONDUCTIVITY	mS/cm	1.124	0.689	0.847	1.046	1.156	1.126
TURBIDITY	NTU	4.68	2.07	1.38	4.81	3.85	3.60
APPENDIX III							
BORON, TOTAL	µg/L	122	37.3 J	89.0 J	103	96.7 J	120
CALCIUM, TOTAL	µg/L	217,000	139,000	146,000	164,000	195,000	201,000
CHLORIDE, TOTAL	mg/L	5.6	2.3	4.5	2.9	6.0	7.5
FLUORIDE, TOTAL	mg/L	0.17 J	0.23	0.14 J	0.17 J	0.15 J	0.11 J
SULFATE, TOTAL	mg/L	51.6	23.6	17.8	79.1	81.3	85.5
TOTAL DISSOLVED SOLIDS	mg/L	749	472	486	628	684	711
APPENDIX IV							
ANTIMONY, TOTAL	µg/L	ND	0.24 J	0.093 J	0.038 J	0.043 J	0.029 J
ARSENIC, TOTAL	µg/L	30.4	0.46 J	0.48 J	20.5	0.95 J	11.0
BARIUM, TOTAL	µg/L	352	306	213	375	189	302
BERYLLIUM, TOTAL	µg/L	ND	ND	0.19 J	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.031 J	0.21 J	0.13 J	0.039 J	0.021 J
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	1.3 J	ND	ND	4.5 J	4.1 J	3.6 J
LEAD, TOTAL	µg/L	ND	ND	ND	2.8 J	ND	3.2 J
LITHIUM, TOTAL	µg/L	13.0	17.8	30.2	36.4	37.3	47.5
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.5 J	2.0 J	ND	ND	ND	ND
RADIUM [226 + 228]	pCi/L	2.389	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	0.57 J	0.20 J	0.63 J	0.10 J	0.099 J
THALLIUM, TOTAL	µg/L	ND	0.044 J	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) and is considered a non-detect.
4. Radium (226 + 228) is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentration's (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/8/2017
Reviewed By: MNH 12/11/2017

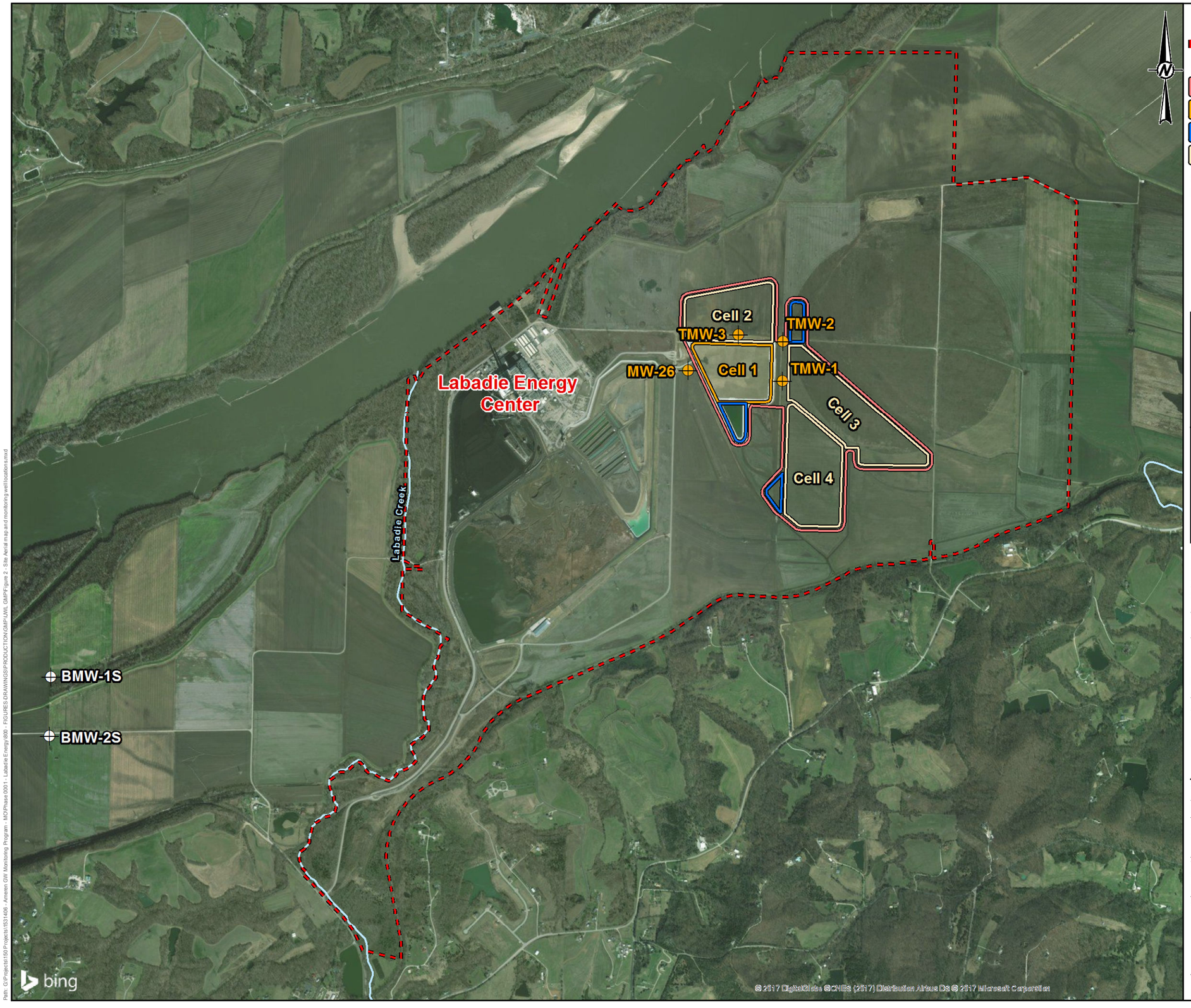
Table 10
November 2017 Detection Monitoring Results
LCL1 - Utility Waste Landfill Cell 1
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS			
		BMW-1S	BMW-2S	MW-26	TMW-1	TMW-2	TMW-3
FIELD PARAMETERS							
DATE	NA	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/8/2017
DISSOLVED OXYGEN	mg/L	0.90	2.31	1.76	0.78	0.53	0.37
pH	SU	6.77	7.11	7.36	7.02	7.13	6.80
REDOX POTENTIAL	mV	-57.8	10.0	310.5	167.9	110.1	-25.7
SPECIFIC CONDUCTIVITY	mS/cm	1.262	0.698	0.799	1.023	1.205	1.181
TURBIDITY	NTU	3.16	0.81	2.51	2.54	3.70	4.86
APPENDIX III							
BORON, TOTAL	µg/L	100	46.3 J	71.7 J	115	130	131
CALCIUM, TOTAL	µg/L	197,000	120,000	137,000	156,000	184,000	191,000
CHLORIDE, TOTAL	mg/L	4.6	21.2	4.4	3.0	6.9	6.9
FLUORIDE, TOTAL	mg/L	0.18 J	0.18 J	0.19 J	0.22	0.18 J	0.15 J
SULFATE, TOTAL	mg/L	157	246	25.4	83.3	97.1	72.0
TOTAL DISSOLVED SOLIDS	mg/L	653	414	291	593	653	307 J

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity unit.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for, but was not detected above the MDL and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.

Prepared By: JSI
Checked By: RJF
Reviewed By: MNH

FIGURES



LEGEND

Labadie Energy Center Property Boundary

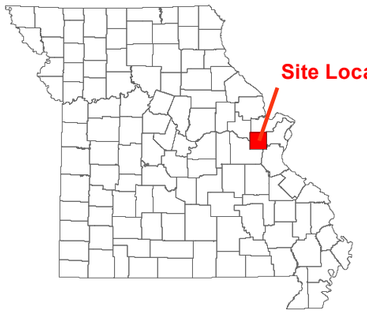
Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Ground/Surface Elevation Measurement Location

- UWL Monitoring Well
- Background Monitoring Well

KEY MAP



NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER MONITORING WELLS INSTALLED BY GOLDER ASSOCIATES WERE SURVEYED BY ZAHNER & ASSOCIATES, INC. ON FEBRUARY 11 AND APRIL 28, 2016.
3. GROUNDWATER MONITORING WELLS INSTALLED BY REITZ AND JENS, INC. WERE SURVEYED BY KDG.

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.

0 5001,000 2,000 3,000 4,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
SITE LOCATION AERIAL MAP AND MONITORING WELL LOCATIONS

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-07-08
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0	1

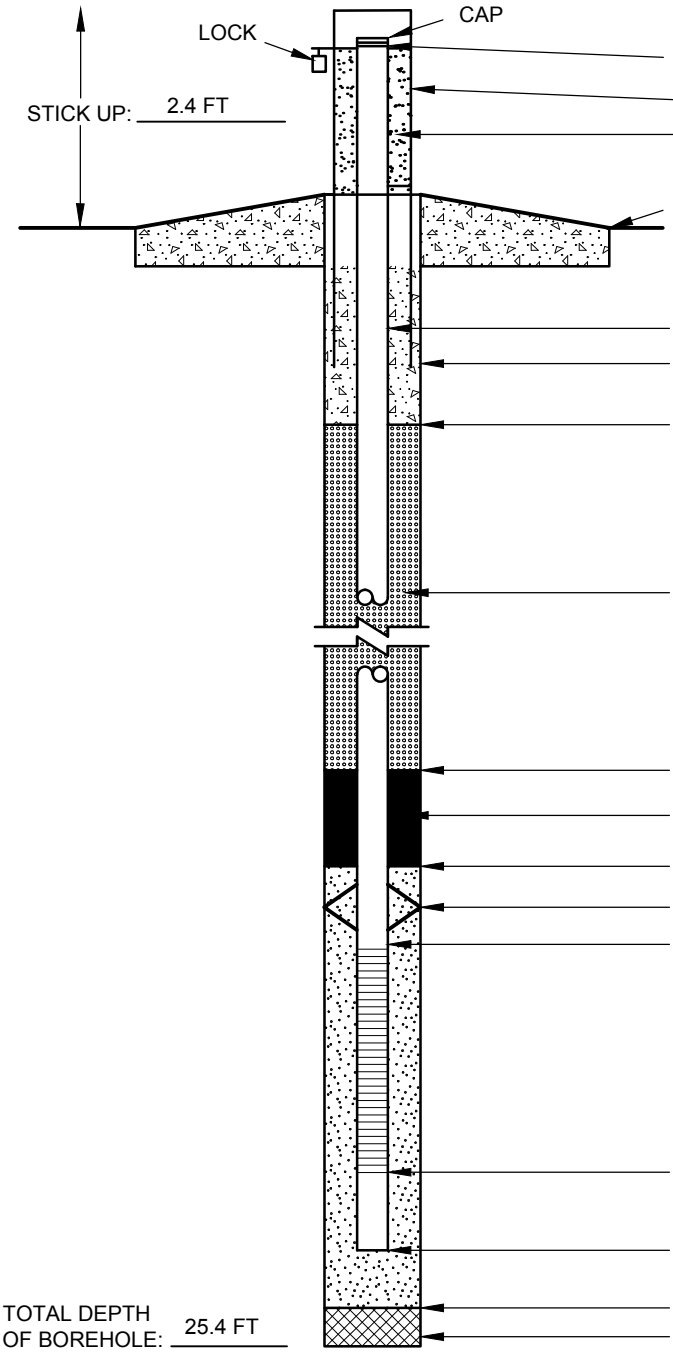
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
1in
0

Path: G:\Projects\150 Projects\1531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES,DRAWINGS\PRODUCTION\GMP\UWL GMP\Figure 2 - Site Aerial map and monitoring well locations.mxd

APPENDIX A – CCR MONITORING WELL CONSTRUCTION DIAGRAMS

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG TMW-2

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001C	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: TMW-2	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 468.0 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 994513.1	EASTING: 728663.8
DRILLER: J. DRABEK	STATIC WATER LEVEL: 12.57 FT BTOC	COMPLETION DATE: 4/6/2016
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 470.40 FT MSL

PROTECTIVE CASING (yes / no): 4" X 5' ALUMINUM

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 468.0 FT MSL

DIAMETER OF RISER PIPE (in.): 2.0

DIAMETER OF BOREHOLE (in.): 6.0

CONCRETE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF ANNULAR SEAL: NONE

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF BENTONITE SEAL: $\frac{3}{8}$" BENTONITE CHIPS - 2 BAGS

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 12.0 FINE: 11.0

CENTRALIZER (yes / no) - TYPE: NONE

TOP OF SCREEN DEPTH (ft. bgs): 15.2

TYPE OF SCREEN: 2" X 9.8' SCHEDULE 40 PVC

SCREEN SLOT SIZE (in.): 0.010 IN

SIZE OF SAND PACK: COARSE: #1 FINE: #0

AMOUNT OF SAND: COARSE: 3 BAGS FINE: 1/2 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 25.0

BOTTOM OF WELL DEPTH (ft. bgs): 25.4

BOTTOM OF FILTER PACK (ft. bgs): 25.4

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 30 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 28, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

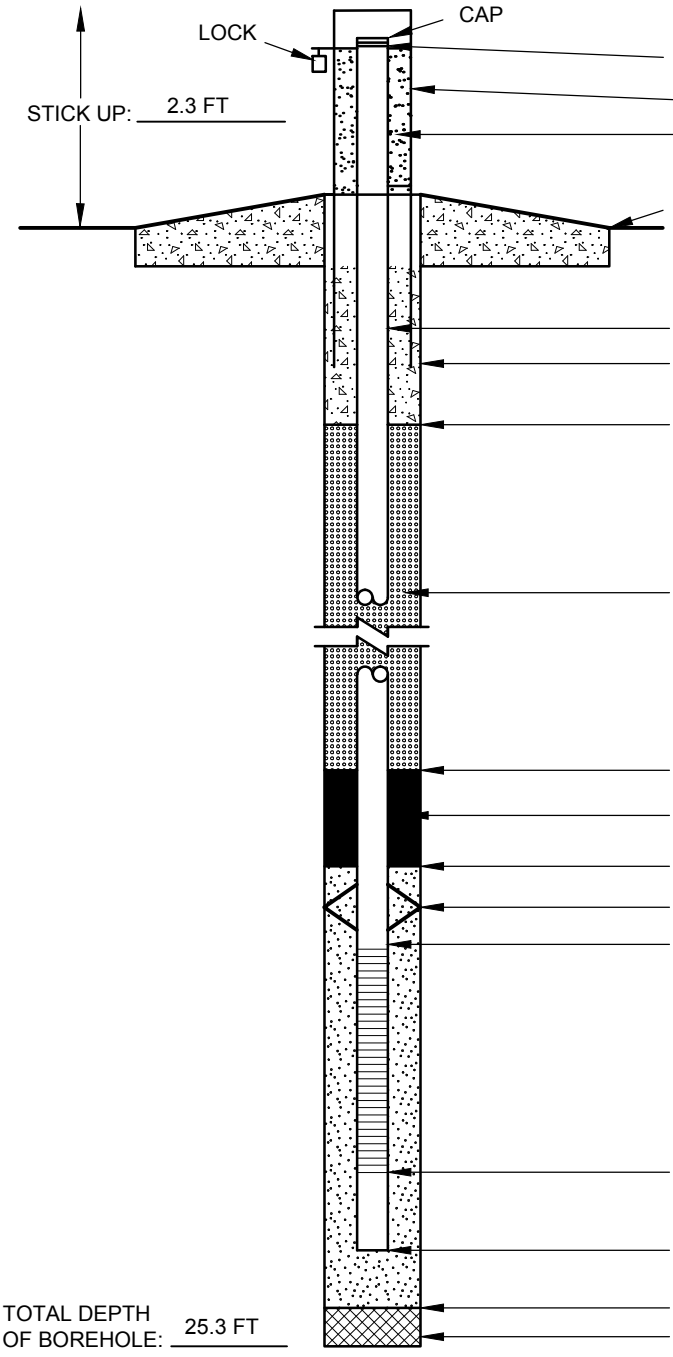
CHECKED BY: J. INGRAM

DATE CHECKED: 6/2/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG TMW-3

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001C	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: TMW-3	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 467.1 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 994635.7	EASTING: 727842.0
DRILLER: J. DRABEK	STATIC WATER LEVEL: 9.35 FT BTOC	COMPLETION DATE: 4/6/2016
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 469.41 FT MSL

PROTECTIVE CASING (yes) / no): 4" X 5' ALUMINUM

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 467.1 FT MSL

DIAMETER OF RISER PIPE (in.): 2.0

DIAMETER OF BOREHOLE (in.): 6.0

CONCRETE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF ANNULAR SEAL: NONE

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 2 BAGS

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 12.5 FINE: 11.5

CENTRALIZER (yes (no) - TYPE: NONE

TOP OF SCREEN DEPTH (ft. bgs): 15.1

TYPE OF SCREEN: 2" X 9.8' SCHEDULE 40 PVC

SCREEN SLOT SIZE (in.): 0.010 IN

SIZE OF SAND PACK: COARSE: #1 FINE: #0

AMOUNT OF SAND: COARSE: 3 BAGS FINE: 1/2 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 24.9

BOTTOM OF WELL DEPTH (ft. bgs): 25.3

BOTTOM OF FILTER PACK (ft. bgs): 25.3

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL.
30 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 (2000) MISSOURI EAST ZONE.
VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 28, 2016.
FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

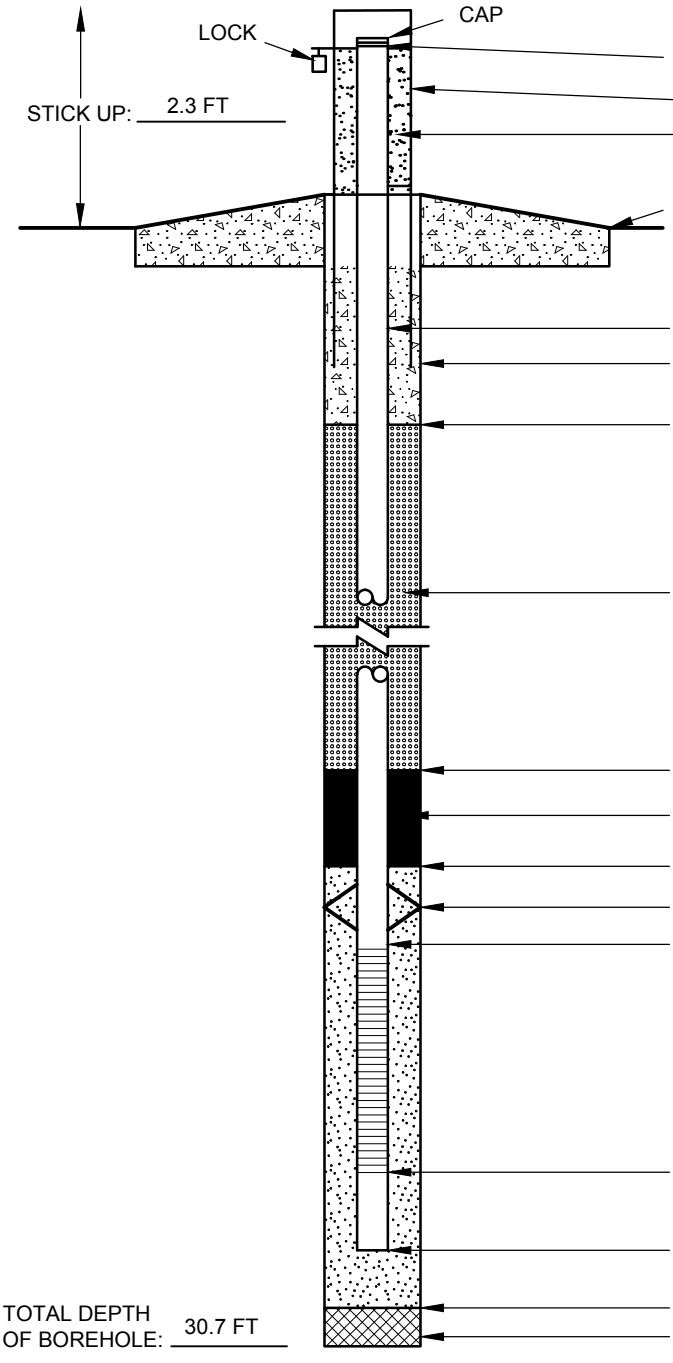
CHECKED BY: J. INGRAM

DATE CHECKED: 6/2/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG BMW-1S

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001B	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: BMW-1S	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 471.2 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 988310.0	EASTING: 715131.6
DRILLER: J. DRABEK	STATIC WATER LEVEL: 13.60 FT BTOC	COMPLETION DATE: 2/01/2016
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 473.49 FT MSL

PROTECTIVE CASING (yes / no): 4" X 5' ALUMINUM

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 471.2 FT MSL

DIAMETER OF RISER PIPE (in.): 2.0

DIAMETER OF BOREHOLE (in.): 6.0

CONCRETE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF ANNULAR SEAL: NONE

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 3 BAGS

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 17.5 FINE: 16.5

CENTRALIZER (yes / no) - TYPE: NONE

TOP OF SCREEN DEPTH (ft. bgs): 20.5

TYPE OF SCREEN: 2" X 9.8' SCHEDULE 40 PVC

SCREEN SLOT SIZE (in.): 0.010 IN

SIZE OF SAND PACK: COARSE: #1 FINE: #0

AMOUNT OF SAND: COARSE: 3 BAGS FINE: 1/2 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 30.3

BOTTOM OF WELL DEPTH (ft. bgs): 30.7

BOTTOM OF FILTER PACK (ft. bgs): 30.7

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL.
100 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON FEBRUARY 11, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

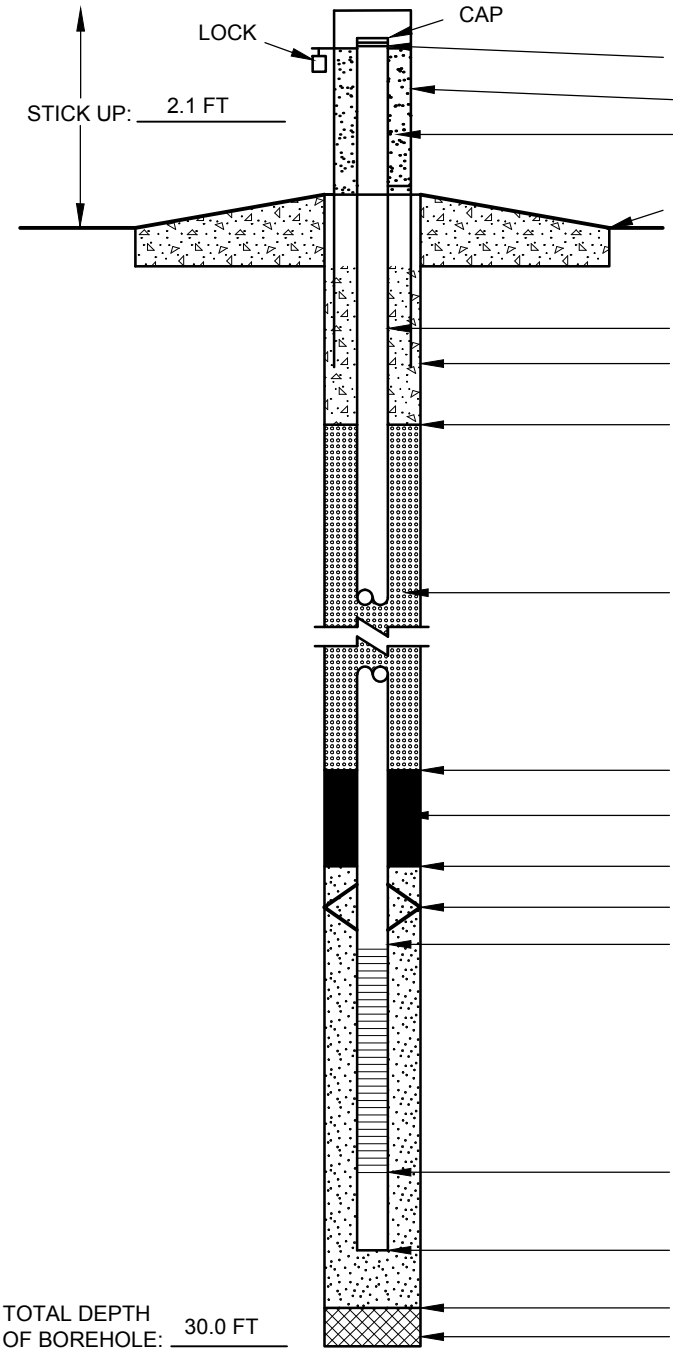
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG BMW-2S

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001B	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: BMW-2S	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 472.5 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 987210.1	EASTING: 715104.3
DRILLER: J. DRABEK	STATIC WATER LEVEL: 14.30 FT BTOC	COMPLETION DATE: 2/02/2016
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 474.56 FT MSL

PROTECTIVE CASING (yes / no): 4" X 5' ALUMINUM

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 472.5 FT MSL

DIAMETER OF RISER PIPE (in.): 2.0

DIAMETER OF BOREHOLE (in.): 6.0

CONCRETE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF ANNULAR SEAL: NONE

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 2.5

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 4 BAGS

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 15.5 FINE: 15.0

CENTRALIZER (yes / no) - TYPE: NONE

TOP OF SCREEN DEPTH (ft. bgs): 17.9

TYPE OF SCREEN: 2" X 9.8 SCHEDULE 40 PVC

SCREEN SLOT SIZE (in.): 0.010 IN

SIZE OF SAND PACK: COARSE: #1 FINE: #0

AMOUNT OF SAND: COARSE: 3 BAGS FINE: 1/2 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 27.7

BOTTOM OF WELL DEPTH (ft. bgs): 28.1

BOTTOM OF FILTER PACK (ft. bgs): 28.1

TYPE AND AMOUNT OF BACKFILL: 1.9 FT - NATURAL CAVE IN

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL.
100 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON FEBRUARY 11, 2016.
FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

APPENDIX B – LABORATORY ANALYTICAL DATA

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

January 03, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on March 25, 2016. 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
Jeffrey Ingram, Golder Associates
John Suozzi, Golder Associates

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60215629009	**L-BMW-1S**	Water	03/23/16 10:20	03/25/16 03:20
60215629010	**L-BMW-2S**	Water	03/22/16 11:39	03/25/16 03:20

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60215629009	**L-BMW-1S**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60215629010	**L-BMW-2S**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Sample: L-BMW-1S **Lab ID: 60215629009** Collected: 03/23/16 10:20 Received: 03/25/16 03:20 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								
Barium	**340**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 17:37	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 17:37	7440-41-7	
Boron	**96.5J**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 17:37	7440-42-8	
Calcium	**191000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 17:37	7440-70-2	
Cobalt	**1.4J**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 17:37	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 17:37	7439-92-1	
Lithium	**21.1**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 17:37	7439-93-2	
Molybdenum	**1.3J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 17:37	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	03/28/16 14:15	03/29/16 13:56	7440-36-0	
Arsenic	**21.8**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 13:56	7440-38-2	
Cadmium	**0.041J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 13:56	7440-43-9	B
Chromium	**0.44J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 13:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 13:56	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 13:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.063J**	ug/L	0.20	0.046	1	04/06/16 09:20	04/06/16 15:16	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**712**	mg/L	5.0	5.0	1		03/30/16 10:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		04/04/16 12:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.1**	mg/L	1.0	0.50	1		03/29/16 19:34	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.073	1		03/29/16 19:34	16984-48-8	
Sulfate	**50.1**	mg/L	5.0	1.2	5		03/31/16 02:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Sample: L-BMW-2S **Lab ID: 60215629010** Collected: 03/22/16 11:39 Received: 03/25/16 03:20 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								
Barium	**247**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 17:39	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 17:39	7440-41-7	
Boron	**52.2J**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 17:39	7440-42-8	
Calcium	**133000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 17:39	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 17:39	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 17:39	7439-92-1	
Lithium	**17.3**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 17:39	7439-93-2	
Molybdenum	**2.9J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 17:39	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.082J**	ug/L	1.0	0.058	1	03/28/16 14:15	03/29/16 14:00	7440-36-0	
Arsenic	**0.22J**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 14:00	7440-38-2	
Cadmium	**0.085J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 14:00	7440-43-9	B
Chromium	**0.52J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 14:00	7440-47-3	
Selenium	**1.4**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 14:00	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 14:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.060J**	ug/L	0.20	0.046	1	04/06/16 09:20	04/06/16 15:18	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**499**	mg/L	5.0	5.0	1		03/28/16 10:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	0.10	0.10	1		04/04/16 13:16		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.50	1		03/29/16 19:49	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.073	1		03/29/16 19:49	16984-48-8	
Sulfate	**20.5**	mg/L	2.0	0.50	2		03/31/16 02:48	14808-79-8	

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-FLY
Pace Project No.: 60261374

QC Batch: 425087 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1735849 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.061J	0.20	0.046	04/06/16 14:45	

LABORATORY CONTROL SAMPLE: 1735850

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1735851 1735852

Parameter	Units	60215629001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.070J	5	5	5.1	4.5	100	88	75-125	13	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 LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424084
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1731908
Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.58J	5.0	0.58	04/04/16 16:58	
Beryllium	ug/L	<0.26	1.0	0.26	04/04/16 16:58	
Boron	ug/L	<50.0	100	50.0	04/04/16 16:58	
Calcium	ug/L	14.2J	100	8.1	04/04/16 16:58	
Cobalt	ug/L	<0.72	5.0	0.72	04/04/16 16:58	
Lead	ug/L	<2.5	5.0	2.5	04/04/16 16:58	
Lithium	ug/L	<4.9	10.0	4.9	04/04/16 16:58	
Molybdenum	ug/L	0.69J	20.0	0.52	04/04/16 16:58	

LABORATORY CONTROL SAMPLE: 1731909

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	989	99	85-115	
Beryllium	ug/L	1000	972	97	85-115	
Boron	ug/L	1000	988	99	85-115	
Calcium	ug/L	10000	9490	95	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	975	97	85-115	
Molybdenum	ug/L	1000	1090	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1731910 1731911

Parameter	Units	60215629001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	126	1000	1000	1080	1110	96	98	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	954	971	95	97	70-130	2	20	
Boron	ug/L	3530	1000	1000	4420	4570	90	104	70-130	3	20	
Calcium	ug/L	133000	10000	10000	140000	145000	68	116	70-130	3	20	M1
Cobalt	ug/L	2.3J	1000	1000	998	1020	100	101	70-130	2	20	
Lead	ug/L	<2.5	1000	1000	1000	1010	100	101	70-130	1	20	
Lithium	ug/L	22.0	1000	1000	1000	1020	98	100	70-130	2	20	
Molybdenum	ug/L	4.1J	1000	1000	1080	1100	108	110	70-130	2	20	

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

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-FLY
Pace Project No.: 60261374

MATRIX SPIKE SAMPLE: 1731912

Parameter	Units	60215629002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	58.9	1000	1010	95	70-130	
Beryllium	ug/L	<0.26	1000	942	94	70-130	
Boron	ug/L	6970	1000	8080	112	70-130	
Calcium	ug/L	68700	10000	78900	102	70-130	
Cobalt	ug/L	<0.72	1000	992	99	70-130	
Lead	ug/L	4.1J	1000	978	97	70-130	
Lithium	ug/L	16.2	1000	994	98	70-130	
Molybdenum	ug/L	141	1000	1200	106	70-130	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424086 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1731918 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	03/29/16 12:50	
Arsenic	ug/L	<0.10	1.0	0.10	03/29/16 12:50	
Cadmium	ug/L	0.039J	0.50	0.029	03/29/16 12:50	
Chromium	ug/L	<0.34	1.0	0.34	03/29/16 12:50	
Selenium	ug/L	<0.18	1.0	0.18	03/29/16 12:50	
Thallium	ug/L	<0.50	1.0	0.50	03/29/16 12:50	

LABORATORY CONTROL SAMPLE: 1731919

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.8	105	85-115	
Arsenic	ug/L	40	42.0	105	85-115	
Cadmium	ug/L	40	41.7	104	85-115	
Chromium	ug/L	40	41.0	103	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	37.9	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1731920 1731921

Parameter	Units	60215629001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	40.2	41.1	100	103	70-130	2	20	
Arsenic	ug/L	5.3	40	40	46.0	47.6	102	106	70-130	3	20	
Cadmium	ug/L	0.082J	40	40	38.8	38.9	97	97	70-130	0	20	
Chromium	ug/L	0.78J	40	40	40.7	40.6	100	100	70-130	0	20	
Selenium	ug/L	<0.18	40	40	39.3	39.7	98	99	70-130	1	20	
Thallium	ug/L	<0.50	40	40	40.6	40.6	101	101	70-130	0	20	

MATRIX SPIKE SAMPLE: 1731922

Parameter	Units	60215629003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	42.4	106	70-130	
Arsenic	ug/L	11.9	40	55.5	109	70-130	
Cadmium	ug/L	<0.029	40	40.1	100	70-130	
Chromium	ug/L	0.36J	40	41.2	102	70-130	
Selenium	ug/L	<0.18	40	41.0	102	70-130	
Thallium	ug/L	<0.50	40	40.6	101	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 423939 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60215629010

METHOD BLANK: 1731234 Matrix: Water
Associated Lab Samples: 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	03/28/16 10:22	

LABORATORY CONTROL SAMPLE: 1731235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	990	99	80-120	

SAMPLE DUPLICATE: 1731236

Parameter	Units	60215561009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5580	5380	4	10	

SAMPLE DUPLICATE: 1731237

Parameter	Units	60215561005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1670	1730	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424197 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60215629009

METHOD BLANK: 1732230 Matrix: Water
Associated Lab Samples: 60215629009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	03/30/16 10:11	

LABORATORY CONTROL SAMPLE: 1732231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	989	99	80-120	

SAMPLE DUPLICATE: 1732232

Parameter	Units	60215628007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	725	727	0	10	

SAMPLE DUPLICATE: 1732233

Parameter	Units	60215629001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	529	526	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424893
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60215629010

SAMPLE DUPLICATE: 1735408

Parameter	Units	60215628007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424950
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60215629009

SAMPLE DUPLICATE: 1735514

Parameter	Units	60215629001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 424192 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1732199 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/29/16 15:46	
Fluoride	mg/L	<0.073	0.20	0.073	03/29/16 15:46	

METHOD BLANK: 1732965 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.25	1.0	0.25	03/30/16 22:43	

LABORATORY CONTROL SAMPLE: 1732200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	

LABORATORY CONTROL SAMPLE: 1732966

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1732201 1732202

Parameter	Units	60215629001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.7	5	5	7.2	7.2	90	90	80-120	0	15	
Fluoride	mg/L	0.24	2.5	2.5	2.8	2.8	102	103	80-120	0	15	
Sulfate	mg/L	76.7	50	50	128	129	103	105	80-120	1	15	

MATRIX SPIKE SAMPLE: 1732203

Parameter	Units	60215629002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	18.9	5	23.6	93	80-120	
Fluoride	mg/L	0.22	2.5	2.6	97	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

MATRIX SPIKE SAMPLE: 1732203

Parameter	Units	60215629002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	295	250	536	97	80-120	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Sample: L-BMW-1S **Lab ID: 60215629009** Collected: 03/23/16 10:20 Received: 03/25/16 03:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0858 ± 0.391 (0.796) C:NA T:93%**	pCi/L	04/08/16 10:39	13982-63-3	
Radium-228	EPA 904.0	**1.30 ± 0.498 (0.770) C:81% T:85%**	pCi/L	04/06/16 17:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Sample: L-BMW-2S **Lab ID: 60215629010** Collected: 03/22/16 11:39 Received: 03/25/16 03:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.348 ± 0.541 (0.937) C:NA T:91%**	pCi/L	04/08/16 10:33	13982-63-3	
Radium-228	EPA 904.0	**0.495 ± 0.378 (0.745) C:78% T:88%**	pCi/L	04/06/16 17:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 214969 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples:

METHOD BLANK: 1050671 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.779 ± 0.434 (0.786) C:79% T:83%	pCi/L	04/06/16 13:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 214970 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1050672 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.460 ± 0.355 (0.699) C:83% T:84%	pCi/L	04/06/16 17:08	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 214953 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples:

METHOD BLANK: 1050642 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.085 ± 0.386 (0.786) C:NA T:93%	pCi/L	04/05/16 20:28	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

QC Batch: 214955 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60215629009, 60215629010

METHOD BLANK: 1050644 Matrix: Water
Associated Lab Samples: 60215629009, 60215629010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.436 (0.944) C:NA T:98%	pCi/L	04/08/16 10:20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-FLY
Pace Project No.: 60261374

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60215629009	**L-BMW-1S**	EPA 200.7	424084	EPA 200.7	424160
60215629010	**L-BMW-2S**	EPA 200.7	424084	EPA 200.7	424160
60215629009	**L-BMW-1S**	EPA 200.8	424086	EPA 200.8	424161
60215629010	**L-BMW-2S**	EPA 200.8	424086	EPA 200.8	424161
60215629009	**L-BMW-1S**	EPA 7470	425087	EPA 7470	425286
60215629010	**L-BMW-2S**	EPA 7470	425087	EPA 7470	425286
60215629009	**L-BMW-1S**	EPA 903.1	214955		
60215629010	**L-BMW-2S**	EPA 903.1	214955		
60215629009	**L-BMW-1S**	EPA 904.0	214970		
60215629010	**L-BMW-2S**	EPA 904.0	214970		
60215629009	**L-BMW-1S**	SM 2540C	424197		
60215629010	**L-BMW-2S**	SM 2540C	423939		
60215629009	**L-BMW-1S**	SM 4500-H+B	424950		
60215629010	**L-BMW-2S**	SM 4500-H+B	424893		
60215629009	**L-BMW-1S**	EPA 300.0	424192		
60215629010	**L-BMW-2S**	EPA 300.0	424192		

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Sample Condition Upon Receipt

WO# : 60215629

60215629

Client Name: Golder

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

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

Optional
Proj Due Date:
Proj Name:

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

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

Thermometer Used: CF +1.0 T-239 / ~~CF -0.8~~ T-262 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-3/15.1/16.3

Date and initials of person examining contents: pv 3/25/16

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1. Radium receive in the high temp
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. Coolers.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr): pv 3/25/16	(☒Yes) ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): _____		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

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Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
							3/23/16 ↑											Y/N	N	N	N	N	N		60215629
1	L-LMW-1S	WT	G	3/23/16	0944	3/23/16	1019		12	3		9							3	3	3	3	6		3BPSU 3BPSU 2-0 6BPIN 001
2	L-LMW-2S	WT	G	3/23/16	1340	~~1402~~	1402		4	1		3							1	1	1	1	2		1BPSU 1BPSU 2-0 2BPIN 002
3	L-LMW-3S	WT	G	3/24/16	0948	3/24/16	1041		1	1		1							1	1	1	1	1		003
4	L-LMW-4S	WT	G	3/24/16	0917	3/24/16	0952																		004
5	L-LMW-5S	WT	G	3/24/16	1023	3/24/16	1043																		005
6	L-LMW-6S	WT	G	3/23/16	1340	3/23/16	1450																		006
7	L-LMW-7S	WT	G	3/23/16	1345	3/23/16	1420																		007
8	L-LMW-8S	WT	G	3/23/16	1120	3/23/16	1245																		008
9	L-BMW-1S	WT	G	3/23/16	0940	3/23/16	1020																		009
10	L-BMW-2S	WT	G	3/22/16	1117	3/22/16	1139																		010
11	L-LMW-DUP-1	WT	G	3/24/16	—	3/24/16	—																		011
12	L-LMW-FB-1	WT	G	3/24/16	1115	3/24/16	1115		⊥	⊥		⊥							⊥	⊥	⊥	⊥	⊥		012

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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	[signature] Golder	3/24/16	1430	[signature]	3/24/16	1417				
	[signature]	3/24/16	1700	[signature]	3/25/16	0820	2-3	Y	Y	Y
							15-1	N	Y	Y
							16-3	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Suozzi

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 03/24/16

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on May 07, 2016. 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, 1/3/18: Revision

REV-2, 1/29/18: Radium pulled in for L-BMW-1S and L-BMW-2S

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
Jeffrey Ingram, Golder Associates
John Suozzi, 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-UWL
Pace Project No.: 60218620

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60218620001	**L-TMW-1**	Water	05/05/16 13:54	05/07/16 04:15
60218620002	**L-TMW-2**	Water	05/05/16 15:01	05/07/16 04:15
60218620003	**L-TMW-3**	Water	05/05/16 10:12	05/07/16 04:15
60218620004	**L-MW-26**	Water	05/05/16 14:59	05/07/16 04:15
60218620005	**L-UWL-DUP-1**	Water	05/05/16 08:00	05/07/16 04:15
60218620006	**L-UWL-FB-1**	Water	05/05/16 14:47	05/07/16 04:15
60218620007	**L-TMW-1 MS**	Water	05/05/16 13:54	05/07/16 04:15
60218620008	**L-TMW-1 MSD**	Water	05/05/16 13:54	05/07/16 04:15
60218627009	**L-BMW-1S**	Water	05/03/16 15:33	05/07/16 04:15
60218627010	**L-BMW-2S**	Water	05/04/16 08:55	05/07/16 04:15

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60218620001	**L-TMW-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620002	**L-TMW-2**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	JMC1	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620003	**L-TMW-3**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620004	**L-MW-26**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	JMC1	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620005	**L-UWL-DUP-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620006	**L-UWL-FB-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218620007	**L-TMW-1 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60218620008	**L-TMW-1 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60218627009	**L-BMW-1S**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218627010	**L-BMW-2S**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-1 **Lab ID: 60218620001** Collected: 05/05/16 13:54 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**252**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:02	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:02	7440-41-7	
Boron	**81.6J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:02	7440-42-8	
Calcium	**150000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:02	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:02	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:02	7439-92-1	
Lithium	**39.1**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:02	7439-93-2	
Molybdenum	**1.1J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:02	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:21	7440-36-0	
Arsenic	**1.3**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:21	7440-38-2	
Cadmium	**0.066J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:21	7440-43-9	
Chromium	**0.45J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:21	7440-47-3	
Selenium	**0.89J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:21	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 11:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**559**	mg/L	5.0	5.0	1		05/12/16 16:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/11/16 10:15		H3,H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.8**	mg/L	1.0	0.50	1		05/31/16 09:18	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.073	1		05/31/16 09:18	16984-48-8	
Sulfate	**89.5**	mg/L	10.0	2.5	10		06/01/16 09:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-2 **Lab ID: 60218620002** Collected: 05/05/16 15:01 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**194**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:08	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:08	7440-41-7	
Boron	**99.8J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:08	7440-42-8	
Calcium	**171000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:08	7440-70-2	
Cobalt	**1.8J**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:08	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:08	7439-92-1	
Lithium	**49.0**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:08	7439-93-2	
Molybdenum	**3.1J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:08	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.074J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:30	7440-36-0	
Arsenic	**0.72J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:30	7440-38-2	
Cadmium	**0.052J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:30	7440-43-9	
Chromium	**0.76J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:30	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:30	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 11:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**664**	mg/L	5.0	5.0	1		05/12/16 16:46		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		05/12/16 11:50		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.9**	mg/L	1.0	0.50	1		05/31/16 09:57	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.073	1		05/31/16 09:57	16984-48-8	
Sulfate	**63.8**	mg/L	5.0	1.2	5		06/01/16 10:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-3 **Lab ID: 60218620003** Collected: 05/05/16 10:12 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**313**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:10	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:10	7440-41-7	
Boron	**116**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:10	7440-42-8	
Calcium	**179000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:10	7440-70-2	
Cobalt	**3.3J**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:10	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:10	7439-92-1	
Lithium	**54.6**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:10	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:10	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:33	7440-36-0	
Arsenic	**9.1**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:33	7440-38-2	
Cadmium	**0.044J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:33	7440-43-9	
Chromium	**1.4**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:33	7440-47-3	
Selenium	**0.51J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:33	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 11:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**718**	mg/L	5.0	5.0	1		05/12/16 16:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.6**	Std. Units	0.10	0.10	1		05/10/16 12:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.2**	mg/L	1.0	0.50	1		05/31/16 10:36	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.073	1		05/31/16 10:36	16984-48-8	
Sulfate	**97.4**	mg/L	10.0	2.5	10		06/01/16 10:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-MW-26 **Lab ID: 60218620004** Collected: 05/05/16 14:59 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**219**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:13	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:13	7440-41-7	
Boron	**95.4J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:13	7440-42-8	
Calcium	**141000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:13	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:13	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:13	7439-92-1	
Lithium	**35.3**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:13	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:13	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.14J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:36	7440-36-0	
Arsenic	**0.35J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:36	7440-38-2	
Cadmium	**0.091J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:36	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:36	7440-47-3	
Selenium	**0.35J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:36	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 11:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**510**	mg/L	5.0	5.0	1		05/12/16 16:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/12/16 11:50		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.4**	mg/L	1.0	0.50	1		05/31/16 10:49	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.073	1		05/31/16 10:49	16984-48-8	
Sulfate	**24.3**	mg/L	2.0	0.50	2		06/01/16 11:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-UWL-DUP-1 **Lab ID: 60218620005** Collected: 05/05/16 08:00 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**210**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:15	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:15	7440-41-7	
Boron	**90.4J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:15	7440-42-8	
Calcium	**136000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:15	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:15	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:15	7439-92-1	
Lithium	**32.3**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:15	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:15	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.13J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:39	7440-36-0	
Arsenic	**0.36J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:39	7440-38-2	
Cadmium	**0.077J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:39	7440-43-9	
Chromium	**0.54J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:39	7440-47-3	
Selenium	**0.36J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:39	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:39	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 11:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**510**	mg/L	5.0	5.0	1		05/12/16 16:49		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		05/10/16 12:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.2**	mg/L	1.0	0.50	1		05/31/16 11:02	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.073	1		05/31/16 11:02	16984-48-8	
Sulfate	**24.2**	mg/L	2.0	0.50	2		06/01/16 11:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-UWL-FB-1 **Lab ID: 60218620006** Collected: 05/05/16 14:47 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**<0.58**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:17	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:17	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:17	7440-42-8	
Calcium	**21.1J**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:17	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:17	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:17	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:17	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:17	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 18:52	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:52	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:52	7440-43-9	
Chromium	**0.57J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:52	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 12:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		05/12/16 16:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	Std. Units	0.10	0.10	1		05/11/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		05/31/16 11:15	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		05/31/16 11:15	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 11:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-BMW-1S **Lab ID: 60218627009** Collected: 05/03/16 15:33 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**366**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:51	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:51	7440-41-7	
Boron	**112**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:51	7440-42-8	
Calcium	**196000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:51	7440-70-2	
Cobalt	**0.84J**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:51	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:51	7439-92-1	
Lithium	**28.4**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:51	7439-93-2	
Molybdenum	**0.68J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:51	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 19:35	7440-36-0	
Arsenic	**36.1**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 19:35	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 19:35	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 19:35	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 19:35	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 19:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 12:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**772**	mg/L	5.0	5.0	1		05/11/16 13:18		H1
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/09/16 13:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.5**	mg/L	1.0	0.50	1		05/31/16 13:51	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.073	1		05/31/16 13:51	16984-48-8	
Sulfate	**65.3**	mg/L	1.0	0.25	1		05/31/16 13:51	14808-79-8	E

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-BMW-2S **Lab ID: 60218627010** Collected: 05/04/16 08:55 Received: 05/07/16 04:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**276**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 12:54	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 12:54	7440-41-7	
Boron	**54.5J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 12:54	7440-42-8	
Calcium	**123000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 12:54	7440-70-2	
Cobalt	**0.84J**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 12:54	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 12:54	7439-92-1	
Lithium	**25.7**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 12:54	7439-93-2	
Molybdenum	**2.7J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 12:54	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.32J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 19:38	7440-36-0	
Arsenic	**0.42J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 19:38	7440-38-2	
Cadmium	**0.047J**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 19:38	7440-43-9	
Chromium	**0.50J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 19:38	7440-47-3	
Selenium	**0.56J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 19:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 19:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	05/12/16 15:30	05/13/16 12:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**446**	mg/L	5.0	5.0	1		05/11/16 15:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		05/09/16 13:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.0	0.50	1		05/31/16 14:04	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.073	1		05/31/16 14:04	16984-48-8	
Sulfate	**23.5**	mg/L	2.0	0.50	2		06/01/16 14:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 430130 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

METHOD BLANK: 1757320 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	05/13/16 11:35	

LABORATORY CONTROL SAMPLE: 1757321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.7	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1757322 1757323

Parameter	Units	60218620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	6.1	5.5	122	109	75-125	11	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1757324 1757325

Parameter	Units	60218627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	6.6	5.0	132	100	75-125	28	20	M1,R1

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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(913)599-5665

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429893 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

METHOD BLANK: 1756505 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	05/23/16 11:57	
Beryllium	ug/L	<0.26	1.0	0.26	05/23/16 11:57	
Boron	ug/L	<50.0	100	50.0	05/23/16 11:57	
Calcium	ug/L	<8.1	100	8.1	05/23/16 11:57	
Cobalt	ug/L	<0.72	5.0	0.72	05/23/16 11:57	
Lead	ug/L	<2.5	5.0	2.5	05/23/16 11:57	
Lithium	ug/L	<4.9	10.0	4.9	05/23/16 11:57	
Molybdenum	ug/L	<0.52	20.0	0.52	05/23/16 11:57	

LABORATORY CONTROL SAMPLE: 1756506

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	998	100	85-115	
Beryllium	ug/L	1000	993	99	85-115	
Boron	ug/L	1000	966	97	85-115	
Calcium	ug/L	10000	9520	95	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	990	99	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1756507 1756508

Parameter	Units	60218620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	252	1000	1000	1260	1250	101	100	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	1010	997	101	100	70-130	1	20	
Boron	ug/L	81.6J	1000	1000	1100	1070	101	99	70-130	2	20	
Calcium	ug/L	150000	10000	10000	156000	154000	55	34	70-130	1	20	M1
Cobalt	ug/L	<0.72	1000	1000	1000	992	100	99	70-130	1	20	
Lead	ug/L	<2.5	1000	1000	1000	990	100	99	70-130	1	20	
Lithium	ug/L	39.1	1000	1000	1080	1070	104	103	70-130	1	20	
Molybdenum	ug/L	1.1J	1000	1000	1070	1060	107	106	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

MATRIX SPIKE SAMPLE: 1756509

Parameter	Units	60218627001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	142	1000	1180	104	70-130	
Beryllium	ug/L	<0.26	1000	1000	100	70-130	
Boron	ug/L	2620	1000	3700	108	70-130	
Calcium	ug/L	130000	10000	142000	118	70-130	
Cobalt	ug/L	0.80J	1000	1010	101	70-130	
Lead	ug/L	3.2J	1000	1010	100	70-130	
Lithium	ug/L	20.9	1000	1100	108	70-130	
Molybdenum	ug/L	4.0J	1000	1080	108	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429894 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

METHOD BLANK: 1756511 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	05/24/16 18:15	
Arsenic	ug/L	<0.10	1.0	0.10	05/24/16 18:15	
Cadmium	ug/L	<0.029	0.50	0.029	05/24/16 18:15	
Chromium	ug/L	<0.34	1.0	0.34	05/24/16 18:15	
Selenium	ug/L	<0.18	1.0	0.18	05/24/16 18:15	
Thallium	ug/L	<0.50	1.0	0.50	05/24/16 18:15	

LABORATORY CONTROL SAMPLE: 1756512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.8	104	85-115	
Arsenic	ug/L	40	41.8	105	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.4	106	85-115	
Selenium	ug/L	40	42.6	107	85-115	
Thallium	ug/L	40	38.7	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1756513 1756514

Parameter	Units	60218620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	41.2	40.8	103	102	70-130	1	20	
Arsenic	ug/L	1.3	40	40	42.5	43.0	103	104	70-130	1	20	
Cadmium	ug/L	0.066J	40	40	40.5	40.2	101	100	70-130	1	20	
Chromium	ug/L	0.45J	40	40	41.9	42.5	104	105	70-130	1	20	
Selenium	ug/L	0.89J	40	40	40.6	40.8	99	100	70-130	0	20	
Thallium	ug/L	<0.50	40	40	41.5	41.8	104	104	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1756515 1756516

Parameter	Units	60218627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	41.5	41.2	104	103	70-130	1	20	
Arsenic	ug/L	9.1	40	40	51.6	51.3	106	106	70-130	1	20	
Cadmium	ug/L	0.031J	40	40	40.0	39.9	100	100	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1756515 1756516

Parameter	Units	60218627001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	ug/L	0.53J	40	40	42.3	42.6	105	105	70-130	1	20	
Selenium	ug/L	<0.18	40	40	41.2	41.4	103	103	70-130	0	20	
Thallium	ug/L	<0.50	40	40	41.1	41.1	103	103	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429637 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218627009

METHOD BLANK: 1755338 Matrix: Water
Associated Lab Samples: 60218627009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/11/16 13:16	

LABORATORY CONTROL SAMPLE: 1755339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 1755340

Parameter	Units	60218627009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	772	759	2	10	H1

SAMPLE DUPLICATE: 1755341

Parameter	Units	60218510003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	9540	8340	13	10	D6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429775 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218627010

METHOD BLANK: 1756023 Matrix: Water
Associated Lab Samples: 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/11/16 15:48	

LABORATORY CONTROL SAMPLE: 1756024

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

SAMPLE DUPLICATE: 1756025

Parameter	Units	60218569012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	493	490	1	10	

SAMPLE DUPLICATE: 1756026

Parameter	Units	60218627001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	525	547	4	10	

SAMPLE DUPLICATE: 1756027

Parameter	Units	60218640009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	455	471	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 430018 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218620001, 60218620002

METHOD BLANK: 1756919 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/12/16 16:31	

LABORATORY CONTROL SAMPLE: 1756920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1060	106	80-120	

SAMPLE DUPLICATE: 1756921

Parameter	Units	60218511009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	154	163	6	10	

SAMPLE DUPLICATE: 1756922

Parameter	Units	60218620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	559	603	8	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 430027 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218620003, 60218620004, 60218620005, 60218620006

METHOD BLANK: 1756931 Matrix: Water
Associated Lab Samples: 60218620003, 60218620004, 60218620005, 60218620006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/12/16 16:46	

LABORATORY CONTROL SAMPLE: 1756932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	915	91	80-120	

SAMPLE DUPLICATE: 1756933

Parameter	Units	60218620003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	718	716	0	10	

SAMPLE DUPLICATE: 1756934

Parameter	Units	60218627011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	900	909	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429485 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218627009, 60218627010

SAMPLE DUPLICATE: 1754753

Parameter	Units	60218420011 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.3	5.9	6	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429646 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218620003, 60218620005

SAMPLE DUPLICATE: 1755369

Parameter	Units	60218627001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429739 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218620001, 60218620006

SAMPLE DUPLICATE: 1755823

Parameter	Units	60218620001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.3	1	5	H3,H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 429774 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218620002, 60218620004

SAMPLE DUPLICATE: 1756022

Parameter	Units	60218548001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.1	6.0	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 432478 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

METHOD BLANK: 1767772 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620006, 60218627009, 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	05/31/16 08:52	
Fluoride	mg/L	<0.073	0.20	0.073	05/31/16 08:52	
Sulfate	mg/L	<0.25	1.0	0.25	05/31/16 08:52	

LABORATORY CONTROL SAMPLE: 1767773

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	2.6	104	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1767774 1767775

Parameter	Units	60218620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.8	5	5	7.5	7.4	95	93	80-120	1	15	
Fluoride	mg/L	0.18J	2.5	2.5	2.7	2.7	101	100	80-120	1	15	

MATRIX SPIKE SAMPLE: 1767776

Parameter	Units	60218627001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.3	5	8.9	91	80-120	
Fluoride	mg/L	0.15J	2.5	2.6	97	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 432720 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218627009, 60218627010

METHOD BLANK: 1768478 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218627009, 60218627010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.25	1.0	0.25	06/01/16 08:56	

LABORATORY CONTROL SAMPLE: 1768479

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1768480 1768481

Parameter	Units	60218620001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	89.5	50	50	141	140	103	102	80-120	0	15	

MATRIX SPIKE SAMPLE: 1768482

Parameter	Units	60218627001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	71.6	25	99.6	112	80-120	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-1 **Lab ID: 60218620001** Collected: 05/05/16 13:54 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.380 ± 0.466 (0.760) C:NA T:92%**	pCi/L	05/31/16 10:05	13982-63-3	
Radium-228	EPA 904.0	**0.417 ± 0.355 (0.714) C:79% T:78%**	pCi/L	05/26/16 14:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-2 **Lab ID: 60218620002** Collected: 05/05/16 15:01 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.261 ± 0.363 (0.605) C:NA T:93%**	pCi/L	05/31/16 10:05	13982-63-3	
Radium-228	EPA 904.0	**0.758 ± 0.411 (0.743) C:81% T:79%**	pCi/L	05/26/16 14:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-3 **Lab ID: 60218620003** Collected: 05/05/16 10:12 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0642 ± 0.293 (0.596) C:NA T:91%**	pCi/L	05/31/16 10:05	13982-63-3	
Radium-228	EPA 904.0	**0.890 ± 0.433 (0.742) C:81% T:80%**	pCi/L	05/26/16 14:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-MW-26 **Lab ID: 60218620004** Collected: 05/05/16 14:59 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.292 (0.655) C:NA T:95%**	pCi/L	05/31/16 10:36	13982-63-3	
Radium-228	EPA 904.0	**0.801 ± 0.468 (0.886) C:80% T:82%**	pCi/L	05/26/16 14:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-UWL-DUP-1 **Lab ID: 60218620005** Collected: 05/05/16 08:00 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.592 (1.00) C:NA T:81%**	pCi/L	06/01/16 13:49	13982-63-3	
Radium-228	EPA 904.0	**0.594 ± 0.357 (0.656) C:80% T:84%**	pCi/L	05/26/16 14:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-UWL-FB-1 **Lab ID: 60218620006** Collected: 05/05/16 14:47 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.268 ± 0.465 (0.831) C:NA T:87%**	pCi/L	06/01/16 14:08	13982-63-3	
Radium-228	EPA 904.0	**-0.168 ± 0.287 (0.707) C:78% T:85%**	pCi/L	05/26/16 11:30	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-1 MS **Lab ID: 60218620007** Collected: 05/05/16 13:54 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**86.3 %REC ± NA (NA) C:NA T:NA**	pCi/L	05/31/16 10:36	13982-63-3	
Radium-228	EPA 904.0	**124 %REC ± NA (NA) C:NA T:NA**	pCi/L	05/26/16 14:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-TMW-1 MSD **Lab ID: 60218620008** Collected: 05/05/16 13:54 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**80.2 %REC 7.40 RPD ± NA (NA) C:NA T:NA**	pCi/L	05/31/16 10:47	13982-63-3	
Radium-228	EPA 904.0	**130 %REC 4.40 RPD ± NA (NA) C:NA T:NA**	pCi/L	05/26/16 14:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-BMW-1S **Lab ID: 60218627009** Collected: 05/03/16 15:33 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.445 ± 0.381 (0.517) C:NA T:91%**	pCi/L	05/31/16 19:22	13982-63-3	
Radium-228	EPA 904.0	**1.28 ± 0.543 (0.891) C:77% T:75%**	pCi/L	05/31/16 12:29	15262-20-1	1e

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Sample: L-BMW-2S **Lab ID: 60218627010** Collected: 05/04/16 08:55 Received: 05/07/16 04:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.310 ± 0.285 (0.168) C:NA T:86%**	pCi/L	05/31/16 19:23	13982-63-3	
Radium-228	EPA 904.0	**0.879 ± 0.382 (0.635) C:82% T:83%**	pCi/L	05/25/16 23:17	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220024 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60218627009, 60218627010

METHOD BLANK: 1076506 Matrix: Water
Associated Lab Samples: 60218627009, 60218627010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.13 ± 0.496 (0.832) C:81% T:78%	pCi/L	05/31/16 12:28	1e
Radium-228	1.22 ± 0.433 (0.648) C:81% T:84%	pCi/L	05/25/16 23:19	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220016 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples:

METHOD BLANK: 1076501 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.189 ± 0.370 (0.677) C:NA T:91%	pCi/L	05/31/16 11:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220233 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60218627009, 60218627010

METHOD BLANK: 1077500 Matrix: Water
Associated Lab Samples: 60218627009, 60218627010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.058 ± 0.265 (0.540) C:NA T:92%	pCi/L	05/31/16 12:29	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220499 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60218620006

METHOD BLANK: 1078898 Matrix: Water
Associated Lab Samples: 60218620006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.361 ± 0.384 (0.799) C:80% T:75%	pCi/L	05/26/16 11:29	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220023 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples:

METHOD BLANK: 1076505 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.148 ± 0.306 (0.675) C:85% T:85%	pCi/L	05/25/16 19:18	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220230 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620007, 60218620008

METHOD BLANK: 1077497 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620005, 60218620007, 60218620008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.345 ± 0.317 (0.646) C:79% T:88%	pCi/L	05/26/16 14:45	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 221075 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60218620005, 60218620006

METHOD BLANK: 1081656 Matrix: Water
Associated Lab Samples: 60218620005, 60218620006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.298 ± 0.360 (0.978) C:NA T:92%	pCi/L	06/01/16 13:37	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

QC Batch: 220232 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620007, 60218620008

METHOD BLANK: 1077499 Matrix: Water
Associated Lab Samples: 60218620001, 60218620002, 60218620003, 60218620004, 60218620007, 60218620008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.124 ± 0.344 (0.812) C:NA T:94%	pCi/L	05/31/16 10:16	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

1e	The MB failed high on the 1st and 2nd counts. All samples above 1.0 were re-ingrowthed, re-counted, and verifiied.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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Lenexa, KS 66219
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218620001	**L-TMW-1**	EPA 200.7	429893	EPA 200.7	429995
60218620002	**L-TMW-2**	EPA 200.7	429893	EPA 200.7	429995
60218620003	**L-TMW-3**	EPA 200.7	429893	EPA 200.7	429995
60218620004	**L-MW-26**	EPA 200.7	429893	EPA 200.7	429995
60218620005	**L-UWL-DUP-1**	EPA 200.7	429893	EPA 200.7	429995
60218620006	**L-UWL-FB-1**	EPA 200.7	429893	EPA 200.7	429995
60218627009	**L-BMW-1S**	EPA 200.7	429893	EPA 200.7	429995
60218627010	**L-BMW-2S**	EPA 200.7	429893	EPA 200.7	429995
60218620001	**L-TMW-1**	EPA 200.8	429894	EPA 200.8	429999
60218620002	**L-TMW-2**	EPA 200.8	429894	EPA 200.8	429999
60218620003	**L-TMW-3**	EPA 200.8	429894	EPA 200.8	429999
60218620004	**L-MW-26**	EPA 200.8	429894	EPA 200.8	429999
60218620005	**L-UWL-DUP-1**	EPA 200.8	429894	EPA 200.8	429999
60218620006	**L-UWL-FB-1**	EPA 200.8	429894	EPA 200.8	429999
60218627009	**L-BMW-1S**	EPA 200.8	429894	EPA 200.8	429999
60218627010	**L-BMW-2S**	EPA 200.8	429894	EPA 200.8	429999
60218620001	**L-TMW-1**	EPA 7470	430130	EPA 7470	430150
60218620002	**L-TMW-2**	EPA 7470	430130	EPA 7470	430150
60218620003	**L-TMW-3**	EPA 7470	430130	EPA 7470	430150
60218620004	**L-MW-26**	EPA 7470	430130	EPA 7470	430150
60218620005	**L-UWL-DUP-1**	EPA 7470	430130	EPA 7470	430150
60218620006	**L-UWL-FB-1**	EPA 7470	430130	EPA 7470	430150
60218627009	**L-BMW-1S**	EPA 7470	430130	EPA 7470	430150
60218627010	**L-BMW-2S**	EPA 7470	430130	EPA 7470	430150
60218620001	**L-TMW-1**	EPA 903.1	220232		
60218620002	**L-TMW-2**	EPA 903.1	220232		
60218620003	**L-TMW-3**	EPA 903.1	220232		
60218620004	**L-MW-26**	EPA 903.1	220232		
60218620005	**L-UWL-DUP-1**	EPA 903.1	221075		
60218620006	**L-UWL-FB-1**	EPA 903.1	221075		
60218627009	**L-BMW-1S**	EPA 903.1	220233		
60218627010	**L-BMW-2S**	EPA 903.1	220233		
60218620007	**L-TMW-1 MS**	EPA 903.1	220232		
60218620008	**L-TMW-1 MSD**	EPA 903.1	220232		
60218620001	**L-TMW-1**	EPA 904.0	220230		
60218620002	**L-TMW-2**	EPA 904.0	220230		
60218620003	**L-TMW-3**	EPA 904.0	220230		
60218620004	**L-MW-26**	EPA 904.0	220230		
60218620005	**L-UWL-DUP-1**	EPA 904.0	220230		
60218620006	**L-UWL-FB-1**	EPA 904.0	220499		
60218627009	**L-BMW-1S**	EPA 904.0	220024		
60218627010	**L-BMW-2S**	EPA 904.0	220024		
60218620007	**L-TMW-1 MS**	EPA 904.0	220230		
60218620008	**L-TMW-1 MSD**	EPA 904.0	220230		

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60218620

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218620001	L-TMW-1	SM 2540C	430018		
60218620002	L-TMW-2	SM 2540C	430018		
60218620003	L-TMW-3	SM 2540C	430027		
60218620004	L-MW-26	SM 2540C	430027		
60218620005	L-UWL-DUP-1	SM 2540C	430027		
60218620006	L-UWL-FB-1	SM 2540C	430027		
60218627009	L-BMW-1S	SM 2540C	429637		
60218627010	L-BMW-2S	SM 2540C	429775		
60218620001	L-TMW-1	SM 4500-H+B	429739		
60218620002	L-TMW-2	SM 4500-H+B	429774		
60218620003	L-TMW-3	SM 4500-H+B	429646		
60218620004	L-MW-26	SM 4500-H+B	429774		
60218620005	L-UWL-DUP-1	SM 4500-H+B	429646		
60218620006	L-UWL-FB-1	SM 4500-H+B	429739		
60218627009	L-BMW-1S	SM 4500-H+B	429485		
60218627010	L-BMW-2S	SM 4500-H+B	429485		
60218620001	L-TMW-1	EPA 300.0	432478		
60218620001	L-TMW-1	EPA 300.0	432720		
60218620002	L-TMW-2	EPA 300.0	432478		
60218620002	L-TMW-2	EPA 300.0	432720		
60218620003	L-TMW-3	EPA 300.0	432478		
60218620003	L-TMW-3	EPA 300.0	432720		
60218620004	L-MW-26	EPA 300.0	432478		
60218620004	L-MW-26	EPA 300.0	432720		
60218620005	L-UWL-DUP-1	EPA 300.0	432478		
60218620005	L-UWL-DUP-1	EPA 300.0	432720		
60218620006	L-UWL-FB-1	EPA 300.0	432478		
60218627009	L-BMW-1S	EPA 300.0	432478		
60218627009	L-BMW-1S	EPA 300.0	432720		
60218627010	L-BMW-2S	EPA 300.0	432478		
60218627010	L-BMW-2S	EPA 300.0	432720		

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Sample Condition Upon Receipt

WO# : 60218620

60218620

Client Name: Golder Assoc.

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

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

Optional
Proj Due Date:
Proj Name:

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

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

Thermometer Used: CF +1.0 / CF 0.0 T-239 / T-262 **Type of Ice:** Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: → 1.6 17.2

Date and initials of person examining contents: BB 5/7/16

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. MS/MSD submitted.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☐Yes ☑No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Y Matrix: WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased): _____	☐Yes ☑No ☐N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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:		Section B Required Project Information:	Section C Invoice Information:
Company: Golder Associates		Report To: Mark Haddock (mhaddock@golder.com)	Attention:
Address: 820 South Main Street, Suite 100		Copy To: Jeffrey Ingram	Company Name:
St Charles, MO 63301			Address:
Email To: maddock@golder.com		Purchase Order No.:	Pace Quote Reference:
Phone: 636-724-9191	Fax: 636-724-9323	Project Name: Ameren Labadie Energy Center - UWL	Pace Project Manager: Jamie Church
Requested Due Date/TAT: Standard		Project Number: 153-1406.0001B	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): Metals* N, Chloride/Fluoride/Sulfate N, TDS N, pH N, Radium 226 & 228 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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60218020
1	L-TMW-1	WT	G			5/5/16	1354		12	3		9							3	3	3	3	6	6BPIN		3BP3U 3BP3N 2u 01
2	L-TMW-2	WT	G			5/5/16	1501		4	1		3							1	1	1	1	2	2BPIN		BP3U BP3N 2u 02
3	L-TMW-3	WT	G			5/6/16	1018																			03
4	L-MW-26	WT	G			5/5/16	1459																			04
5	L-UWL-DUP-1	WT	G			5/5/16	—																			05
6	L-UWL-FB-1	WT	G			5/5/16	1447																			06
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	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	[signature] / Golder	5/6/16	1520	[signature]	5/6/16					
	[signature]	5/6/16	1725	[signature] / PACE	5/6/16	1725				
	[signature] / PACE	5/6/16	1745	[signature]	5/7/16	0415	1.6	Y	Y	Y
							17.2	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*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

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Sample Condition Upon Receipt

WO#: 60218627

60218627

Client Name: Golder

Optional
Proj Due Date:
Proj Name:

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

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: CF +1.0 / CF 0.0 T-239 / T-262 **Type of Ice:** Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: → 1.1 1.2, 13.6

Temperature should be above freezing to 6°C

Date and initials of person examining contents: BB 5/7/16

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. MS/MSD
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☐Yes ☑No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Y Matrix: WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased): _____	☐Yes ☑No ☐N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	mhaddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228				BP/N		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N						
1	L-LMW-1S	WT	G			5/4/16	1525		12	3		9							3	3	3	3	6				BP/N		60218627
2	L-LMW-2S	WT	G			5/5/16	1130		4	1		3							1	1	1	1	2			2	BP/N		
3	L-LMW-3S	WT	G			5/4/16	1535																					
4	L-LMW-4S	WT	G			5/5/16	1235																					
5	L-LMW-5S	WT	G			5/6/16	0855																					
6	L-LMW-6S	WT	G			5/5/16	1408																					
7	L-LMW-7S	WT	G			5/5/16	1110																					
8	L-LMW-8S	WT	G			5/5/16	0955																					
9	L-BMW-1S	WT	G			5/3/16	1533																					
10	L-BMW-2S	WT	G			5/4/16	0855																					
11	L-LMW-DUP-1	WT	G			5/5/16	-																					
12	L-LMW-FB-1	WT	G			5/5/16	1115																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl		5/6/16	1320		5/6/16		
	CT WD	5/6/16	1725		5/6/16	1725	
		5/6/16	1745		5/7/16	0415	1.1 17.2 Y/N Y Y
							15.6 Y/N Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

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.

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

July 11, 2016

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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
Project Manager

Enclosures

cc: Jeffrey Ingram, Golder Associates
John Suozzi, Golder Associates

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60221462001	**L-MW-26**	Water	06/15/16 09:40	06/16/16 03:30
60221462002	**L-TMW-1**	Water	06/15/16 09:39	06/16/16 03:30
60221462003	**L-TMW-2**	Water	06/15/16 11:03	06/16/16 03:30
60221462004	**L-TMW-3**	Water	06/15/16 11:25	06/16/16 03:30
60221462005	**L-UWL-DUP-1**	Water	06/15/16 08:00	06/16/16 03:30
60221462006	**L-UWL-FB-1**	Water	06/15/16 11:25	06/16/16 03:30
60221462007	**L-MW-26 MS**	Water	06/15/16 09:40	06/16/16 03:30
60221462008	**L-MW-26 MSD**	Water	06/15/16 09:40	06/16/16 03:30

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60221462001	**L-MW-26**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462002	**L-TMW-1**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462003	**L-TMW-2**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462004	**L-TMW-3**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462005	**L-UWL-DUP-1**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462006	**L-UWL-FB-1**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60221462007	**L-MW-26 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60221462008	**L-MW-26 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-MW-26 **Lab ID: 60221462001** Collected: 06/15/16 09:40 Received: 06/16/16 03:30 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								
Barium	**203**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:30	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:30	7440-41-7	
Boron	**84.7J**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:30	7440-42-8	
Calcium	**140000**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:30	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:30	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:30	7439-92-1	
Lithium	**27.1**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:30	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:30	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.25J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:11	7440-36-0	B
Arsenic	**0.51J**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:11	7440-38-2	
Cadmium	**0.044J**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:11	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:11	7440-47-3	
Selenium	**1.9**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:11	7782-49-2	
Thallium	**0.51J**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 15:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**506**	mg/L	5.0	5.0	1		06/20/16 13:36		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.9**	mg/L	1.0	0.50	1		06/25/16 20:44	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.073	1		06/25/16 20:44	16984-48-8	
Sulfate	**29.5**	mg/L	2.0	0.50	2		06/26/16 12:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-1 **Lab ID: 60221462002** Collected: 06/15/16 09:39 Received: 06/16/16 03:30 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								
Barium	**245**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:37	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:37	7440-41-7	
Boron	**83.6J**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:37	7440-42-8	
Calcium	**147000**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:37	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:37	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:37	7439-92-1	
Lithium	**32.9**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:37	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:37	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.19J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:24	7440-36-0	B
Arsenic	**1.3**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:24	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:24	7440-43-9	
Chromium	**0.77J**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:24	7440-47-3	
Selenium	**1.4**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:24	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 15:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**622**	mg/L	5.0	5.0	1		06/20/16 13:37		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.5**	mg/L	1.0	0.50	1		06/25/16 21:43	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.073	1		06/25/16 21:43	16984-48-8	
Sulfate	**83.7**	mg/L	5.0	1.2	5		06/26/16 12:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-2 **Lab ID: 60221462003** Collected: 06/15/16 11:03 Received: 06/16/16 03:30 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								
Barium	**202**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:39	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:39	7440-41-7	
Boron	**91.3J**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:39	7440-42-8	
Calcium	**175000**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:39	7440-70-2	
Cobalt	**1.6J**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:39	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:39	7439-92-1	
Lithium	**40.1**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:39	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:39	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.17J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:33	7440-36-0	B
Arsenic	**1.3**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:33	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:33	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:33	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:33	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 15:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**681**	mg/L	5.0	5.0	1		06/20/16 13:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.1**	mg/L	1.0	0.50	1		06/25/16 21:57	16887-00-6	
Fluoride	**0.20J**	mg/L	0.20	0.073	1		06/25/16 21:57	16984-48-8	
Sulfate	**78.7**	mg/L	5.0	1.2	5		06/26/16 13:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-3 **Lab ID: 60221462004** Collected: 06/15/16 11:25 Received: 06/16/16 03:30 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								
Barium	**286**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:41	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:41	7440-41-7	
Boron	**107**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:41	7440-42-8	
Calcium	**173000**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:41	7440-70-2	
Cobalt	**2.6J**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:41	7440-48-4	
Lead	**2.6J**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:41	7439-92-1	
Lithium	**41.9**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:41	7439-93-2	
Molybdenum	**1.5J**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:41	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.19J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:37	7440-36-0	B
Arsenic	**4.6**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:37	7440-38-2	
Cadmium	**0.041J**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:37	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:37	7440-47-3	
Selenium	**0.94J**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:37	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 15:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**683**	mg/L	5.0	5.0	1		06/20/16 13:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.0**	mg/L	1.0	0.50	1		06/25/16 22:12	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.073	1		06/25/16 22:12	16984-48-8	
Sulfate	**71.8**	mg/L	5.0	1.2	5		06/26/16 13:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-UWL-DUP-1 **Lab ID: 60221462005** Collected: 06/15/16 08:00 Received: 06/16/16 03:30 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								
Barium	**242**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:44	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:44	7440-41-7	
Boron	**80.8J**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:44	7440-42-8	
Calcium	**145000**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:44	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:44	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:44	7439-92-1	
Lithium	**31.5**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:44	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:44	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.17J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:41	7440-36-0	B
Arsenic	**1.3**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:41	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:41	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:41	7440-47-3	
Selenium	**1.5**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:41	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 15:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**629**	mg/L	5.0	5.0	1		06/20/16 13:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.5**	mg/L	1.0	0.50	1		06/25/16 22:27	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.073	1		06/25/16 22:27	16984-48-8	
Sulfate	**85.3**	mg/L	5.0	1.2	5		06/26/16 13:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-UWL-FB-1 **Lab ID: 60221462006** Collected: 06/15/16 11:25 Received: 06/16/16 03:30 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								
Barium	**<0.58**	ug/L	10.0	0.58	1	06/20/16 11:30	06/21/16 10:46	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	06/20/16 11:30	06/21/16 10:46	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	06/20/16 11:30	06/21/16 10:46	7440-42-8	
Calcium	**14.3J**	ug/L	100	8.1	1	06/20/16 11:30	06/21/16 10:46	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	06/20/16 11:30	06/21/16 10:46	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	06/20/16 11:30	06/21/16 10:46	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	06/20/16 11:30	06/21/16 10:46	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	06/20/16 11:30	06/21/16 10:46	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.12J**	ug/L	1.0	0.058	1	06/24/16 09:30	06/28/16 11:55	7440-36-0	B
Arsenic	**<0.10**	ug/L	1.0	0.10	1	06/24/16 09:30	06/28/16 11:55	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	06/24/16 09:30	06/28/16 11:55	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	06/24/16 09:30	06/28/16 11:55	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/24/16 09:30	06/28/16 11:55	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	06/24/16 09:30	06/28/16 11:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	06/22/16 10:05	06/22/16 16:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		06/20/16 13:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	Std. Units	0.10	0.10	1		06/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		06/25/16 22:41	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		06/25/16 22:41	16984-48-8	
Sulfate	**0.93J**	mg/L	1.0	0.25	1		06/25/16 22:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: MERP/10734 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

METHOD BLANK: 1780282 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.095J	0.20	0.039	06/22/16 14:55	

LABORATORY CONTROL SAMPLE: 1780283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1780284 1780285

Parameter	Units	60221328001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.2	4.8	103	97	75-125	6	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1780286 1780287

Parameter	Units	60221462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.0	5.0	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: MPRP/36397 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

METHOD BLANK: 1779239 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	10.0	0.58	06/21/16 10:01	
Beryllium	ug/L	<0.26	1.0	0.26	06/21/16 10:01	
Boron	ug/L	<50.0	100	50.0	06/21/16 10:01	
Calcium	ug/L	<8.1	100	8.1	06/21/16 10:01	
Cobalt	ug/L	<0.72	5.0	0.72	06/21/16 10:01	
Lead	ug/L	<2.5	5.0	2.5	06/21/16 10:01	
Lithium	ug/L	<4.9	10.0	4.9	06/21/16 10:01	
Molybdenum	ug/L	<0.52	20.0	0.52	06/21/16 10:01	

LABORATORY CONTROL SAMPLE: 1779240

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	990	99	85-115	
Beryllium	ug/L	1000	995	100	85-115	
Boron	ug/L	1000	967	97	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	973	97	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	

MATRIX SPIKE SAMPLE: 1779241

Parameter	Units	60221275002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	132	1000	1130	100	70-130	
Beryllium	ug/L	ND	1000	1020	102	70-130	
Boron	ug/L	104	1000	1120	102	70-130	
Calcium	ug/L	76200	10000	85800	96	70-130	
Cobalt	ug/L	ND	1000	982	98	70-130	
Lead	ug/L	ND	1000	963	96	70-130	
Lithium	ug/L	12.9	1000	1020	101	70-130	
Molybdenum	ug/L	ND	1000	1050	105	70-130	

MATRIX SPIKE SAMPLE: 1779242

Parameter	Units	60221462001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	203	1000	1210	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

MATRIX SPIKE SAMPLE: 1779242

Parameter	Units	60221462001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Beryllium	ug/L	<0.26	1000	1010	101	70-130	
Boron	ug/L	84.7J	1000	1080	100	70-130	
Calcium	ug/L	140000	10000	145000	48	70-130	M1
Cobalt	ug/L	<0.72	1000	986	99	70-130	
Lead	ug/L	<2.5	1000	983	98	70-130	
Lithium	ug/L	27.1	1000	1030	101	70-130	
Molybdenum	ug/L	<0.52	1000	1050	105	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: MPRP/36444 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

METHOD BLANK: 1782192 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.12J	1.0	0.058	06/28/16 11:02	
Arsenic	ug/L	<0.10	1.0	0.10	06/28/16 11:02	
Cadmium	ug/L	<0.029	0.50	0.029	06/28/16 11:02	
Chromium	ug/L	<0.34	1.0	0.34	06/28/16 11:02	
Selenium	ug/L	<0.18	1.0	0.18	06/28/16 11:02	
Thallium	ug/L	<0.50	1.0	0.50	06/28/16 11:02	

LABORATORY CONTROL SAMPLE: 1782193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.8	104	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	42.2	106	85-115	
Chromium	ug/L	40	41.5	104	85-115	
Selenium	ug/L	40	43.2	108	85-115	
Thallium	ug/L	40	38.4	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782195 1782196

Parameter	Units	60221462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.25J	40	40	41.9	41.7	104	104	70-130	1	20	
Arsenic	ug/L	0.51J	40	40	42.6	42.6	105	105	70-130	0	20	
Cadmium	ug/L	0.044J	40	40	40.9	40.9	102	102	70-130	0	20	
Chromium	ug/L	<0.34	40	40	40.9	40.2	102	100	70-130	2	20	
Selenium	ug/L	1.9	40	40	43.2	42.9	103	103	70-130	1	20	
Thallium	ug/L	0.51J	40	40	40.6	40.3	100	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 1782197

Parameter	Units	60221462002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.19J	40	41.5	103	70-130	
Arsenic	ug/L	1.3	40	43.4	105	70-130	
Cadmium	ug/L	<0.029	40	40.4	101	70-130	
Chromium	ug/L	0.77J	40	41.0	100	70-130	
Selenium	ug/L	1.4	40	42.1	102	70-130	
Thallium	ug/L	<0.50	40	40.7	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: WET/62493 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

METHOD BLANK: 1779160 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/20/16 13:28	

LABORATORY CONTROL SAMPLE: 1779161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 1779162

Parameter	Units	60221624001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1090	1100	0	10	

SAMPLE DUPLICATE: 1779163

Parameter	Units	60221462001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	506	502	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: WET/62483 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

SAMPLE DUPLICATE: 1779090

Parameter	Units	60221462001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.8	1	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: WETA/40259 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

METHOD BLANK: 1782963 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/25/16 17:33	
Fluoride	mg/L	<0.073	0.20	0.073	06/25/16 17:33	
Sulfate	mg/L	<0.25	1.0	0.25	06/25/16 17:33	

LABORATORY CONTROL SAMPLE: 1782964

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782965 1782966

Parameter	Units	60221675002 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			51.0	50.9				0	15	
Fluoride	mg/L	ND	25	25	24.4	24.0	94	93	80-120	2	15	
Sulfate	mg/L	97.2	50	50	145	145	95	96	80-120	0	15	

MATRIX SPIKE SAMPLE: 1782967

Parameter	Units	60221462001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	9.9	5	14.6	94	80-120	
Fluoride	mg/L	0.18J	2.5	2.6	95	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: WETA/40272 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005

METHOD BLANK: 1783411 Matrix: Water
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.25	1.0	0.25	06/26/16 08:56	

LABORATORY CONTROL SAMPLE: 1783412

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.1	101	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-MW-26 **Lab ID: 60221462001** Collected: 06/15/16 09:40 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.402 (0.824) C:NA T:91%**	pCi/L	07/07/16 21:10	13982-63-3	
Radium-228	EPA 904.0	**0.368 ± 0.386 (0.802) C:75% T:89%**	pCi/L	07/06/16 16:21	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-1 **Lab ID: 60221462002** Collected: 06/15/16 09:39 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.186 ± 0.438 (0.812) C:NA T:87%**	pCi/L	07/07/16 21:41	13982-63-3	
Radium-228	EPA 904.0	**0.495 ± 0.465 (0.953) C:68% T:79%**	pCi/L	07/06/16 16:21	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-2 **Lab ID: 60221462003** Collected: 06/15/16 11:03 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.225 ± 0.412 (0.736) C:NA T:93%**	pCi/L	07/07/16 21:30	13982-63-3	
Radium-228	EPA 904.0	**0.920 ± 0.519 (0.941) C:68% T:78%**	pCi/L	07/06/16 16:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-TMW-3 **Lab ID: 60221462004** Collected: 06/15/16 11:25 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0324 ± 0.229 (0.389) C:NA T:86%**	pCi/L	07/07/16 21:53	13982-63-3	
Radium-228	EPA 904.0	**0.136 ± 0.387 (0.867) C:72% T:81%**	pCi/L	07/06/16 16:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-UWL-DUP-1 **Lab ID: 60221462005** Collected: 06/15/16 08:00 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0591 ± 0.307 (0.636) C:NA T:89%**	pCi/L	07/07/16 21:51	13982-63-3	
Radium-228	EPA 904.0	**0.154 ± 0.390 (0.870) C:72% T:80%**	pCi/L	07/06/16 16:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-UWL-FB-1 **Lab ID: 60221462006** Collected: 06/15/16 11:25 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.282 (0.633) C:NA T:85%**	pCi/L	07/07/16 21:27	13982-63-3	
Radium-228	EPA 904.0	**-0.0638 ± 0.402 (0.951) C:69% T:74%**	pCi/L	07/06/16 16:22	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-MW-26 MS **Lab ID: 60221462007** Collected: 06/15/16 09:40 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**107 %REC ± NA (NA) C:NA T:NA**	pCi/L	07/07/16 21:40	13982-63-3	
Radium-228	EPA 904.0	**91.7 %REC +/- NA (NA) C:NA T:NA**	pCi/L	07/06/16 16:23	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Sample: L-MW-26 MSD **Lab ID: 60221462008** Collected: 06/15/16 09:40 Received: 06/16/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**95.2 %REC 12.0 RPD ± NA (NA) C:NA T:NA**	pCi/L	07/07/16 21:51	13982-63-3	
Radium-228	EPA 904.0	**114 %REC 21.8 RPD +/- NA (NA) C:NA T:NA**	pCi/L	07/06/16 16:23	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: RADC/30065 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006, 60221462007, 60221462008

METHOD BLANK: 1096978 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.182 ± 0.368 (0.812) C:64% T:77%	pCi/L	07/06/16 16:21	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

QC Batch: RADC/30043 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60221462001, 60221462002, 60221462003, 60221462004, 60221462005, 60221462006, 60221462007, 60221462008

METHOD BLANK: 1096899 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	3.43 ± 3.49 (4.55) C:NA T:5%	pCi/L	07/07/16 21:30	1e

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

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.

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

1e	The Ra-226 Method Blank had zero tracer yield. Further analysis indicated there was no measurable barium in the sample. In order to generate a result, a minimum tracer yield of 5% was used in the calculations. All sample results were below the RL of 1.0 pCi/L and had normal tracer yields indicating the problem was isolated to the MB. The MB MDC and activity appear elevated due to the low yield.
B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60221462001	**L-MW-26**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462002	**L-TMW-1**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462003	**L-TMW-2**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462004	**L-TMW-3**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462005	**L-UWL-DUP-1**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462006	**L-UWL-FB-1**	EPA 200.7	MPRP/36397	EPA 200.7	ICP/26530
60221462001	**L-MW-26**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462002	**L-TMW-1**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462003	**L-TMW-2**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462004	**L-TMW-3**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462005	**L-UWL-DUP-1**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462006	**L-UWL-FB-1**	EPA 200.8	MPRP/36444	EPA 200.8	ICPM/4337
60221462001	**L-MW-26**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462002	**L-TMW-1**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462003	**L-TMW-2**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462004	**L-TMW-3**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462005	**L-UWL-DUP-1**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462006	**L-UWL-FB-1**	EPA 7470	MERP/10734	EPA 7470	MERC/10681
60221462001	**L-MW-26**	EPA 903.1	RADC/30043		
60221462002	**L-TMW-1**	EPA 903.1	RADC/30043		
60221462003	**L-TMW-2**	EPA 903.1	RADC/30043		
60221462004	**L-TMW-3**	EPA 903.1	RADC/30043		
60221462005	**L-UWL-DUP-1**	EPA 903.1	RADC/30043		
60221462006	**L-UWL-FB-1**	EPA 903.1	RADC/30043		
60221462007	**L-MW-26 MS**	EPA 903.1	RADC/30043		
60221462008	**L-MW-26 MSD**	EPA 903.1	RADC/30043		
60221462001	**L-MW-26**	EPA 904.0	RADC/30065		
60221462002	**L-TMW-1**	EPA 904.0	RADC/30065		
60221462003	**L-TMW-2**	EPA 904.0	RADC/30065		
60221462004	**L-TMW-3**	EPA 904.0	RADC/30065		
60221462005	**L-UWL-DUP-1**	EPA 904.0	RADC/30065		
60221462006	**L-UWL-FB-1**	EPA 904.0	RADC/30065		
60221462007	**L-MW-26 MS**	EPA 904.0	RADC/30065		
60221462008	**L-MW-26 MSD**	EPA 904.0	RADC/30065		
60221462001	**L-MW-26**	SM 2540C	WET/62493		
60221462002	**L-TMW-1**	SM 2540C	WET/62493		
60221462003	**L-TMW-2**	SM 2540C	WET/62493		
60221462004	**L-TMW-3**	SM 2540C	WET/62493		
60221462005	**L-UWL-DUP-1**	SM 2540C	WET/62493		
60221462006	**L-UWL-FB-1**	SM 2540C	WET/62493		
60221462001	**L-MW-26**	SM 4500-H+B	WET/62483		
60221462002	**L-TMW-1**	SM 4500-H+B	WET/62483		
60221462003	**L-TMW-2**	SM 4500-H+B	WET/62483		
60221462004	**L-TMW-3**	SM 4500-H+B	WET/62483		
60221462005	**L-UWL-DUP-1**	SM 4500-H+B	WET/62483		
60221462006	**L-UWL-FB-1**	SM 4500-H+B	WET/62483		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60221462

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60221462001	**L-MW-26**	EPA 300.0	WETA/40259		
60221462001	**L-MW-26**	EPA 300.0	WETA/40272		
60221462002	**L-TMW-1**	EPA 300.0	WETA/40259		
60221462002	**L-TMW-1**	EPA 300.0	WETA/40272		
60221462003	**L-TMW-2**	EPA 300.0	WETA/40259		
60221462003	**L-TMW-2**	EPA 300.0	WETA/40272		
60221462004	**L-TMW-3**	EPA 300.0	WETA/40259		
60221462004	**L-TMW-3**	EPA 300.0	WETA/40272		
60221462005	**L-UWL-DUP-1**	EPA 300.0	WETA/40259		
60221462005	**L-UWL-DUP-1**	EPA 300.0	WETA/40272		
60221462006	**L-UWL-FB-1**	EPA 300.0	WETA/40259		

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Sample Condition Upon Receipt

WO# : 60221462

60221462

Client Name: Golder

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

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: CF -0.1 T-239 / CF 0.0 T-262

Type of Ice: Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 0.5 / 15.3

Temperature should be above freezing to 6°C

Optional
Proj Due Date:
Proj Name:

Date and initials of person examining contents: DV 6/16/16

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. Carbon samples shipped w/ ice
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): _____		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 6/16

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical
www.pacelabs.com

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

Page: of

Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center
Project Number:	153-1406.0001

Section C Invoice Information:

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

REGULATORY AGENCY

NPDES GROUND WATER 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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60221462	
1	L-MW-26	WT	G			6/15/16	0940		12	3		9						3	3	3	3	9		3BP3U 3BP3N 6BP1N	001
2	L-TMW-1	WT	G			6/15/16	0939		4	1		3						1	1	1	1	2		1BP3U 1BP3N 2BP1N	002
3	L-TMW-2	WT	G			6/15/16	1103																		003
4	L-TMW-3	WT	G			6/15/16	1125																		004
5	L-UWL-Dup-1	WT	G			6/15/16	—																		005
6	L-UWL-FB-1	WT	G			6/15/16	1125																		006
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)
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Golder	6/15/16	0900		6/15/16	1300				
					6/16/16	0600	0.5	Y	Y	Y
					6/16/16	0330	1.5-3	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Feldmann

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 06/15/16

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

January 03, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2016. 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, 8/10/16: REVISION

This report has been reissued on August 10, 2016. An upload error caused the results for the MS to be uploaded instead of the results for sample 006.

REV-2, 1/3/18: Sample ID revision

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

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

cc: Ryan Feldmann, Golder
Jeffrey Ingram, Golder Associates
John Suozzi, Golder Associates

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60223484001	**L-TMW-1**	Water	07/13/16 09:13	07/14/16 04:55
60223484002	**L-TMW-2**	Water	07/13/16 10:10	07/14/16 04:55
60223484003	**L-TMW-3**	Water	07/13/16 11:17	07/14/16 04:55
60223484004	**L-MW-26**	Water	07/13/16 16:22	07/14/16 04:55
60223484005	**L-UWL-DUP-1**	Water	07/13/16 00:00	07/14/16 04:55
60223484006	**L-UWL-FB-1**	Water	07/13/16 11:21	07/14/16 04:55
60223484007	**L-TMW-2 MS**	Water	07/13/16 10:10	07/14/16 04:55
60223484008	**L-TMW-2 MSD**	Water	07/13/16 10:10	07/14/16 04:55
60223486009	**L-BMW-1S**	Water	07/11/16 12:20	07/14/16 04:55
60223486010	**L-BMW-2S**	Water	07/11/16 13:38	07/14/16 04:55

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60223484001	**L-TMW-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484002	**L-TMW-2**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484003	**L-TMW-3**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484004	**L-MW-26**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484005	**L-UWL-DUP-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484006	**L-UWL-FB-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223484007	**L-TMW-2 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60223484008	**L-TMW-2 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60223486009	**L-BMW-1S**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223486010	**L-BMW-2S**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-1 **Lab ID: 60223484001** Collected: 07/13/16 09:13 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**222**	ug/L	10.0	0.58	1	07/15/16 15:45	07/18/16 13:37	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:37	7440-41-7	
Boron	**83.4J**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:37	7440-42-8	
Calcium	**142000**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:37	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:37	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:37	7439-92-1	
Lithium	**34.6**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:37	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:37	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.068J**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:26	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:26	7440-38-2	
Cadmium	**0.035J**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:26	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:26	7440-47-3	
Selenium	**1.2**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:26	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:26	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 09:59	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**611**	mg/L	5.0	5.0	1		07/20/16 11:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		07/18/16 13:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.6**	mg/L	1.0	0.50	1		07/31/16 21:46	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		07/31/16 21:46	16984-48-8	
Sulfate	**76.7**	mg/L	5.0	0.77	5		08/02/16 18:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-2 **Lab ID: 60223484002** Collected: 07/13/16 10:10 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**178**	ug/L	10.0	0.58	1	07/15/16 15:45	07/18/16 13:39	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:39	7440-41-7	
Boron	**88.8J**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:39	7440-42-8	
Calcium	**168000**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:39	7440-70-2	M1
Cobalt	**2.0J**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:39	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:39	7439-92-1	
Lithium	**43.0**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:39	7439-93-2	
Molybdenum	**1.2J**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:39	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:29	7440-36-0	
Arsenic	**1.1**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:29	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:29	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:29	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:29	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:06	7439-97-6	M1,R1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**668**	mg/L	5.0	5.0	1		07/20/16 11:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		07/18/16 13:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.1**	mg/L	1.0	0.50	1		07/31/16 22:28	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		07/31/16 22:28	16984-48-8	
Sulfate	**71.9**	mg/L	5.0	0.77	5		08/02/16 18:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-3 **Lab ID: 60223484003** Collected: 07/13/16 11:17 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**270**	ug/L	10.0	0.58	1	07/15/16 15:45	07/18/16 13:46	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:46	7440-41-7	
Boron	**112**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:46	7440-42-8	
Calcium	**176000**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:46	7440-70-2	
Cobalt	**3.4J**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:46	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:46	7439-92-1	
Lithium	**46.3**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:46	7439-93-2	
Molybdenum	**1.9J**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:46	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.064J**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:38	7440-36-0	
Arsenic	**4.1**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:38	7440-38-2	
Cadmium	**0.084J**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:38	7440-43-9	
Chromium	**0.43J**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:38	7440-47-3	
Selenium	**0.36J**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**695**	mg/L	5.0	5.0	1		07/20/16 11:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.7**	mg/L	1.0	0.50	1		07/31/16 23:11	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.027	1		07/31/16 23:11	16984-48-8	
Sulfate	**72.9**	mg/L	5.0	0.77	5		08/02/16 19:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-MW-26 **Lab ID: 60223484004** Collected: 07/13/16 16:22 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**190**	ug/L	5.0	0.58	1	07/15/16 15:45	07/18/16 13:48	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:48	7440-41-7	
Boron	**77.9J**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:48	7440-42-8	
Calcium	**132000**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:48	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:48	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:48	7439-92-1	
Lithium	**28.7**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:48	7439-93-2	
Molybdenum	**0.55J**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:48	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.14J**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:41	7440-36-0	
Arsenic	**0.49J**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:41	7440-38-2	
Cadmium	**0.051J**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:41	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:41	7440-47-3	
Selenium	**2.7**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:41	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**491**	mg/L	5.0	5.0	1		07/20/16 11:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.2**	mg/L	1.0	0.50	1		07/31/16 23:25	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		07/31/16 23:25	16984-48-8	
Sulfate	**27.1**	mg/L	2.0	0.31	2		08/02/16 19:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-UWL-DUP-1 **Lab ID: 60223484005** Collected: 07/13/16 00:00 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**228**	ug/L	10.0	0.58	1	07/15/16 15:45	07/18/16 13:50	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:50	7440-41-7	
Boron	**85.0J**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:50	7440-42-8	
Calcium	**144000**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:50	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:50	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:50	7439-92-1	
Lithium	**35.7**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:50	7439-93-2	
Molybdenum	**0.67J**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:50	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.063J**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:44	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:44	7440-38-2	
Cadmium	**0.045J**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:44	7440-43-9	
Chromium	**0.52J**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:44	7440-47-3	
Selenium	**1.3**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:44	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**617**	mg/L	5.0	5.0	1		07/20/16 11:30		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.6**	mg/L	1.0	0.50	1		07/31/16 23:39	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		07/31/16 23:39	16984-48-8	
Sulfate	**75.5**	mg/L	5.0	0.77	5		08/02/16 20:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-UWL-FB-1 **Lab ID: 60223484006** Collected: 07/13/16 11:21 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**<0.58**	ug/L	10.0	0.58	1	07/15/16 15:45	07/18/16 13:52	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:45	07/18/16 13:52	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	07/15/16 15:45	07/18/16 13:52	7440-42-8	
Calcium	**44.4J**	ug/L	100	8.1	1	07/15/16 15:45	07/18/16 13:52	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:45	07/18/16 13:52	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:45	07/18/16 13:52	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	07/15/16 15:45	07/18/16 13:52	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	07/15/16 15:45	07/18/16 13:52	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	07/15/16 15:45	07/21/16 19:50	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	07/15/16 15:45	07/21/16 19:50	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:45	07/21/16 19:50	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:45	07/21/16 19:50	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:45	07/21/16 19:50	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:45	07/21/16 19:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**7.0**	mg/L	5.0	5.0	1		07/20/16 11:31		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.1**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		07/31/16 23:53	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		07/31/16 23:53	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		07/31/16 23:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-BMW-1S **Lab ID: 60223486009** Collected: 07/11/16 12:20 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**334**	ug/L	10.0	0.58	1	07/15/16 16:30	07/19/16 17:05	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 16:30	07/19/16 17:05	7440-41-7	
Boron	**120**	ug/L	100	50.0	1	07/15/16 16:30	07/19/16 17:05	7440-42-8	
Calcium	**219000**	ug/L	100	8.1	1	07/15/16 16:30	07/19/16 17:05	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 16:30	07/19/16 17:05	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 16:30	07/19/16 17:05	7439-92-1	
Lithium	**20.0**	ug/L	10.0	4.9	1	07/15/16 16:30	07/19/16 17:05	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	07/15/16 16:30	07/19/16 17:05	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	07/15/16 16:30	07/22/16 18:21	7440-36-0	
Arsenic	**34.0**	ug/L	1.0	0.10	1	07/15/16 16:30	07/22/16 18:21	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 16:30	07/22/16 18:21	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 16:30	07/22/16 18:21	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 16:30	07/22/16 18:21	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 16:30	07/22/16 18:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**780**	mg/L	5.0	5.0	1		07/18/16 16:37		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.0**	mg/L	1.0	0.50	1		08/01/16 02:42	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.027	1		08/01/16 02:42	16984-48-8	
Sulfate	**51.9**	mg/L	5.0	0.77	5		08/02/16 16:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-BMW-2S **Lab ID: 60223486010** Collected: 07/11/16 13:38 Received: 07/14/16 04:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**245**	ug/L	10.0	0.58	1	07/15/16 16:30	07/19/16 17:07	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 16:30	07/19/16 17:07	7440-41-7	
Boron	**58.2J**	ug/L	100	50.0	1	07/15/16 16:30	07/19/16 17:07	7440-42-8	
Calcium	**136000**	ug/L	100	8.1	1	07/15/16 16:30	07/19/16 17:07	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 16:30	07/19/16 17:07	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 16:30	07/19/16 17:07	7439-92-1	
Lithium	**19.2**	ug/L	10.0	4.9	1	07/15/16 16:30	07/19/16 17:07	7439-93-2	
Molybdenum	**2.9J**	ug/L	20.0	0.52	1	07/15/16 16:30	07/19/16 17:07	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.24J**	ug/L	1.0	0.058	1	07/15/16 16:30	07/22/16 18:25	7440-36-0	
Arsenic	**0.41J**	ug/L	1.0	0.10	1	07/15/16 16:30	07/22/16 18:25	7440-38-2	
Cadmium	**0.045J**	ug/L	0.50	0.029	1	07/15/16 16:30	07/22/16 18:25	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 16:30	07/22/16 18:25	7440-47-3	
Selenium	**0.75J**	ug/L	1.0	0.18	1	07/15/16 16:30	07/22/16 18:25	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 16:30	07/22/16 18:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	07/14/16 16:15	07/15/16 10:59	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**494**	mg/L	5.0	5.0	1		07/18/16 16:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		07/19/16 08:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.2**	mg/L	1.0	0.50	1		08/01/16 02:56	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		08/01/16 02:56	16984-48-8	
Sulfate	**24.8**	mg/L	2.0	0.31	2		08/02/16 17:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438581 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004

METHOD BLANK: 1793915 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	07/15/16 09:13	

LABORATORY CONTROL SAMPLE: 1793916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1793917 1793918

Parameter	Units	60223480001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	4.7	4.4	95	89	75-125	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1793919 1793920

Parameter	Units	60223484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.2	3.2	103	63	75-125	48	20	M1,R1

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-UWL
Pace Project No.: 60223484

QC Batch: 438582 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60223484005, 60223484006, 60223486009, 60223486010

METHOD BLANK: 1793921 Matrix: Water
Associated Lab Samples: 60223484005, 60223484006, 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	07/15/16 10:17	

LABORATORY CONTROL SAMPLE: 1793922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1793923 1793924

Parameter	Units	60223486008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.1	4.2	103	85	75-125	19	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438661 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006

METHOD BLANK: 1794268 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	07/18/16 13:10	
Beryllium	ug/L	<0.26	1.0	0.26	07/18/16 13:10	
Boron	ug/L	<50.0	100	50.0	07/18/16 13:10	
Calcium	ug/L	13.4J	100	8.1	07/18/16 13:10	
Cobalt	ug/L	<0.72	5.0	0.72	07/18/16 13:10	
Lead	ug/L	<2.5	5.0	2.5	07/18/16 13:10	
Lithium	ug/L	<4.9	10.0	4.9	07/18/16 13:10	
Molybdenum	ug/L	<0.52	20.0	0.52	07/18/16 13:10	

LABORATORY CONTROL SAMPLE: 1794269

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	930	93	85-115	
Beryllium	ug/L	1000	965	97	85-115	
Boron	ug/L	1000	928	93	85-115	
Calcium	ug/L	10000	9540	95	85-115	
Cobalt	ug/L	1000	954	95	85-115	
Lead	ug/L	1000	983	98	85-115	
Lithium	ug/L	1000	954	95	85-115	
Molybdenum	ug/L	1000	994	99	85-115	

MATRIX SPIKE SAMPLE: 1794270

Parameter	Units	60223211005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	73.6	1000	1010	94	70-130	
Beryllium	ug/L	<0.26	1000	971	97	70-130	
Boron	ug/L	1270	1000	2230	95	70-130	
Calcium	ug/L	215000	10000	227000	125	70-130	
Cobalt	ug/L	10.3	1000	939	93	70-130	
Lead	ug/L	<2.5	1000	955	95	70-130	
Lithium	ug/L	45.6	1000	1020	98	70-130	
Molybdenum	ug/L	6.9J	1000	1010	100	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794271 1794272

Parameter	Units	60223484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	178	1000	1000	1100	1100	93	92	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	976	970	98	97	70-130	1	20	
Boron	ug/L	88.8J	1000	1000	1040	1030	95	94	70-130	1	20	
Calcium	ug/L	168000	10000	10000	182000	179000	141	108	70-130	2	20	M1
Cobalt	ug/L	2.0J	1000	1000	926	921	92	92	70-130	0	20	
Lead	ug/L	<2.5	1000	1000	950	944	95	94	70-130	1	20	
Lithium	ug/L	43.0	1000	1000	999	997	96	95	70-130	0	20	
Molybdenum	ug/L	1.2J	1000	1000	989	986	99	98	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438694
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60223486009, 60223486010

METHOD BLANK: 1794434 Matrix: Water
Associated Lab Samples: 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	07/19/16 16:32	
Beryllium	ug/L	<0.26	1.0	0.26	07/19/16 16:32	
Boron	ug/L	<50.0	100	50.0	07/19/16 16:32	
Calcium	ug/L	<8.1	100	8.1	07/19/16 16:32	
Cobalt	ug/L	<0.72	5.0	0.72	07/19/16 16:32	
Lead	ug/L	<2.5	5.0	2.5	07/19/16 16:32	
Lithium	ug/L	<4.9	10.0	4.9	07/19/16 16:32	
Molybdenum	ug/L	<0.52	20.0	0.52	07/19/16 16:32	

LABORATORY CONTROL SAMPLE: 1794435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	984	98	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	984	98	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	961	96	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	

MATRIX SPIKE SAMPLE: 1794436

Parameter	Units	60223486003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	77.7	1000	1050	97	70-130	
Beryllium	ug/L	<0.26	1000	1030	103	70-130	
Boron	ug/L	4300	1000	5410	111	70-130	
Calcium	ug/L	67100	10000	79800	127	70-130	
Cobalt	ug/L	<0.72	1000	1040	104	70-130	
Lead	ug/L	<2.5	1000	1010	101	70-130	
Lithium	ug/L	25.8	1000	1010	99	70-130	
Molybdenum	ug/L	173	1000	1260	109	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794437 1794438

Parameter	Units	60223486008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	170	1000	1000	1140	1150	97	98	70-130	0	20	
Beryllium	ug/L	<0.26	1000	1000	1030	1040	103	104	70-130	0	20	
Boron	ug/L	6220	1000	1000	7220	7210	101	99	70-130	0	20	
Calcium	ug/L	183000	10000	10000	196000	194000	131	109	70-130	1	20	M1
Cobalt	ug/L	2.4J	1000	1000	1050	1050	105	105	70-130	0	20	
Lead	ug/L	<2.5	1000	1000	1020	1030	102	103	70-130	1	20	
Lithium	ug/L	28.4	1000	1000	1010	1030	98	100	70-130	1	20	
Molybdenum	ug/L	80.7	1000	1000	1180	1190	110	111	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438662 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006

METHOD BLANK: 1794273 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	07/21/16 18:48	
Arsenic	ug/L	<0.10	1.0	0.10	07/21/16 18:48	
Cadmium	ug/L	<0.029	0.50	0.029	07/21/16 18:48	
Chromium	ug/L	<0.34	1.0	0.34	07/21/16 18:48	
Selenium	ug/L	<0.18	1.0	0.18	07/21/16 18:48	
Thallium	ug/L	<0.50	1.0	0.50	07/21/16 18:48	

LABORATORY CONTROL SAMPLE: 1794274

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.0	105	85-115	
Arsenic	ug/L	40	41.8	105	85-115	
Cadmium	ug/L	40	41.5	104	85-115	
Chromium	ug/L	40	41.9	105	85-115	
Selenium	ug/L	40	40.7	102	85-115	
Thallium	ug/L	40	36.8	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794275 1794276

Parameter	Units	60223484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	40.8	40.8	102	102	70-130	0	20	
Arsenic	ug/L	1.1	40	40	41.7	41.6	101	101	70-130	0	20	
Cadmium	ug/L	<0.029	40	40	39.1	38.9	98	97	70-130	1	20	
Chromium	ug/L	<0.34	40	40	40.4	39.9	101	100	70-130	1	20	
Selenium	ug/L	<0.18	40	40	37.4	37.7	93	94	70-130	1	20	
Thallium	ug/L	<0.50	40	40	38.0	37.9	95	95	70-130	0	20	

MATRIX SPIKE SAMPLE: 1794277

Parameter	Units	60223484005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.063J	40	41.5	104	70-130	
Arsenic	ug/L	1.4	40	42.2	102	70-130	
Cadmium	ug/L	0.045J	40	39.4	98	70-130	
Chromium	ug/L	0.52J	40	40.8	101	70-130	
Selenium	ug/L	1.3	40	39.0	94	70-130	
Thallium	ug/L	<0.50	40	37.9	95	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438697 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60223486009, 60223486010

METHOD BLANK: 1794447 Matrix: Water
Associated Lab Samples: 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	07/22/16 17:16	
Arsenic	ug/L	<0.10	1.0	0.10	07/22/16 17:16	
Cadmium	ug/L	<0.029	0.50	0.029	07/22/16 17:16	
Chromium	ug/L	<0.34	1.0	0.34	07/22/16 17:16	
Selenium	ug/L	<0.18	1.0	0.18	07/22/16 17:16	
Thallium	ug/L	<0.50	1.0	0.50	07/22/16 17:16	

LABORATORY CONTROL SAMPLE: 1794448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.2	103	85-115	
Arsenic	ug/L	40	41.5	104	85-115	
Cadmium	ug/L	40	41.4	103	85-115	
Chromium	ug/L	40	41.4	104	85-115	
Selenium	ug/L	40	42.0	105	85-115	
Thallium	ug/L	40	37.6	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794450 1794451

Parameter	Units	60223486008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.062J	40	40	41.1	41.4	102	103	70-130	1	20	
Arsenic	ug/L	5.9	40	40	47.4	47.9	104	105	70-130	1	20	
Cadmium	ug/L	0.049J	40	40	39.9	39.7	100	99	70-130	1	20	
Chromium	ug/L	<0.34	40	40	40.8	40.8	101	101	70-130	0	20	
Selenium	ug/L	<0.18	40	40	40.1	40.6	100	102	70-130	1	20	
Thallium	ug/L	<0.50	40	40	40.5	40.6	101	101	70-130	0	20	

MATRIX SPIKE SAMPLE: 1794452

Parameter	Units	60223486010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.24J	40	41.3	103	70-130	
Arsenic	ug/L	0.41J	40	42.0	104	70-130	
Cadmium	ug/L	0.045J	40	40.6	101	70-130	
Chromium	ug/L	<0.34	40	41.2	102	70-130	
Selenium	ug/L	0.75J	40	41.4	102	70-130	
Thallium	ug/L	<0.50	40	39.6	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438865 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223486009, 60223486010

METHOD BLANK: 1795295 Matrix: Water
Associated Lab Samples: 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/18/16 16:03	

LABORATORY CONTROL SAMPLE: 1795296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1060	106	80-120	

SAMPLE DUPLICATE: 1795297

Parameter	Units	60223225002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1910	1840			

SAMPLE DUPLICATE: 1795298

Parameter	Units	60223337001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5440	5450	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 439280 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223484001, 60223484002

METHOD BLANK: 1796638 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/20/16 11:04	

LABORATORY CONTROL SAMPLE: 1796639

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	928	93	80-120	

SAMPLE DUPLICATE: 1796640

Parameter	Units	60223225002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1910	1910	0	10	H1

SAMPLE DUPLICATE: 1796641

Parameter	Units	60223484002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	668	669	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 439282 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223484003, 60223484004, 60223484005, 60223484006

METHOD BLANK: 1796642 Matrix: Water
Associated Lab Samples: 60223484003, 60223484004, 60223484005, 60223484006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/20/16 11:26	

LABORATORY CONTROL SAMPLE: 1796643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	929	93	80-120	

SAMPLE DUPLICATE: 1796644

Parameter	Units	60223538001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	541	524	3	10	

SAMPLE DUPLICATE: 1796645

Parameter	Units	60223538003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	583	579	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438827 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60223484001, 60223484002

SAMPLE DUPLICATE: 1795190

Parameter	Units	60223480001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

SAMPLE DUPLICATE: 1795191

Parameter	Units	60223484002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 438986 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60223484003, 60223484004, 60223484005, 60223484006, 60223486009, 60223486010

SAMPLE DUPLICATE: 1795581

Parameter	Units	60223486008 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	5	H6

SAMPLE DUPLICATE: 1795582

Parameter	Units	60223608001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.3	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 440718 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006, 60223486009, 60223486010

METHOD BLANK: 1803297 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006, 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	07/31/16 21:18	
Fluoride	mg/L	<0.027	0.20	0.027	07/31/16 21:18	
Sulfate	mg/L	<0.15	1.0	0.15	07/31/16 21:18	

LABORATORY CONTROL SAMPLE: 1803298

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1803299 1803300

Parameter	Units	60223484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.1	5	5	11.0	10.9	98	96	80-120	1	15	
Fluoride	mg/L	0.14J	2.5	2.5	2.6	2.5	98	95	80-120	3	15	

MATRIX SPIKE SAMPLE: 1803301

Parameter	Units	60223486008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.23	2.5	2.6	96	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 440988 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005

METHOD BLANK: 1803964 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	08/02/16 08:56	

LABORATORY CONTROL SAMPLE: 1803965

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1803966 1803967

Parameter	Units	60223480002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	208	100	100	306	306	98	98	80-120	0	15	

MATRIX SPIKE SAMPLE: 1803968

Parameter	Units	60223484002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	71.9	25	96.5	98	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 440989 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60223486009, 60223486010

METHOD BLANK: 1803969 Matrix: Water
Associated Lab Samples: 60223486009, 60223486010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	08/02/16 08:57	

LABORATORY CONTROL SAMPLE: 1803970

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

MATRIX SPIKE SAMPLE: 1803971

Parameter	Units	60223486008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	338	250	574	95	80-120	

MATRIX SPIKE SAMPLE: 1803972

Parameter	Units	60224349003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	174	100	266	92	80-120	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-1 **Lab ID: 60223484001** Collected: 07/13/16 09:13 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.446 (0.966) C:NA T:85%**	pCi/L	08/09/16 01:01	13982-63-3	
Radium-228	EPA 904.0	**0.808 ± 0.339 (0.536) C:75% T:89%**	pCi/L	08/05/16 23:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-2 **Lab ID: 60223484002** Collected: 07/13/16 10:10 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0854 ± 0.443 (0.919) C:NA T:81%**	pCi/L	08/09/16 00:31	13982-63-3	
Radium-228	EPA 904.0	**0.807 ± 0.393 (0.671) C:75% T:89%**	pCi/L	08/08/16 15:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-3 **Lab ID: 60223484003** Collected: 07/13/16 11:17 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.414 (0.927) C:NA T:81%**	pCi/L	08/09/16 00:32	13982-63-3	
Radium-228	EPA 904.0	**0.979 ± 0.358 (0.521) C:78% T:88%**	pCi/L	08/05/16 23:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-MW-26 **Lab ID: 60223484004** Collected: 07/13/16 16:22 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0719 ± 0.373 (0.774) C:NA T:93%**	pCi/L	08/09/16 10:15	13982-63-3	
Radium-228	EPA 904.0	**0.310 ± 0.332 (0.673) C:77% T:85%**	pCi/L	08/05/16 23:28	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-UWL-DUP-1 **Lab ID: 60223484005** Collected: 07/13/16 00:00 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.295 ± 0.356 (0.543) C:NA T:90%**	pCi/L	08/09/16 10:16	13982-63-3	
Radium-228	EPA 904.0	**0.714 ± 0.435 (0.813) C:75% T:77%**	pCi/L	08/08/16 15:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-UWL-FB-1 **Lab ID: 60223484006** Collected: 07/13/16 11:21 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.516 ± 0.562 (0.885) C:NA T:91%**	pCi/L	08/09/16 10:15	13982-63-3	
Radium-228	EPA 904.0	**0.551 ± 0.394 (0.775) C:75% T:90%**	pCi/L	08/08/16 15:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-2 MS **Lab ID: 60223484007** Collected: 07/13/16 10:10 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**101.8 %REC ± NA (NA) C:NA T:NA**	pCi/L	08/09/16 10:56	13982-63-3	
Radium-228	EPA 904.0	**98.3 %REC +/- NA (NA) C:NA T:NA**	pCi/L	08/08/16 15:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-TMW-2 MSD **Lab ID: 60223484008** Collected: 07/13/16 10:10 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**79.9% REC 24.05 RPD ± NA (NA) C:NA T:NA**	pCi/L	08/09/16 10:46	13982-63-3	
Radium-228	EPA 904.0	**119 %REC 19.3 RPD +/- NA (NA) C:NA T:NA**	pCi/L	08/08/16 15:43	15262-20-1	1e

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-BMW-1S **Lab ID: 60223486009** Collected: 07/11/16 12:20 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.902 ± 0.667 (0.903) C:NA T:92%**	pCi/L	08/08/16 20:11	13982-63-3	
Radium-228	EPA 904.0	**1.59 ± 0.540 (0.752) C:77% T:82%**	pCi/L	08/08/16 15:41	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Sample: L-BMW-2S **Lab ID: 60223486010** Collected: 07/11/16 13:38 Received: 07/14/16 04:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.152 ± 0.472 (0.913) C:NA T:91%**	pCi/L	08/08/16 20:55	13982-63-3	
Radium-228	EPA 904.0	**0.169 ± 0.323 (0.711) C:77% T:84%**	pCi/L	08/08/16 15:42	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 227885 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006, 60223484007, 60223484008

METHOD BLANK: 1116171 Matrix: Water
Associated Lab Samples: 60223484001, 60223484002, 60223484003, 60223484004, 60223484005, 60223484006, 60223484007, 60223484008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.158 ± 0.489 (0.946) C:NA T:88%	pCi/L	08/09/16 00:18	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 227880 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60223486009, 60223486010

METHOD BLANK: 1116165 Matrix: Water
Associated Lab Samples: 60223486009, 60223486010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.204 ± 0.353 (0.889) C:NA T:96%	pCi/L	08/08/16 19:24	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 227854 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60223484002, 60223484005, 60223484006, 60223484007, 60223484008, 60223486009, 60223486010

METHOD BLANK: 1116121 Matrix: Water
Associated Lab Samples: 60223484002, 60223484005, 60223484006, 60223484007, 60223484008, 60223486009, 60223486010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.520 ± 0.358 (0.690) C:76% T:91%	pCi/L	08/08/16 12:05	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

QC Batch: 227853 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60223484001, 60223484003, 60223484004

METHOD BLANK: 1116120 Matrix: Water
Associated Lab Samples: 60223484001, 60223484003, 60223484004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.264 ± 0.262 (0.524) C:83% T:85%	pCi/L	08/05/16 23:25	

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

SAMPLE QUALIFIERS

Sample: 60223484006

[1]	Upload error caused the results for the MS to be uploaded instead of the results for this sample.

ANALYTE QUALIFIERS

1e	The % recovery for the Ra-228 matrix spike dup performed on sample 60223484008 was high and outside of Pace's default acceptance criteria at 119.19%. The high bias may be due to sample matrix interference and indicate a high bias in the sample result.
B	Analyte was detected in the associated method blank.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

ANALYTE QUALIFIERS

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223484001	L-TMW-1	EPA 200.7	438661	EPA 200.7	438770
60223484002	L-TMW-2	EPA 200.7	438661	EPA 200.7	438770
60223484003	L-TMW-3	EPA 200.7	438661	EPA 200.7	438770
60223484004	L-MW-26	EPA 200.7	438661	EPA 200.7	438770
60223484005	L-UWL-DUP-1	EPA 200.7	438661	EPA 200.7	438770
60223484006	L-UWL-FB-1	EPA 200.7	438661	EPA 200.7	438770
60223486009	L-BMW-1S	EPA 200.7	438694	EPA 200.7	438764
60223486010	L-BMW-2S	EPA 200.7	438694	EPA 200.7	438764
60223484001	L-TMW-1	EPA 200.8	438662	EPA 200.8	438771
60223484002	L-TMW-2	EPA 200.8	438662	EPA 200.8	438771
60223484003	L-TMW-3	EPA 200.8	438662	EPA 200.8	438771
60223484004	L-MW-26	EPA 200.8	438662	EPA 200.8	438771
60223484005	L-UWL-DUP-1	EPA 200.8	438662	EPA 200.8	438771
60223484006	L-UWL-FB-1	EPA 200.8	438662	EPA 200.8	438771
60223486009	L-BMW-1S	EPA 200.8	438697	EPA 200.8	438765
60223486010	L-BMW-2S	EPA 200.8	438697	EPA 200.8	438765
60223484001	L-TMW-1	EPA 7470	438581	EPA 7470	438588
60223484002	L-TMW-2	EPA 7470	438581	EPA 7470	438588
60223484003	L-TMW-3	EPA 7470	438581	EPA 7470	438588
60223484004	L-MW-26	EPA 7470	438581	EPA 7470	438588
60223484005	L-UWL-DUP-1	EPA 7470	438582	EPA 7470	438589
60223484006	L-UWL-FB-1	EPA 7470	438582	EPA 7470	438589
60223486009	L-BMW-1S	EPA 7470	438582	EPA 7470	438589
60223486010	L-BMW-2S	EPA 7470	438582	EPA 7470	438589
60223484001	L-TMW-1	EPA 903.1	227885		
60223484002	L-TMW-2	EPA 903.1	227885		
60223484003	L-TMW-3	EPA 903.1	227885		
60223484004	L-MW-26	EPA 903.1	227885		
60223484005	L-UWL-DUP-1	EPA 903.1	227885		
60223484006	L-UWL-FB-1	EPA 903.1	227885		
60223486009	L-BMW-1S	EPA 903.1	227880		
60223486010	L-BMW-2S	EPA 903.1	227880		
60223484007	L-TMW-2 MS	EPA 903.1	227885		
60223484008	L-TMW-2 MSD	EPA 903.1	227885		
60223484001	L-TMW-1	EPA 904.0	227853		
60223484002	L-TMW-2	EPA 904.0	227854		
60223484003	L-TMW-3	EPA 904.0	227853		
60223484004	L-MW-26	EPA 904.0	227853		
60223484005	L-UWL-DUP-1	EPA 904.0	227854		
60223484006	L-UWL-FB-1	EPA 904.0	227854		
60223486009	L-BMW-1S	EPA 904.0	227854		
60223486010	L-BMW-2S	EPA 904.0	227854		
60223484007	L-TMW-2 MS	EPA 904.0	227854		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60223484

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223484008	L-TMW-2 MSD	EPA 904.0	227854		
60223484001	L-TMW-1	SM 2540C	439280		
60223484002	L-TMW-2	SM 2540C	439280		
60223484003	L-TMW-3	SM 2540C	439282		
60223484004	L-MW-26	SM 2540C	439282		
60223484005	L-UWL-DUP-1	SM 2540C	439282		
60223484006	L-UWL-FB-1	SM 2540C	439282		
60223486009	L-BMW-1S	SM 2540C	438865		
60223486010	L-BMW-2S	SM 2540C	438865		
60223484001	L-TMW-1	SM 4500-H+B	438827		
60223484002	L-TMW-2	SM 4500-H+B	438827		
60223484003	L-TMW-3	SM 4500-H+B	438986		
60223484004	L-MW-26	SM 4500-H+B	438986		
60223484005	L-UWL-DUP-1	SM 4500-H+B	438986		
60223484006	L-UWL-FB-1	SM 4500-H+B	438986		
60223486009	L-BMW-1S	SM 4500-H+B	438986		
60223486010	L-BMW-2S	SM 4500-H+B	438986		
60223484001	L-TMW-1	EPA 300.0	440718		
60223484001	L-TMW-1	EPA 300.0	440988		
60223484002	L-TMW-2	EPA 300.0	440718		
60223484002	L-TMW-2	EPA 300.0	440988		
60223484003	L-TMW-3	EPA 300.0	440718		
60223484003	L-TMW-3	EPA 300.0	440988		
60223484004	L-MW-26	EPA 300.0	440718		
60223484004	L-MW-26	EPA 300.0	440988		
60223484005	L-UWL-DUP-1	EPA 300.0	440718		
60223484005	L-UWL-DUP-1	EPA 300.0	440988		
60223484006	L-UWL-FB-1	EPA 300.0	440718		
60223486009	L-BMW-1S	EPA 300.0	440718		
60223486009	L-BMW-1S	EPA 300.0	440989		
60223486010	L-BMW-2S	EPA 300.0	440718		
60223486010	L-BMW-2S	EPA 300.0	440989		

REPORT OF LABORATORY ANALYSIS

5

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Sample Condition Upon Receipt

WO# : 60223484

60223484

SC

Client Name: Golder Ass.

Optional
Proj Due Date:
Proj Name:

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

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

Thermometer Used: CF +1.1 T-266 / CF -0.1 T-239

Type of Ice: Wet / Blue / None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.3 / 20.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: S 7/14/16

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6. PH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8. Counts
Correct containers used:	☒Yes ☐No ☐N/A	9. Sample on COC for L-TMW-1 and L-TMW-2 are backwards
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	10. LTMW-1 has 2 for test Radium &
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11. LTMW-2 has 4 for test radium
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☒Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	14.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☒N/A	
Pace Trip Blank lot # (if purchased): _____		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☒N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jami Church 7/14/16

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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		
1	L-TMW-1	WT	G			7/13/16	0913		12	3		9							3	3	3	3	6		60223484 001
2	L-TMW-2	WT	G			7/13/16	1010		4	1		3							1	1	1	1	2		002
3	L-TMW-3	WT	G			7/13/16	1117		4	1		3							1	1	1	1	2		003
4	L-MW-26	WT	G			7/12/16	1622		4	1		3							1	1	1	1	2		004
5	L-UWL-DUP-1	WT	G			7/13/16	—		4	1		3							1	1	1	1	2		005
6	L-UWL-FB-1	WT	G			7/13/16	1121		4	1		3							1	1	1	1	2		006
7		WT	G																						
8		WT	G																						
9		WT	G																						
10		WT	G																						
11		WT	G																						
12		WT	G																						

Requested Analysis Filtered (Y/N)

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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	John Swoboda / Golder	7/13/16	1648	[illegible] / FACE	7/13/16	1642				
	[illegible] / FACE	7-13-16	1750	[illegible] / FACE	7/14/16	0455	1.3 20.7	Y N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Swoboda

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7/13/16

*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.

Chain of Custody

30190178

Pace Analytical®
www.pacelabs.com

Workorder: 60223484 **Workorder Name:**AMEREN LABADIE ENERGY CTR-UWL **Owner Received Date:** 7/14/2016 **Results Requested By:** 7/28/2016

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#:30190178

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: BP1N	Requested Analysis: Radium 226 & 228	LAB USE ONLY
1	L-TMW-1	PS	7/13/2016 09:13	60223484001	Water	2	X	001
2	L-TMW-2	RQS	7/13/2016 10:10	60223484002	Water	2	X	002
3	L-TMW-3	PS	7/13/2016 11:17	60223484003	Water	2	X	003
4	L-TMW-26	PS	7/13/2016 16:22	60223484004	Water	2	X	004
5	L-UWL-DUP-1	PS	7/13/2016 00:00	60223484005	Water	2	X	005
6	L-UWL-FB-1	PS	7/13/2016 11:21	60223484006	Water	2	X	007
7	L-TMW-2 MS	PS	7/13/2016 10:10	60223484007	Water	2	X	008
8	L-TMW-2 MSD	PS	7/13/2016 10:10	60223484008	Water	2	X	009

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature] PASI	07/15/16 1700	Karen E. Thi	7/19/16 0955
2				
3				

Comments

Cooler Temperature on Receipt N/A °C Custody Seal (Y) or N Received on Ice Y or (N) Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: Pace, Kansas Project # 30190178

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 6703 1646 4300

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Thermometer Used N/A **Type of Ice:** Wet Blue (None)

Cooler Temperature **Observed Temp** N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 7/19/16

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:	✓			8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests			✓	12.
All containers needing preservation have been checked. All containers needing preservation are found to be in compliance with EPA recommendation.	✓ ✓			13.
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed KH; Date/time of preservation; Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	14.
Trip Blank Present:			✓	15.
Trip Blank Custody Seals Present			✓	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (I.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical® www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60223486

60223486

Client Name: Golder

Optional
Proj Due Date:
Proj Name:

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

Tracking #: Xroads 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: CF +0.1 T-266 / CF -0.1 T-239 **Type of Ice:** ~~Wet~~ Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 20.3 22.4 3.3

Date and initials of person examining contents: JW 7/14/16

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. ~~only~~ coolers w/ only Radium
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3. volume arrived w/o ice
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☑No ☐N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: Date/Time:

Comments/ Resolution:

Jami Church 7/14/16

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

Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N	N		60225486
1	L-LMW-1S	WT	G			7/11/16	1505		4	1		3							1	1	1	1	2		001
2	L-LMW-2S	WT	G			7/13/16	1117																		002
3	L-LMW-3S	WT	G			7/12/16	1515																		003
4	L-LMW-4S	WT	G			7/13/16	1238																		004
5	L-LMW-5S	WT	G			7/13/16	1244																		005
6	L-LMW-6S	WT	G			7/12/16	1610																		006
7	L-LMW-7S	WT	G			7/12/16	1440																		007
8	L-LMW-8S	WT	G			7/12/16	1257			3		9								3	3	3	3	6		008
9	L-BMW-1S	WT	G			7/11/16	1220		4	1		3							1	1	1	1	2		009
10	L-BMW-2S	WT	G				1338																		010
11	L-LMW-DUP-1	WT	G			7/11/16	—																		011
12	L-LMW-FB-1	WT	G			7/12/16	1525																		012

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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	John Suozzi/Golder	7/13/16	1648	[illegible]/PACE	7/13/16	1640				
	[illegible]/PACE	7-13-16	1730	[illegible]/PACE	7/14/16	0455	22.4	N	Y	Y
							20.3	N	Y	Y
							3-3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Suozzi

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7/13/16

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory between September 10, 2016 and September 14, 2016. 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.

Chloride/Fluoride/Sulfate analysis not performed on L-UWL-DUP-1 due to Lab Error.

REV-1, 1/2/18: Revision

REV-2, 1/29/18: Radium pulled in for L-BMW-2S and L-BMW-1S.

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 Jeffrey Ingram, Golder Associates

REPORT OF LABORATORY ANALYSIS

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

cc: John Suozzi, Golder Associates

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227580001	**L-TMW-1**	Water	09/13/16 08:23	09/14/16 04:40
60227580002	**L-TMW-2**	Water	09/12/16 15:58	09/14/16 04:40
60227580003	**L-TMW-3**	Water	09/13/16 09:54	09/14/16 04:40
60227580004	**L-MW-26**	Water	09/13/16 09:53	09/14/16 04:40
60227580005	**L-UWL-DUP-1**	Water	09/13/16 08:00	09/14/16 04:40
60227580006	**L-UWL-FB-1**	Water	09/13/16 09:45	09/14/16 04:40
60227580007	**L-TMW-1 MS**	Water	09/13/16 08:23	09/14/16 04:40
60227580008	**L-TMW-1 MSD**	Water	09/13/16 08:23	09/14/16 04:40
60227402002	**L-BMW-2S**	Water	09/09/16 09:25	09/10/16 03:30
60227402012	**L-BMW-1S**	Water	09/13/16 15:06	09/14/16 04:40

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60227580001	**L-TMW-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227580002	**L-TMW-2**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227580003	**L-TMW-3**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227580004	**L-MW-26**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227580005	**L-UWL-DUP-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
60227580006	**L-UWL-FB-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227580007	**L-TMW-1 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60227580008	**L-TMW-1 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60227402002	**L-BMW-2S**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227402012	**L-BMW-1S**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-1 **Lab ID: 60227580001** Collected: 09/13/16 08:23 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**248**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 17:31	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 17:31	7440-41-7	
Boron	**85.6J**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 17:31	7440-42-8	
Calcium	**138000**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 17:31	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 17:31	7440-48-4	
Lead	**2.6J**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 17:31	7439-92-1	
Lithium	**33.0**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 17:31	7439-93-2	
Molybdenum	**0.91J**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 17:31	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.068J**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:09	7440-36-0	
Arsenic	**1.2**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:09	7440-38-2	
Cadmium	**0.069J**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:09	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.34	1	09/15/16 10:55	09/21/16 17:09	7440-47-3	
Selenium	**4.2**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:09	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 13:41	7439-97-6	M1,R1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**647**	mg/L	5.0	5.0	1		09/19/16 09:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		09/19/16 15:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.0	0.50	1		10/01/16 17:50	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		10/01/16 17:50	16984-48-8	
Sulfate	**63.4**	mg/L	5.0	0.77	5		10/02/16 22:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-2 **Lab ID: 60227580002** Collected: 09/12/16 15:58 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**188**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 17:49	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 17:49	7440-41-7	
Boron	**92.6J**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 17:49	7440-42-8	
Calcium	**170000**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 17:49	7440-70-2	
Cobalt	**3.4J**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 17:49	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 17:49	7439-92-1	
Lithium	**39.4**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 17:49	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 17:49	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:22	7440-36-0	
Arsenic	**1.0**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:22	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:22	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/15/16 10:55	09/21/16 17:22	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:22	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:22	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 13:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**743**	mg/L	5.0	5.0	1		09/19/16 09:01		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		09/19/16 15:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.50	1		10/01/16 18:19	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		10/01/16 18:19	16984-48-8	
Sulfate	**78.5**	mg/L	5.0	0.77	5		10/02/16 22:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-3 **Lab ID: 60227580003** Collected: 09/13/16 09:54 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**239**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 17:53	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 17:53	7440-41-7	
Boron	**104**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 17:53	7440-42-8	
Calcium	**152000**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 17:53	7440-70-2	
Cobalt	**1.6J**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 17:53	7440-48-4	
Lead	**3.0J**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 17:53	7439-92-1	
Lithium	**34.5**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 17:53	7439-93-2	
Molybdenum	**0.56J**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 17:53	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.12J**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:26	7440-36-0	
Arsenic	**1.0**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:26	7440-38-2	
Cadmium	**0.073J**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:26	7440-43-9	
Chromium	**0.58J**	ug/L	1.0	0.34	1	09/15/16 10:55	09/21/16 17:26	7440-47-3	
Selenium	**0.47J**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:26	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:26	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 13:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**604**	mg/L	5.0	5.0	1		09/19/16 09:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		09/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.7**	mg/L	1.0	0.50	1		10/01/16 18:33	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.027	1		10/01/16 18:33	16984-48-8	
Sulfate	**32.3**	mg/L	2.0	0.31	2		10/02/16 22:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-MW-26 **Lab ID: 60227580004** Collected: 09/13/16 09:53 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**188**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 17:56	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 17:56	7440-41-7	
Boron	**75.6J**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 17:56	7440-42-8	
Calcium	**130000**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 17:56	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 17:56	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 17:56	7439-92-1	
Lithium	**27.3**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 17:56	7439-93-2	
Molybdenum	**0.54J**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 17:56	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.17J**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:30	7440-36-0	
Arsenic	**0.59J**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:30	7440-38-2	
Cadmium	**0.034J**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:30	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.34	1	09/15/16 10:55	09/21/16 17:30	7440-47-3	
Selenium	**3.0**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:30	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 13:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**496**	mg/L	5.0	5.0	1		09/19/16 09:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		09/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.3**	mg/L	1.0	0.50	1		10/01/16 18:47	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		10/01/16 18:47	16984-48-8	
Sulfate	**27.3**	mg/L	2.0	0.31	2		10/02/16 22:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-UWL-DUP-1 **Lab ID: 60227580005** Collected: 09/13/16 08:00 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**188**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 18:00	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 18:00	7440-41-7	
Boron	**76.6J**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 18:00	7440-42-8	
Calcium	**128000**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 18:00	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 18:00	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 18:00	7439-92-1	
Lithium	**27.9**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 18:00	7439-93-2	
Molybdenum	**1.1J**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 18:00	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.18J**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:35	7440-36-0	
Arsenic	**0.62J**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:35	7440-38-2	
Cadmium	**0.038J**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:35	7440-43-9	
Chromium	**0.69J**	ug/L	1.0	0.34	1	09/15/16 10:55	09/21/16 17:35	7440-47-3	
Selenium	**2.9**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:35	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 14:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**496**	mg/L	5.0	5.0	1		09/19/16 09:19		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		09/19/16 15:30		H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-UWL-FB-1 **Lab ID: 60227580006** Collected: 09/13/16 09:45 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**<0.58**	ug/L	10.0	0.58	1	09/15/16 10:55	09/16/16 18:04	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/15/16 10:55	09/16/16 18:04	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	09/15/16 10:55	09/16/16 18:04	7440-42-8	
Calcium	**21.3J**	ug/L	100	8.1	1	09/15/16 10:55	09/16/16 18:04	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/15/16 10:55	09/16/16 18:04	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/15/16 10:55	09/16/16 18:04	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	09/15/16 10:55	09/16/16 18:04	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	09/15/16 10:55	09/16/16 18:04	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	09/15/16 10:55	09/21/16 17:48	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	09/15/16 10:55	09/21/16 17:48	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/15/16 10:55	09/21/16 17:48	7440-43-9	
Chromium	**0.86J**	ug/L	1.0	0.34	1	09/15/16 10:55	09/22/16 09:49	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/15/16 10:55	09/21/16 17:48	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/15/16 10:55	09/21/16 17:48	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 14:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**12.0**	mg/L	5.0	5.0	1		09/19/16 09:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.2**	Std. Units	0.10	0.10	1		09/19/16 15:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		10/01/16 19:01	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		10/01/16 19:01	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		10/01/16 19:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-BMW-2S **Lab ID: 60227402002** Collected: 09/09/16 09:25 Received: 09/10/16 03:30 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								
Barium	**249**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 16:38	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 16:38	7440-41-7	
Boron	**61.0J**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 16:38	7440-42-8	
Calcium	**137000**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 16:38	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 16:38	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 16:38	7439-92-1	
Lithium	**17.6**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 16:38	7439-93-2	
Molybdenum	**3.0J**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 16:38	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.20J**	ug/L	1.0	0.058	1	09/13/16 10:25	09/20/16 14:35	7440-36-0	
Arsenic	**0.49J**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 14:35	7440-38-2	
Cadmium	**0.040J**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 14:35	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 14:35	7440-47-3	
Selenium	**0.75J**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 14:35	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 14:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/13/16 08:30	09/13/16 11:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**480**	mg/L	5.0	5.0	1		09/16/16 10:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		09/13/16 11:25		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.9**	mg/L	1.0	0.50	1		10/01/16 10:38	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		10/01/16 10:38	16984-48-8	
Sulfate	**15.4**	mg/L	1.0	0.15	1		10/01/16 10:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-BMW-1S **Lab ID: 60227402012** Collected: 09/13/16 15:06 Received: 09/14/16 04:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**338**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 17:16	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 17:16	7440-41-7	
Boron	**103**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 17:16	7440-42-8	
Calcium	**188000**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 17:16	7440-70-2	
Cobalt	**0.78J**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 17:16	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 17:16	7439-92-1	
Lithium	**16.1**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 17:16	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 17:16	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	09/14/16 15:40	09/21/16 16:39	7440-36-0	
Arsenic	**29.4**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 16:39	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 16:39	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 16:39	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 16:39	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 16:39	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/15/16 08:30	09/15/16 13:35	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**752**	mg/L	5.0	5.0	1		09/19/16 09:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		09/20/16 10:55		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.0**	mg/L	1.0	0.50	1		10/06/16 17:44	16887-00-6	
Fluoride	**0.069J**	mg/L	0.20	0.027	1		10/06/16 17:44	16984-48-8	
Sulfate	**50.0**	mg/L	5.0	0.77	5		10/08/16 04:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446246 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60227402002

METHOD BLANK: 1824355 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	09/13/16 11:45	

LABORATORY CONTROL SAMPLE: 1824356

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824357 1824358

Parameter	Units	60227403003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.1	4.6	102	91	75-125	11	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824359 1824360

Parameter	Units	60227172005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	3.8	3.5	77	70	75-125	10	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824485 1824486

Parameter	Units	60227402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	4.9	6.0	98	119	75-125	19	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446591 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60227402012, 60227580001, 60227580002, 60227580003, 60227580004

METHOD BLANK: 1826124 Matrix: Water
Associated Lab Samples: 60227402012, 60227580001, 60227580002, 60227580003, 60227580004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	09/15/16 12:57	

LABORATORY CONTROL SAMPLE: 1826125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1826126 1826127

Parameter	Units	60227580001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	6.4	5.2	129	104	75-125	22	20	M1,R1

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446592 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60227580005, 60227580006

METHOD BLANK: 1826128 Matrix: Water
Associated Lab Samples: 60227580005, 60227580006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	09/15/16 13:59	

LABORATORY CONTROL SAMPLE: 1826129

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1826130 1826131

Parameter	Units	60227573001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	3.8	88	76	75-125	15	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446273
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60227402002

METHOD BLANK: 1824423 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	09/13/16 16:24	
Beryllium	ug/L	<0.26	1.0	0.26	09/13/16 16:24	
Boron	ug/L	<50.0	100	50.0	09/13/16 16:24	
Calcium	ug/L	16.1J	100	8.1	09/13/16 16:24	
Cobalt	ug/L	<0.72	5.0	0.72	09/13/16 16:24	
Lead	ug/L	<2.5	5.0	2.5	09/13/16 16:24	
Lithium	ug/L	<4.9	10.0	4.9	09/13/16 16:24	
Molybdenum	ug/L	0.66J	20.0	0.52	09/13/16 16:24	

LABORATORY CONTROL SAMPLE: 1824424

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	962	96	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Lead	ug/L	1000	1000	100	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824425 1824426

Parameter	Units	60227402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	55.4	1000	1000	1080	1110	103	105	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	1030	1060	103	106	70-130	2	20	
Boron	ug/L	6900	1000	1000	7940	8000	104	110	70-130	1	20	
Calcium	ug/L	76400	10000	10000	87500	89200	111	127	70-130	2	20	
Cobalt	ug/L	<0.72	1000	1000	983	982	98	98	70-130	0	20	
Lead	ug/L	<2.5	1000	1000	982	980	98	98	70-130	0	20	
Lithium	ug/L	14.3	1000	1000	1060	1070	104	106	70-130	2	20	
Molybdenum	ug/L	119	1000	1000	1200	1200	108	108	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824427 1824428

Parameter	Units	60227403003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	68.9	1000	1000	1110	1100	105	103	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	1040	1040	104	104	70-130	1	20	
Boron	ug/L	5080	1000	1000	6190	6100	111	102	70-130	2	20	
Calcium	ug/L	81300	10000	10000	89800	90600	85	93	70-130	1	20	
Cobalt	ug/L	<0.72	1000	1000	975	962	98	96	70-130	1	20	
Lead	ug/L	<2.5	1000	1000	981	972	98	97	70-130	1	20	
Lithium	ug/L	23.4	1000	1000	1070	1060	105	104	70-130	1	20	
Molybdenum	ug/L	120	1000	1000	1200	1190	108	107	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824429 1824430

Parameter	Units	60227172005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	515	1000	1000	1590	1550	107	103	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	1050	1020	105	102	70-130	2	20	
Boron	ug/L	4740	1000	1000	5800	5710	106	97	70-130	2	20	
Calcium	ug/L	134000	10000	10000	144000	142000	95	75	70-130	1	20	
Cobalt	ug/L	<0.72	1000	1000	976	963	98	96	70-130	1	20	
Lead	ug/L	2.7J	1000	1000	989	972	99	97	70-130	2	20	
Lithium	ug/L	<4.9	1000	1000	1070	1040	107	104	70-130	2	20	
Molybdenum	ug/L	0.63J	1000	1000	1090	1080	109	108	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446525
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60227402012

METHOD BLANK: 1825615 Matrix: Water
Associated Lab Samples: 60227402012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	09/15/16 16:02	
Beryllium	ug/L	<0.26	1.0	0.26	09/15/16 16:02	
Boron	ug/L	<50.0	100	50.0	09/15/16 16:02	
Calcium	ug/L	10.2J	100	8.1	09/15/16 16:02	
Cobalt	ug/L	<0.72	5.0	0.72	09/15/16 16:02	
Lead	ug/L	<2.5	5.0	2.5	09/15/16 16:02	
Lithium	ug/L	<4.9	10.0	4.9	09/15/16 16:02	
Molybdenum	ug/L	<0.52	20.0	0.52	09/15/16 16:02	

LABORATORY CONTROL SAMPLE: 1825616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	966	97	85-115	
Boron	ug/L	1000	982	98	85-115	
Calcium	ug/L	10000	9480	95	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825617 1825618

Parameter	Units	60227403014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	105	1000	1000	1130	1120	103	101	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	958	946	96	95	70-130	1	20	
Boron	ug/L	4820	1000	1000	5850	5760	102	94	70-130	1	20	
Calcium	ug/L	144000	10000	10000	154000	150000	95	55	70-130	3	20	M1
Cobalt	ug/L	<0.72	1000	1000	1010	998	101	100	70-130	1	20	
Lead	ug/L	<2.5	1000	1000	993	986	99	99	70-130	1	20	
Lithium	ug/L	19.1	1000	1000	1060	1050	104	103	70-130	1	20	
Molybdenum	ug/L	205	1000	1000	1270	1260	107	106	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

MATRIX SPIKE SAMPLE: 1825619

Parameter	Units	60227402010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	339	1000	1370	103	70-130	
Beryllium	ug/L	<0.26	1000	956	96	70-130	
Boron	ug/L	4280	1000	5310	102	70-130	
Calcium	ug/L	144000	10000	152000	82	70-130	
Cobalt	ug/L	3.1J	1000	1000	100	70-130	
Lead	ug/L	<2.5	1000	990	99	70-130	
Lithium	ug/L	35.5	1000	1090	105	70-130	
Molybdenum	ug/L	46.2	1000	1110	106	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446615 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006

METHOD BLANK: 1826219 Matrix: Water
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	09/16/16 17:24	
Beryllium	ug/L	<0.26	1.0	0.26	09/16/16 17:24	
Boron	ug/L	<50.0	100	50.0	09/16/16 17:24	
Calcium	ug/L	<8.1	100	8.1	09/16/16 17:24	
Cobalt	ug/L	<0.72	5.0	0.72	09/16/16 17:24	
Lead	ug/L	<2.5	5.0	2.5	09/16/16 17:24	
Lithium	ug/L	<4.9	10.0	4.9	09/16/16 17:24	
Molybdenum	ug/L	<0.52	20.0	0.52	09/16/16 17:24	

LABORATORY CONTROL SAMPLE: 1826220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	992	99	85-115	
Boron	ug/L	1000	963	96	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	999	100	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1826221 1826222

Parameter	Units	60227580001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	248	1000	1000	1230	1250	98	100	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	973	986	97	99	70-130	1	20	
Boron	ug/L	85.6J	1000	1000	1060	1080	97	99	70-130	2	20	
Calcium	ug/L	138000	10000	10000	147000	150000	90	128	70-130	3	20	
Cobalt	ug/L	<0.72	1000	1000	960	978	96	98	70-130	2	20	
Lead	ug/L	2.6J	1000	1000	965	982	96	98	70-130	2	20	
Lithium	ug/L	33.0	1000	1000	1050	1060	101	103	70-130	1	20	
Molybdenum	ug/L	0.91J	1000	1000	1040	1050	104	105	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446276 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60227402002

METHOD BLANK: 1824434 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	09/20/16 14:13	
Arsenic	ug/L	<0.10	1.0	0.10	09/20/16 14:13	
Cadmium	ug/L	<0.029	0.50	0.029	09/20/16 14:13	
Chromium	ug/L	<0.34	1.0	0.34	09/20/16 14:13	
Selenium	ug/L	<0.18	1.0	0.18	09/20/16 14:13	
Thallium	ug/L	<0.50	1.0	0.50	09/20/16 14:13	

LABORATORY CONTROL SAMPLE: 1824435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	85-115	
Arsenic	ug/L	40	41.9	105	85-115	
Cadmium	ug/L	40	40.4	101	85-115	
Chromium	ug/L	40	41.7	104	85-115	
Selenium	ug/L	40	41.7	104	85-115	
Thallium	ug/L	40	40.2	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824436 1824437

Parameter	Units	60227402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.066J	40	40	39.8	39.9	99	100	70-130	0	20	
Arsenic	ug/L	27.3	40	40	68.9	68.7	104	104	70-130	0	20	
Cadmium	ug/L	<0.029	40	40	38.4	38.6	96	96	70-130	0	20	
Chromium	ug/L	<0.34	40	40	40.7	40.7	101	101	70-130	0	20	
Selenium	ug/L	<0.18	40	40	38.5	39.1	96	97	70-130	1	20	
Thallium	ug/L	<0.50	40	40	42.1	42.0	105	105	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824438 1824439

Parameter	Units	60227403003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.084J	40	40	39.7	39.5	99	98	70-130	1	20	
Arsenic	ug/L	17.7	40	40	58.4	59.6	102	105	70-130	2	20	
Cadmium	ug/L	<0.029	40	40	38.6	38.4	96	96	70-130	0	20	
Chromium	ug/L	<0.34	40	40	41.3	41.4	103	103	70-130	0	20	
Selenium	ug/L	<0.18	40	40	35.0	35.6	87	89	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824438 1824439

Parameter	Units	60227403003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	ug/L	<0.50	40	40	41.5	41.8	104	105	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1824440 1824441

Parameter	Units	60227172005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	39.0	39.0	98	97	70-130	0	20	
Arsenic	ug/L	1.6	40	40	43.6	43.8	105	105	70-130	1	20	
Cadmium	ug/L	<0.029	40	40	38.2	37.9	95	95	70-130	1	20	
Chromium	ug/L	1.3	40	40	41.9	42.6	102	103	70-130	2	20	
Selenium	ug/L	<0.18	40	40	38.1	38.8	95	97	70-130	2	20	
Thallium	ug/L	<0.50	40	40	42.5	42.6	106	107	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446524 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60227402012

METHOD BLANK: 1825609 Matrix: Water
Associated Lab Samples: 60227402012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	09/21/16 15:13	
Arsenic	ug/L	<0.10	1.0	0.10	09/21/16 15:13	
Cadmium	ug/L	<0.029	0.50	0.029	09/21/16 15:13	
Chromium	ug/L	<0.34	1.0	0.34	09/21/16 15:13	
Selenium	ug/L	<0.18	1.0	0.18	09/21/16 15:13	
Thallium	ug/L	<0.50	1.0	0.50	09/21/16 15:13	

LABORATORY CONTROL SAMPLE: 1825610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.3	101	85-115	
Arsenic	ug/L	40	41.4	104	85-115	
Cadmium	ug/L	40	40.9	102	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	41.7	104	85-115	
Thallium	ug/L	40	40.4	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825611 1825612

Parameter	Units	60227403015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	39.8	39.9	100	100	70-130	0	20	
Arsenic	ug/L	31.8	40	40	72.9	74.0	103	105	70-130	2	20	
Cadmium	ug/L	<0.029	40	40	38.9	38.4	97	96	70-130	1	20	
Chromium	ug/L	1.0	40	40	41.9	42.4	102	104	70-130	1	20	
Selenium	ug/L	<0.18	40	40	37.7	37.4	94	93	70-130	1	20	
Thallium	ug/L	<0.50	40	40	42.9	43.0	107	108	70-130	0	20	

MATRIX SPIKE SAMPLE: 1825613

Parameter	Units	60227402010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	40.1	100	70-130	
Arsenic	ug/L	9.4	40	51.5	105	70-130	
Cadmium	ug/L	<0.029	40	38.8	97	70-130	
Chromium	ug/L	0.53J	40	41.0	101	70-130	
Selenium	ug/L	0.25J	40	38.9	97	70-130	
Thallium	ug/L	<0.50	40	43.4	109	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446616 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006

METHOD BLANK: 1826223 Matrix: Water
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	09/21/16 17:00	
Arsenic	ug/L	<0.10	1.0	0.10	09/21/16 17:00	
Cadmium	ug/L	<0.029	0.50	0.029	09/21/16 17:00	
Chromium	ug/L	<0.34	1.0	0.34	09/21/16 17:00	
Selenium	ug/L	<0.18	1.0	0.18	09/21/16 17:00	
Thallium	ug/L	<0.50	1.0	0.50	09/21/16 17:00	

LABORATORY CONTROL SAMPLE: 1826224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.6	101	85-115	
Arsenic	ug/L	40	42.6	106	85-115	
Cadmium	ug/L	40	40.0	100	85-115	
Chromium	ug/L	40	40.8	102	85-115	
Selenium	ug/L	40	41.7	104	85-115	
Thallium	ug/L	40	40.5	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1826225 1826226

Parameter	Units	60227580001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.068J	40	40	39.8	39.6	99	99	70-130	0	20	
Arsenic	ug/L	1.2	40	40	44.0	43.4	107	106	70-130	1	20	
Cadmium	ug/L	0.069J	40	40	39.1	38.1	98	95	70-130	3	20	
Chromium	ug/L	0.36J	40	40	40.9	40.6	101	101	70-130	1	20	
Selenium	ug/L	4.2	40	40	42.8	41.4	97	93	70-130	3	20	
Thallium	ug/L	<0.50	40	40	43.7	43.0	109	107	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446819 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227402002

METHOD BLANK: 1827312 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	09/16/16 10:02	

LABORATORY CONTROL SAMPLE: 1827313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	982	98	80-120	

SAMPLE DUPLICATE: 1827314

Parameter	Units	60227402001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	526	522	1	10	

SAMPLE DUPLICATE: 1827315

Parameter	Units	60227403003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	513	519	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446979 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227580002

METHOD BLANK: 1828613 Matrix: Water
Associated Lab Samples: 60227580002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	09/19/16 08:57	

LABORATORY CONTROL SAMPLE: 1828614

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

SAMPLE DUPLICATE: 1828615

Parameter	Units	60227547007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	202	201	0	10	

SAMPLE DUPLICATE: 1828616

Parameter	Units	60227580002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	743	730	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446982 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227402012, 60227580001, 60227580003, 60227580004

METHOD BLANK: 1828622 Matrix: Water
Associated Lab Samples: 60227402012, 60227580001, 60227580003, 60227580004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	09/19/16 09:04	

LABORATORY CONTROL SAMPLE: 1828623

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

SAMPLE DUPLICATE: 1828624

Parameter	Units	60227573001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	743	733	1	10	

SAMPLE DUPLICATE: 1828627

Parameter	Units	60227580001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	647	637	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446992 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227580005, 60227580006

METHOD BLANK: 1828634 Matrix: Water
Associated Lab Samples: 60227580005, 60227580006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	09/19/16 09:19	

LABORATORY CONTROL SAMPLE: 1828635

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

SAMPLE DUPLICATE: 1828636

Parameter	Units	60227580005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	496	496	0	10	

SAMPLE DUPLICATE: 1828637

Parameter	Units	60227586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	427	435	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446274
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60227402002

SAMPLE DUPLICATE: 1824431

Parameter	Units	60227283001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.3	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 446989 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227580001, 60227580002, 60227580005, 60227580006

SAMPLE DUPLICATE: 1828631

Parameter	Units	60227580001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 447131 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227402012, 60227580003, 60227580004

SAMPLE DUPLICATE: 1828952

Parameter	Units	60227704003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 448782 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227402002

METHOD BLANK: 1836679 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	10/01/16 09:27	
Fluoride	mg/L	<0.027	0.20	0.027	10/01/16 09:27	
Sulfate	mg/L	<0.15	1.0	0.15	10/01/16 09:27	

LABORATORY CONTROL SAMPLE: 1836680

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	2.6	102	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836681 1836682

Parameter	Units	60227402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.13J	2.5	2.5	2.6	2.6	100	97	80-120	2	15	

MATRIX SPIKE SAMPLE: 1836683

Parameter	Units	60227403003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.082J	2.5	2.5	96	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 448783 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580006

METHOD BLANK: 1836684 Matrix: Water
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	10/01/16 14:18	
Fluoride	mg/L	<0.027	0.20	0.027	10/01/16 14:18	
Sulfate	mg/L	<0.15	1.0	0.15	10/01/16 14:18	

LABORATORY CONTROL SAMPLE: 1836685

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836686 1836687

Parameter	Units	60227172005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.088J	2.5	2.5	2.6	2.7	99	104	80-120	4	15	

MATRIX SPIKE SAMPLE: 1836688

Parameter	Units	60227580001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.3	5	7.0	93	80-120	
Fluoride	mg/L	0.18J	2.5	2.6	98	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 448790 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004

METHOD BLANK: 1836865 Matrix: Water
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	10/02/16 11:23	

LABORATORY CONTROL SAMPLE: 1836866

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

MATRIX SPIKE SAMPLE: 1836867

Parameter	Units	60227403003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	275	100	373	98	80-120	

MATRIX SPIKE SAMPLE: 1836870

Parameter	Units	60227580001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	63.4	25	85.9	90	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 449284 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227402012

METHOD BLANK: 1838547 Matrix: Water
Associated Lab Samples: 60227402012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	10/06/16 08:27	
Fluoride	mg/L	<0.027	0.20	0.027	10/06/16 08:27	

LABORATORY CONTROL SAMPLE: 1838548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1838549 1838550

Parameter	Units	60227403012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	13.9	5	5	18.7	18.8	95	98	80-120	1	15	
Fluoride	mg/L	0.12J	2.5	2.5	2.4	2.5	93	96	80-120	3	15	

MATRIX SPIKE SAMPLE: 1838551

Parameter	Units	60227403013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.34	2.5	2.6	92	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 449623 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227402012

METHOD BLANK: 1839827 Matrix: Water
Associated Lab Samples: 60227402012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	10/07/16 22:21	

LABORATORY CONTROL SAMPLE: 1839828

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1839829 1839830

Parameter	Units	60227403012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	454	250	250	704	705	100	100	80-120	0	15	

MATRIX SPIKE SAMPLE: 1839831

Parameter	Units	60227403014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	213	100	313	100	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-1 **Lab ID: 60227580001** Collected: 09/13/16 08:23 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0618 ± 0.469 (0.928) C:NA T:87%**	pCi/L	09/30/16 00:14	13982-63-3	
Radium-228	EPA 904.0	**1.66 ± 0.553 (0.785) C:72% T:78%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-2 **Lab ID: 60227580002** Collected: 09/12/16 15:58 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0616 ± 0.281 (0.572) C:NA T:91%**	pCi/L	09/30/16 00:14	13982-63-3	
Radium-228	EPA 904.0	**1.65 ± 0.542 (0.761) C:74% T:79%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-3 **Lab ID: 60227580003** Collected: 09/13/16 09:54 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.418 ± 0.391 (0.554) C:NA T:94%**	pCi/L	09/30/16 00:15	13982-63-3	
Radium-228	EPA 904.0	**1.29 ± 0.496 (0.782) C:73% T:83%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-MW-26 **Lab ID: 60227580004** Collected: 09/13/16 09:53 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.180 ± 0.275 (0.442) C:NA T:92%**	pCi/L	09/30/16 00:13	13982-63-3	
Radium-228	EPA 904.0	**0.844 ± 0.437 (0.777) C:73% T:82%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-UWL-DUP-1 **Lab ID: 60227580005** Collected: 09/13/16 08:00 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.240 ± 0.333 (0.556) C:NA T:91%**	pCi/L	09/30/16 00:15	13982-63-3	
Radium-228	EPA 904.0	**1.24 ± 0.504 (0.808) C:69% T:79%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-UWL-FB-1 **Lab ID: 60227580006** Collected: 09/13/16 09:45 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0572 ± 0.261 (0.421) C:NA T:99%**	pCi/L	09/30/16 00:27	13982-63-3	
Radium-228	EPA 904.0	**0.889 ± 0.529 (0.977) C:68% T:71%**	pCi/L	09/29/16 02:43	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-1 MS **Lab ID: 60227580007** Collected: 09/13/16 08:23 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**94.7%REC ± NA (NA)**	pCi/L	09/30/16 00:39	13982-63-3	
Radium-228	EPA 904.0	**116 %REC +/- NA (NA) C:NA T:NA**	pCi/L	09/29/16 02:43	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-TMW-1 MSD **Lab ID: 60227580008** Collected: 09/13/16 08:23 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**77.7%REC 19.7RPD ± NA (NA)**	pCi/L	09/30/16 00:33	13982-63-3	
Radium-228	EPA 904.0	**122 %REC 4.68 RPD +/- NA (NA) C:NA T:NA**	pCi/L	09/29/16 02:44	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-BMW-2S **Lab ID: 60227402002** Collected: 09/09/16 09:25 Received: 09/10/16 03:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.166 ± 0.392 (0.727) C:NA T:90%**	pCi/L	09/28/16 12:08	13982-63-3	
Radium-228	EPA 904.0	**1.96 ± 0.603 (0.742) C:76% T:89%**	pCi/L	10/03/16 13:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Sample: L-BMW-1S **Lab ID: 60227402012** Collected: 09/13/16 15:06 Received: 09/14/16 04:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.850 ± 0.675 (0.877) C:NA T:82%**	pCi/L	09/30/16 10:35	13982-63-3	
Radium-228	EPA 904.0	**2.77 ± 0.712 (0.699) C:72% T:76%**	pCi/L	09/29/16 02:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 233812 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60227402012, 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006, 60227580007, 60227580008

METHOD BLANK: 1146451 Matrix: Water
Associated Lab Samples: 60227402012, 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006, 60227580007, 60227580008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.598 ± 0.378 (0.704) C:75% T:80%	pCi/L	09/29/16 02:43	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 234044 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60227402012

METHOD BLANK: 1147794 Matrix: Water
Associated Lab Samples: 60227402012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.081 ± 0.370 (0.873) C:NA T:94%	pCi/L	09/30/16 10:03	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 233943 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006, 60227580007, 60227580008

METHOD BLANK: 1147223 Matrix: Water
Associated Lab Samples: 60227580001, 60227580002, 60227580003, 60227580004, 60227580005, 60227580006, 60227580007, 60227580008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.358 (0.757) C:NA T:95%	pCi/L	09/29/16 23:04	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 233282 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60227402002

METHOD BLANK: 1143381 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.158 ± 0.242 (0.634) C:NA T:95%	pCi/L	09/28/16 11:20	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 233297 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60227402002

METHOD BLANK: 1143403 Matrix: Water
Associated Lab Samples: 60227402002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.776 ± 0.424 (0.778) C:82% T:89%	pCi/L	10/03/16 12:57	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

QC Batch: 233941 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples:

METHOD BLANK: 1147217 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.976 ± 0.455 (0.758) C:69% T:90%	pCi/L	09/28/16 22:34	

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227402002	L-BMW-2S	EPA 200.7	446273	EPA 200.7	446311
60227402012	L-BMW-1S	EPA 200.7	446525	EPA 200.7	446567
60227580001	L-TMW-1	EPA 200.7	446615	EPA 200.7	446659
60227580002	L-TMW-2	EPA 200.7	446615	EPA 200.7	446659
60227580003	L-TMW-3	EPA 200.7	446615	EPA 200.7	446659
60227580004	L-MW-26	EPA 200.7	446615	EPA 200.7	446659
60227580005	L-UWL-DUP-1	EPA 200.7	446615	EPA 200.7	446659
60227580006	L-UWL-FB-1	EPA 200.7	446615	EPA 200.7	446659
60227402002	L-BMW-2S	EPA 200.8	446276	EPA 200.8	446312
60227402012	L-BMW-1S	EPA 200.8	446524	EPA 200.8	446573
60227580001	L-TMW-1	EPA 200.8	446616	EPA 200.8	446662
60227580002	L-TMW-2	EPA 200.8	446616	EPA 200.8	446662
60227580003	L-TMW-3	EPA 200.8	446616	EPA 200.8	446662
60227580004	L-MW-26	EPA 200.8	446616	EPA 200.8	446662
60227580005	L-UWL-DUP-1	EPA 200.8	446616	EPA 200.8	446662
60227580006	L-UWL-FB-1	EPA 200.8	446616	EPA 200.8	446662
60227402002	L-BMW-2S	EPA 7470	446246	EPA 7470	446282
60227402012	L-BMW-1S	EPA 7470	446591	EPA 7470	446630
60227580001	L-TMW-1	EPA 7470	446591	EPA 7470	446630
60227580002	L-TMW-2	EPA 7470	446591	EPA 7470	446630
60227580003	L-TMW-3	EPA 7470	446591	EPA 7470	446630
60227580004	L-MW-26	EPA 7470	446591	EPA 7470	446630
60227580005	L-UWL-DUP-1	EPA 7470	446592	EPA 7470	446631
60227580006	L-UWL-FB-1	EPA 7470	446592	EPA 7470	446631
60227402002	L-BMW-2S	EPA 903.1	233282		
60227402012	L-BMW-1S	EPA 903.1	234044		
60227580001	L-TMW-1	EPA 903.1	233943		
60227580002	L-TMW-2	EPA 903.1	233943		
60227580003	L-TMW-3	EPA 903.1	233943		
60227580004	L-MW-26	EPA 903.1	233943		
60227580005	L-UWL-DUP-1	EPA 903.1	233943		
60227580006	L-UWL-FB-1	EPA 903.1	233943		
60227580007	L-TMW-1 MS	EPA 903.1	233943		
60227580008	L-TMW-1 MSD	EPA 903.1	233943		
60227402002	L-BMW-2S	EPA 904.0	233297		
60227402012	L-BMW-1S	EPA 904.0	233812		
60227580001	L-TMW-1	EPA 904.0	233812		
60227580002	L-TMW-2	EPA 904.0	233812		
60227580003	L-TMW-3	EPA 904.0	233812		
60227580004	L-MW-26	EPA 904.0	233812		
60227580005	L-UWL-DUP-1	EPA 904.0	233812		
60227580006	L-UWL-FB-1	EPA 904.0	233812		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60227580

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227580007	**L-TMW-1 MS**	EPA 904.0	233812		
60227580008	**L-TMW-1 MSD**	EPA 904.0	233812		
60227402002	**L-BMW-2S**	SM 2540C	446819		
60227402012	**L-BMW-1S**	SM 2540C	446982		
60227580001	**L-TMW-1**	SM 2540C	446982		
60227580002	**L-TMW-2**	SM 2540C	446979		
60227580003	**L-TMW-3**	SM 2540C	446982		
60227580004	**L-MW-26**	SM 2540C	446982		
60227580005	**L-UWL-DUP-1**	SM 2540C	446992		
60227580006	**L-UWL-FB-1**	SM 2540C	446992		
60227402002	**L-BMW-2S**	SM 4500-H+B	446274		
60227402012	**L-BMW-1S**	SM 4500-H+B	447131		
60227580001	**L-TMW-1**	SM 4500-H+B	446989		
60227580002	**L-TMW-2**	SM 4500-H+B	446989		
60227580003	**L-TMW-3**	SM 4500-H+B	447131		
60227580004	**L-MW-26**	SM 4500-H+B	447131		
60227580005	**L-UWL-DUP-1**	SM 4500-H+B	446989		
60227580006	**L-UWL-FB-1**	SM 4500-H+B	446989		
60227402002	**L-BMW-2S**	EPA 300.0	448782		
60227402012	**L-BMW-1S**	EPA 300.0	449284		
60227402012	**L-BMW-1S**	EPA 300.0	449623		
60227580001	**L-TMW-1**	EPA 300.0	448783		
60227580001	**L-TMW-1**	EPA 300.0	448790		
60227580002	**L-TMW-2**	EPA 300.0	448783		
60227580002	**L-TMW-2**	EPA 300.0	448790		
60227580003	**L-TMW-3**	EPA 300.0	448783		
60227580003	**L-TMW-3**	EPA 300.0	448790		
60227580004	**L-MW-26**	EPA 300.0	448783		
60227580004	**L-MW-26**	EPA 300.0	448790		
60227580006	**L-UWL-FB-1**	EPA 300.0	448783		

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Sample Condition Upon Receipt

WO# : 60227580

60227580

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-266 CF +1.1) / T-239 CF -0.1 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read -1.0, 0.4, 0.6 Corr. Factor CF +1.1 CF -0.1 Corrected 0.1, 1.5, 1.7

Temperature should be above freezing to 6°C 19.1, 21.0, 20.8, 19.2 — 20.2, 22.1, 21.9, 20.3

Date and initials of person examining contents: [illegible]

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	pH
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: water	☐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	
Cyanide water sample checks: ☒N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	 ☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: ______ Date: ______

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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	**Standard**

Section B — **Required** Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		40227520
1	L-TMW-1	WT	G			9/13/14	0825		18	3		9							3	3	3	3	6		3(BSN) 3(BSN) 6(BSN) 05
2	L-TMW-2	WT	G			9/12/14	1553		4	1		3							1	1	1	1	2		1(BSN) 1(BSN) 2(BSN) OR
3	L-TMW-3	WT	G			9/13/14	0954		1	1		1							1	1	1	1	1		003
4	L-MW-26	WT	G				0953		1	1		1							1	1	1	1	1		004
5	L-UWL-DUP-1	WT	G				—		1	1		1							1	1	1	1	1		005
6	L-UWL-FB-1	WT	G				0945		1	1		1							1	1	1	1	1		006
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
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Jeff Ingram (golder)	9/13/14	1900	PPS	9/13/14	1850
	PPS	9/13/14	1850		9/14/14	0840

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09/13/14

*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
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Sample Condition Upon Receipt

WO# : 60227402

60227402

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 ☐ NA 9/6

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

Thermometer Used: CF +1.1 T-266 / CF -0.1 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 3.5, 13.1, 15.0 **Corr. Factor** CF +1.1 CF -0.1 **Corrected** 4.6, 14.2, 16.1

Date and initials of person examining contents: RB 9/6/16

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	pH
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	
Cyanide water sample checks: ☐ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: _____

9/12/16

Project Manager Review: _____ Jami Church Date: _____

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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:	820 South Main Street, Suite 100, St Charles, MO 63301
Email To:	maddock@golder.com
Phone:	636-724-9191
Fax:	636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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

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): Metals* N; Chloride/Fluoride/Sulfate N; TDS N; pH N; Radium 226 & 228 N

Pace Project No./ Lab I.D.: 60224402

ITEM #	SAMPLE ID	MATRIX CODE	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 Y/N	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~L-LMW-1S~~	WT	G																						
2	L-LMW-2S	WT	G			9/9/16	1055		12	3		9							3	3	2	3	6		6 RPIN 3BP3N 3BP3U 20 001
3	~~L-LMW-3S~~	WT	G																						
4	~~L-LMW-4S~~	WT	G																						
5	~~L-LMW-5S~~	WT	G																						
6	~~L-LMW-6S~~	WT	G																						
7	~~L-LMW-7S~~	WT	G																						
8	~~L-LMW-8S~~	WT	G																						
9	~~L-BMW-1S~~	WT	G																						
10	L-BMW-2S	WT	G			9/9/16	0925		4	1		3							1	1	1	1	3		2BPIN BP3N BP3U 002
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	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Jeff Ingram golder	9/9/16	1615	[signature]	9/10/16	0330	4.6	Y	Y	Y
							14.2	N	Y	Y
							16.1	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 9/9/16

*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

multi COCs

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60227402

60227402

2nd COC

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: CF +1.1 CF -0.1 T-268 / T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** -1.0, 0.4, 0.6 **Corr. Factor** CF +1.1 CF -0.1 **Corrected** 0.1, 1.5, 1.7

Temperature should be above freezing to 6°C 19.1, 21.0, 20.8, 19.2 20.2, 22.1, 21.9, 20.3

Date and initials of person examining contents: DS 9/14/16 MS

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	pH
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: water	☐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	
Cyanide water sample checks: ☒N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 9/14/16

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical™ www.pacelabs.com

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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60227452
1	L-LMW-1S	WT	G			9/12/16	1455		4	1		3							1	1	1	1	2		005
2	L-LMW-2S	WT	G																						
3	L-LMW-3S	WT	G			9/13/16	1313		4	1		3							1	1	1	1	2		006
4	L-LMW-4S	WT	G				1118												1	1	1	1	1		007
5	L-LMW-5S	WT	G				1125												1	1	1	1	1		008
6	L-LMW-6S	WT	G			9/12/16	1320												1	1	1	1	1		009
7	L-LMW-7S	WT	G				1110												1	1	1	1	1		010
8	L-LMW-8S	WT	G				0940												1	1	1	1	1		011
9	L-BMW-1S	WT	G			9/13/16	1504		4	1		3							1	1	1	1	2		012
10	L-BMW-2S	WT	G																						
11	L-LMW-DUP-1	WT	G			9/12/16			4	1		3							1	1	1	1	2		013
12	L-LMW-FB-1	WT	G			9/12/16	1425		4	1		3							1	1	1	1	2		014

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Jeff Ingram (golder)	9/13/16	1800	(PACE)	9/13/16	1800
	(PACE)	9/13/16	1850		9/14/16	0850
						440

SAMPLE CONDITIONS

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9/13/16

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory between November 12, 2016 and November 16, 2016. 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, 1/3/18: Revision

REV-2, 1/30/18: Radium results pulled in for L-BMW-2S

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
Jeffrey Ingram, Golder Associates
John Suozzi, 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-UWL
Pace Project No.: 60232361

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60232361001	**L-TMW-1**	Water	11/15/16 10:05	11/16/16 03:45
60232361002	**L-TMW-2**	Water	11/15/16 10:54	11/16/16 03:45
60232361003	**L-TMW-3**	Water	11/15/16 10:10	11/16/16 03:45
60232361004	**L-MW-26**	Water	11/15/16 08:53	11/16/16 03:45
60232361005	**L-UWL-DUP-1**	Water	11/15/16 08:00	11/16/16 03:45
60232361006	**L-UWL-FB-1**	Water	11/15/16 10:20	11/16/16 03:45
60232361007	**L-TMW-3 MS**	Water	11/15/16 10:10	11/16/16 03:45
60232361008	**L-TMW-3 MSD**	Water	11/15/16 10:10	11/16/16 03:45
60232172001	**L-BMW-1S**	Water	11/11/16 12:42	11/12/16 03:35
60232172002	**L-BMW-2S**	Water	11/11/16 08:45	11/12/16 03:35

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60232361001	**L-TMW-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361002	**L-TMW-2**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361003	**L-TMW-3**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361004	**L-MW-26**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361005	**L-UWL-DUP-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361006	**L-UWL-FB-1**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232361007	**L-TMW-3 MS**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60232361008	**L-TMW-3 MSD**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60232172001	**L-BMW-1S**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	JMC1	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232172002	**L-BMW-2S**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	JMC1	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-1 **Lab ID: 60232361001** Collected: 11/15/16 10:05 Received: 11/16/16 03:45 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								
Barium	**275**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:06	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:06	7440-41-7	
Boron	**93.8J**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:19	7440-42-8	
Calcium	**149000**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:06	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:06	7440-48-4	
Lead	**2.6J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:06	7439-92-1	
Lithium	**33.3**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:06	7439-93-2	
Molybdenum	**0.92J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:06	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.23J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:03	7440-36-0	B
Arsenic	**1.6**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:03	7440-38-2	
Cadmium	**0.097J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:03	7440-43-9	B
Chromium	**0.45J**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:03	7440-47-3	
Selenium	**7.7**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:03	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**578**	mg/L	5.0	5.0	1		11/18/16 15:22		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		11/29/16 09:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.5**	mg/L	1.0	0.50	1		12/09/16 22:14	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.027	1		12/09/16 22:14	16984-48-8	
Sulfate	**38.4**	mg/L	2.0	0.31	2		12/11/16 22:59	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-2 **Lab ID: 60232361002** Collected: 11/15/16 10:54 Received: 11/16/16 03:45 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								
Barium	**193**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:09	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:09	7440-41-7	
Boron	**117**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:22	7440-42-8	
Calcium	**172000**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:09	7440-70-2	
Cobalt	**4.5J**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:09	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:09	7439-92-1	
Lithium	**52.6**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:09	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:09	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.23J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:07	7440-36-0	B
Arsenic	**0.96J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:07	7440-38-2	B
Cadmium	**0.047J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:07	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:07	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:07	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**698**	mg/L	5.0	5.0	1		11/18/16 15:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		11/29/16 09:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.9**	mg/L	1.0	0.50	1		12/09/16 22:28	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		12/09/16 22:28	16984-48-8	
Sulfate	**88.9**	mg/L	5.0	0.77	5		12/11/16 23:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-3 **Lab ID: 60232361003** Collected: 11/15/16 10:10 Received: 11/16/16 03:45 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								
Barium	**324**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:13	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:13	7440-41-7	
Boron	**115**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:37	7440-42-8	
Calcium	**191000**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:13	7440-70-2	
Cobalt	**3.1J**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:13	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:13	7439-92-1	
Lithium	**55.2**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:13	7439-93-2	
Molybdenum	**0.73J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:13	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.22J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:12	7440-36-0	B
Arsenic	**3.9**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:12	7440-38-2	
Cadmium	**0.12J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:12	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:12	7440-47-3	
Selenium	**0.27J**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:12	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:32	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**717**	mg/L	5.0	5.0	1		11/18/16 15:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		11/29/16 09:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.1**	mg/L	1.0	0.50	1		12/09/16 22:42	16887-00-6	M1
Fluoride	**0.14J**	mg/L	0.20	0.027	1		12/09/16 22:42	16984-48-8	
Sulfate	**89.9**	mg/L	10.0	1.5	10		12/11/16 23:27	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-MW-26 **Lab ID: 60232361004** Collected: 11/15/16 08:53 Received: 11/16/16 03:45 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								
Barium	**208**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:24	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:24	7440-41-7	
Boron	**65.2J**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:26	7440-42-8	
Calcium	**144000**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:24	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:24	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:24	7439-92-1	
Lithium	**25.8**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:24	7439-93-2	
Molybdenum	**1.2J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:24	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.35J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:25	7440-36-0	B
Arsenic	**0.73J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:25	7440-38-2	B
Cadmium	**0.19J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:25	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:25	7440-47-3	
Selenium	**14.8**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:25	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**505**	mg/L	5.0	5.0	1		11/18/16 15:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		11/22/16 14:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.1**	mg/L	1.0	0.50	1		12/09/16 23:10	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		12/09/16 23:10	16984-48-8	
Sulfate	**24.7**	mg/L	2.0	0.31	2		12/11/16 23:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-UWL-DUP-1 **Lab ID: 60232361005** Collected: 11/15/16 08:00 Received: 11/16/16 03:45 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								
Barium	**207**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:28	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:28	7440-41-7	
Boron	**63.4J**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:30	7440-42-8	
Calcium	**144000**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:28	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:28	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:28	7439-92-1	
Lithium	**26.7**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:28	7439-93-2	
Molybdenum	**0.91J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:28	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.33J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:29	7440-36-0	B
Arsenic	**0.73J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:29	7440-38-2	B
Cadmium	**0.10J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:29	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:29	7440-47-3	
Selenium	**15.0**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:29	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**501**	mg/L	5.0	5.0	1		11/18/16 15:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		11/22/16 14:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.2**	mg/L	1.0	0.50	1		12/09/16 23:24	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		12/09/16 23:24	16984-48-8	
Sulfate	**26.0**	mg/L	2.0	0.31	2		12/12/16 00:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-UWL-FB-1 **Lab ID: 60232361006** Collected: 11/15/16 10:20 Received: 11/16/16 03:45 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								
Barium	**<0.58**	ug/L	5.0	0.58	1	11/16/16 18:45	11/21/16 16:31	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/21/16 16:31	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:33	7440-42-8	
Calcium	**32.3J**	ug/L	100	8.1	1	11/16/16 18:45	11/21/16 16:31	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/21/16 16:31	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/21/16 16:31	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	11/16/16 18:45	11/21/16 16:31	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	11/16/16 18:45	11/21/16 16:31	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.18J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 13:33	7440-36-0	B
Arsenic	**0.12J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 13:33	7440-38-2	B
Cadmium	**0.047J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 13:33	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 13:33	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 13:33	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 13:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 14:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		11/18/16 15:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.1**	Std. Units	0.10	0.10	1		11/29/16 09:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		12/09/16 23:38	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		12/09/16 23:38	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		12/09/16 23:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-BMW-1S **Lab ID: 60232172001** Collected: 11/11/16 12:42 Received: 11/12/16 03:35 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								
Barium	**338**	ug/L	5.0	0.58	1	11/15/16 08:30	11/15/16 17:10	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/15/16 08:30	11/15/16 17:10	7440-41-7	
Boron	**88.1J**	ug/L	100	50.0	1	11/15/16 08:30	11/15/16 17:10	7440-42-8	
Calcium	**200000**	ug/L	100	8.1	1	11/15/16 08:30	11/15/16 17:10	7440-70-2	
Cobalt	**1.8J**	ug/L	5.0	0.72	1	11/15/16 08:30	11/15/16 17:10	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/15/16 08:30	11/15/16 17:10	7439-92-1	
Lithium	**20.0**	ug/L	10.0	4.9	1	11/15/16 08:30	11/15/16 17:10	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	11/15/16 08:30	11/15/16 17:10	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	11/15/16 08:30	11/28/16 13:11	7440-36-0	
Arsenic	**22.9**	ug/L	1.0	0.10	1	11/15/16 08:30	11/28/16 13:11	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/15/16 08:30	11/28/16 13:11	7440-43-9	
Chromium	**0.48J**	ug/L	1.0	0.34	1	11/15/16 08:30	11/28/16 13:11	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/15/16 08:30	11/28/16 13:11	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/15/16 08:30	11/28/16 13:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/23/16 08:35	11/23/16 12:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**692**	mg/L	5.0	5.0	1		11/17/16 16:04		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.10	1		11/19/16 08:41		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.3**	mg/L	1.0	0.50	1		12/04/16 02:16	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.027	1		12/04/16 02:16	16984-48-8	
Sulfate	**43.1**	mg/L	5.0	0.77	5		12/05/16 01:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-BMW-2S **Lab ID: 60232172002** Collected: 11/11/16 08:45 Received: 11/12/16 03:35 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								
Barium	**218**	ug/L	5.0	0.58	1	11/15/16 08:30	11/15/16 17:12	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/15/16 08:30	11/15/16 17:12	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	11/15/16 08:30	11/15/16 17:12	7440-42-8	
Calcium	**119000**	ug/L	100	8.1	1	11/15/16 08:30	11/15/16 17:12	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/15/16 08:30	11/15/16 17:12	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/15/16 08:30	11/15/16 17:12	7439-92-1	
Lithium	**19.2**	ug/L	10.0	4.9	1	11/15/16 08:30	11/15/16 17:12	7439-93-2	
Molybdenum	**2.1J**	ug/L	20.0	0.52	1	11/15/16 08:30	11/15/16 17:12	7439-98-7	B
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.22J**	ug/L	1.0	0.058	1	11/15/16 08:30	11/28/16 13:15	7440-36-0	
Arsenic	**0.41J**	ug/L	1.0	0.10	1	11/15/16 08:30	11/28/16 13:15	7440-38-2	
Cadmium	**0.036J**	ug/L	0.50	0.029	1	11/15/16 08:30	11/28/16 13:15	7440-43-9	
Chromium	**0.64J**	ug/L	1.0	0.34	1	11/15/16 08:30	11/28/16 13:15	7440-47-3	
Selenium	**1.3**	ug/L	1.0	0.18	1	11/15/16 08:30	11/28/16 13:15	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/15/16 08:30	11/28/16 13:15	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/23/16 08:35	11/23/16 12:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**405**	mg/L	5.0	5.0	1		11/17/16 16:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		11/19/16 08:43		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.50	1		12/04/16 02:30	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.027	1		12/04/16 02:30	16984-48-8	
Sulfate	**12.3**	mg/L	1.0	0.15	1		12/04/16 02:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 456114 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1867553 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	11/23/16 11:30	

LABORATORY CONTROL SAMPLE: 1867554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1867555 1867556

Parameter	Units	60232056010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.3	5.0	105	100	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 456523 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

METHOD BLANK: 1869427 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	11/28/16 14:15	

LABORATORY CONTROL SAMPLE: 1869428

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1869429 1869430

Parameter	Units	60232361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.5	5.7	110	114	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 454893 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1862815 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.87J	5.0	0.58	11/15/16 17:03	
Beryllium	ug/L	0.56J	1.0	0.26	11/15/16 17:03	
Boron	ug/L	<50.0	100	50.0	11/15/16 17:03	
Calcium	ug/L	12.6J	100	8.1	11/15/16 17:03	
Cobalt	ug/L	<0.72	5.0	0.72	11/15/16 17:03	
Lead	ug/L	<2.5	5.0	2.5	11/15/16 17:03	
Lithium	ug/L	<4.9	10.0	4.9	11/15/16 17:03	
Molybdenum	ug/L	1.0J	20.0	0.52	11/15/16 17:03	

LABORATORY CONTROL SAMPLE: 1862816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	989	99	85-115	
Beryllium	ug/L	1000	989	99	85-115	
Boron	ug/L	1000	954	95	85-115	
Calcium	ug/L	10000	9980	100	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	985	99	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1862817 1862818

Parameter	Units	60232174003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	244	1000	1000	1240	1240	100	100	70-130	0	20	
Beryllium	ug/L	<0.26	1000	1000	984	981	98	98	70-130	0	20	
Boron	ug/L	8410	1000	1000	9490	9440	108	102	70-130	1	20	
Calcium	ug/L	161000	10000	10000	172000	171000	107	100	70-130	0	20	
Cobalt	ug/L	1.5J	1000	1000	984	979	98	98	70-130	1	20	
Lead	ug/L	<2.5	1000	1000	984	980	98	98	70-130	0	20	
Lithium	ug/L	5.6J	1000	1000	1020	1020	102	102	70-130	0	20	
Molybdenum	ug/L	6.4J	1000	1000	1060	1060	106	105	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

MATRIX SPIKE SAMPLE: 1862819

Parameter	Units	60232174004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	213	1000	1200	99	70-130	
Beryllium	ug/L	0.56J	1000	977	98	70-130	
Boron	ug/L	8580	1000	9230	65	70-130	M1
Calcium	ug/L	174000	10000	178000	34	70-130	M1
Cobalt	ug/L	<0.72	1000	977	98	70-130	
Lead	ug/L	<2.5	1000	978	98	70-130	
Lithium	ug/L	26.3	1000	1040	101	70-130	
Molybdenum	ug/L	54.4	1000	1100	105	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 455260 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

METHOD BLANK: 1864224 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.74J	5.0	0.58	11/21/16 14:56	
Beryllium	ug/L	<0.26	1.0	0.26	11/21/16 14:56	
Boron	ug/L	<50.0	100	50.0	11/21/16 14:56	
Calcium	ug/L	55.0J	100	8.1	11/21/16 15:18	
Cobalt	ug/L	<0.72	5.0	0.72	11/21/16 14:56	
Lead	ug/L	<2.5	5.0	2.5	11/21/16 14:56	
Lithium	ug/L	<4.9	10.0	4.9	11/21/16 14:56	
Molybdenum	ug/L	0.53J	20.0	0.52	11/21/16 14:56	

LABORATORY CONTROL SAMPLE: 1864225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1080	108	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	1060	106	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1080	108	85-115	
Lead	ug/L	1000	1080	108	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1130	113	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864226 1864227

Parameter	Units	60232344001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	156	1000	1000	1200	1240	105	108	70-130	3	20	
Beryllium	ug/L	0.34J	1000	1000	988	1010	99	101	70-130	3	20	
Boron	ug/L	6230	1000	1000	7450	6810	122	58	70-130	9	20	M1
Calcium	ug/L	169000	10000	10000	183000	180000	136	112	70-130	1	20	M1
Cobalt	ug/L	2.7J	1000	1000	1000	1040	100	104	70-130	4	20	
Lead	ug/L	5.5	1000	1000	994	1040	99	103	70-130	4	20	
Lithium	ug/L	17.0	1000	1000	1030	1060	102	104	70-130	2	20	
Molybdenum	ug/L	4.0J	1000	1000	1090	1130	109	112	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864229 1864230

Parameter	Units	60232361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	324	1000	1000	1440	1380	111	106	70-130	4	20	
Beryllium	ug/L	<0.26	1000	1000	1030	988	103	99	70-130	4	20	
Boron	ug/L	115	1000	1000	1110	1080	100	97	70-130	3	20	
Calcium	ug/L	191000	10000	10000	198000	200000	72	94	70-130	1	20	
Cobalt	ug/L	3.1J	1000	1000	1040	995	103	99	70-130	4	20	
Lead	ug/L	<2.5	1000	1000	1040	993	104	99	70-130	4	20	
Lithium	ug/L	55.2	1000	1000	1120	1080	106	102	70-130	4	20	
Molybdenum	ug/L	0.73J	1000	1000	1130	1090	113	109	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 454894 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1862820 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	11/28/16 13:02	
Arsenic	ug/L	<0.10	1.0	0.10	11/28/16 13:02	
Cadmium	ug/L	<0.029	0.50	0.029	11/28/16 13:02	
Chromium	ug/L	<0.34	1.0	0.34	11/28/16 13:02	
Selenium	ug/L	<0.18	1.0	0.18	11/28/16 13:02	
Thallium	ug/L	<0.50	1.0	0.50	11/28/16 13:02	

LABORATORY CONTROL SAMPLE: 1862821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.2	98	85-115	
Arsenic	ug/L	40	40.0	100	85-115	
Cadmium	ug/L	40	40.1	100	85-115	
Chromium	ug/L	40	40.9	102	85-115	
Selenium	ug/L	40	40.2	101	85-115	
Thallium	ug/L	40	38.4	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1862822 1862823

Parameter	Units	60232174003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	40.6	39.9	102	100	70-130	2	20	
Arsenic	ug/L	7.8	40	40	48.8	48.0	103	101	70-130	2	20	
Cadmium	ug/L	<0.029	40	40	38.8	38.1	97	95	70-130	2	20	
Chromium	ug/L	0.52J	40	40	40.3	40.3	100	100	70-130	0	20	
Selenium	ug/L	<0.18	40	40	38.4	38.3	96	96	70-130	0	20	
Thallium	ug/L	<0.50	40	40	37.5	36.6	94	91	70-130	2	20	

MATRIX SPIKE SAMPLE: 1862824

Parameter	Units	60232174005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	40.2	100	70-130	
Arsenic	ug/L	19.9	40	61.4	104	70-130	
Cadmium	ug/L	<0.029	40	38.0	95	70-130	
Chromium	ug/L	0.37J	40	39.9	99	70-130	
Selenium	ug/L	<0.18	40	38.6	97	70-130	
Thallium	ug/L	<0.50	40	36.6	91	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 455259 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

METHOD BLANK: 1864217 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.18J	1.0	0.058	11/30/16 12:11	
Arsenic	ug/L	0.13J	1.0	0.10	11/30/16 12:11	
Cadmium	ug/L	0.043J	0.50	0.029	11/30/16 12:11	
Chromium	ug/L	<0.34	1.0	0.34	11/30/16 12:11	
Selenium	ug/L	<0.18	1.0	0.18	11/30/16 12:11	
Thallium	ug/L	<0.50	1.0	0.50	11/30/16 12:11	

LABORATORY CONTROL SAMPLE: 1864218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.6	102	85-115	
Arsenic	ug/L	40	40.8	102	85-115	
Cadmium	ug/L	40	40.6	101	85-115	
Chromium	ug/L	40	41.9	105	85-115	
Selenium	ug/L	40	39.3	98	85-115	
Thallium	ug/L	40	39.3	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864219 1864220

Parameter	Units	60232344001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.25J	40	40	42.0	41.6	104	103	70-130	1	20	
Arsenic	ug/L	3.4	40	40	44.8	45.0	103	104	70-130	0	20	
Cadmium	ug/L	0.16J	40	40	39.8	39.7	99	99	70-130	0	20	
Chromium	ug/L	<0.34	40	40	41.6	41.2	103	102	70-130	1	20	
Selenium	ug/L	0.60J	40	40	38.0	37.8	94	93	70-130	1	20	
Thallium	ug/L	<0.50	40	40	41.1	40.5	103	101	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864221 1864222

Parameter	Units	60232361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.22J	40	40	39.9	41.1	99	102	70-130	3	20	
Arsenic	ug/L	3.9	40	40	42.8	44.3	97	101	70-130	3	20	
Cadmium	ug/L	0.12J	40	40	38.1	39.4	95	98	70-130	3	20	
Chromium	ug/L	<0.34	40	40	39.3	40.8	98	101	70-130	4	20	
Selenium	ug/L	0.27J	40	40	35.7	36.6	89	91	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864221 1864222

Parameter	Units	60232361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	ug/L	<0.50	40	40	39.6	40.3	99	101	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 455505 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1865080 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/16 16:00	

LABORATORY CONTROL SAMPLE: 1865081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	973	97	80-120	

SAMPLE DUPLICATE: 1865082

Parameter	Units	60232172001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	692	661	5	10	

SAMPLE DUPLICATE: 1865083

Parameter	Units	60232173003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	470	480	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 455652 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

METHOD BLANK: 1865724 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/18/16 15:14	

LABORATORY CONTROL SAMPLE: 1865725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	956	96	80-120	

SAMPLE DUPLICATE: 1865726

Parameter	Units	60232259001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	31.0	26.0	18	10	D6

SAMPLE DUPLICATE: 1865727

Parameter	Units	60232361003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	717	714	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 455737 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60232172001, 60232172002

SAMPLE DUPLICATE: 1866223

Parameter	Units	60231804003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.2	1	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 456166 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60232361004, 60232361005

SAMPLE DUPLICATE: 1867771

Parameter	Units	60232345009 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.5	7.5	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 456197 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361006

SAMPLE DUPLICATE: 1867976

Parameter	Units	60232361003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.1	1	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 457500 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1873090 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	12/03/16 20:42	
Fluoride	mg/L	<0.027	0.20	0.027	12/03/16 20:42	
Sulfate	mg/L	<0.15	1.0	0.15	12/03/16 20:42	

LABORATORY CONTROL SAMPLE: 1873091

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	2.5	102	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1873092 1873093

Parameter	Units	60232174001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.24	2.5	2.5	3.2	3.2	117	116	80-120	0	15	

MATRIX SPIKE SAMPLE: 1873094

Parameter	Units	60232174003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.091J	2.5	3.0	117	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 457515 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232172001

METHOD BLANK: 1873341 Matrix: Water
Associated Lab Samples: 60232172001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	12/04/16 16:24	

LABORATORY CONTROL SAMPLE: 1873342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.6	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1873343 1873344

Parameter	Units	60232174001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	99.1	50	50	157	157	115	116	80-120	0	15	

MATRIX SPIKE SAMPLE: 1873345

Parameter	Units	60232174003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	348	250	625	111	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 458213 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

METHOD BLANK: 1875985 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	12/09/16 17:08	
Fluoride	mg/L	<0.027	0.20	0.027	12/09/16 17:08	
Sulfate	mg/L	<0.15	1.0	0.15	12/09/16 17:08	

LABORATORY CONTROL SAMPLE: 1875986

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	96	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1875987 1875988

Parameter	Units	60232589004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.80	2.5	2.5	3.6	3.7	111	115	80-120	3	15	

MATRIX SPIKE SAMPLE: 1875989

Parameter	Units	60232361003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.1	5	13.2	121	80-120	M1
Fluoride	mg/L	0.14J	2.5	3.0	114	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 458452 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005

METHOD BLANK: 1876996 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	12/11/16 17:25	

LABORATORY CONTROL SAMPLE: 1876997

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

MATRIX SPIKE SAMPLE: 1877000

Parameter	Units	60232361003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	89.9	50	155	130	80-120	M1

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-1 **Lab ID: 60232361001** Collected: 11/15/16 10:05 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.329 (0.669) C:NA T:87%**	pCi/L	12/20/16 20:02	13982-63-3	
Radium-228	EPA 904.0	**0.144 ± 0.366 (0.821) C:57% T:85%**	pCi/L	12/21/16 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-2 **Lab ID: 60232361002** Collected: 11/15/16 10:54 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.351 (0.788) C:NA T:89%**	pCi/L	12/20/16 20:02	13982-63-3	
Radium-228	EPA 904.0	**0.555 ± 0.400 (0.769) C:69% T:81%**	pCi/L	12/21/16 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-3 **Lab ID: 60232361003** Collected: 11/15/16 10:10 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.208 ± 0.452 (0.834) C:NA T:88%**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**1.33 ± 0.570 (0.918) C:61% T:84%**	pCi/L	12/21/16 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-MW-26 **Lab ID: 60232361004** Collected: 11/15/16 08:53 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.069 ± 0.317 (0.747) C:NA T:88%**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**0.00255 ± 0.319 (0.746) C:74% T:84%**	pCi/L	12/21/16 16:03	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-UWL-DUP-1 **Lab ID: 60232361005** Collected: 11/15/16 08:00 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0698 ± 0.454 (0.915) C:NA T:91%**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**0.152 ± 0.304 (0.671) C:69% T:87%**	pCi/L	12/21/16 16:03	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-UWL-FB-1 **Lab ID: 60232361006** Collected: 11/15/16 10:20 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.131 ± 0.299 (0.481) C:NA T:90%**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**0.538 ± 0.426 (0.844) C:69% T:82%**	pCi/L	12/21/16 16:03	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-3 MS **Lab ID: 60232361007** Collected: 11/15/16 10:10 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**106.4 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**107.32 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/21/16 16:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-TMW-3 MSD **Lab ID: 60232361008** Collected: 11/15/16 10:10 Received: 11/16/16 03:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**121.7 %REC 13.34 RPD ± NA (NA) C:NA T:NA**	pCi/L	12/20/16 20:43	13982-63-3	
Radium-228	EPA 904.0	**125.30 %REC 15.45 RPD ± NA (NA) C:NA T:NA**	pCi/L	12/21/16 16:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-BMW-1S **Lab ID: 60232172001** Collected: 11/11/16 12:42 Received: 11/12/16 03:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0609 ± 0.278 (0.566) C:NA T:93%**	pCi/L	12/14/16 11:41	13982-63-3	
Radium-228	EPA 904.0	**2.03 ± 0.690 (1.00) C:73% T:83%**	pCi/L	12/21/16 11:34	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Sample: L-BMW-2S **Lab ID: 60232172002** Collected: 11/11/16 08:45 Received: 11/12/16 03:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.252 ± 0.428 (0.756) C:NA T:94%**	pCi/L	12/14/16 11:50	13982-63-3	
Radium-228	EPA 904.0	**0.334 ± 0.337 (0.696) C:74% T:90%**	pCi/L	12/21/16 11:34	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 242462 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples:

METHOD BLANK: 1191881 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.135 ± 0.308 (0.496) C:NA T:96%	pCi/L	12/18/16 12:05	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 242463 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples:

METHOD BLANK: 1191883 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.926 ± 0.480 (0.858) C:70% T:86%	pCi/L	12/17/16 14:31	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 243194 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006, 60232361007, 60232361008

METHOD BLANK: 1196318 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006, 60232361007, 60232361008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.396 ± 0.561 (0.950) C:NA T:84%	pCi/L	12/20/16 12:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 242425 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1191788 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.066 ± 0.341 (0.790) C:NA T:87%	pCi/L	12/14/16 11:19	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 242430 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60232172001, 60232172002

METHOD BLANK: 1191795 Matrix: Water
Associated Lab Samples: 60232172001, 60232172002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.457 ± 0.414 (0.844) C:70% T:80%	pCi/L	12/21/16 11:33	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

QC Batch: 243195 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006, 60232361007, 60232361008

METHOD BLANK: 1196319 Matrix: Water
Associated Lab Samples: 60232361001, 60232361002, 60232361003, 60232361004, 60232361005, 60232361006, 60232361007, 60232361008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.157 ± 0.319 (0.706) C:63% T:88%	pCi/L	12/21/16 16:02	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232172001	**L-BMW-1S**	EPA 200.7	454893	EPA 200.7	455015
60232172002	**L-BMW-2S**	EPA 200.7	454893	EPA 200.7	455015
60232361001	**L-TMW-1**	EPA 200.7	455260	EPA 200.7	455379
60232361002	**L-TMW-2**	EPA 200.7	455260	EPA 200.7	455379
60232361003	**L-TMW-3**	EPA 200.7	455260	EPA 200.7	455379
60232361004	**L-MW-26**	EPA 200.7	455260	EPA 200.7	455379
60232361005	**L-UWL-DUP-1**	EPA 200.7	455260	EPA 200.7	455379
60232361006	**L-UWL-FB-1**	EPA 200.7	455260	EPA 200.7	455379
60232172001	**L-BMW-1S**	EPA 200.8	454894	EPA 200.8	455017
60232172002	**L-BMW-2S**	EPA 200.8	454894	EPA 200.8	455017
60232361001	**L-TMW-1**	EPA 200.8	455259	EPA 200.8	455381
60232361002	**L-TMW-2**	EPA 200.8	455259	EPA 200.8	455381
60232361003	**L-TMW-3**	EPA 200.8	455259	EPA 200.8	455381
60232361004	**L-MW-26**	EPA 200.8	455259	EPA 200.8	455381
60232361005	**L-UWL-DUP-1**	EPA 200.8	455259	EPA 200.8	455381
60232361006	**L-UWL-FB-1**	EPA 200.8	455259	EPA 200.8	455381
60232172001	**L-BMW-1S**	EPA 7470	456114	EPA 7470	456252
60232172002	**L-BMW-2S**	EPA 7470	456114	EPA 7470	456252
60232361001	**L-TMW-1**	EPA 7470	456523	EPA 7470	456570
60232361002	**L-TMW-2**	EPA 7470	456523	EPA 7470	456570
60232361003	**L-TMW-3**	EPA 7470	456523	EPA 7470	456570
60232361004	**L-MW-26**	EPA 7470	456523	EPA 7470	456570
60232361005	**L-UWL-DUP-1**	EPA 7470	456523	EPA 7470	456570
60232361006	**L-UWL-FB-1**	EPA 7470	456523	EPA 7470	456570
60232172001	**L-BMW-1S**	EPA 903.1	242425		
60232172002	**L-BMW-2S**	EPA 903.1	242425		
60232361001	**L-TMW-1**	EPA 903.1	243194		
60232361002	**L-TMW-2**	EPA 903.1	243194		
60232361003	**L-TMW-3**	EPA 903.1	243194		
60232361004	**L-MW-26**	EPA 903.1	243194		
60232361005	**L-UWL-DUP-1**	EPA 903.1	243194		
60232361006	**L-UWL-FB-1**	EPA 903.1	243194		
60232361007	**L-TMW-3 MS**	EPA 903.1	243194		
60232361008	**L-TMW-3 MSD**	EPA 903.1	243194		
60232172001	**L-BMW-1S**	EPA 904.0	242430		
60232172002	**L-BMW-2S**	EPA 904.0	242430		
60232361001	**L-TMW-1**	EPA 904.0	243195		
60232361002	**L-TMW-2**	EPA 904.0	243195		
60232361003	**L-TMW-3**	EPA 904.0	243195		
60232361004	**L-MW-26**	EPA 904.0	243195		
60232361005	**L-UWL-DUP-1**	EPA 904.0	243195		
60232361006	**L-UWL-FB-1**	EPA 904.0	243195		
60232361007	**L-TMW-3 MS**	EPA 904.0	243195		
60232361008	**L-TMW-3 MSD**	EPA 904.0	243195		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60232361

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232172001	**L-BMW-1S**	SM 2540C	455505		
60232172002	**L-BMW-2S**	SM 2540C	455505		
60232361001	**L-TMW-1**	SM 2540C	455652		
60232361002	**L-TMW-2**	SM 2540C	455652		
60232361003	**L-TMW-3**	SM 2540C	455652		
60232361004	**L-MW-26**	SM 2540C	455652		
60232361005	**L-UWL-DUP-1**	SM 2540C	455652		
60232361006	**L-UWL-FB-1**	SM 2540C	455652		
60232172001	**L-BMW-1S**	SM 4500-H+B	455737		
60232172002	**L-BMW-2S**	SM 4500-H+B	455737		
60232361001	**L-TMW-1**	SM 4500-H+B	456197		
60232361002	**L-TMW-2**	SM 4500-H+B	456197		
60232361003	**L-TMW-3**	SM 4500-H+B	456197		
60232361004	**L-MW-26**	SM 4500-H+B	456166		
60232361005	**L-UWL-DUP-1**	SM 4500-H+B	456166		
60232361006	**L-UWL-FB-1**	SM 4500-H+B	456197		
60232172001	**L-BMW-1S**	EPA 300.0	457500		
60232172001	**L-BMW-1S**	EPA 300.0	457515		
60232172002	**L-BMW-2S**	EPA 300.0	457500		
60232361001	**L-TMW-1**	EPA 300.0	458213		
60232361001	**L-TMW-1**	EPA 300.0	458452		
60232361002	**L-TMW-2**	EPA 300.0	458213		
60232361002	**L-TMW-2**	EPA 300.0	458452		
60232361003	**L-TMW-3**	EPA 300.0	458213		
60232361003	**L-TMW-3**	EPA 300.0	458452		
60232361004	**L-MW-26**	EPA 300.0	458213		
60232361004	**L-MW-26**	EPA 300.0	458452		
60232361005	**L-UWL-DUP-1**	EPA 300.0	458213		
60232361005	**L-UWL-DUP-1**	EPA 300.0	458452		
60232361006	**L-UWL-FB-1**	EPA 300.0	458213		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60232361

60232361

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-266 (CF +0.7) / T-239 (CF -0.5) **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 0.0/6.1 **Corr. Factor** CF +0.7 / CF -0.5 **Corrected** 0.7/16.8

Date and initials of person examining contents: PM 11/16/16

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	pH
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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 Check 11/16/16 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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B — Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60273361
1	L-TMW-1	WT	G			11/15/16	1005		4	1		3							1	1	1	1	2		1BP3N 1BP2U 2BP1N 01
2	L-TMW-2	WT	G			"	1054		4	1		3							1	1	1	1	2		02
3	L-TMW-3	WT	G			"	1010		12	3		3							3	3	3	3	6	3BP3N 3BP2U 6BP1N	03
4	L-MW-26	WT	G			"	0953		4	1		3							1	1	1	1	2		04
5	L-UWL-DUP-1	WT	G			"	—		4	1		3							1	1	1	1	2		05
6	L-UWL-FB-1	WT	G			"	1020		4	1		3							1	1	1	1	2		06
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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	golder	11/15/16	1700	PACE	11/15/16	1700				
	PACE	11/15/16	1700	PACE	11/16/16	0345	0.7	X	X	Y
							10.8	N	Y	X

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	John Suozzi					
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY): 11/15/16				

*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.

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Sample Condition Upon Receipt

WO# : 60232172

60232172

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: CF +0.7 T-266 / CF -0.5 T-239 **Type of Ice:** Wet Blue None → radium samples

RB 11/12/16

Cooler Temperature (°C): **As-read** 1.1/1.7 **Corr. Factor** CF +0.7 CF -0.5 **Corrected** 1.8/1.8

Date and initials of person examining contents:

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	pH
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	
Cyanide water sample checks: ☐ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: Jean Check Date: 11/14/16

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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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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	Y/N	Analysis Test: Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60232172
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																						
6	L-LMW-6S	WT	G																						
7	L-LMW-7S	WT	G																						
8	L-LMW-8S	WT	G																						
9	L-BMW-1S	WT	G			11/11/16	1242		4	1		3							1	1	1	1	2		BP2W BP3N 28PW 01
10	L-BMW-2S	WT	G			11/11/16	0845		4	1		3							1	1	1	1	2		02
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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	John Suozzi/Golder	11/11/16	1630	Jamie Church/PACE	11/11/16	1630				
	Jamie Church / PACE	11/11/16	1700	Barbara /	11/12/16	0335	1.8	Y	Y	Y
							1.8	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Suozzi

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/11/16

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. 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, 1/3/18: Revision

REV-2, 1/29/18: Radium pulled in for L-BMW-1S and L-BMW-2S.

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
Jeffrey Ingram, Golder Associates
John Suozzi, 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-UWL
Pace Project No.: 60236163

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236163001	**L-TMW-1**	Water	01/17/17 09:18	01/18/17 04:20
60236163002	**L-TMW-2**	Water	01/17/17 10:26	01/18/17 04:20
60236163003	**L-TMW-3**	Water	01/17/17 11:40	01/18/17 04:20
60236163004	**L-MW-26**	Water	01/16/17 15:25	01/18/17 04:20
60236163005	**L-UWL-DUP-1**	Water	01/16/17 08:00	01/18/17 04:20
60236163006	**L-UWL-FB-1**	Water	01/17/17 08:50	01/18/17 04:20
60236163007	**L-TMW-3 MS**	Water	01/17/17 11:40	01/18/17 04:20
60236163008	**L-TMW-3 MSD**	Water	01/17/17 11:40	01/18/17 04:20
60236164005	**L-BMW-1S**	Water	01/16/17 11:15	01/18/17 04:20
60236164006	**L-BMW-2S**	Water	01/16/17 13:20	01/18/17 04:20

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236163001	**L-TMW-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163002	**L-TMW-2**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163003	**L-TMW-3**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163004	**L-MW-26**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163005	**L-UWL-DUP-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163006	**L-UWL-FB-1**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236163007	**L-TMW-3 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60236163008	**L-TMW-3 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60236164005	**L-BMW-1S**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236164006	**L-BMW-2S**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	ZBM	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K

Pace Analytical Services, LLC
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Lenexa, KS 66219
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-1 **Lab ID: 60236163001** Collected: 01/17/17 09:18 Received: 01/18/17 04:20 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								
Barium	**250**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:54	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:54	7440-41-7	
Boron	**97.1J**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:40	7440-42-8	
Calcium	**137000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:54	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:54	7440-48-4	
Lead	**2.5J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:54	7439-92-1	
Lithium	**30.0**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:54	7439-93-2	
Molybdenum	**0.76J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:54	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:18	7440-36-0	
Arsenic	**3.2**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:18	7440-38-2	
Cadmium	**0.047J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:18	7440-43-9	
Chromium	**0.48J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:18	7440-47-3	
Selenium	**9.3**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:18	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**576**	mg/L	5.0	5.0	1		01/24/17 09:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		01/24/17 15:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.50	1		01/24/17 10:26	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.027	1		01/24/17 10:26	16984-48-8	
Sulfate	**47.1**	mg/L	5.0	0.77	5		01/25/17 14:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-2 **Lab ID: 60236163002** Collected: 01/17/17 10:26 Received: 01/18/17 04:20 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								
Barium	**156**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:56	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:56	7440-41-7	
Boron	**118**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:42	7440-42-8	
Calcium	**156000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:56	7440-70-2	
Cobalt	**3.8J**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:56	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:56	7439-92-1	
Lithium	**50.6**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:56	7439-93-2	
Molybdenum	**0.69J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:56	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:22	7440-36-0	
Arsenic	**0.91J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:22	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:22	7440-43-9	
Chromium	**0.51J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:22	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:22	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:22	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**683**	mg/L	5.0	5.0	1		01/24/17 09:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		01/25/17 10:21		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.3**	mg/L	1.0	0.50	1		01/24/17 10:41	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		01/24/17 10:41	16984-48-8	
Sulfate	**92.5**	mg/L	10.0	1.5	10		01/25/17 15:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-3 **Lab ID: 60236163003** Collected: 01/17/17 11:40 Received: 01/18/17 04:20 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								
Barium	**271**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:58	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:58	7440-41-7	
Boron	**124**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:56	7440-42-8	
Calcium	**166000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:58	7440-70-2	M1
Cobalt	**2.8J**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:58	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:58	7439-92-1	
Lithium	**45.0**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:58	7439-93-2	
Molybdenum	**0.79J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:58	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:26	7440-36-0	
Arsenic	**5.6**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:26	7440-38-2	
Cadmium	**0.073J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:26	7440-43-9	
Chromium	**0.53J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:26	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:26	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:26	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**668**	mg/L	5.0	5.0	1		01/24/17 09:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		01/25/17 10:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.50	1		01/24/17 10:57	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		01/24/17 10:57	16984-48-8	
Sulfate	**73.5**	mg/L	5.0	0.77	5		01/25/17 15:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-MW-26 **Lab ID: 60236163004** Collected: 01/16/17 15:25 Received: 01/18/17 04:20 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								
Barium	**192**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 14:09	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 14:09	7440-41-7	
Boron	**59.4J**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:45	7440-42-8	
Calcium	**143000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 16:45	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 14:09	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 14:09	7439-92-1	
Lithium	**24.5**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 14:09	7439-93-2	
Molybdenum	**0.55J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 14:09	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.079J**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:53	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:53	7440-38-2	
Cadmium	**0.066J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:53	7440-43-9	
Chromium	**0.45J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:53	7440-47-3	
Selenium	**18.2**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:53	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:53	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**493**	mg/L	5.0	5.0	1		01/20/17 09:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		01/24/17 15:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.6**	mg/L	1.0	0.50	1		01/24/17 12:14	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		01/24/17 12:14	16984-48-8	
Sulfate	**28.4**	mg/L	2.0	0.31	2		01/25/17 15:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-UWL-DUP-1 **Lab ID: 60236163005** Collected: 01/16/17 08:00 Received: 01/18/17 04:20 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								
Barium	**201**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 14:11	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 14:11	7440-41-7	
Boron	**65.4J**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:51	7440-42-8	
Calcium	**158000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 16:51	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 14:11	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 14:11	7439-92-1	
Lithium	**25.3**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 14:11	7439-93-2	
Molybdenum	**0.54J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 14:11	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.089J**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:57	7440-36-0	
Arsenic	**0.25J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:57	7440-38-2	
Cadmium	**0.084J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:57	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:57	7440-47-3	
Selenium	**20.2**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:57	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**477**	mg/L	5.0	5.0	1		01/20/17 09:59		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		01/24/17 15:35		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.6**	mg/L	1.0	0.50	1		01/24/17 12:29	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		01/24/17 12:29	16984-48-8	
Sulfate	**28.7**	mg/L	2.0	0.31	2		01/25/17 16:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-UWL-FB-1 **Lab ID: 60236163006** Collected: 01/17/17 08:50 Received: 01/18/17 04:20 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								
Barium	**<0.58**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 14:13	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 14:13	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:53	7440-42-8	
Calcium	**21.8J**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 16:53	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 14:13	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 14:13	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 14:13	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 14:13	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 18:48	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:48	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:48	7440-43-9	
Chromium	**0.70J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:48	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:48	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:48	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/01/17 16:15	02/02/17 14:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		01/24/17 09:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		01/24/17 15:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		01/24/17 12:45	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		01/24/17 12:45	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		01/24/17 12:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-BMW-1S **Lab ID: 60236164005** Collected: 01/16/17 11:15 Received: 01/18/17 04:20 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								
Barium	**359**	ug/L	5.0	0.58	1	01/18/17 14:00	01/27/17 10:23	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/27/17 10:23	7440-41-7	
Boron	**105**	ug/L	100	50.0	1	01/18/17 14:00	01/27/17 10:23	7440-42-8	
Calcium	**204000**	ug/L	100	8.1	1	01/18/17 14:00	01/27/17 10:23	7440-70-2	
Cobalt	**0.81J**	ug/L	5.0	0.72	1	01/18/17 14:00	01/27/17 10:23	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/27/17 10:23	7439-92-1	
Lithium	**17.6**	ug/L	10.0	4.9	1	01/18/17 14:00	01/27/17 10:23	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/27/17 10:23	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.058**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 16:33	7440-36-0	
Arsenic	**22.4**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 16:33	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 16:33	7440-43-9	
Chromium	**0.89J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 16:33	7440-47-3	B
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 16:33	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 16:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/02/17 15:15	02/03/17 11:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**704**	mg/L	5.0	5.0	1		01/20/17 10:00		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		01/24/17 15:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.4**	mg/L	1.0	0.50	1		01/24/17 14:17	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.027	1		01/24/17 14:17	16984-48-8	
Sulfate	**42.9**	mg/L	5.0	0.77	5		01/25/17 18:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-BMW-2S **Lab ID: 60236164006** Collected: 01/16/17 13:20 Received: 01/18/17 04:20 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								
Barium	**232**	ug/L	5.0	0.58	1	01/18/17 14:00	01/27/17 10:25	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/27/17 10:25	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	01/18/17 14:00	01/27/17 10:25	7440-42-8	
Calcium	**116000**	ug/L	100	8.1	1	01/18/17 14:00	01/27/17 10:25	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/27/17 10:25	7440-48-4	
Lead	**3.1J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/27/17 10:25	7439-92-1	
Lithium	**16.6**	ug/L	10.0	4.9	1	01/18/17 14:00	01/27/17 10:25	7439-93-2	
Molybdenum	**1.9J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/27/17 10:25	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.18J**	ug/L	1.0	0.058	1	01/18/17 14:00	01/19/17 16:46	7440-36-0	
Arsenic	**0.26J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 16:46	7440-38-2	
Cadmium	**0.054J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 16:46	7440-43-9	
Chromium	**0.53J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 16:46	7440-47-3	B
Selenium	**1.7**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 16:46	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 16:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	02/02/17 15:15	02/03/17 11:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**366**	mg/L	5.0	5.0	1		01/20/17 10:01		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		01/24/17 15:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.5**	mg/L	1.0	0.50	1		01/24/17 14:32	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		01/24/17 14:32	16984-48-8	
Sulfate	**12.8**	mg/L	1.0	0.15	1		01/24/17 14:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 464115 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

METHOD BLANK: 1899425 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	02/02/17 13:58	

LABORATORY CONTROL SAMPLE: 1899426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1899427 1899428

Parameter	Units	60236163003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.2	4.8	103	95	75-125	8	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 464216 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60236164005, 60236164006

METHOD BLANK: 1899875 Matrix: Water
Associated Lab Samples: 60236164005, 60236164006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	02/03/17 11:03	

LABORATORY CONTROL SAMPLE: 1899876

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1899877 1899878

Parameter	Units	60236164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.0	5.0	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462397 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

METHOD BLANK: 1893084 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	01/23/17 13:17	
Beryllium	ug/L	<0.26	1.0	0.26	01/23/17 13:17	
Boron	ug/L	<50.0	100	50.0	01/23/17 13:17	
Calcium	ug/L	14.3J	100	8.1	01/23/17 13:17	
Cobalt	ug/L	<0.72	5.0	0.72	01/23/17 13:17	
Lead	ug/L	<2.5	5.0	2.5	01/23/17 13:17	
Lithium	ug/L	<4.9	10.0	4.9	01/23/17 13:17	
Molybdenum	ug/L	<0.52	20.0	0.52	01/23/17 13:17	

LABORATORY CONTROL SAMPLE: 1893085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	926	93	85-115	
Beryllium	ug/L	1000	924	92	85-115	
Boron	ug/L	1000	922	92	85-115	
Calcium	ug/L	10000	8990	90	85-115	
Cobalt	ug/L	1000	971	97	85-115	
Lead	ug/L	1000	961	96	85-115	
Lithium	ug/L	1000	966	97	85-115	
Molybdenum	ug/L	1000	984	98	85-115	

MATRIX SPIKE SAMPLE: 1893086

Parameter	Units	60236162001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	410	1000	1360	95	70-130	
Beryllium	ug/L	<0.26	1000	948	95	70-130	
Boron	ug/L	555	1000	1490	94	70-130	
Calcium	ug/L	121000	10000	130000	86	70-130	
Cobalt	ug/L	<0.72	1000	949	95	70-130	
Lead	ug/L	3.6J	1000	936	93	70-130	
Lithium	ug/L	24.4	1000	1010	99	70-130	
Molybdenum	ug/L	1.8J	1000	1000	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1893087 1893088

Parameter	Units	60236163003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	271	1000	1000	1220	1210	95	94	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	947	924	95	92	70-130	2	20	
Boron	ug/L	124	1000	1000	1180	1160	106	104	70-130	2	20	
Calcium	ug/L	166000	10000	10000	172000	175000	61	92	70-130	2	20	M1
Cobalt	ug/L	2.8J	1000	1000	985	950	98	95	70-130	4	20	
Lead	ug/L	<2.5	1000	1000	970	942	97	94	70-130	3	20	
Lithium	ug/L	45.0	1000	1000	1060	1030	101	99	70-130	2	20	
Molybdenum	ug/L	0.79J	1000	1000	1030	997	103	100	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462399
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60236164005, 60236164006

METHOD BLANK: 1893094
Matrix: Water
Associated Lab Samples: 60236164005, 60236164006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	01/27/17 10:05	
Beryllium	ug/L	<0.16	1.0	0.16	01/27/17 10:05	
Boron	ug/L	<3.5	100	3.5	01/27/17 10:05	
Calcium	ug/L	<36.0	100	36.0	01/27/17 10:05	
Cobalt	ug/L	<0.73	5.0	0.73	01/27/17 10:05	
Lead	ug/L	<2.4	5.0	2.4	01/27/17 10:05	
Lithium	ug/L	<2.9	10.0	2.9	01/27/17 10:05	
Molybdenum	ug/L	<1.3	20.0	1.3	01/27/17 10:05	

LABORATORY CONTROL SAMPLE: 1893095

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	967	97	85-115	
Calcium	ug/L	10000	9860	99	85-115	
Cobalt	ug/L	1000	989	99	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1070	107	85-115	
Molybdenum	ug/L	1000	992	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1893096 1893097

Parameter	Units	60236164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	52.0	1000	1000	1120	1080	107	102	70-130	4	20	
Beryllium	ug/L	<0.26	1000	1000	1060	1020	106	102	70-130	4	20	
Boron	ug/L	6860	1000	1000	8080	7590	123	74	70-130	6	20	
Calcium	ug/L	68900	10000	10000	80700	75500	118	67	70-130	7	20	M1
Cobalt	ug/L	<0.72	1000	1000	995	968	99	97	70-130	3	20	
Lead	ug/L	<2.5	1000	1000	1030	1000	103	100	70-130	3	20	
Lithium	ug/L	15.2	1000	1000	1120	1080	110	106	70-130	4	20	
Molybdenum	ug/L	115	1000	1000	1130	1100	102	98	70-130	3	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462398 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

METHOD BLANK: 1893089 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	01/19/17 17:04	
Arsenic	ug/L	<0.10	1.0	0.10	01/19/17 17:04	
Cadmium	ug/L	<0.029	0.50	0.029	01/19/17 17:04	
Chromium	ug/L	<0.34	1.0	0.34	01/19/17 17:04	
Selenium	ug/L	<0.18	1.0	0.18	01/19/17 17:04	
Thallium	ug/L	<0.50	1.0	0.50	01/19/17 17:04	

LABORATORY CONTROL SAMPLE: 1893090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.4	104	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	41.7	104	85-115	
Chromium	ug/L	40	40.4	101	85-115	
Selenium	ug/L	40	42.5	106	85-115	
Thallium	ug/L	40	37.8	94	85-115	

MATRIX SPIKE SAMPLE: 1893091

Parameter	Units	60236162002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	40.9	102	70-130	
Arsenic	ug/L	2.9	40	43.8	102	70-130	
Cadmium	ug/L	<0.029	40	39.3	98	70-130	
Chromium	ug/L	0.39J	40	39.5	98	70-130	
Selenium	ug/L	<0.18	40	38.2	95	70-130	
Thallium	ug/L	<0.50	40	40.5	101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1893092 1893093

Parameter	Units	60236163003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	40.8	40.6	102	101	70-130	1	20	
Arsenic	ug/L	5.6	40	40	45.4	44.8	100	98	70-130	1	20	
Cadmium	ug/L	0.073J	40	40	38.8	38.9	97	97	70-130	0	20	
Chromium	ug/L	0.53J	40	40	37.7	38.4	93	95	70-130	2	20	
Selenium	ug/L	<0.18	40	40	37.6	38.5	94	96	70-130	2	20	
Thallium	ug/L	<0.50	40	40	36.9	38.0	91	94	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462400 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60236164005, 60236164006

METHOD BLANK: 1893098 Matrix: Water
Associated Lab Samples: 60236164005, 60236164006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	01/19/17 15:54	
Arsenic	ug/L	<0.10	1.0	0.10	01/19/17 15:54	
Cadmium	ug/L	<0.029	0.50	0.029	01/19/17 15:54	
Chromium	ug/L	0.40J	1.0	0.34	01/19/17 15:54	
Selenium	ug/L	<0.18	1.0	0.18	01/19/17 15:54	
Thallium	ug/L	<0.50	1.0	0.50	01/19/17 15:54	

LABORATORY CONTROL SAMPLE: 1893099

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.2	101	85-115	
Arsenic	ug/L	40	41.4	103	85-115	
Cadmium	ug/L	40	41.0	102	85-115	
Chromium	ug/L	40	40.2	101	85-115	
Selenium	ug/L	40	42.2	106	85-115	
Thallium	ug/L	40	39.8	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1893100 1893101

Parameter	Units	60236164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.058	40	40	41.0	40.2	102	100	70-130	2	20	
Arsenic	ug/L	32.1	40	40	72.1	72.0	100	100	70-130	0	20	
Cadmium	ug/L	<0.029	40	40	39.7	38.8	99	97	70-130	2	20	
Chromium	ug/L	0.37J	40	40	40.1	39.7	99	98	70-130	1	20	
Selenium	ug/L	<0.18	40	40	38.2	37.7	95	94	70-130	1	20	
Thallium	ug/L	<0.50	40	40	42.2	40.2	106	101	70-130	5	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462642 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236163004, 60236163005, 60236164005, 60236164006

METHOD BLANK: 1894078 Matrix: Water
Associated Lab Samples: 60236163004, 60236163005, 60236164005, 60236164006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/20/17 09:53	

LABORATORY CONTROL SAMPLE: 1894079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	950	95	80-120	

SAMPLE DUPLICATE: 1894080

Parameter	Units	60235643003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	7870	7930	1	10	H3

SAMPLE DUPLICATE: 1894081

Parameter	Units	60236164005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	704	708	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462912 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163006

METHOD BLANK: 1895338 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/24/17 09:49	

LABORATORY CONTROL SAMPLE: 1895339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	980	98	80-120	

SAMPLE DUPLICATE: 1895340

Parameter	Units	60236163003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	668	657	2	10	

SAMPLE DUPLICATE: 1895341

Parameter	Units	60236164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	484	481	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462921 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60236163001, 60236163004, 60236163005, 60236163006, 60236164005, 60236164006

SAMPLE DUPLICATE: 1895373

Parameter	Units	60236163005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462929 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60236163002, 60236163003

SAMPLE DUPLICATE: 1895398

Parameter	Units	60236163003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	6.9	2	5	H6

SAMPLE DUPLICATE: 1895399

Parameter	Units	60236164001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.2	9.2	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 462964 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236164005, 60236164006

METHOD BLANK: 1895533 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236164005, 60236164006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	01/24/17 09:12	
Fluoride	mg/L	<0.027	0.20	0.027	01/24/17 09:12	
Sulfate	mg/L	<0.15	1.0	0.15	01/24/17 09:12	

LABORATORY CONTROL SAMPLE: 1895534

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	2.5	101	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895535 1895536

Parameter	Units	60236163003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.6	5	5	11.9	11.7	105	103	80-120	1	15	
Fluoride	mg/L	0.15J	2.5	2.5	2.7	2.7	101	100	80-120	1	15	

MATRIX SPIKE SAMPLE: 1895537

Parameter	Units	60236164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.19J	2.5	2.7	101	80-120	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 463225 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236164005

METHOD BLANK: 1896369 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236164005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	0.29J	1.0	0.15	01/25/17 10:55	

LABORATORY CONTROL SAMPLE: 1896370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1896371 1896372

Parameter	Units	60236163003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	73.5	25	25	101	101	108	112	80-120	1	15	

MATRIX SPIKE SAMPLE: 1896373

Parameter	Units	60236164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	285	100	388	103	80-120	

MATRIX SPIKE SAMPLE: 1896374

Parameter	Units	60236274001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	318	250	582	106	80-120	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-1 **Lab ID: 60236163001** Collected: 01/17/17 09:18 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.130 ± 0.359 (0.849) C:NA T:87%**	pCi/L	02/09/17 00:16	13982-63-3	
Radium-228	EPA 904.0	**0.412 ± 0.322 (0.638) C:99% T:85%**	pCi/L	02/08/17 20:18	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-2 **Lab ID: 60236163002** Collected: 01/17/17 10:26 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.202 ± 0.308 (0.496) C:NA T:83%**	pCi/L	02/09/17 00:16	13982-63-3	
Radium-228	EPA 904.0	**0.545 ± 0.457 (0.911) C:62% T:83%**	pCi/L	02/08/17 20:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-3 **Lab ID: 60236163003** Collected: 01/17/17 11:40 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.180 ± 0.353 (0.644) C:NA T:93%**	pCi/L	02/09/17 00:16	13982-63-3	
Radium-228	EPA 904.0	**0.616 ± 0.473 (0.923) C:60% T:82%**	pCi/L	02/08/17 20:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-MW-26 **Lab ID: 60236163004** Collected: 01/16/17 15:25 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.268 (0.433) C:NA T:94%**	pCi/L	02/09/17 00:16	13982-63-3	
Radium-228	EPA 904.0	**0.578 ± 0.377 (0.707) C:77% T:85%**	pCi/L	02/08/17 20:21	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-UWL-DUP-1 **Lab ID: 60236163005** Collected: 01/16/17 08:00 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.574 ± 0.420 (0.470) C:NA T:89%**	pCi/L	02/09/17 00:16	13982-63-3	
Radium-228	EPA 904.0	**0.249 ± 0.385 (0.834) C:70% T:86%**	pCi/L	02/08/17 20:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-UWL-FB-1 **Lab ID: 60236163006** Collected: 01/17/17 08:50 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.190 ± 0.329 (0.830) C:NA T:92%**	pCi/L	02/09/17 00:45	13982-63-3	
Radium-228	EPA 904.0	**0.863 ± 0.634 (1.24) C:48% T:89%**	pCi/L	02/08/17 20:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-3 MS **Lab ID: 60236163007** Collected: 01/17/17 11:40 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**71.1%REC ± NA (NA)**	pCi/L	02/09/17 00:59	13982-63-3	
Radium-228	EPA 904.0	**130 %REC +/- NA (NA) C:NA T:NA**	pCi/L	02/08/17 20:12	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-TMW-3 MSD **Lab ID: 60236163008** Collected: 01/17/17 11:40 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**85.1%REC 17.94RPD ± NA (NA)**	pCi/L	02/09/17 00:59	13982-63-3	
Radium-228	EPA 904.0	**149 %REC 13.5 RPD +/- NA (NA) C:NA T:NA**	pCi/L	02/08/17 20:12	15262-20-1	1e

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-BMW-1S **Lab ID: 60236164005** Collected: 01/16/17 11:15 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.340 ± 0.317 (0.417) C:NA T:86%**	pCi/L	02/10/17 00:42	13982-63-3	
Radium-228	EPA 904.0	**1.07 ± 0.328 (0.394) C:127% T:85%**	pCi/L	02/09/17 15:21	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Sample: L-BMW-2S **Lab ID: 60236164006** Collected: 01/16/17 13:20 Received: 01/18/17 04:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.118 ± 0.283 (0.547) C:NA T:84%**	pCi/L	02/10/17 01:10	13982-63-3	
Radium-228	EPA 904.0	**0.0680 ± 0.324 (0.744) C:65% T:85%**	pCi/L	02/09/17 15:23	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 247726 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60236164005, 60236164006

METHOD BLANK: 1218302 Matrix: Water
Associated Lab Samples: 60236164005, 60236164006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.156 ± 0.361 (0.805) C:71% T:75%	pCi/L	02/09/17 15:22	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 247725 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60236164005, 60236164006

METHOD BLANK: 1218299 Matrix: Water
Associated Lab Samples: 60236164005, 60236164006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0604 ± 0.276 (0.445) C:NA T:81%	pCi/L	02/09/17 23:49	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 248053 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236163007, 60236163008

METHOD BLANK: 1220030 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236163007, 60236163008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0597 ± 0.273 (0.162) C:NA T:92%	pCi/L	02/09/17 00:16	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

QC Batch: 248056 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236163007, 60236163008

METHOD BLANK: 1220031 Matrix: Water
Associated Lab Samples: 60236163001, 60236163002, 60236163003, 60236163004, 60236163005, 60236163006, 60236163007, 60236163008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.624 ± 0.534 (1.02) C:41% T:70%	pCi/L	02/08/17 15:07	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

1e	The % recovery for the Ra-228 matrix spike dup performed on sample 60236163008 was high and outside of Pace's default acceptance criteria at 149.04%. The high bias may be due to sample matrix interference and indicate a high bias in the sample result.
B	Analyte was detected in the associated method blank.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236163001	**L-TMW-1**	EPA 200.7	462397	EPA 200.7	462406
60236163002	**L-TMW-2**	EPA 200.7	462397	EPA 200.7	462406
60236163003	**L-TMW-3**	EPA 200.7	462397	EPA 200.7	462406
60236163004	**L-MW-26**	EPA 200.7	462397	EPA 200.7	462406
60236163005	**L-UWL-DUP-1**	EPA 200.7	462397	EPA 200.7	462406
60236163006	**L-UWL-FB-1**	EPA 200.7	462397	EPA 200.7	462406
60236164005	**L-BMW-1S**	EPA 200.7	462399	EPA 200.7	462408
60236164006	**L-BMW-2S**	EPA 200.7	462399	EPA 200.7	462408
60236163001	**L-TMW-1**	EPA 200.8	462398	EPA 200.8	462407
60236163002	**L-TMW-2**	EPA 200.8	462398	EPA 200.8	462407
60236163003	**L-TMW-3**	EPA 200.8	462398	EPA 200.8	462407
60236163004	**L-MW-26**	EPA 200.8	462398	EPA 200.8	462407
60236163005	**L-UWL-DUP-1**	EPA 200.8	462398	EPA 200.8	462407
60236163006	**L-UWL-FB-1**	EPA 200.8	462398	EPA 200.8	462407
60236164005	**L-BMW-1S**	EPA 200.8	462400	EPA 200.8	462409
60236164006	**L-BMW-2S**	EPA 200.8	462400	EPA 200.8	462409
60236163001	**L-TMW-1**	EPA 7470	464115	EPA 7470	464196
60236163002	**L-TMW-2**	EPA 7470	464115	EPA 7470	464196
60236163003	**L-TMW-3**	EPA 7470	464115	EPA 7470	464196
60236163004	**L-MW-26**	EPA 7470	464115	EPA 7470	464196
60236163005	**L-UWL-DUP-1**	EPA 7470	464115	EPA 7470	464196
60236163006	**L-UWL-FB-1**	EPA 7470	464115	EPA 7470	464196
60236164005	**L-BMW-1S**	EPA 7470	464216	EPA 7470	464287
60236164006	**L-BMW-2S**	EPA 7470	464216	EPA 7470	464287
60236163001	**L-TMW-1**	EPA 903.1	248053		
60236163002	**L-TMW-2**	EPA 903.1	248053		
60236163003	**L-TMW-3**	EPA 903.1	248053		
60236163004	**L-MW-26**	EPA 903.1	248053		
60236163005	**L-UWL-DUP-1**	EPA 903.1	248053		
60236163006	**L-UWL-FB-1**	EPA 903.1	248053		
60236164005	**L-BMW-1S**	EPA 903.1	247725		
60236164006	**L-BMW-2S**	EPA 903.1	247725		
60236163007	**L-TMW-3 MS**	EPA 903.1	248053		
60236163008	**L-TMW-3 MSD**	EPA 903.1	248053		
60236163001	**L-TMW-1**	EPA 904.0	248056		
60236163002	**L-TMW-2**	EPA 904.0	248056		
60236163003	**L-TMW-3**	EPA 904.0	248056		
60236163004	**L-MW-26**	EPA 904.0	248056		
60236163005	**L-UWL-DUP-1**	EPA 904.0	248056		
60236163006	**L-UWL-FB-1**	EPA 904.0	248056		
60236164005	**L-BMW-1S**	EPA 904.0	247726		
60236164006	**L-BMW-2S**	EPA 904.0	247726		
60236163007	**L-TMW-3 MS**	EPA 904.0	248056		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60236163

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236163008	L-TMW-3 MSD	EPA 904.0	248056		
60236163001	L-TMW-1	SM 2540C	462912		
60236163002	L-TMW-2	SM 2540C	462912		
60236163003	L-TMW-3	SM 2540C	462912		
60236163004	L-MW-26	SM 2540C	462642		
60236163005	L-UWL-DUP-1	SM 2540C	462642		
60236163006	L-UWL-FB-1	SM 2540C	462912		
60236164005	L-BMW-1S	SM 2540C	462642		
60236164006	L-BMW-2S	SM 2540C	462642		
60236163001	L-TMW-1	SM 4500-H+B	462921		
60236163002	L-TMW-2	SM 4500-H+B	462929		
60236163003	L-TMW-3	SM 4500-H+B	462929		
60236163004	L-MW-26	SM 4500-H+B	462921		
60236163005	L-UWL-DUP-1	SM 4500-H+B	462921		
60236163006	L-UWL-FB-1	SM 4500-H+B	462921		
60236164005	L-BMW-1S	SM 4500-H+B	462921		
60236164006	L-BMW-2S	SM 4500-H+B	462921		
60236163001	L-TMW-1	EPA 300.0	462964		
60236163001	L-TMW-1	EPA 300.0	463225		
60236163002	L-TMW-2	EPA 300.0	462964		
60236163002	L-TMW-2	EPA 300.0	463225		
60236163003	L-TMW-3	EPA 300.0	462964		
60236163003	L-TMW-3	EPA 300.0	463225		
60236163004	L-MW-26	EPA 300.0	462964		
60236163004	L-MW-26	EPA 300.0	463225		
60236163005	L-UWL-DUP-1	EPA 300.0	462964		
60236163005	L-UWL-DUP-1	EPA 300.0	463225		
60236163006	L-UWL-FB-1	EPA 300.0	462964		
60236164005	L-BMW-1S	EPA 300.0	462964		
60236164005	L-BMW-1S	EPA 300.0	463225		
60236164006	L-BMW-2S	EPA 300.0	462964		

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Sample Condition Upon Receipt

WO# : 60236163

60236163

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-266 (CF +1.5) / T-239 (CF -0.5) **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 13.2/12.3/1.1 **Corr. Factor** 0 (CF +1.5 CF +0.9) **Corrected** 14.2/13.8/26

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JV 1/18/17

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	pH
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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: Jann Check 1/18/17 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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N	N	N		
1	L-TMW-1	WT	G			1/17/17	0918		4	1		3							1	1	1	1	2		60236163
2	L-TMW-2	WT	G			1/17/17	1026		4	1		3							1	1	1	1	2		
3	L-TMW-3	WT	G			1/17/17	1140		12	3		9							3	3	3	3	6		
4	L-MW-26	WT	G			1/16/17	1525		4	1		3							1	1	1	1	2		
5	L-UWL-DUP-1	WT	G			1/16/17	—		4	1		3							1	1	1	1	2		
6	L-UWL-FB-1	WT	G			1/17/17	0850		4	1		3							1	1	1	1	2		
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
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Tommy Goodwin / Golder	1/17/17	1715	[signature]	1/18/17	0420

SAMPLE CONDITIONS

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Tommy Goodwin

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/17/17

*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.

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Sample Condition Upon Receipt

WO# : 60236164

60236164

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: CF +1.5 T-266 / CF -0.5 T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 13.2/12.3/1.1 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 14.7/13.8/2.6

Date and initials of person examining contents: JV 1/18/17

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	pH
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: ~T	☐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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 Check 1/18/17

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.

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Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N	N	N			60236164
1	~~L-LMW-1S~~	WT	G																				TG			—
2	L-LMW-2S	WT	G			1/17/17	1415		12	3		9							3	3	3	3	6			3BP3N 3BP2U 6BP1N 001
3	L-LMW-3S	WT	G			1/16/17	1521		4	1		3							1	1	1	1	2			1BP3N 1BP2U 2BP1N 002
4	~~L-LMW-4S~~	WT	G																							—
5	~~L-LMW-5S~~	WT	G																							—
6	~~L-LMW-6S~~	WT	G																							—
7	L-LMW-7S	WT	G			1/17/17	1523		4	1		3							1	1	1	1	2			003
8	L-LMW-8S	WT	G			1/17/17	1423		4	1		3							1	1	1	1	2			004
9	TG ~~L-BMW-1S~~ L-BMW-1S	WT	G			1/16/17	1115		4	1		3							1	1	1	1	2			005
10	TG ~~L-BMW-2S~~ L-BMW-2S	WT	G			1/16/17	1323		4	1		3							1	1	1	1	2			006
11	L-LMW-DUP-1	WT	G			1/16/17	—		4	1		3							1	1	1	1	2			007
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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Tommy Goodwin / Golder	1/17/17	1715		1/18/17	0420	14.7 ~~N~~	Y	Y	Y
							13.8	N		
							2.6	Y		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Tommy Goodwin

SIGNATURE of SAMPLER: Tommy Goodwin DATE Signed (MM/DD/YY): 1/17/17

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2017. 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, 1/3/18: Revision

REV-2, 1/29/18: Radium pulled in for L-BMW-1S and L-BMW-2S.

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
Jeffrey Ingram, Golder Associates
John Suozzi, 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-UWL
Pace Project No.: 60239003

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

Pace Analytical Services, LLC
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Lenexa, KS 66219
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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60239003001	**L-TMW-1**	Water	03/03/17 09:07	03/04/17 03:10
60239003002	**L-TMW-2**	Water	03/03/17 10:05	03/04/17 03:10
60239003003	**L-TMW-3**	Water	03/03/17 11:03	03/04/17 03:10
60239003004	**L-MW-26**	Water	03/03/17 12:10	03/04/17 03:10
60239003005	**L-UWL-DUP-1**	Water	03/03/17 08:00	03/04/17 03:10
60239003006	**L-UWL-FB-1**	Water	03/03/17 12:00	03/04/17 03:10
60239003007	**L-TMW-3 MS**	Water	03/03/17 11:03	03/04/17 03:10
60239003008	**L-TMW-3 MSD**	Water	03/03/17 11:03	03/04/17 03:10
60239001009	**L-BMW-1S**	Water	03/01/17 14:30	03/04/17 03:10
60239001010	**L-BMW-2S**	Water	03/01/17 15:38	03/04/17 03:10

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60239003001	**L-TMW-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003002	**L-TMW-2**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003003	**L-TMW-3**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003004	**L-MW-26**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003005	**L-UWL-DUP-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

Pace Analytical Services, LLC
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Lenexa, KS 66219
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003006	**L-UWL-FB-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239003007	**L-TMW-3 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60239003008	**L-TMW-3 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60239001009	**L-BMW-1S**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60239001010	**L-BMW-2S**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-1 **Lab ID: 60239003001** Collected: 03/03/17 09:07 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**286**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:16	7440-39-3	
Beryllium	**0.53J**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:16	7440-41-7	B
Boron	**107**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:16	7440-42-8	
Calcium	**163000**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:16	7440-70-2	
Cobalt	**1.5J**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:16	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:16	7439-92-1	
Lithium	**40.1**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:16	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:16	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.063J**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 12:36	7440-36-0	
Arsenic	**2.6**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 12:36	7440-38-2	
Cadmium	**0.055J**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 12:36	7440-43-9	
Chromium	**0.53J**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 12:36	7440-47-3	B
Selenium	**9.5**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 12:36	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 12:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 12:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**642**	mg/L	5.0	5.0	1		03/06/17 16:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/08/17 15:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.6**	mg/L	1.0	0.50	1		03/07/17 15:39	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		03/07/17 15:39	16984-48-8	
Sulfate	**67.2**	mg/L	5.0	2.5	5		03/10/17 10:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-2 **Lab ID: 60239003002** Collected: 03/03/17 10:05 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**173**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:18	7440-39-3	
Beryllium	**0.20J**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:18	7440-41-7	B
Boron	**124**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:18	7440-42-8	
Calcium	**174000**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:18	7440-70-2	
Cobalt	**3.7J**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:18	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:18	7439-92-1	
Lithium	**57.5**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:18	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:18	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.052J**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 12:40	7440-36-0	
Arsenic	**0.64J**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 12:40	7440-38-2	B
Cadmium	**0.070J**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 12:40	7440-43-9	
Chromium	**0.93J**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 12:40	7440-47-3	B
Selenium	**0.097J**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 12:40	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 12:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 12:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**737**	mg/L	5.0	5.0	1		03/06/17 16:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/08/17 15:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.50	1		03/07/17 16:19	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.10	1		03/07/17 16:19	16984-48-8	
Sulfate	**99.8**	mg/L	10.0	5.0	10		03/10/17 10:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-3 **Lab ID: 60239003003** Collected: 03/03/17 11:03 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**303**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:20	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:20	7440-41-7	
Boron	**132**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:20	7440-42-8	
Calcium	**186000**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:20	7440-70-2	M1
Cobalt	**3.3J**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:20	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:20	7439-92-1	
Lithium	**54.3**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:20	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:20	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.055J**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 12:45	7440-36-0	
Arsenic	**7.5**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 12:45	7440-38-2	
Cadmium	**0.048J**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 12:45	7440-43-9	
Chromium	**0.59J**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 12:45	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 12:45	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 12:45	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 12:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**684**	mg/L	5.0	5.0	1		03/06/17 16:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.10	1		03/08/17 15:35		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.0**	mg/L	1.0	0.50	1		03/07/17 16:33	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		03/07/17 16:33	16984-48-8	
Sulfate	**71.8**	mg/L	5.0	2.5	5		03/10/17 10:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-MW-26 **Lab ID: 60239003004** Collected: 03/03/17 12:10 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**208**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:27	7440-39-3	
Beryllium	**0.29J**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:27	7440-41-7	B
Boron	**64.0J**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:27	7440-42-8	
Calcium	**137000**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:27	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:27	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:27	7439-92-1	
Lithium	**30.6**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:27	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:27	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.14J**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 12:58	7440-36-0	
Arsenic	**0.73J**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 12:58	7440-38-2	B
Cadmium	**0.10J**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 12:58	7440-43-9	
Chromium	**0.83J**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 12:58	7440-47-3	B
Selenium	**14.9**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 12:58	7782-49-2	
Thallium	**0.041J**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 12:58	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 13:09	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**489**	mg/L	5.0	5.0	1		03/06/17 16:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		03/10/17 11:27		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.4**	mg/L	1.0	0.50	1		03/11/17 15:51	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.10	1		03/11/17 15:51	16984-48-8	
Sulfate	**29.6**	mg/L	2.0	1.0	2		03/11/17 16:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-UWL-DUP-1 **Lab ID: 60239003005** Collected: 03/03/17 08:00 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**174**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:29	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:29	7440-41-7	
Boron	**124**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:29	7440-42-8	
Calcium	**175000**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:29	7440-70-2	
Cobalt	**3.5J**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:29	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:29	7439-92-1	
Lithium	**57.3**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:29	7439-93-2	
Molybdenum	**1.5J**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:29	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.059J**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 13:02	7440-36-0	
Arsenic	**0.54J**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 13:02	7440-38-2	B
Cadmium	**0.086J**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 13:02	7440-43-9	
Chromium	**0.99J**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 13:02	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 13:02	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 13:02	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 13:11	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**733**	mg/L	5.0	5.0	1		03/06/17 16:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/08/17 15:26		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.4**	mg/L	1.0	0.50	1		03/07/17 17:13	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.10	1		03/07/17 17:13	16984-48-8	
Sulfate	**98.7**	mg/L	10.0	5.0	10		03/10/17 12:27	14808-79-8	

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-UWL
Pace Project No.: 60239003

Sample: L-UWL-FB-1 **Lab ID: 60239003006** Collected: 03/03/17 12:00 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**<0.91**	ug/L	5.0	0.91	1	03/07/17 15:20	03/09/17 12:31	7440-39-3	
Beryllium	**0.17J**	ug/L	1.0	0.16	1	03/07/17 15:20	03/09/17 12:31	7440-41-7	B
Boron	**<3.5**	ug/L	100	3.5	1	03/07/17 15:20	03/09/17 12:31	7440-42-8	
Calcium	**41.3J**	ug/L	100	36.0	1	03/07/17 15:20	03/09/17 12:31	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 15:20	03/09/17 12:31	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 15:20	03/09/17 12:31	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	03/07/17 15:20	03/09/17 12:31	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	03/07/17 15:20	03/09/17 12:31	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.026**	ug/L	1.0	0.026	1	03/07/17 15:20	03/09/17 13:19	7440-36-0	
Arsenic	**<0.052**	ug/L	1.0	0.052	1	03/07/17 15:20	03/09/17 13:19	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 15:20	03/09/17 13:19	7440-43-9	
Chromium	**1.7**	ug/L	1.0	0.054	1	03/07/17 15:20	03/09/17 13:19	7440-47-3	
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 15:20	03/09/17 13:19	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 15:20	03/09/17 13:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 13:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		03/06/17 16:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	Std. Units	0.10	0.10	1		03/10/17 11:27		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		03/07/17 17:26	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		03/07/17 17:26	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		03/07/17 17:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-BMW-1S **Lab ID: 60239001009** Collected: 03/01/17 14:30 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**351**	ug/L	5.0	0.91	1	03/06/17 14:25	03/07/17 14:11	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/06/17 14:25	03/07/17 14:11	7440-41-7	
Boron	**102**	ug/L	100	3.5	1	03/06/17 14:25	03/07/17 14:11	7440-42-8	
Calcium	**209000**	ug/L	100	36.0	1	03/06/17 14:25	03/07/17 14:11	7440-70-2	
Cobalt	**0.88J**	ug/L	5.0	0.73	1	03/06/17 14:25	03/07/17 14:11	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/06/17 14:25	03/07/17 14:11	7439-92-1	
Lithium	**18.9**	ug/L	10.0	2.9	1	03/06/17 14:25	03/07/17 14:11	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	1.3	1	03/06/17 14:25	03/07/17 14:11	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.027J**	ug/L	1.0	0.026	1	03/06/17 14:25	03/07/17 13:12	7440-36-0	
Arsenic	**27.1**	ug/L	1.0	0.052	1	03/06/17 14:25	03/07/17 13:12	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/06/17 14:25	03/07/17 13:12	7440-43-9	
Chromium	**2.2**	ug/L	1.0	0.054	1	03/06/17 14:25	03/07/17 13:12	7440-47-3	
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/06/17 14:25	03/07/17 13:12	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/06/17 14:25	03/07/17 13:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 11:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**748**	mg/L	5.0	5.0	1		03/06/17 13:34		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		03/07/17 17:35		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.3**	mg/L	1.0	0.50	1		03/07/17 14:45	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		03/07/17 14:45	16984-48-8	
Sulfate	**53.3**	mg/L	5.0	2.5	5		03/08/17 15:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-BMW-2S **Lab ID: 60239001010** Collected: 03/01/17 15:38 Received: 03/04/17 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**250**	ug/L	5.0	0.91	1	03/06/17 14:25	03/07/17 14:13	7440-39-3	
Beryllium	**0.25J**	ug/L	1.0	0.16	1	03/06/17 14:25	03/07/17 14:13	7440-41-7	
Boron	**49.1J**	ug/L	100	3.5	1	03/06/17 14:25	03/07/17 14:13	7440-42-8	
Calcium	**131000**	ug/L	100	36.0	1	03/06/17 14:25	03/07/17 14:13	7440-70-2	M1
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/06/17 14:25	03/07/17 14:13	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/06/17 14:25	03/07/17 14:13	7439-92-1	
Lithium	**17.9**	ug/L	10.0	2.9	1	03/06/17 14:25	03/07/17 14:13	7439-93-2	
Molybdenum	**2.3J**	ug/L	20.0	1.3	1	03/06/17 14:25	03/07/17 14:13	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.21J**	ug/L	1.0	0.026	1	03/06/17 14:25	03/07/17 13:17	7440-36-0	
Arsenic	**0.46J**	ug/L	1.0	0.052	1	03/06/17 14:25	03/07/17 13:17	7440-38-2	
Cadmium	**0.033J**	ug/L	0.50	0.018	1	03/06/17 14:25	03/07/17 13:17	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.054	1	03/06/17 14:25	03/07/17 13:17	7440-47-3	B
Selenium	**1.6**	ug/L	1.0	0.086	1	03/06/17 14:25	03/07/17 13:17	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/06/17 14:25	03/07/17 13:17	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	03/06/17 13:45	03/07/17 11:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**413**	mg/L	5.0	5.0	1		03/06/17 13:34		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		03/07/17 17:36		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.0	0.50	1		03/07/17 14:59	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 14:59	16984-48-8	
Sulfate	**14.3**	mg/L	1.0	0.50	1		03/07/17 14:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467663 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1914206 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.046	0.20	0.046	03/07/17 11:23	

LABORATORY CONTROL SAMPLE: 1914207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914208 1914209

Parameter	Units	60239001001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.046	5	5	4.6	5.2	92	104	75-125	12	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914210 1914211

Parameter	Units	60239002007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.046	5	5	5.0	4.2	100	83	75-125	19	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467664 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

METHOD BLANK: 1914212 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.046	0.20	0.046	03/07/17 12:27	

LABORATORY CONTROL SAMPLE: 1914213

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914214 1914215

Parameter	Units	60239003003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.046	5	5	5.2	5.1	105	101	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467645
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1914146
Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	03/07/17 13:40	
Beryllium	ug/L	<0.16	1.0	0.16	03/07/17 13:40	
Boron	ug/L	<3.5	100	3.5	03/07/17 13:40	
Calcium	ug/L	<36.0	100	36.0	03/07/17 13:40	
Cobalt	ug/L	<0.73	5.0	0.73	03/07/17 13:40	
Lead	ug/L	<2.4	5.0	2.4	03/07/17 13:40	
Lithium	ug/L	<2.9	10.0	2.9	03/07/17 13:40	
Molybdenum	ug/L	<1.3	20.0	1.3	03/07/17 13:40	

LABORATORY CONTROL SAMPLE: 1914147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1080	108	85-115	
Boron	ug/L	1000	1040	104	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	1090	109	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914148 1914149

Parameter	Units	60239001001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	138	1000	1000	1180	1160	104	102	70-130	1	20	
Beryllium	ug/L	0.24J	1000	1000	1110	1100	111	110	70-130	1	20	
Boron	ug/L	2560	1000	1000	3520	3490	96	93	70-130	1	20	
Calcium	ug/L	153000	10000	10000	156000	156000	27	26	70-130	0	20	M1
Cobalt	ug/L	2.6J	1000	1000	1040	1030	103	102	70-130	1	20	
Lead	ug/L	<2.4	1000	1000	988	982	99	98	70-130	1	20	
Lithium	ug/L	21.7	1000	1000	1150	1130	113	111	70-130	2	20	
Molybdenum	ug/L	3.3J	1000	1000	1100	1080	109	108	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

MATRIX SPIKE SAMPLE: 1914150

Parameter	Units	60239001010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	250	1000	1280	103	70-130	
Beryllium	ug/L	0.25J	1000	1080	108	70-130	
Boron	ug/L	49.1J	1000	1110	106	70-130	
Calcium	ug/L	131000	10000	134000	26	70-130	M1
Cobalt	ug/L	<0.73	1000	1030	103	70-130	
Lead	ug/L	<2.4	1000	987	99	70-130	
Lithium	ug/L	17.9	1000	1130	111	70-130	
Molybdenum	ug/L	2.3J	1000	1090	109	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467818 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

METHOD BLANK: 1914780 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	03/09/17 12:12	
Beryllium	ug/L	0.35J	1.0	0.16	03/09/17 12:12	
Boron	ug/L	<3.5	100	3.5	03/09/17 12:12	
Calcium	ug/L	<36.0	100	36.0	03/09/17 12:12	
Cobalt	ug/L	<0.73	5.0	0.73	03/09/17 12:12	
Lead	ug/L	<2.4	5.0	2.4	03/09/17 12:12	
Lithium	ug/L	<2.9	10.0	2.9	03/09/17 12:12	
Molybdenum	ug/L	<1.3	20.0	1.3	03/09/17 12:12	

LABORATORY CONTROL SAMPLE: 1914781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	9790	98	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Lead	ug/L	1000	986	99	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914782 1914783

Parameter	Units	60239003003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	303	1000	1000	1360	1350	106	105	70-130	1	20	
Beryllium	ug/L	<0.16	1000	1000	1050	1040	105	104	70-130	1	20	
Boron	ug/L	132	1000	1000	1220	1220	109	108	70-130	0	20	
Calcium	ug/L	186000	10000	10000	193000	194000	68	74	70-130	0	20	M1
Cobalt	ug/L	3.3J	1000	1000	1040	1040	104	104	70-130	0	20	
Lead	ug/L	<2.4	1000	1000	977	977	98	98	70-130	0	20	
Lithium	ug/L	54.3	1000	1000	1160	1150	111	110	70-130	1	20	
Molybdenum	ug/L	<1.3	1000	1000	1120	1120	112	112	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914784 1914785

Parameter	Units	60239078005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	384	1000	1000	1450	1450	107	106	70-130	0	20	
Beryllium	ug/L	0.20J	1000	1000	1050	1050	105	105	70-130	0	20	
Boron	ug/L	101	1000	1000	1170	1170	107	106	70-130	0	20	
Calcium	ug/L	122000	10000	10000	133000	132000	104	98	70-130	0	20	
Cobalt	ug/L	<0.73	1000	1000	1060	1050	106	105	70-130	1	20	
Lead	ug/L	3.0J	1000	1000	995	984	99	98	70-130	1	20	
Lithium	ug/L	5.0J	1000	1000	1120	1110	111	111	70-130	0	20	
Molybdenum	ug/L	<1.3	1000	1000	1130	1120	113	112	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467646 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1914151 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	03/07/17 12:03	
Arsenic	ug/L	<0.052	1.0	0.052	03/07/17 12:03	
Cadmium	ug/L	<0.018	0.50	0.018	03/07/17 12:03	
Chromium	ug/L	0.092J	1.0	0.054	03/07/17 12:03	
Selenium	ug/L	<0.086	1.0	0.086	03/07/17 12:03	
Thallium	ug/L	<0.036	1.0	0.036	03/07/17 12:03	

LABORATORY CONTROL SAMPLE: 1914152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.6	96	85-115	
Arsenic	ug/L	40	39.3	98	85-115	
Cadmium	ug/L	40	39.5	99	85-115	
Chromium	ug/L	40	39.9	100	85-115	
Selenium	ug/L	40	38.3	96	85-115	
Thallium	ug/L	40	39.4	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914153 1914154

Parameter	Units	60239001001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.058J	40	40	38.9	37.7	97	94	70-130	3	20	
Arsenic	ug/L	5.6	40	40	44.5	44.4	97	97	70-130	0	20	
Cadmium	ug/L	0.072J	40	40	37.9	38.3	95	96	70-130	1	20	
Chromium	ug/L	0.38J	40	40	41.6	41.4	103	102	70-130	1	20	
Selenium	ug/L	0.34J	40	40	37.1	38.0	92	94	70-130	2	20	
Thallium	ug/L	0.055J	40	40	40.1	39.7	100	99	70-130	1	20	

MATRIX SPIKE SAMPLE: 1914155

Parameter	Units	60239001004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.030J	40	38.9	97	70-130	
Arsenic	ug/L	13.5	40	53.2	99	70-130	
Cadmium	ug/L	<0.018	40	38.4	96	70-130	
Chromium	ug/L	0.72J	40	39.8	98	70-130	
Selenium	ug/L	<0.086	40	37.0	92	70-130	
Thallium	ug/L	<0.036	40	40.3	101	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467819 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

METHOD BLANK: 1914787 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	03/09/17 12:27	
Arsenic	ug/L	0.078J	1.0	0.052	03/09/17 12:27	
Cadmium	ug/L	<0.018	0.50	0.018	03/09/17 12:27	
Chromium	ug/L	0.14J	1.0	0.054	03/09/17 12:27	
Selenium	ug/L	<0.086	1.0	0.086	03/09/17 12:27	
Thallium	ug/L	<0.036	1.0	0.036	03/09/17 12:27	

LABORATORY CONTROL SAMPLE: 1914788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.0	98	85-115	
Arsenic	ug/L	40	39.2	98	85-115	
Cadmium	ug/L	40	39.1	98	85-115	
Chromium	ug/L	40	40.2	100	85-115	
Selenium	ug/L	40	37.4	93	85-115	
Thallium	ug/L	40	37.3	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914789 1914790

Parameter	Units	60239003003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.055J	40	40	39.8	40.2	99	100	70-130	1	20	
Arsenic	ug/L	7.5	40	40	47.5	47.8	100	101	70-130	1	20	
Cadmium	ug/L	0.048J	40	40	38.5	39.4	96	98	70-130	2	20	
Chromium	ug/L	0.59J	40	40	40.8	41.6	101	103	70-130	2	20	
Selenium	ug/L	<0.086	40	40	36.0	36.8	90	92	70-130	2	20	
Thallium	ug/L	<0.036	40	40	37.8	38.4	95	96	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914791 1914792

Parameter	Units	60239078005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.026	40	40	40.0	39.9	100	100	70-130	0	20	
Arsenic	ug/L	4.8	40	40	44.7	44.4	100	99	70-130	1	20	
Cadmium	ug/L	<0.018	40	40	39.8	39.5	100	99	70-130	1	20	
Chromium	ug/L	0.58J	40	40	43.7	44.2	108	109	70-130	1	20	
Selenium	ug/L	<0.086	40	40	37.2	36.3	93	91	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914791 1914792

Parameter	Units	60239078005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	ug/L	<0.036	40	40	38.5	38.1	96	95	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467655 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1914179 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	03/06/17 13:33	

LABORATORY CONTROL SAMPLE: 1914180

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

SAMPLE DUPLICATE: 1914181

Parameter	Units	60239001001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	521	518	1	10	

SAMPLE DUPLICATE: 1914182

Parameter	Units	60239002007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	801	787	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467708 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

METHOD BLANK: 1914312 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	03/06/17 16:41	

LABORATORY CONTROL SAMPLE: 1914313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	967	97	80-120	

SAMPLE DUPLICATE: 1914314

Parameter	Units	60239002009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	458	463	1	10	

SAMPLE DUPLICATE: 1914315

Parameter	Units	60239003003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	684	678	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467783 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239001009, 60239001010

SAMPLE DUPLICATE: 1914609

Parameter	Units	60238737003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.5	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 468014 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003005

SAMPLE DUPLICATE: 1915494

Parameter	Units	60239003003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.9	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 468118 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239003004, 60239003006

SAMPLE DUPLICATE: 1915886

Parameter	Units	60238916002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	11.8	11.6	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467750 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239001009, 60239001010, 60239003001, 60239003002, 60239003003, 60239003005, 60239003006

METHOD BLANK: 1914482 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010, 60239003001, 60239003002, 60239003003, 60239003005, 60239003006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/07/17 09:11	
Fluoride	mg/L	<0.10	0.20	0.10	03/07/17 09:11	
Sulfate	mg/L	<0.50	1.0	0.50	03/07/17 09:11	

LABORATORY CONTROL SAMPLE: 1914483

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	2.4	97	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914484 1914485

Parameter	Units	60239001001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.8	5	5	9.9	10.1	102	105	80-120	2	15	
Fluoride	mg/L	0.16J	2.5	2.5	2.7	2.8	103	106	80-120	3	15	

MATRIX SPIKE SAMPLE: 1914486

Parameter	Units	60239003003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.0	5	11.8	96	80-120	
Fluoride	mg/L	0.14J	2.5	2.7	100	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467870 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239001009

METHOD BLANK: 1914965 Matrix: Water
Associated Lab Samples: 60239001009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.50	1.0	0.50	03/08/17 09:09	

LABORATORY CONTROL SAMPLE: 1914966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914967 1914968

Parameter	Units	60239001001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	57.6	25	25	84.6	84.9	108	109	80-120	0	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 467871 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003005

METHOD BLANK: 1914971 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.50	1.0	0.50	03/10/17 08:59	

LABORATORY CONTROL SAMPLE: 1914972

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

MATRIX SPIKE SAMPLE: 1914973

Parameter	Units	60239078005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	4.0	5	9.5	111	80-120	

MATRIX SPIKE SAMPLE: 1914974

Parameter	Units	60239003003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	71.8	25	99.7	111	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 468362
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239003004

METHOD BLANK: 1917437 Matrix: Water
Associated Lab Samples: 60239003004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/11/17 06:58	
Fluoride	mg/L	<0.10	0.20	0.10	03/11/17 06:58	
Sulfate	mg/L	<0.50	1.0	0.50	03/11/17 06:58	

LABORATORY CONTROL SAMPLE: 1917438

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1917439 1917440

Parameter	Units	2050681002 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	12.5	12.5	14.8	14.8	113	113	80-120	0	15	
Sulfate	mg/L	80.7	25	25	109	108	111	110	80-120	0	15	

MATRIX SPIKE SAMPLE: 1917441

Parameter	Units	2050681003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	12.5	14.7	111	80-120	
Sulfate	mg/L	47.2	25	75.2	112	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-1 **Lab ID: 60239003001** Collected: 03/03/17 09:07 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.473 ± 0.538 (0.848) C:NA T:91%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**0.616 ± 0.398 (0.749) C:70% T:84%**	pCi/L	03/23/17 11:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-2 **Lab ID: 60239003002** Collected: 03/03/17 10:05 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.360 (0.807) C:NA T:97%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**0.980 ± 0.485 (0.821) C:69% T:87%**	pCi/L	03/23/17 13:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-3 **Lab ID: 60239003003** Collected: 03/03/17 11:03 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.166 ± 0.399 (0.771) C:NA T:92%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**0.732 ± 0.402 (0.709) C:68% T:87%**	pCi/L	03/23/17 11:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-MW-26 **Lab ID: 60239003004** Collected: 03/03/17 12:10 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.447 ± 0.587 (0.978) C:NA T:96%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**0.269 ± 0.339 (0.714) C:69% T:92%**	pCi/L	03/23/17 13:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-UWL-DUP-1 **Lab ID: 60239003005** Collected: 03/03/17 08:00 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.251 ± 0.493 (0.900) C:NA T:87%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**0.997 ± 0.536 (0.948) C:69% T:79%**	pCi/L	03/23/17 13:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-UWL-FB-1 **Lab ID: 60239003006** Collected: 03/03/17 12:00 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0776 ± 0.403 (0.835) C:NA T:97%**	pCi/L	03/25/17 11:37	13982-63-3	
Radium-228	EPA 904.0	**-0.243 ± 0.398 (0.997) C:65% T:80%**	pCi/L	03/23/17 13:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-3 MS **Lab ID: 60239003007** Collected: 03/03/17 11:03 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**84.10%REC ± NA (NA)**	pCi/L	03/25/17 11:55	13982-63-3	
Radium-228	EPA 904.0	**130.48 %REC ± NA (NA) C:NA T:NA**	pCi/L	03/23/17 11:45	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-TMW-3 MSD **Lab ID: 60239003008** Collected: 03/03/17 11:03 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**71.9%REC 15.66RPD ± NA (NA)**	pCi/L	03/25/17 11:55	13982-63-3	
Radium-228	EPA 904.0	**118.46 %REC 9.66 RPD ± NA (NA) C:NA T:NA**	pCi/L	03/23/17 11:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-BMW-1S **Lab ID: 60239001009** Collected: 03/01/17 14:30 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.059 ± 0.270 (0.637) C:NA T:90%**	pCi/L	03/23/17 22:11	13982-63-3	
Radium-228	EPA 904.0	**1.28 ± 0.464 (0.653) C:77% T:85%**	pCi/L	03/23/17 15:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Sample: L-BMW-2S **Lab ID: 60239001010** Collected: 03/01/17 15:38 Received: 03/04/17 03:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.167 ± 0.289 (0.515) C:NA T:91%**	pCi/L	03/23/17 22:11	13982-63-3	
Radium-228	EPA 904.0	**-0.151 ± 0.254 (0.630) C:78% T:94%**	pCi/L	03/23/17 15:15	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 252573 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006, 60239003007, 60239003008

METHOD BLANK: 1242508 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006, 60239003007, 60239003008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.239 ± 0.304 (0.641) C:69% T:84%	pCi/L	03/23/17 11:48	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 252116 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1240451 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.119 ± 0.330 (0.639) C:NA T:85%	pCi/L	03/23/17 21:24	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 252564 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006, 60239003007, 60239003008

METHOD BLANK: 1242495 Matrix: Water
Associated Lab Samples: 60239003001, 60239003002, 60239003003, 60239003004, 60239003005, 60239003006, 60239003007, 60239003008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0812 ± 0.371 (0.598) C:NA T:93%	pCi/L	03/25/17 11:13	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

QC Batch: 252117 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60239001009, 60239001010

METHOD BLANK: 1240452 Matrix: Water
Associated Lab Samples: 60239001009, 60239001010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.524 ± 0.375 (0.725) C:74% T:80%	pCi/L	03/23/17 11:58	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239001009	**L-BMW-1S**	EPA 200.7	467645	EPA 200.7	467729
60239001010	**L-BMW-2S**	EPA 200.7	467645	EPA 200.7	467729
60239003001	**L-TMW-1**	EPA 200.7	467818	EPA 200.7	467884
60239003002	**L-TMW-2**	EPA 200.7	467818	EPA 200.7	467884
60239003003	**L-TMW-3**	EPA 200.7	467818	EPA 200.7	467884
60239003004	**L-MW-26**	EPA 200.7	467818	EPA 200.7	467884
60239003005	**L-UWL-DUP-1**	EPA 200.7	467818	EPA 200.7	467884
60239003006	**L-UWL-FB-1**	EPA 200.7	467818	EPA 200.7	467884
60239001009	**L-BMW-1S**	EPA 200.8	467646	EPA 200.8	467731
60239001010	**L-BMW-2S**	EPA 200.8	467646	EPA 200.8	467731
60239003001	**L-TMW-1**	EPA 200.8	467819	EPA 200.8	467885
60239003002	**L-TMW-2**	EPA 200.8	467819	EPA 200.8	467885
60239003003	**L-TMW-3**	EPA 200.8	467819	EPA 200.8	467885
60239003004	**L-MW-26**	EPA 200.8	467819	EPA 200.8	467885
60239003005	**L-UWL-DUP-1**	EPA 200.8	467819	EPA 200.8	467885
60239003006	**L-UWL-FB-1**	EPA 200.8	467819	EPA 200.8	467885
60239001009	**L-BMW-1S**	EPA 7470	467663	EPA 7470	467684
60239001010	**L-BMW-2S**	EPA 7470	467663	EPA 7470	467684
60239003001	**L-TMW-1**	EPA 7470	467664	EPA 7470	467682
60239003002	**L-TMW-2**	EPA 7470	467664	EPA 7470	467682
60239003003	**L-TMW-3**	EPA 7470	467664	EPA 7470	467682
60239003004	**L-MW-26**	EPA 7470	467664	EPA 7470	467682
60239003005	**L-UWL-DUP-1**	EPA 7470	467664	EPA 7470	467682
60239003006	**L-UWL-FB-1**	EPA 7470	467664	EPA 7470	467682
60239001009	**L-BMW-1S**	EPA 903.1	252116		
60239001010	**L-BMW-2S**	EPA 903.1	252116		
60239003001	**L-TMW-1**	EPA 903.1	252564		
60239003002	**L-TMW-2**	EPA 903.1	252564		
60239003003	**L-TMW-3**	EPA 903.1	252564		
60239003004	**L-MW-26**	EPA 903.1	252564		
60239003005	**L-UWL-DUP-1**	EPA 903.1	252564		
60239003006	**L-UWL-FB-1**	EPA 903.1	252564		
60239003007	**L-TMW-3 MS**	EPA 903.1	252564		
60239003008	**L-TMW-3 MSD**	EPA 903.1	252564		
60239001009	**L-BMW-1S**	EPA 904.0	252117		
60239001010	**L-BMW-2S**	EPA 904.0	252117		
60239003001	**L-TMW-1**	EPA 904.0	252573		
60239003002	**L-TMW-2**	EPA 904.0	252573		
60239003003	**L-TMW-3**	EPA 904.0	252573		
60239003004	**L-MW-26**	EPA 904.0	252573		
60239003005	**L-UWL-DUP-1**	EPA 904.0	252573		
60239003006	**L-UWL-FB-1**	EPA 904.0	252573		
60239003007	**L-TMW-3 MS**	EPA 904.0	252573		
60239003008	**L-TMW-3 MSD**	EPA 904.0	252573		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60239003

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239001009	**L-BMW-1S**	SM 2540C	467655		
60239001010	**L-BMW-2S**	SM 2540C	467655		
60239003001	**L-TMW-1**	SM 2540C	467708		
60239003002	**L-TMW-2**	SM 2540C	467708		
60239003003	**L-TMW-3**	SM 2540C	467708		
60239003004	**L-MW-26**	SM 2540C	467708		
60239003005	**L-UWL-DUP-1**	SM 2540C	467708		
60239003006	**L-UWL-FB-1**	SM 2540C	467708		
60239001009	**L-BMW-1S**	SM 4500-H+B	467783		
60239001010	**L-BMW-2S**	SM 4500-H+B	467783		
60239003001	**L-TMW-1**	SM 4500-H+B	468014		
60239003002	**L-TMW-2**	SM 4500-H+B	468014		
60239003003	**L-TMW-3**	SM 4500-H+B	468014		
60239003004	**L-MW-26**	SM 4500-H+B	468118		
60239003005	**L-UWL-DUP-1**	SM 4500-H+B	468014		
60239003006	**L-UWL-FB-1**	SM 4500-H+B	468118		
60239001009	**L-BMW-1S**	EPA 300.0	467750		
60239001009	**L-BMW-1S**	EPA 300.0	467870		
60239001010	**L-BMW-2S**	EPA 300.0	467750		
60239003001	**L-TMW-1**	EPA 300.0	467750		
60239003001	**L-TMW-1**	EPA 300.0	467871		
60239003002	**L-TMW-2**	EPA 300.0	467750		
60239003002	**L-TMW-2**	EPA 300.0	467871		
60239003003	**L-TMW-3**	EPA 300.0	467750		
60239003003	**L-TMW-3**	EPA 300.0	467871		
60239003004	**L-MW-26**	EPA 300.0	468362		
60239003005	**L-UWL-DUP-1**	EPA 300.0	467750		
60239003005	**L-UWL-DUP-1**	EPA 300.0	467871		
60239003006	**L-UWL-FB-1**	EPA 300.0	467750		

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Sample Condition Upon Receipt

WO# : 60239003

60239003

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-266 (CF +1.5) / T-239 (CF +0.9) **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** -0.4/14.8 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 1.1/16.3

Date and initials of person examining contents: pv 3/4/17 pv 3/4/17

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	pH
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	
Cyanide water sample checks: ☐ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 Check 3/6/17 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

Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60239003
1	L-TMW-1	WT	G			3/3/17	0907		4	1		3							1	1	1	1	2		1BP3N 2O, 1BP2U, 2BP4N 01
2	L-TMW-2	WT	G			"	1005		4	1		3							1	1	1	1	2		02
3	L-TMW-3	WT	G			"	1103		12	3		9							3	3	3	3	6		03
4	L-MW-26	WT	G			"	1210		4	1		3							1	1	1	1	2		04
5	L-UWL-DUP-1	WT	G			"	—		4	1		3							1	1	1	1	2		05
6	L-UWL-FB-1	WT	G			"	1200		4	1		3							1	1	1	1	2		06
7		WT	G																						
8		WT	G																						
9		WT	G																						
10		WT	G																						
11		WT	G																						
12		WT	G																						

3BP3N 3BP2U 6BPAN

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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Jeff Ingram / Golder	3/3/17	1430	Richard Canning	3/3/17	1430				
	Richard Canning	3/3/17	1700	[signature]	3/4/17	0310	1.1	Y	Y	Y
							16.3	N	N	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 3/3/17

*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# : 60239001

60239001

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-266 (CF +1.5) / T-239 (CF +0.9) **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0-2/12.8 13.4 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 1.7/14.3/14.9 pv 3/4/17

Date and initials of person examining contents: pv 3/4/17

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	pH
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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 Check 3/6/17

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

Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228						Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N	N	N					
1	L-LMW-1S	WT	G			3/2/17	1134		12	3		9							3	3	3	3	6	3BP2U	3BP3N			60239001
2	L-LMW-2S	WT	G			1	1351		4	1		3							1	1	1	1	2	1BP2U	1BP3N	2BP1NAR		002
3	L-LMW-3S	WT	G			3/3/17	1017		1	1									1	1	1	1	1					003
4	L-LMW-4S	WT	G			1	1100																					004
5	L-LMW-5S	WT	G			3/2/17	1530																					005
6	L-LMW-6S	WT	G			1	1445																					006
7	L-LMW-7S	WT	G			1	1330																					007
8	L-LMW-8S	WT	G			1	1245																					008
9	L-BMW-1S	WT	G			3/1/17	1430																					009
10	L-BMW-2S	WT	G			1	1538																					010
11	L-LMW-DUP-1	WT	G			3/2/17	—																					011
12	L-LMW-FB-1	WT	G			3/1/17	1000																					012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl		3/3/17	1430		3/3/17	1430
		3/3/17	1700		3/4/17	0310

SAMPLE CONDITIONS	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	1.7	X	X	X
	14.3	N		
	14.9	†	†	†

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 3/3/17

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

January 29, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory between June 02, 2017 and June 03, 2017. 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, 1/3/18: Revision

REV-2, 1/29/18: Radium pulled in for L-BMW-1S and L-BMW-2S.

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
Jeffrey Ingram, Golder Associates
John Suozzi, 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-UWL
Pace Project No.: 60245680

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60245680001	**L-TMW-1**	Water	06/02/17 11:29	06/03/17 08:00
60245680002	**L-TMW-2**	Water	06/02/17 12:30	06/03/17 08:00
60245680003	**L-TMW-3**	Water	06/02/17 12:30	06/03/17 08:00
60245680004	**L-MW-26**	Water	06/02/17 10:17	06/03/17 08:00
60245680005	**L-UWL-DUP-1**	Water	06/02/17 08:00	06/03/17 08:00
60245680006	**L-UWL-FB-1**	Water	06/02/17 10:04	06/03/17 08:00
60245680007	**L-TMW-3 MS**	Water	06/02/17 12:30	06/03/17 08:00
60245680008	**L-TMW-3 MSD**	Water	06/02/17 12:30	06/03/17 08:00
60245569006	**L-BMW-1S**	Water	05/31/17 10:47	06/02/17 04:05
60245569007	**L-BMW-2S**	Water	05/31/17 12:01	06/02/17 04:05

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60245680001	**L-TMW-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680002	**L-TMW-2**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680003	**L-TMW-3**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680004	**L-MW-26**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680005	**L-UWL-DUP-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680006	**L-UWL-FB-1**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245680007	**L-TMW-3 MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60245680008	**L-TMW-3 MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60245569006	**L-BMW-1S**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245569007	**L-BMW-2S**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	SMW	1	PASI-K
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-1 **Lab ID: 60245680001** Collected: 06/02/17 11:29 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**375**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:23	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:23	7440-41-7	
Boron	**103**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:23	7440-42-8	
Calcium	**164000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:23	7440-70-2	
Cobalt	**4.5J**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:23	7440-48-4	
Lead	**2.8J**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:23	7439-92-1	
Lithium	**36.4**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:23	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:23	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.038J**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:17	7440-36-0	
Arsenic	**20.5**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:17	7440-38-2	
Cadmium	**0.13J**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:17	7440-43-9	
Chromium	**0.20J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:17	7440-47-3	B
Selenium	**0.63J**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:17	7782-49-2	
Thallium	**0.053J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:17	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:40	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**628**	mg/L	5.0	5.0	1		06/07/17 09:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		06/07/17 13:52		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.9**	mg/L	1.0	0.50	1		06/07/17 12:18	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		06/07/17 12:18	16984-48-8	
Sulfate	**79.1**	mg/L	5.0	2.5	5		06/07/17 12:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-2 **Lab ID: 60245680002** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**189**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:26	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:26	7440-41-7	
Boron	**96.7J**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:26	7440-42-8	
Calcium	**195000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:26	7440-70-2	
Cobalt	**4.1J**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:26	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:26	7439-92-1	
Lithium	**37.3**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:26	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:26	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.043J**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:20	7440-36-0	
Arsenic	**0.95J**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:20	7440-38-2	
Cadmium	**0.039J**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:20	7440-43-9	
Chromium	**0.22J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:20	7440-47-3	B
Selenium	**0.10J**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:20	7782-49-2	
Thallium	**0.049J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:20	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:46	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**684**	mg/L	5.0	5.0	1		06/07/17 09:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		06/07/17 13:57		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.0**	mg/L	1.0	0.50	1		06/07/17 12:49	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		06/07/17 12:49	16984-48-8	
Sulfate	**81.3**	mg/L	10.0	5.0	10		06/07/17 13:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-3 **Lab ID: 60245680003** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**302**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:28	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:28	7440-41-7	
Boron	**120**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:28	7440-42-8	
Calcium	**201000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:28	7440-70-2	M1
Cobalt	**3.6J**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:28	7440-48-4	
Lead	**3.2J**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:28	7439-92-1	
Lithium	**47.5**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:28	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:28	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.029J**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:24	7440-36-0	
Arsenic	**11.0**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:24	7440-38-2	
Cadmium	**0.021J**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:24	7440-43-9	
Chromium	**0.15J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:24	7440-47-3	B
Selenium	**0.099J**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:24	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:48	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**711**	mg/L	5.0	5.0	1		06/07/17 09:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		06/07/17 15:53		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.5**	mg/L	1.0	0.50	1		06/07/17 14:37	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.10	1		06/07/17 14:37	16984-48-8	
Sulfate	**85.5**	mg/L	5.0	2.5	5		06/07/17 13:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-MW-26 **Lab ID: 60245680004** Collected: 06/02/17 10:17 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**213**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:34	7440-39-3	
Beryllium	**0.19J**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:34	7440-41-7	
Boron	**89.0J**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:34	7440-42-8	
Calcium	**146000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:34	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:34	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:34	7439-92-1	
Lithium	**30.2**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:34	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:34	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.093J**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:43	7440-36-0	
Arsenic	**0.48J**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:43	7440-38-2	
Cadmium	**0.21J**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:43	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:43	7440-47-3	B
Selenium	**0.20J**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:43	7782-49-2	
Thallium	**0.049J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:43	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:55	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**486**	mg/L	5.0	5.0	1		06/07/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		06/07/17 13:47		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.5**	mg/L	1.0	0.50	1		06/07/17 15:23	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		06/07/17 15:23	16984-48-8	
Sulfate	**17.8**	mg/L	1.0	0.50	1		06/07/17 15:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-UWL-DUP-1 **Lab ID: 60245680005** Collected: 06/02/17 08:00 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**188**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:43	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:43	7440-41-7	
Boron	**99.0J**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:43	7440-42-8	
Calcium	**192000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:43	7440-70-2	
Cobalt	**3.8J**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:43	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:43	7439-92-1	
Lithium	**37.4**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:43	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:43	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.057J**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:46	7440-36-0	
Arsenic	**1.0**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:46	7440-38-2	
Cadmium	**0.051J**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:46	7440-43-9	
Chromium	**0.27J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:46	7440-47-3	B
Selenium	**0.12J**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:46	7782-49-2	
Thallium	**0.037J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:46	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:57	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**693**	mg/L	5.0	5.0	1		06/07/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		06/07/17 13:38		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.1**	mg/L	1.0	0.50	1		06/07/17 15:54	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		06/07/17 15:54	16984-48-8	
Sulfate	**82.3**	mg/L	10.0	5.0	10		06/07/17 16:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-UWL-FB-1 **Lab ID: 60245680006** Collected: 06/02/17 10:04 Received: 06/03/17 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Barium	**<0.91**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:46	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:46	7440-41-7	
Boron	**<3.5**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:46	7440-42-8	
Calcium	**38.7J**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:46	7440-70-2	B
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:46	7440-48-4	
Lead	**2.4J**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:46	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:46	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:46	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.026**	ug/L	1.0	0.026	1	06/09/17 16:50	06/16/17 21:40	7440-36-0	
Arsenic	**<0.052**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:40	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:40	7440-43-9	
Chromium	**0.12J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:40	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:40	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:40	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.037**	ug/L	0.20	0.037	1	06/09/17 10:26	06/10/17 13:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		06/07/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.2**	Std. Units	0.10	0.10	1		06/07/17 13:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		06/07/17 16:25	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		06/07/17 16:25	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		06/07/17 16:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-BMW-1S **Lab ID: 60245569006** Collected: 05/31/17 10:47 Received: 06/02/17 04:05 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								
Barium	**352**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:46	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:46	7440-41-7	
Boron	**122**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:46	7440-42-8	
Calcium	**217000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:46	7440-70-2	
Cobalt	**1.3J**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:46	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:46	7439-92-1	
Lithium	**13.0**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:46	7439-93-2	
Molybdenum	**1.5J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:46	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**<0.026**	ug/L	1.0	0.026	1	06/07/17 15:52	06/08/17 14:57	7440-36-0	
Arsenic	**30.4**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 14:57	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 14:57	7440-43-9	
Chromium	**0.22J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 14:57	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 14:57	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 14:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:10	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**749**	mg/L	5.0	5.0	1		06/05/17 08:42		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/07/17 13:19		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.6**	mg/L	1.0	0.50	1		06/06/17 17:37	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		06/06/17 17:37	16984-48-8	
Sulfate	**51.6**	mg/L	5.0	2.5	5		06/07/17 11:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-BMW-2S **Lab ID: 60245569007** Collected: 05/31/17 12:01 Received: 06/02/17 04:05 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								
Barium	**306**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:53	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:53	7440-41-7	
Boron	**37.3J**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:53	7440-42-8	
Calcium	**139000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:53	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:53	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:53	7439-92-1	
Lithium	**17.8**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:53	7439-93-2	
Molybdenum	**2.0J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:53	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.24J**	ug/L	1.0	0.026	1	06/07/17 15:52	06/08/17 15:09	7440-36-0	
Arsenic	**0.46J**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 15:09	7440-38-2	
Cadmium	**0.031J**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 15:09	7440-43-9	
Chromium	**0.17J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 15:09	7440-47-3	B
Selenium	**0.57J**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 15:09	7782-49-2	
Thallium	**0.044J**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 15:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.046	1	06/07/17 17:21	06/08/17 12:17	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**472**	mg/L	5.0	5.0	1		06/05/17 08:42		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		06/07/17 10:01		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.0	0.50	1		06/06/17 04:20	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.10	1		06/06/17 04:20	16984-48-8	
Sulfate	**23.6**	mg/L	2.0	1.0	2		06/24/17 14:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480125 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005

METHOD BLANK: 1966554 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.14J	0.20	0.046	06/08/17 11:51	

LABORATORY CONTROL SAMPLE: 1966555

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.3	85	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966556 1966557

Parameter	Units	60245569001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.14J	5	5	2.8	3.1	53	59	75-125	11	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966558 1966559

Parameter	Units	60245680003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.14J	5	5	3.9	3.9	75	75	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480337 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60245680006

METHOD BLANK: 1967483 Matrix: Water
Associated Lab Samples: 60245680006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.037	0.20	0.037	06/10/17 13:08	

LABORATORY CONTROL SAMPLE: 1967484

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1967485 1967486

Parameter	Units	60245904006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.9	4.7	98	94	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480092 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60245569006, 60245569007

METHOD BLANK: 1966370 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	4.1J	5.0	0.91	06/09/17 18:28	
Beryllium	ug/L	<0.16	1.0	0.16	06/09/17 18:28	
Boron	ug/L	<3.5	100	3.5	06/09/17 18:28	
Calcium	ug/L	51.6J	100	36.0	06/09/17 18:28	
Cobalt	ug/L	<0.73	5.0	0.73	06/09/17 18:28	
Lead	ug/L	<2.4	5.0	2.4	06/09/17 18:28	
Lithium	ug/L	<2.9	10.0	2.9	06/09/17 18:28	
Molybdenum	ug/L	<1.3	20.0	1.3	06/09/17 18:28	

LABORATORY CONTROL SAMPLE: 1966371

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	1030	103	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966372 1966373

Parameter	Units	60245569001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	230	1000	1000	1250	1250	102	102	70-130	0	20	
Beryllium	ug/L	<0.16	1000	1000	1030	1030	103	103	70-130	0	20	
Boron	ug/L	3260	1000	1000	4320	4380	106	112	70-130	1	20	
Calcium	ug/L	190000	10000	10000	200000	202000	96	118	70-130	1	20	
Cobalt	ug/L	1.5J	1000	1000	1020	1020	102	102	70-130	0	20	
Lead	ug/L	<2.4	1000	1000	987	987	99	98	70-130	0	20	
Lithium	ug/L	18.6	1000	1000	1080	1080	106	106	70-130	0	20	
Molybdenum	ug/L	4.7J	1000	1000	1060	1060	106	106	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

MATRIX SPIKE SAMPLE: 1966374

Parameter	Units	60245678001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	314	1000	1330	101	70-130	
Beryllium	ug/L	<0.16	1000	1040	104	70-130	
Boron	ug/L	56.4J	1000	1130	108	70-130	
Calcium	ug/L	136000	10000	146000	99	70-130	
Cobalt	ug/L	<0.73	1000	1020	102	70-130	
Lead	ug/L	<2.4	1000	983	98	70-130	
Lithium	ug/L	8.3J	1000	1060	105	70-130	
Molybdenum	ug/L	1.6J	1000	1050	105	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480475 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

METHOD BLANK: 1968200 Matrix: Water
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	06/12/17 16:14	
Beryllium	ug/L	<0.16	1.0	0.16	06/12/17 16:14	
Boron	ug/L	<3.5	100	3.5	06/12/17 16:14	
Calcium	ug/L	126	100	36.0	06/12/17 16:14	
Cobalt	ug/L	<0.73	5.0	0.73	06/12/17 16:14	
Lead	ug/L	<2.4	5.0	2.4	06/12/17 16:14	
Lithium	ug/L	<2.9	10.0	2.9	06/12/17 16:14	
Molybdenum	ug/L	<1.3	20.0	1.3	06/12/17 16:14	

LABORATORY CONTROL SAMPLE: 1968201

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	960	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	964	96	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	992	99	85-115	
Lead	ug/L	1000	991	99	85-115	
Lithium	ug/L	1000	943	94	85-115	
Molybdenum	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1968202 1968203

Parameter	Units	60245680003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	302	1000	1000	1260	1280	96	98	70-130	2	20	
Beryllium	ug/L	<0.16	1000	1000	1010	1030	101	103	70-130	2	20	
Boron	ug/L	120	1000	1000	1130	1150	101	103	70-130	2	20	
Calcium	ug/L	201000	10000	10000	208000	215000	71	133	70-130	3	20	M1
Cobalt	ug/L	3.6J	1000	1000	990	987	99	98	70-130	0	20	
Lead	ug/L	3.2J	1000	1000	984	980	98	98	70-130	0	20	
Lithium	ug/L	47.5	1000	1000	1030	1050	98	100	70-130	2	20	
Molybdenum	ug/L	<1.3	1000	1000	1020	1020	102	102	70-130	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

MATRIX SPIKE SAMPLE: 1968204

Parameter	Units	60245680004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	213	1000	1180	97	70-130	
Beryllium	ug/L	0.19J	1000	1020	101	70-130	
Boron	ug/L	89.0J	1000	1090	100	70-130	
Calcium	ug/L	146000	10000	156000	100	70-130	
Cobalt	ug/L	<0.73	1000	971	97	70-130	
Lead	ug/L	<2.4	1000	968	97	70-130	
Lithium	ug/L	30.2	1000	1010	98	70-130	
Molybdenum	ug/L	<1.3	1000	1000	100	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480093 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60245569006, 60245569007

METHOD BLANK: 1966376 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	06/08/17 14:29	
Arsenic	ug/L	<0.052	1.0	0.052	06/08/17 14:29	
Cadmium	ug/L	<0.018	0.50	0.018	06/08/17 14:29	
Chromium	ug/L	0.12J	1.0	0.054	06/08/17 14:29	
Selenium	ug/L	<0.086	1.0	0.086	06/08/17 14:29	
Thallium	ug/L	<0.036	1.0	0.036	06/08/17 14:29	

LABORATORY CONTROL SAMPLE: 1966377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.4	99	85-115	
Arsenic	ug/L	40	40.4	101	85-115	
Cadmium	ug/L	40	39.2	98	85-115	
Chromium	ug/L	40	40.5	101	85-115	
Selenium	ug/L	40	39.0	97	85-115	
Thallium	ug/L	40	37.0	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966378 1966379

Parameter	Units	60245569001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.033J	40	40	38.8	38.9	97	97	70-130	0	20	
Arsenic	ug/L	10.6	40	40	50.5	50.5	100	100	70-130	0	20	
Cadmium	ug/L	0.025J	40	40	37.1	37.8	93	94	70-130	2	20	
Chromium	ug/L	0.18J	40	40	40.1	39.8	100	99	70-130	1	20	
Selenium	ug/L	0.13J	40	40	36.8	35.5	92	89	70-130	4	20	
Thallium	ug/L	0.090J	40	40	39.6	40.0	99	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 1966380

Parameter	Units	60245569003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.026	40	39.2	98	70-130	
Arsenic	ug/L	6.0	40	48.7	107	70-130	
Cadmium	ug/L	<0.018	40	37.7	94	70-130	
Chromium	ug/L	0.19J	40	39.9	99	70-130	
Selenium	ug/L	0.099J	40	36.6	91	70-130	
Thallium	ug/L	0.038J	40	39.6	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480476 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

METHOD BLANK: 1968211 Matrix: Water
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	06/16/17 21:01	
Arsenic	ug/L	<0.052	1.0	0.052	06/16/17 21:01	
Cadmium	ug/L	<0.018	0.50	0.018	06/16/17 21:01	
Chromium	ug/L	0.14J	1.0	0.054	06/16/17 21:01	
Selenium	ug/L	<0.086	1.0	0.086	06/16/17 21:01	
Thallium	ug/L	0.042J	1.0	0.036	06/16/17 21:01	

LABORATORY CONTROL SAMPLE: 1968212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.3	98	85-115	
Arsenic	ug/L	40	39.5	99	85-115	
Cadmium	ug/L	40	39.4	99	85-115	
Chromium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	40.0	100	85-115	
Thallium	ug/L	40	37.7	94	85-115	

MATRIX SPIKE SAMPLE: 1968214

Parameter	Units	60245679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.026	40	40.3	101	70-130	
Arsenic	ug/L	1.7	40	40.7	97	70-130	
Cadmium	ug/L	<0.018	40	38.6	96	70-130	
Chromium	ug/L	0.25J	40	39.3	98	70-130	
Selenium	ug/L	<0.086	40	37.6	94	70-130	
Thallium	ug/L	0.12J	40	39.0	97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1968215 1968216

Parameter	Units	60245680003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.029J	40	40	39.5	40.3	99	101	70-130	2	20	
Arsenic	ug/L	11.0	40	40	49.4	49.6	96	97	70-130	0	20	
Cadmium	ug/L	0.021J	40	40	37.7	38.7	94	97	70-130	3	20	
Chromium	ug/L	0.15J	40	40	38.7	39.4	96	98	70-130	2	20	
Selenium	ug/L	0.099J	40	40	36.4	37.6	91	94	70-130	3	20	
Thallium	ug/L	<0.036	40	40	38.9	40.0	97	100	70-130	3	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 479556 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60245569006, 60245569007

METHOD BLANK: 1964508 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/05/17 08:38	

LABORATORY CONTROL SAMPLE: 1964509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	980	98	80-120	

SAMPLE DUPLICATE: 1964510

Parameter	Units	60245386001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	646	654	1	10	

SAMPLE DUPLICATE: 1964511

Parameter	Units	60245563004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	493	483	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 479930 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

METHOD BLANK: 1965744 Matrix: Water
Associated Lab Samples: 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/07/17 09:45	

LABORATORY CONTROL SAMPLE: 1965745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	959	96	80-120	

SAMPLE DUPLICATE: 1965746

Parameter	Units	60245701011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	<5.0		10	

SAMPLE DUPLICATE: 1965747

Parameter	Units	60245680003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	711	707	1	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480008
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60245569007

SAMPLE DUPLICATE: 1965881

Parameter	Units	60245388001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.1	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480061 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60245569006, 60245680001, 60245680002, 60245680004, 60245680005, 60245680006

SAMPLE DUPLICATE: 1966184

Parameter	Units	60245569006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.3	1	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480064
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60245680003

SAMPLE DUPLICATE: 1966201

Parameter	Units	60245680003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.1	1	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 479757
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245569007

METHOD BLANK: 1964983 Matrix: Water
Associated Lab Samples: 60245569007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/05/17 08:46	
Fluoride	mg/L	<0.10	0.20	0.10	06/05/17 08:46	

LABORATORY CONTROL SAMPLE: 1964984

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	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1964985 1964986

Parameter	Units	60245569001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.1	5	5	10.3	10.3	103	105	80-120	1	15	
Fluoride	mg/L	0.26	2.5	2.5	3.0	3.1	111	113	80-120	1	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 479826 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245569006

METHOD BLANK: 1965201 Matrix: Water
Associated Lab Samples: 60245569006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/06/17 09:04	
Fluoride	mg/L	<0.10	0.20	0.10	06/06/17 09:04	

LABORATORY CONTROL SAMPLE: 1965202

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	2.7	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1965203 1965204

Parameter	Units	60245683010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	80.6	125	125	209	210	103	103	80-120	0	15	
Fluoride	mg/L	ND	62.5	62.5	70.4	70.8	110	111	80-120	1	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 480020 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245569006, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

METHOD BLANK: 1965938 Matrix: Water
Associated Lab Samples: 60245569006, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/07/17 18:43	
Fluoride	mg/L	<0.10	0.20	0.10	06/07/17 18:43	
Sulfate	mg/L	<0.50	1.0	0.50	06/07/17 18:43	

LABORATORY CONTROL SAMPLE: 1965939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1965940 1965941

Parameter	Units	60245680003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.5	5	5	12.9	12.8	107	107	80-120	0	15	
Fluoride	mg/L	0.11J	2.5	2.5	2.7	2.7	103	102	80-120	1	15	

MATRIX SPIKE SAMPLE: 1965942

Parameter	Units	60245794001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	42.5	25	70.1	110	80-120	
Fluoride	mg/L	ND	12.5	13.2	102	80-120	
Sulfate	mg/L	31.6	25	56.6	100	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 482449 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245569007

METHOD BLANK: 1976681 Matrix: Water
Associated Lab Samples: 60245569007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.50	1.0	0.50	06/24/17 13:25	

LABORATORY CONTROL SAMPLE: 1976682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	96	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-1 **Lab ID: 60245680001** Collected: 06/02/17 11:29 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.250 ± 0.389 (0.674) C:NA T:86%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.838 ± 0.505 (0.946) C:68% T:81%**	pCi/L	06/20/17 14:41	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-2 **Lab ID: 60245680002** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.462 ± 0.456 (0.694) C:NA T:88%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.633 ± 0.371 (0.676) C:74% T:88%**	pCi/L	06/20/17 14:41	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-3 **Lab ID: 60245680003** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.620 ± 0.454 (0.507) C:NA T:80%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.129 ± 0.335 (0.748) C:73% T:86%**	pCi/L	06/20/17 14:42	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-MW-26 **Lab ID: 60245680004** Collected: 06/02/17 10:17 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.395 ± 0.401 (0.607) C:NA T:100%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.669 ± 0.405 (0.756) C:73% T:89%**	pCi/L	06/20/17 14:42	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-UWL-DUP-1 **Lab ID: 60245680005** Collected: 06/02/17 08:00 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.172 ± 0.263 (0.156) C:NA T:98%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.727 ± 0.379 (0.658) C:78% T:84%**	pCi/L	06/20/17 14:42	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-UWL-FB-1 **Lab ID: 60245680006** Collected: 06/02/17 10:04 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.573 ± 0.425 (0.532) C:NA T:96%**	pCi/L	06/16/17 10:47	13982-63-3	
Radium-228	EPA 904.0	**0.243 ± 0.358 (0.772) C:67% T:88%**	pCi/L	06/20/17 14:42	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-3 MS **Lab ID: 60245680007** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**88.0 %REC +/- NA (NA) C:NA T:NA**	pCi/L	06/16/17 11:01	13982-63-3	
Radium-228	EPA 904.0	**90.1 %REC +/- NA (NA) C:NA T:NA**	pCi/L	06/20/17 14:42	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-TMW-3 MSD **Lab ID: 60245680008** Collected: 06/02/17 12:30 Received: 06/03/17 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**97.6 %REC 10.3 RPD +/- NA (NA) C:NA T:NA**	pCi/L	06/16/17 11:01	13982-63-3	
Radium-228	EPA 904.0	**108 %REC 18.3 RPD +/- NA (NA) C:NA T:NA**	pCi/L	06/20/17 14:42	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-BMW-1S **Lab ID: 60245569006** Collected: 05/31/17 10:47 Received: 06/02/17 04:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.509 ± 0.357 (0.172) C:NA T:84%**	pCi/L	06/16/17 10:11	13982-63-3	
Radium-228	EPA 904.0	**1.88 ± 0.592 (0.767) C:74% T:85%**	pCi/L	06/20/17 14:40	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Sample: L-BMW-2S **Lab ID: 60245569007** Collected: 05/31/17 12:01 Received: 06/02/17 04:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.528 ± 0.333 (0.143) C:NA T:99%**	pCi/L	06/16/17 10:11	13982-63-3	
Radium-228	EPA 904.0	**0.181 ± 0.448 (0.994) C:73% T:88%**	pCi/L	06/20/17 14:40	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 261084 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006, 60245680007, 60245680008

METHOD BLANK: 1285493 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006, 60245680007, 60245680008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.432 ± 0.370 (0.743) C:76% T:81%	pCi/L	06/20/17 14:39	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 261083 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples:

METHOD BLANK: 1285492 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.374 ± 0.360 (0.742) C:77% T:88%	pCi/L	06/20/17 16:00	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 261072 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples:

METHOD BLANK: 1285474 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.235 ± 0.327 (0.547) C:NA T:94%	pCi/L	06/15/17 23:06	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

QC Batch: 261073 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006, 60245680007, 60245680008

METHOD BLANK: 1285475 Matrix: Water
Associated Lab Samples: 60245569006, 60245569007, 60245680001, 60245680002, 60245680003, 60245680004, 60245680005, 60245680006, 60245680007, 60245680008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	1.21 ± 0.533 (0.386) C:NA T:102%	pCi/L	06/16/17 11:01	1e

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-UWL
Pace Project No.: 60245680

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.

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.

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

1e	The Ra-226 MB associated with batch 36049 was greater than the associated MDC, but less than the analysis RL. Pace allows reporting of results when the MB result is less than the RL.
B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245569006	L-BMW-1S	EPA 200.7	480092	EPA 200.7	480184
60245569007	L-BMW-2S	EPA 200.7	480092	EPA 200.7	480184
60245680001	L-TMW-1	EPA 200.7	480475	EPA 200.7	480588
60245680002	L-TMW-2	EPA 200.7	480475	EPA 200.7	480588
60245680003	L-TMW-3	EPA 200.7	480475	EPA 200.7	480588
60245680004	L-MW-26	EPA 200.7	480475	EPA 200.7	480588
60245680005	L-UWL-DUP-1	EPA 200.7	480475	EPA 200.7	480588
60245680006	L-UWL-FB-1	EPA 200.7	480475	EPA 200.7	480588
60245569006	L-BMW-1S	EPA 200.8	480093	EPA 200.8	480185
60245569007	L-BMW-2S	EPA 200.8	480093	EPA 200.8	480185
60245680001	L-TMW-1	EPA 200.8	480476	EPA 200.8	480587
60245680002	L-TMW-2	EPA 200.8	480476	EPA 200.8	480587
60245680003	L-TMW-3	EPA 200.8	480476	EPA 200.8	480587
60245680004	L-MW-26	EPA 200.8	480476	EPA 200.8	480587
60245680005	L-UWL-DUP-1	EPA 200.8	480476	EPA 200.8	480587
60245680006	L-UWL-FB-1	EPA 200.8	480476	EPA 200.8	480587
60245569006	L-BMW-1S	EPA 7470	480125	EPA 7470	480203
60245569007	L-BMW-2S	EPA 7470	480125	EPA 7470	480203
60245680001	L-TMW-1	EPA 7470	480125	EPA 7470	480203
60245680002	L-TMW-2	EPA 7470	480125	EPA 7470	480203
60245680003	L-TMW-3	EPA 7470	480125	EPA 7470	480203
60245680004	L-MW-26	EPA 7470	480125	EPA 7470	480203
60245680005	L-UWL-DUP-1	EPA 7470	480125	EPA 7470	480203
60245680006	L-UWL-FB-1	EPA 7470	480337	EPA 7470	480443
60245569006	L-BMW-1S	EPA 903.1	261073		
60245569007	L-BMW-2S	EPA 903.1	261073		
60245680001	L-TMW-1	EPA 903.1	261073		
60245680002	L-TMW-2	EPA 903.1	261073		
60245680003	L-TMW-3	EPA 903.1	261073		
60245680004	L-MW-26	EPA 903.1	261073		
60245680005	L-UWL-DUP-1	EPA 903.1	261073		
60245680006	L-UWL-FB-1	EPA 903.1	261073		
60245680007	L-TMW-3 MS	EPA 903.1	261073		
60245680008	L-TMW-3 MSD	EPA 903.1	261073		
60245569006	L-BMW-1S	EPA 904.0	261084		
60245569007	L-BMW-2S	EPA 904.0	261084		
60245680001	L-TMW-1	EPA 904.0	261084		
60245680002	L-TMW-2	EPA 904.0	261084		
60245680003	L-TMW-3	EPA 904.0	261084		
60245680004	L-MW-26	EPA 904.0	261084		
60245680005	L-UWL-DUP-1	EPA 904.0	261084		
60245680006	L-UWL-FB-1	EPA 904.0	261084		
60245680007	L-TMW-3 MS	EPA 904.0	261084		
60245680008	L-TMW-3 MSD	EPA 904.0	261084		
60245569006	L-BMW-1S	SM 2540C	479556		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-UWL
Pace Project No.: 60245680

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245569007	**L-BMW-2S**	SM 2540C	479556		
60245680001	**L-TMW-1**	SM 2540C	479930		
60245680002	**L-TMW-2**	SM 2540C	479930		
60245680003	**L-TMW-3**	SM 2540C	479930		
60245680004	**L-MW-26**	SM 2540C	479930		
60245680005	**L-UWL-DUP-1**	SM 2540C	479930		
60245680006	**L-UWL-FB-1**	SM 2540C	479930		
60245569006	**L-BMW-1S**	SM 4500-H+B	480061		
60245569007	**L-BMW-2S**	SM 4500-H+B	480008		
60245680001	**L-TMW-1**	SM 4500-H+B	480061		
60245680002	**L-TMW-2**	SM 4500-H+B	480061		
60245680003	**L-TMW-3**	SM 4500-H+B	480064		
60245680004	**L-MW-26**	SM 4500-H+B	480061		
60245680005	**L-UWL-DUP-1**	SM 4500-H+B	480061		
60245680006	**L-UWL-FB-1**	SM 4500-H+B	480061		
60245569006	**L-BMW-1S**	EPA 300.0	479826		
60245569006	**L-BMW-1S**	EPA 300.0	480020		
60245569007	**L-BMW-2S**	EPA 300.0	479757		
60245569007	**L-BMW-2S**	EPA 300.0	482449		
60245680001	**L-TMW-1**	EPA 300.0	480020		
60245680002	**L-TMW-2**	EPA 300.0	480020		
60245680003	**L-TMW-3**	EPA 300.0	480020		
60245680004	**L-MW-26**	EPA 300.0	480020		
60245680005	**L-UWL-DUP-1**	EPA 300.0	480020		
60245680006	**L-UWL-FB-1**	EPA 300.0	480020		

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Sample Condition Upon Receipt

WO# : 60245680

60245680

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: CF +2.9 T-266 / CF +0.2 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 22.4 23.6 5.0 **Corr. Factor** CF +2.9 CF +0.2 **Corrected** 22.6 23.8 5.2

Date and initials of person examining contents: JB 6/7/17

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	pH
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	
Cyanide water sample checks: ☒N/A 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: _____

Jann Check 6/6/17

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:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - UWL
Project Number:	153-1406.0001B

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

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N	N		60245680
1	BP2N BP3N 2oz L-TMW-1 (2) BP1N 3oz	WT	G			6-2-17	1127		4	1		3							1	1	1	1	2		01
2	L-TMW-2	WT	G				1230		4	1		3							1	1	1	1	2		02
3	(3) BP2N (3) BP3N L-TMW-3 (4) BP3N 2oz	WT	G				1230		12	3		9							3	3	3	3	6		03
4	BP2N BP3N L-MW-26 (2) BP1N	WT	G				1017		4	1		3							1	1	1	1	2		04
5	L-UWL-DUP-1	WT	G				—		4	1		3							1	1	1	1	2		05
6	L-UWL-FB-1	WT	G				1004		4	1		3							1	1	1	1	2		06
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
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	Jeff Ingram / Golder	6/2/17	1430	Richard Manning	6/2/17	1430
	Richard Manning	6/2/17	1700		6/3/17	0800

SAMPLE CONDITIONS			
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
22.6	N	Y	Y
23.8	N	Y	Y
5.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 6/2/17

*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.

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Sample Condition Upon Receipt

WO# : 60245569

60245569

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-266 (CF +2.9) / T-239 (CF +0.2) **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 10.0 / 17.2 / 15.0 **Corr. Factor** CF +2.9 (CF +0.2) **Corrected** 10.2 / 17.4 / 15.2

Date and initials of person examining contents: pv 6/2/17

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	pH
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	
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001B

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N	N	N		60245569
1	L-LMW-1S	WT	G			6/1/17	1114		12	3		9							3	3	3	3	6		3BP3N 3BP1U 6BP1N 001
2	L-LMW-2S	WT	G				1053		4	1		3							1	1	1	1	2		1BP3N 1BP1U 2BP1N 002
3	L-LMW-3S	WT	G				1515		4	1		3							1	1	1	1	2		003
4	L-LMW-4S	WT	G				1643		4	1		3							1	1	1	1	2		004
5	~~L-LMW-5S~~	WT	G																						
6	~~L-LMW-6S~~	WT	G																						
7	~~L-LMW-7S~~	WT	G																						
8	L-LMW-8S	WT	G			6/1/17	1431		4	1		3							1	1	1	1	2		005
9	L-BMW-1S	WT	G			5/31/17	1047		4	1		3							1	1	1	1	2		006
10	L-BMW-2S	WT	G				1201		4	1		3							1	1	1	1	2		007
11	L-LMW-DUP-1	WT	G			6/1/17	—		4	1		3							1	1	1	1	2		008
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: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg EPA 200.8: Sb, As, Cd, Cr, Se, Tl	/ Golder	6/1/17	18:15		6/1/17	18:15				
		6/1/17	18:30		6/2/17	0405	1.2	Y	Y	Y
							17.4	N		
							15.2	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Suozzi

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 6/1/2017

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

January 02, 2018

Mark Haddock
Golder Associates
820 S. Main St
Suite 100
Saint Charles, MO 63301

RE: Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory on November 11, 2017. 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, 1/2/18: Revised to split samples into client designated reports.

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
Jeffrey Ingram, Golder Associates
John Suozzi, Golder Associates

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60257953001	**L-TMW-1**	Water	11/08/17 15:50	11/11/17 03:20
60257953002	**L-TMW-2**	Water	11/08/17 16:50	11/11/17 03:20
60257953003	**L-TMW-3**	Water	11/08/17 15:50	11/11/17 03:20
60257953004	**L-MW-26**	Water	11/08/17 14:55	11/11/17 03:20
60257953005	**L-UWL-DUP-1**	Water	11/08/17 08:00	11/11/17 03:20
60257953006	**L-UWL-FB-1**	Water	11/08/17 14:40	11/11/17 03:20
60257955009	**L-BMW-1S**	Water	11/07/17 10:25	11/11/17 03:20
60257955010	**L-BMW-2S**	Water	11/07/17 11:28	11/11/17 03:20

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60257953001	**L-TMW-1**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257953002	**L-TMW-2**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257953003	**L-TMW-3**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257953004	**L-MW-26**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257953005	**L-UWL-DUP-1**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257953006	**L-UWL-FB-1**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257955009	**L-BMW-1S**	EPA 200.7	TDS	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257955010	**L-BMW-2S**	EPA 200.7	SMW	7	PASI-K
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-TMW-1 **Lab ID: 60257953001** Collected: 11/08/17 15:50 Received: 11/11/17 03:20 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	**115**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 16:57	7440-42-8	
Calcium	**156000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 16:57	7440-70-2	
Iron	**1900**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 16:57	7439-89-6	
Magnesium	**42200**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 16:57	7439-95-4	
Manganese	**2210**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 16:57	7439-96-5	
Potassium	**5820**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 16:57	7440-09-7	
Sodium	**10600**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 16:57	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**483**	mg/L	20.0	4.9	1		11/15/17 16:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**593**	mg/L	5.0	5.0	1		11/15/17 17:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.0**	mg/L	1.0	0.50	1		11/25/17 16:32	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.10	1		11/25/17 16:32	16984-48-8	
Sulfate	**83.3**	mg/L	10.0	5.0	10		11/26/17 15:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-TMW-2 **Lab ID: 60257953002** Collected: 11/08/17 16:50 Received: 11/11/17 03:20 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	**130**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 17:08	7440-42-8	
Calcium	**184000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 17:08	7440-70-2	
Iron	**801**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 17:08	7439-89-6	
Magnesium	**49300**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 17:08	7439-95-4	
Manganese	**1850**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 17:08	7439-96-5	
Potassium	**6760**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 17:08	7440-09-7	
Sodium	**25200**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 17:08	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**583**	mg/L	20.0	4.9	1		11/15/17 17:07		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**653**	mg/L	5.0	5.0	1		11/15/17 17:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.9**	mg/L	1.0	0.50	1		11/25/17 17:44	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.10	1		11/25/17 17:44	16984-48-8	
Sulfate	**97.1**	mg/L	10.0	5.0	10		11/26/17 16:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-TMW-3 **Lab ID: 60257953003** Collected: 11/08/17 15:50 Received: 11/11/17 03:20 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	**131**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 17:10	7440-42-8	
Calcium	**191000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 17:10	7440-70-2	
Iron	**11300**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 17:10	7439-89-6	
Magnesium	**42200**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 17:10	7439-95-4	
Manganese	**1740**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 17:10	7439-96-5	
Potassium	**6790**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 17:10	7440-09-7	
Sodium	**9000**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 17:10	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**592**	mg/L	20.0	4.9	1		11/15/17 17:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**307**	mg/L	5.0	5.0	1		11/15/17 17:43		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.9**	mg/L	1.0	0.50	1		11/25/17 17:58	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		11/25/17 17:58	16984-48-8	
Sulfate	**72.0**	mg/L	5.0	2.5	5		11/26/17 16:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-MW-26 **Lab ID: 60257953004** Collected: 11/08/17 14:55 Received: 11/11/17 03:20 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	**71.7J**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 17:12	7440-42-8	B
Calcium	**137000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 17:12	7440-70-2	
Iron	**14.7J**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 17:12	7439-89-6	
Magnesium	**24400**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 17:12	7439-95-4	
Manganese	**52.9**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 17:12	7439-96-5	
Potassium	**3930**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 17:12	7440-09-7	
Sodium	**4980**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 17:12	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**408**	mg/L	20.0	4.9	1		11/15/17 17:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**291**	mg/L	5.0	5.0	1		11/15/17 17:44		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.4**	mg/L	1.0	0.50	1		11/25/17 18:13	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		11/25/17 18:13	16984-48-8	
Sulfate	**25.4**	mg/L	2.0	1.0	2		11/26/17 16:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-UWL-DUP-1 **Lab ID: 60257953005** Collected: 11/08/17 08:00 Received: 11/11/17 03:20 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	**133**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 17:15	7440-42-8	
Calcium	**189000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 17:15	7440-70-2	
Iron	**11100**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 17:15	7439-89-6	
Magnesium	**42300**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 17:15	7439-95-4	
Manganese	**1720**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 17:15	7439-96-5	
Potassium	**6680**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 17:15	7440-09-7	
Sodium	**8900**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 17:15	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**368**	mg/L	20.0	4.9	1		11/15/17 17:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**673**	mg/L	5.0	5.0	1		11/15/17 17:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.9**	mg/L	1.0	0.50	1		11/25/17 18:27	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		11/25/17 18:27	16984-48-8	
Sulfate	**71.1**	mg/L	5.0	2.5	5		11/26/17 17:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-UWL-FB-1 **Lab ID: 60257953006** Collected: 11/08/17 14:40 Received: 11/11/17 03:20 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	**6.6J**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 17:17	7440-42-8	B
Calcium	**<36.0**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 17:17	7440-70-2	
Iron	**<12.4**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 17:17	7439-89-6	
Magnesium	**<15.4**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 17:17	7439-95-4	
Manganese	**<1.8**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 17:17	7439-96-5	
Potassium	**<52.3**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 17:17	7440-09-7	
Sodium	**<28.4**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 17:17	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**10.1J**	mg/L	20.0	4.9	1		11/15/17 17:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		11/15/17 17:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		11/25/17 18:42	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		11/25/17 18:42	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		11/25/17 18:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-BMW-1S **Lab ID: 60257955009** Collected: 11/07/17 10:25 Received: 11/11/17 03:20 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	3.5	1	11/18/17 12:30	11/25/17 14:06	7440-42-8	
Calcium	**197000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 14:06	7440-70-2	
Iron	**28000**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 14:06	7439-89-6	
Magnesium	**44500**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 14:06	7439-95-4	
Manganese	**2440**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 14:06	7439-96-5	
Potassium	**5910**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 14:06	7440-09-7	
Sodium	**17400**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 14:06	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**410**	mg/L	20.0	4.9	1		11/15/17 13:42		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**653**	mg/L	5.0	5.0	1		11/14/17 18:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.6**	mg/L	1.0	0.50	1		11/26/17 03:20	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.10	1		11/26/17 03:20	16984-48-8	
Sulfate	**157**	mg/L	10.0	5.0	10		11/27/17 02:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Sample: L-BMW-2S **Lab ID: 60257955010** Collected: 11/07/17 11:28 Received: 11/11/17 03:20 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	**46.3J**	ug/L	100	3.5	1	12/02/17 12:17	12/04/17 11:44	7440-42-8	
Calcium	**120000**	ug/L	100	36.0	1	12/02/17 12:17	12/04/17 11:44	7440-70-2	
Iron	**<12.4**	ug/L	50.0	12.4	1	12/02/17 12:17	12/04/17 11:44	7439-89-6	
Magnesium	**17800**	ug/L	50.0	15.4	1	12/02/17 12:17	12/04/17 11:44	7439-95-4	
Manganese	**<1.8**	ug/L	5.0	1.8	1	12/02/17 12:17	12/04/17 11:44	7439-96-5	
Potassium	**5780**	ug/L	500	52.3	1	12/02/17 12:17	12/04/17 11:44	7440-09-7	
Sodium	**5540**	ug/L	500	28.4	1	12/02/17 12:17	12/04/17 11:44	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**35.8**	mg/L	20.0	4.9	1		11/15/17 13:46		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**414**	mg/L	5.0	5.0	1		11/14/17 18:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.2**	mg/L	2.0	1.0	2		11/27/17 02:40	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.10	1		11/26/17 03:35	16984-48-8	
Sulfate	**246**	mg/L	20.0	10.0	20		11/27/17 02:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503849 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

METHOD BLANK: 2063340 Matrix: Water
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	9.8J	100	3.5	11/25/17 16:54	
Calcium	ug/L	<36.0	100	36.0	11/25/17 16:54	
Iron	ug/L	<12.4	50.0	12.4	11/25/17 16:54	
Magnesium	ug/L	<15.4	50.0	15.4	11/25/17 16:54	
Manganese	ug/L	<1.8	5.0	1.8	11/25/17 16:54	
Potassium	ug/L	<52.3	500	52.3	11/25/17 16:54	
Sodium	ug/L	<28.4	500	28.4	11/25/17 16:54	

LABORATORY CONTROL SAMPLE: 2063341

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Magnesium	ug/L	10000	9910	99	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9890	99	85-115	
Sodium	ug/L	10000	9630	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2063342 2063343

Parameter	Units	60257953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	115	1000	1000	1130	1130	102	101	70-130	0	20	
Calcium	ug/L	156000	10000	10000	165000	169000	89	124	70-130	2	20	
Iron	ug/L	1900	10000	10000	12000	12000	101	101	70-130	0	20	
Magnesium	ug/L	42200	10000	10000	52200	53200	100	110	70-130	2	20	
Manganese	ug/L	2210	1000	1000	3210	3250	100	104	70-130	1	20	
Potassium	ug/L	5820	10000	10000	15900	16000	101	102	70-130	1	20	
Sodium	ug/L	10600	10000	10000	20500	20700	99	101	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2063344 2063345

Parameter	Units	60258162001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	1390	1000	1000	2380	2430	99	104	70-130	2	20	
Calcium	ug/L	98500	10000	10000	109000	110000	105	112	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2063344 2063345

Parameter	Units	60258162001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	<12.4	10000	10000	10100	10200	101	102	70-130	1	20	
Magnesium	ug/L	27200	10000	10000	36900	37300	97	101	70-130	1	20	
Manganese	ug/L	40.1	1000	1000	1040	1050	100	101	70-130	1	20	
Potassium	ug/L	7410	10000	10000	17300	17400	99	100	70-130	1	20	
Sodium	ug/L	28700	10000	10000	38700	39000	100	103	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503851 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60257955009, 60257955010

METHOD BLANK: 2063351 Matrix: Water
Associated Lab Samples: 60257955009, 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<3.5	100	3.5	11/25/17 14:02	
Calcium	ug/L	<36.0	100	36.0	11/25/17 14:02	
Iron	ug/L	<12.4	50.0	12.4	11/25/17 14:02	
Magnesium	ug/L	<15.4	50.0	15.4	11/25/17 14:02	
Manganese	ug/L	<1.8	5.0	1.8	11/25/17 14:02	
Potassium	ug/L	<52.3	500	52.3	11/25/17 14:02	
Sodium	ug/L	46.0J	500	28.4	11/25/17 14:02	

LABORATORY CONTROL SAMPLE: 2063352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	10400	104	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	9980	100	85-115	
Sodium	ug/L	10000	9800	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2063353 2063354

Parameter	Units	60257955002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	6350	1000	1000	7540	7590	119	124	70-130	1	20	
Calcium	ug/L	62200	10000	10000	73200	72400	110	102	70-130	1	20	
Iron	ug/L	<12.4	10000	10000	10000	10200	100	102	70-130	2	20	
Magnesium	ug/L	143	10000	10000	9810	10100	97	100	70-130	3	20	
Manganese	ug/L	2.1J	1000	1000	993	1020	99	102	70-130	3	20	
Potassium	ug/L	8620	10000	10000	18600	18900	100	103	70-130	2	20	
Sodium	ug/L	62000	10000	10000	72800	72500	107	105	70-130	0	20	

MATRIX SPIKE SAMPLE: 2063355

Parameter	Units	60257955003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	5350	1000	6310	96	70-130	
Calcium	ug/L	74100	10000	83900	98	70-130	
Iron	ug/L	5180	10000	15200	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

MATRIX SPIKE SAMPLE: 2063355

Parameter	Units	60257955003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Magnesium	ug/L	7860	10000	17600	98	70-130	
Manganese	ug/L	533	1000	1550	102	70-130	
Potassium	ug/L	7120	10000	17200	101	70-130	
Sodium	ug/L	115000	10000	124000	93	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 505584 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60257955010

METHOD BLANK: 2070869 Matrix: Water
Associated Lab Samples: 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<3.5	100	3.5	12/04/17 11:40	
Calcium	ug/L	<36.0	100	36.0	12/04/17 11:40	
Iron	ug/L	<12.4	50.0	12.4	12/04/17 11:40	
Magnesium	ug/L	<15.4	50.0	15.4	12/04/17 11:40	
Manganese	ug/L	<1.8	5.0	1.8	12/04/17 11:40	
Potassium	ug/L	<52.3	500	52.3	12/04/17 11:40	
Sodium	ug/L	<28.4	500	28.4	12/04/17 11:40	

LABORATORY CONTROL SAMPLE: 2070870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	976	98	85-115	
Calcium	ug/L	10000	9990	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Magnesium	ug/L	10000	9970	100	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9790	98	85-115	
Sodium	ug/L	10000	9690	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2070871 2070872

Parameter	Units	60257955010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	46.3J	1000	1000	1030	1040	98	99	70-130	0	20	
Calcium	ug/L	120000	10000	10000	128000	128000	74	79	70-130	0	20	
Iron	ug/L	<12.4	10000	10000	9910	9930	99	99	70-130	0	20	
Magnesium	ug/L	17800	10000	10000	27000	27200	93	94	70-130	0	20	
Manganese	ug/L	<1.8	1000	1000	987	988	99	99	70-130	0	20	
Potassium	ug/L	5780	10000	10000	15500	15600	97	98	70-130	0	20	
Sodium	ug/L	5540	10000	10000	15200	15300	97	97	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503330 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257955009, 60257955010

METHOD BLANK: 2060588 Matrix: Water
Associated Lab Samples: 60257955009, 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.9	20.0	4.9	11/15/17 12:42	

LABORATORY CONTROL SAMPLE: 2060589

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 2060591

Parameter	Units	60257955002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	34.0	33.7	1	10	

SAMPLE DUPLICATE: 2060592

Parameter	Units	60257954005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	71.1	60.7	16	10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503362 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

METHOD BLANK: 2060731 Matrix: Water
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.9	20.0	4.9	11/15/17 16:04	

LABORATORY CONTROL SAMPLE: 2060732

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

SAMPLE DUPLICATE: 2060735

Parameter	Units	60257860001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	131	133	2	10	

SAMPLE DUPLICATE: 2060736

Parameter	Units	60257953001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	483	519	7	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503088 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60257955009, 60257955010

METHOD BLANK: 2059699 Matrix: Water
Associated Lab Samples: 60257955009, 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/14/17 18:20	

LABORATORY CONTROL SAMPLE: 2059700

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

SAMPLE DUPLICATE: 2059701

Parameter	Units	60257854017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	587	552	6	10	

SAMPLE DUPLICATE: 2059999

Parameter	Units	60257954005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	404	439	8	10	

SAMPLE DUPLICATE: 2060000

Parameter	Units	60257955002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	428	728	52	10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 503358 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

METHOD BLANK: 2060708 Matrix: Water
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/15/17 15:41	

LABORATORY CONTROL SAMPLE: 2060709

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

SAMPLE DUPLICATE: 2060710

Parameter	Units	60257860003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3310	732	128	10	D6

SAMPLE DUPLICATE: 2060711

Parameter	Units	60257953001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	593	603	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 504549 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

METHOD BLANK: 2067027 Matrix: Water
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005, 60257953006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	11/25/17 16:03	
Fluoride	mg/L	<0.10	0.20	0.10	11/25/17 16:03	
Sulfate	mg/L	<0.50	1.0	0.50	11/25/17 16:03	

LABORATORY CONTROL SAMPLE: 2067028

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	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2067029 2067030

Parameter	Units	60257953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	5	5	7.8	7.8	96	97	80-120	0	15	
Fluoride	mg/L	0.22	2.5	2.5	2.7	2.7	98	98	80-120	1	15	

MATRIX SPIKE SAMPLE: 2067031

Parameter	Units	60257954005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	18.8	5	23.9	102	80-120	
Fluoride	mg/L	0.14J	2.5	2.5	93	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 504550 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257955009, 60257955010

METHOD BLANK: 2067032 Matrix: Water
Associated Lab Samples: 60257955009, 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	11/25/17 23:30	
Fluoride	mg/L	<0.10	0.20	0.10	11/25/17 23:30	

LABORATORY CONTROL SAMPLE: 2067033

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2067034 2067035

Parameter	Units	60257954015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<0.50	5	5	4.9	5.1	98	101	80-120	3	15	
Fluoride	mg/L	<0.10	2.5	2.5	2.5	2.6	101	105	80-120	4	15	

MATRIX SPIKE SAMPLE: 2067036

Parameter	Units	60257955002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.18J	2.5	2.6	97	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

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 504564 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005

METHOD BLANK: 2067306 Matrix: Water
Associated Lab Samples: 60257953001, 60257953002, 60257953003, 60257953004, 60257953005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.50	1.0	0.50	11/26/17 07:43	

LABORATORY CONTROL SAMPLE: 2067307

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2067308 2067309

Parameter	Units	60257950006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	33.0	10	10	42.8	42.8	98	99	80-120	0	15	

MATRIX SPIKE SAMPLE: 2067310

Parameter	Units	60257953001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	83.3	50	133	99	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

QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

QC Batch: 504565 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257955009, 60257955010

METHOD BLANK: 2067311 Matrix: Water
Associated Lab Samples: 60257955009, 60257955010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	11/26/17 18:16	
Sulfate	mg/L	<0.50	1.0	0.50	11/26/17 18:16	

LABORATORY CONTROL SAMPLE: 2067312

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2067313 2067314

Parameter	Units	60257954005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	236	100	100	333	328	98	92	80-120	2	15	

MATRIX SPIKE SAMPLE: 2067315

Parameter	Units	60257955002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	21.0	10	31.6	106	80-120	
Sulfate	mg/L	232	100	325	93	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 CENTER
Pace Project No.: 60257953

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.

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

ANALYTE QUALIFIERS

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60257953001	L-TMW-1	EPA 200.7	503849	EPA 200.7	503865
60257953002	L-TMW-2	EPA 200.7	503849	EPA 200.7	503865
60257953003	L-TMW-3	EPA 200.7	503849	EPA 200.7	503865
60257953004	L-MW-26	EPA 200.7	503849	EPA 200.7	503865
60257953005	L-UWL-DUP-1	EPA 200.7	503849	EPA 200.7	503865
60257953006	L-UWL-FB-1	EPA 200.7	503849	EPA 200.7	503865
60257955009	L-BMW-1S	EPA 200.7	503851	EPA 200.7	503862
60257955010	L-BMW-2S	EPA 200.7	503851	EPA 200.7	503862
60257955010	L-BMW-2S	EPA 200.7	505584	EPA 200.7	505740
60257953001	L-TMW-1	SM 2320B	503362		
60257953002	L-TMW-2	SM 2320B	503362		
60257953003	L-TMW-3	SM 2320B	503362		
60257953004	L-MW-26	SM 2320B	503362		
60257953005	L-UWL-DUP-1	SM 2320B	503362		
60257953006	L-UWL-FB-1	SM 2320B	503362		
60257955009	L-BMW-1S	SM 2320B	503330		
60257955010	L-BMW-2S	SM 2320B	503330		
60257953001	L-TMW-1	SM 2540C	503358		
60257953002	L-TMW-2	SM 2540C	503358		
60257953003	L-TMW-3	SM 2540C	503358		
60257953004	L-MW-26	SM 2540C	503358		
60257953005	L-UWL-DUP-1	SM 2540C	503358		
60257953006	L-UWL-FB-1	SM 2540C	503358		
60257955009	L-BMW-1S	SM 2540C	503088		
60257955010	L-BMW-2S	SM 2540C	503088		
60257953001	L-TMW-1	EPA 300.0	504549		
60257953001	L-TMW-1	EPA 300.0	504564		
60257953002	L-TMW-2	EPA 300.0	504549		
60257953002	L-TMW-2	EPA 300.0	504564		
60257953003	L-TMW-3	EPA 300.0	504549		
60257953003	L-TMW-3	EPA 300.0	504564		
60257953004	L-MW-26	EPA 300.0	504549		
60257953004	L-MW-26	EPA 300.0	504564		
60257953005	L-UWL-DUP-1	EPA 300.0	504549		
60257953005	L-UWL-DUP-1	EPA 300.0	504564		
60257953006	L-UWL-FB-1	EPA 300.0	504549		
60257955009	L-BMW-1S	EPA 300.0	504550		
60257955009	L-BMW-1S	EPA 300.0	504565		
60257955010	L-BMW-2S	EPA 300.0	504550		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CENTER
Pace Project No.: 60257953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60257955010	**L-BMW-2S**	EPA 300.0	504565		

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www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60257953

60257953

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: (CF 0.0) T-266 / (CF +0.2) T-239 **Type of Ice:** (Wet) Blue None

RM 11-10-17

Cooler Temperature (°C): As-read 0.7/0.9/1.0/1.5/1.2 **Corr. Factor** (CF 0.0) (CF +0.2) **Corrected** 0.7/0.9/1.0/1.5/1.2

Date and initials of person examining contents:

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	
Cyanide water sample checks: ☑N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: _____

Jann Check 11/14/17

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Mark Haddock (mhaddock@golder.com)	Attention:	
Address:	820 South Main Street, Suite 100	Copy To:	Jeffrey Ingram	Company Name:	
	St Charles, MO 63301			Address:	
Email To:	maddock@golder.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	636-724-9191 Fax: 636-724-9323	Project Name:	Ameren Labadie Energy Center	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001F	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	Metals*	Cl/F/SO4/Alkalinity	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		
1	L-TMW-1	WT	G			11/08/17	1550		6	3		3						3	3	3			60257953 3(BP1U) 3(BP3N) 01
2	L-TMW-2	WT	G				1650		2	1		1						1	1	1			BP1U, BP3N 02
3	L-TMW-3	WT	G				1550																03
4	L-MW-26	WT	G				1455																04
5	L-UWL-DUP-1	WT	G				—																05
6	L-UWL-FB-1	WT	G				1440																06
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)
*EPA 200.7: B,Ca,Mg,K,Na,Fe,Mn	Jeff Ingram/Golder	11-9/17	940		11/9/17	10:18				
		11/9/17	1700		11/10/17 11/11/17	0320	0.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Works

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/08/17

*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

WO# : 60257955

60257955

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Sample Condition Upon Receipt

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: (CF 0.0) T-266 / CF +0.2 T-239 **Type of Ice:** (Wet) Blue None

RM 11-10-17

Cooler Temperature (°C): As-read 0.7/0.9/1.0/1.5/1.2 Corr. Factor (CF 0.0) CF +0.2 Corrected 0.7/0.9/1.0/1.5/1.2

Date and initials of person examining contents:

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	
Cyanide water sample checks: ☑N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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 Cheek 11/14/17 Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical
www.pacelabs.com

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

Section A Required Client Information:

Company:	Golder Associates
Address:	820 South Main Street, Suite 100
	St Charles, MO 63301
Email To:	maddock@golder.com
Phone: 636-724-9191	Fax: 636-724-9323
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Mark Haddock (mhaddock@golder.com)
Copy To:	Jeffrey Ingram
Purchase Order No.:	
Project Name:	Ameren Labadie Energy Center - Fly Ash
Project Number:	153-1406.0001E

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

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	Metals*	Cl/F/SO4/Alkalinity	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N		60257955
1	L-LMW-1S	WT	G			11/08/17	1138		3	1		1							1	1	1		BP1U, BP3N
2	L-LMW-2S	WT	G			11/07/17	1128		6	3		3							3	3	3		3(BP1U) 3(BP3N)
3	L-LMW-3S	WT	G			11/08/17	1220		3	1		1							1	1	1		BP1U, BP3N
4	L-LMW-4S	WT	G			"	1310		"	"		"							"	"	"		
5	L-LMW-5S	WT	G				1400																
6	L-LMW-6S	WT	G				1445																
7	L-LMW-7S	WT	G				1350																
8	L-LMW-8S	WT	G				1250																
9	L-BMW-1S	WT	G			11/07/17	1025																
10	L-BMW-2S	WT	G			"	1128																
11	L-LMW-DUP-1	WT	G			11/08/17	—																
12	L-LMW-FB-1	WT	G			"	1145																

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: B,Ca,Mg,K,Na,Fe,Mn	Jeff Ingram / Golder	11-9-17	940		11/9/17	10:18				
		11/9/17	1700		11/10/17	0320	1.5	Y	Y	Y
							1.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bri Worthington

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/08/17

*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.

MEMORANDUM

Date:	January 19, 2018	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 – BMW 1S/2S**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie-LCL1- BMW 15/25
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001
Validation Date: 1/12/18

Laboratory: Pace Analytical
SDG #: 60261374
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-BMW-1S, L-BMW-2S, L-UWL-DUP-1, L-UWL-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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☑	☐	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	
g) Were any matrix problems noted?	☑	☐	☐	Sulfate

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Hg(0.061), Ba(0.58), Ca(14.2), Mo(0.69), Cu(0.4
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)?	☑ (11)	☑	☑ (12)	Dup-1@ (13) EB-1@
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?	☐	☑	☐	Ca(68/70-130)
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:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-BMW-1S	Sulfate	50.1	D	Result had a dilution factor (DF) of 5
	Molybdenum (Mo)	20.0	U	Detected in Blank; PQL > Result > MDL
	Cadmium (Cd)	0.50	U	
	Mercury (Hg)	0.20	U	
L-BMW-2S	Mo	20.0	U	
	Cd	0.50	U	
	Hg	0.20	U	
	Sulfate	20.5	D	DF of 2
			(12)	

Signature: Tommy J. Goodwin Date: 1/19/2018

MEMORANDUM

Date:	June 1, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 – E1**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS and MSD. Mercury recovery was outside the criteria for MS. Mercury exceeded the criteria for RPD in the MS/MSD. Data was not qualified on MS/MSD data alone.
- Sulfate was detected outside the calibrated range and was qualified as estimate (J).
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie - LCL1 - E1
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60218620
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-1 MS, L-TMW-1 MSD, 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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Hg, Ca

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)?	☑	☐	☐	Ca(21.1), Cr(0.57)
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)?				Dup-1@ MW-26
	☒	☐	☐	FB-1@ TMW-2
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS (8)

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?	☐	☑	☐	Hg (132), Ca (55)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Ca (34)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☐	☑	☐	Hg (28)

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Sulfate	89.5	D	Result at a Dilution Factor (DF) of 10
L-TMW-2	Chromium (Cr)	1.0	U	Detected in Field Blank (FB); PQL > Result > MDL
"	Sulfate	63.8	D	Result at a DF of 5
L-TMW-3		97.4	D	10
L-MW-26		24.3	D	2
L-UWL-DUP-1		24.2	D	2
L-BMW-2S		23.5	D	2
L-BMW-1S		65.3	J	Result outside calibration range.

Signature: Tommy J. Woods Jr. Date: 6/1/17

MEMORANDUM

Date:	June 1, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 – E2**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J). If the results were less than the method detection limit or detected in a blank the results were qualified as non-detects and estimates (UJ).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie - LCLI-E2
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: ~~60221462~~ 6/1/17

Laboratory: Pace Analytical
SDG #: 60221462
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐ _____
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-~~TMW~~-26 MS, L-~~TMW~~ MSD

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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies: _____

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Ca

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Hg (0.055), Sb (0.12)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca (14.3), Sb (0.12), Sulfate (0.93)
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)?				Dup-1@ TMW-1
	☒	☐	☐	FB-1@ TMW-3
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Mo (200), Cr (200)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS (1)

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?	☐	☑	☐	Ca (48)
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:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-MW-26	Antimony (Sb)	1.0	U	Detected in Method Blank (MB); PQL>Result>MDL
"	Sulfate	29.5	D	Result had a Dilution Factor (DF) of 2
L-TMW-1	Sulfate	83.7	D	" 5
"	Sb	1.0	U	Detected in MB; PQL>Result>MDL
L-TMW-2	Sb	1.0	U	" "
"	Sulfate	78.7	D	Result had a DF of 5
L-TMW-3	Sulfate	71.8	D	" 5
"	Sb	1.0	U	Detected in MB; PQL>Result>MDL
L-UWL-DUP-1	Sb	1.0	U	" "
	Molybdenum (Mo)	20.0	UJ	RPD not met; Result<MDL
	Chromium (Cr)	1.0	UJ	" "
	Sulfate	85.3	D	Result had a DF of 5
L-UWL-FB-1	Sb	1.0	U	Detected in MB; PQL>Result>MDL

Signature: Tommy Hood Jr Date: 6/1/17

MEMORANDUM

Date:	June 1, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.3**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Mercury and Radium-228 recovery was outside the criteria for MSD. Mercury exceeded the criteria for RPD in the MS/MSD. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J). If the results were less than the method detection limit or detected in a blank the results were qualified as non-detects and estimates (UJ).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie-2021 - E3
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60223484
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-2 MS, L-TMW-2 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	☒ (12)	☑	☐	L-TMW-1 + L-TMW-2 backwards sample count - fixed by J. Church
b) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
c) Were samples received in good condition?	☑	☐	☐	

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH, TDS
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Hg, Ca, Ra-228

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ca(13.4)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca(44.4), TDS(7.0)
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)?				Dup-1@ TMW-1
	☒	☐	☐	FB-1@ TMW-3
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Mo(200), Cd(25), Cr(200)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS(3)

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?	☐	☑	☐	Ca(141)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Hg(63), Ra-228(119)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☐	☑	☐	Hg(48)

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Molybdenum (Mo)	0.52	UJ	RPD not met; Result < MDL
	Chromium (Cr)	0.34	UJ	" "
	Sulfate	76.7	D	Result had a Dilution Factor (DF) of 5
L-TMW-2	Sulfate	71.9		5
L-TMW-3		72.9		5
L-MW-26		27.1		2
L-UWL-DUP-1		75.5		5
L-UWL-FB-1	Calcium (Ca)	800	U	Detected in Method Blank (MB); PQL>Result>MDL
L-BMW-1S	Sulfate	51.9	D	DF of 5
L-BMW-2S	"	24.8	D	" 2

Signature: Tommy J. Gordon Jr. Date: 6/1/17

MEMORANDUM

Date:	June 1, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.4**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Mercury recovery was outside the criteria for MS and exceeded the criteria for RPD in the MS/MSD. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie-LCL1 - E4
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60227580
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐ _____
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-1 MS, L-TMW-1 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies: _____

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Hg

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☑ @	☐	Ca, Mo
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca(21.3), Cr(0.86), TDS(12)
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)?				Dup-1@ MW-26
	☒	☐	☐	FB-1@ TMW-3
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Mo(68), Cr(20.8)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS(2)

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?	☐	☑	☐	Hg(129)
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?	☑ @	☑	☐	Hg(22)

Comments/Notes:

L-UWL-DUP-1 was not analyzed for EPA 300.0 : Sulfate, Chloride, Fluoride

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Sulfate	63.4	D	Result had a Dilution Factor (DF) of 5
L-TMW-2	⊥	78.5	D	⊥ 5
L-TMW-3	⊥	32.3	D	⊥ 2
"	Chromium (Cr)	1.0	U	Detected in Field Blank (FB); PQL>Result>MDL
L-MW-26	Sulfate	27.3	D	Result had a DF of 2
L-BMW-1S	⊥	50.0	D	⊥ 5
L-BMW-2S	Molybdenum (Mo)	20.0	U	Blank; PQL > Result > MDL

Signature: Tommy J. Hoots Jr. Date: 6/1/17

MEMORANDUM

Date:	June 1, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.5**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium, Chloride, and Sulfate recovery was outside the criteria for MS. Boron recovery was outside the criteria for MSD. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U). If the sample results were greater than the PQL, but less than 5 times the blank detection result, the detections were recorded at the result value and qualified as non-detects (U).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie – CCL 1 – E5
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60232361
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-3 MS, L-TMW-3 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	B, Ca

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ba(0.74), Ca(0.55), Mo(0.53), Sb(0.18), As(0.13), Cl(c
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca(32.3), Sb(0.18), As(0.12), Cl(0.047),
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)?				Dup-1@ MW-26
	☒	☐	☐	FB-1@ TMW-1
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Mo (27.5), Cl(62.1)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	pH, TDS
d) Were lab dup. precision criteria met (note RPD)?	☐	☑	☐	TDS (18)

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?	☐	☑	☐	Ca(136), Chloride(121), Sulfate(130)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	B(58)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☑	☐	☐	

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Sulfate	38.4	D	Result had a Dilution Factor (DF) of 2
	Molybdenum (Mo)	20.0	U	Detected in Method Blank (MB); PQL > Result > MDL
	Antimony (Sb)	1.0	U	
	Cadmium (Cd)	0.50	U	
	Arsenic (As)	1.6	U	Field Blank (FB) + MB ; Result > PQL
L-TMW-2	Mo	20.0	U	MB : PQL > Result > MDL
	Sb	1.0	U	
	As	1.0	U	
	Cd	0.50	U	
	Sulfate	88.9	D	Result had a DF of 5
L-TMW-3	Sulfate	89.9	D	" 10
	Mo	20.0	U	Detected in MB; PQL > Result > MDL
	Sb	1.0	U	
	Cd	0.50	U	
L-MW-26	Mo	20.0	U	
	Sb	1.0	U	
	As	1.0	U	
	Cd	0.50	U	
	Sulfate	24.7	D	Result had a DF of 2
L-UWL-DUP-1	Sulfate	26.0	D	" 2
	Mo	20.0	U	Detected in MB; PQL > Result > MDL
	Sb	1.0	U	
	As	1.0	U	
	Cd	0.50	U	
L-UWL-FB-1	Calcium (Ca)	100	U	
"	Sb	1.0	U	

Signature: Tommy J Hoods Jr Date: 6/1/17

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
HWL-FB-1	As	1.0	U	MB; PQL > Result > MDL
1	Cd	0.50	U	1 1
L-BMW-1S	Sulfate	43.1	D	DF of 5
L-BMW-2S	Mo	20.0	U	MB; PQL > Result > MDL
			TA	

Signature: Tommy D. Goodwin Jr. Date: 6/1/2017

MEMORANDUM

Date:	June 2, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.6**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Radium-228 recovery was outside the criteria for MSD. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J). If the results were less than the method detection limit or detected in a blank the results were qualified as non-detects and estimates (UJ).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie -2621-E6
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/2/17

Laboratory: Pace Analytical
SDG #: 60236163
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-3 MS, L-TMW-3 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Ca, Ra-228

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ca(14.3), Cr(0.27), Sulfate(0.29)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca(21.8), Cr(0.79),
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)?				Dup-1@ MW-26
	☒	☐	☐	FB-1@ MW-1
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	As(200), Cd(24)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS(2)

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?	☐	☑	☐	Cr(61)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☑ (H)	☑	☐	Ra-228(149)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☑	☐	☐	

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
All Well Samples	Chromium (Cr)	1.0	U	Detected in Method Blank (MB); PQL > Result > MDL
L-TMW-1	Sulfate	47.1	D	Result had a Dilution Factor (DF) of 5
L-TMW-2	〃	92.5	D	〃 10
L-TMW-3	〃	73.5	D	〃 5
L-MW-26	〃	28.4	D	〃 2
〃	Arsenic (As)	0.10	UJ	RPD not met; Result < MDL
L-UWL-DUP-1	Sulfate	28.7	D	Result had a DF of 2
L-UWL-FB-1	Calcium (Ca)	100	U	Detected in Method Blank; PQL > Result > MDL
L-BMW-1S	Sulfate	42.9	D	Result had a DF of 5
~~〃~~	~~Cr~~	~~1.0~~	~~U~~	~~MB; PQL > Result > MDL~~
~~L-BMW-2S~~	~~〃~~	~~1.0~~	~~U~~	~~〃~~

(16)

Signature: Tommy J Goode Jr Date: 6/2/17

MEMORANDUM

Date:	June 2, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.7**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J). If the results were less than the method detection limit or detected in a blank the results were qualified as non-detects and estimates (UJ).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie - LCL1 - E7
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 6/2/17

Laboratory: Pace Analytical
SDG #: 60239003
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW-3 MS, L-TMW-3 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Ca

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Be(0.35), As(0.078), Cr(0.14)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Be(0.17), Ca(41.3), Cr(1.7),
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)?				Dup-1@ TMW-2
	☒	☐	☐	FB-1@ MW-26
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Cd(20.5), Se(200), Be(200)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS (1)

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?	☐	☑	☐	Ca(68)
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:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Beryllium (Be)	1.0	U	Detected in Method Blank (MB); PQL > Result > MDL
	Chromium (Cr)	1.0	U	" "
	Sulfate	67.2	D	Result had a Dilution Factor (DF) of 5
L-TMW-2	Sulfate	99.8	D	" 10
	Be	1.0	U	Detected in MB; PQL > Result > MDL
	Arsenic (As)	1.0	U	
	Cr	1.0	U	
L-TMW-3	Cr	1.0	U	
"	Sulfate	71.8	D	Result had a DF of 5
L-MW-26	Sulfate	29.6	D	" 2
	Be	1.0	U	Detected in MB; PQL > Result > MDL
	As	1.0	U	
	Cr	1.0	U	
L-UWL-DUP-1	As	1.0	U	
	Cr	1.0	U	
	Be	0.16	UJ	RPD not met; Result < MDL
	Se	0.086	UJ	" "
	Sulfate	98.7	D	Result had a DF of 10
L-UWL-FB-1	Be	1.0	U	Detected in MB; PQL > Result > MDL
L-BMW-1S	Sulfate	53.3	D	DF of 5
L-BMW-2S	Cr	1.0	U	MB; PQL > Result > MDL

Signature: Tommy J. Gordon II Date: 6/2/17

MEMORANDUM

Date:	July 6, 2017	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 - E.8**		

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

- Analysis of pH for all samples was initiated outside of the 15 minute EPA required holding time. Field measurements of pH were taken at the time of sample collection.
- Calcium recovery was outside the criteria for MS. Data was not qualified on MS/MSD data alone.
- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J). If the results were less than the method detection limit or detected in a blank the results were qualified as non-detects and estimates (UJ).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie - LCLI - E8
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001C
Validation Date: 7/6/2017

Laboratory: Pace Analytical
SDG #: 60245680
Analytical Method (type and no.): Metals 200.7&200.8, Hg 7470, TDS 2540C, pH 4500H+, Anions 300.0, Rads 903.1&904.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-UWL-DUP-1, L-UWL-FB-1, L-TMW- 3 MS, L-TMW- 3 MSD
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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☐	☒	☐	pH
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Hg (MS+MSDLow), Ca (MSD Hi, J

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ra-226 (1.21 ± 0.533), Hg (0.14), Ca (126), Cr (0.14), Tl (0.042)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	Ca (38.7), Cr (0.12), Pb (2.4)
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)?				Dup-1@ TMW-2
	☒	☐	☐	FB-1@ MW-26
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Sb (28), Cd (27), Cr (20), Tl (28)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS (1)

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?	☐	☑	☐	Hg (Low),
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Hg (Low), Ca (High)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☑	☐	☐	

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
~~L-EB~~ All Samples	Chromium (Cr)	1.0	U	Detected in Method Blank (MB); Result < PQL
+	Mercury (Hg)	0.20	U	
All samples, except: BMW-1S/2S	Thallium (Tl)	1.0	U	
L-TMW-1	Sulfate	79.1	D	Result had a dilution factor (DF) of 5
L-TMW-2	Sulfate	81.3	D	10
L-TMW-3	Sulfate	85.5	D	5
L-~~MW-26~~ UWL-DUP-1	Sulfate	82.3	D	10
L-UWL-FB-1	Calcium (Ca)	100	U	Detected in MB; Result < PQL
L-TMW-3	Radium-226 (Ra-226)	0.620	U	Result > MDC
L-UWL-FB-1	Ra-226	0.573	U	"
L-BMW-1S	Sulfate	51.6	D	DF of 5
	Cr	1.0	U	Blank; PQL > Result > MDL
	Hg	0.20	U	"
~~L-BMW-2S~~	Cr	1.0	U	"
	Hg	0.20	U	"
L-BMW-2S	Sulfate	23.6	D	DF of 2

Signature: Tommy Woodward Date: 7/6/2017

MEMORANDUM

Date:	January 03, 2018	**Project No.:**	1531406
To:	Project File	**Project:**	Ameren
From:	Tommy Goodwin		
cc:	Amanda Derhake, Jeff Ingram	**Email:**	
RE:	**DATA VALIDATION SUMMARY, LABADIE ENERGY CENTER – LCL1 – D.M. NOV.2017**		

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

- Reported results with high levels of non-target analytes or other matrix interference were analyzed at dilution and qualified as dilution (D).
- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When a compound was detected in a blank (i.e. method, field, rinsate), and the sample results were greater than the MDL and less than the PQL the results were recorded at the PQL value and qualified as non-detects (U).
- When a duplicate (i.e. field, sample) RPD was not met, associated samples were qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie- LCL1 - D.M. Nov 2017
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001F
Validation Date: 1/3/18

Laboratory: Pace Analytical
SDG #: 60257953
Analytical Method (type and no.): Metals 200.7, 2320B Alkalinity, 2540C TDS, 300.0 IC Anions
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-TMW-1, L-TMW-2, L-TMW-3, L-MW-26, L-BMW-1S, L-BMW-2S, S-LMW-DUP-1, S-LMW-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?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	pH, Cond, Turb, Temp, DO, ORP, Flow, DTW
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	

Note Deficiencies:

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

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	
b) Were hold times met for sample analysis?	☑	☐	☐	
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☑	☐	☐	chloride, Fluoride
g) Were any matrix problems noted?	☐	☑	☐	

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	-01;-06 / -09;10 COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	B(9.8), Na(46.0)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	B(6.6), Alk(10.1)
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)?				Dup-1@ L-TMW-3
	☑	☐	☐	FB-1@ L-MW-26
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	Alk(46.7), TDS(74.7)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☑	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☑	☐	TDS(52), Alk(16)

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:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

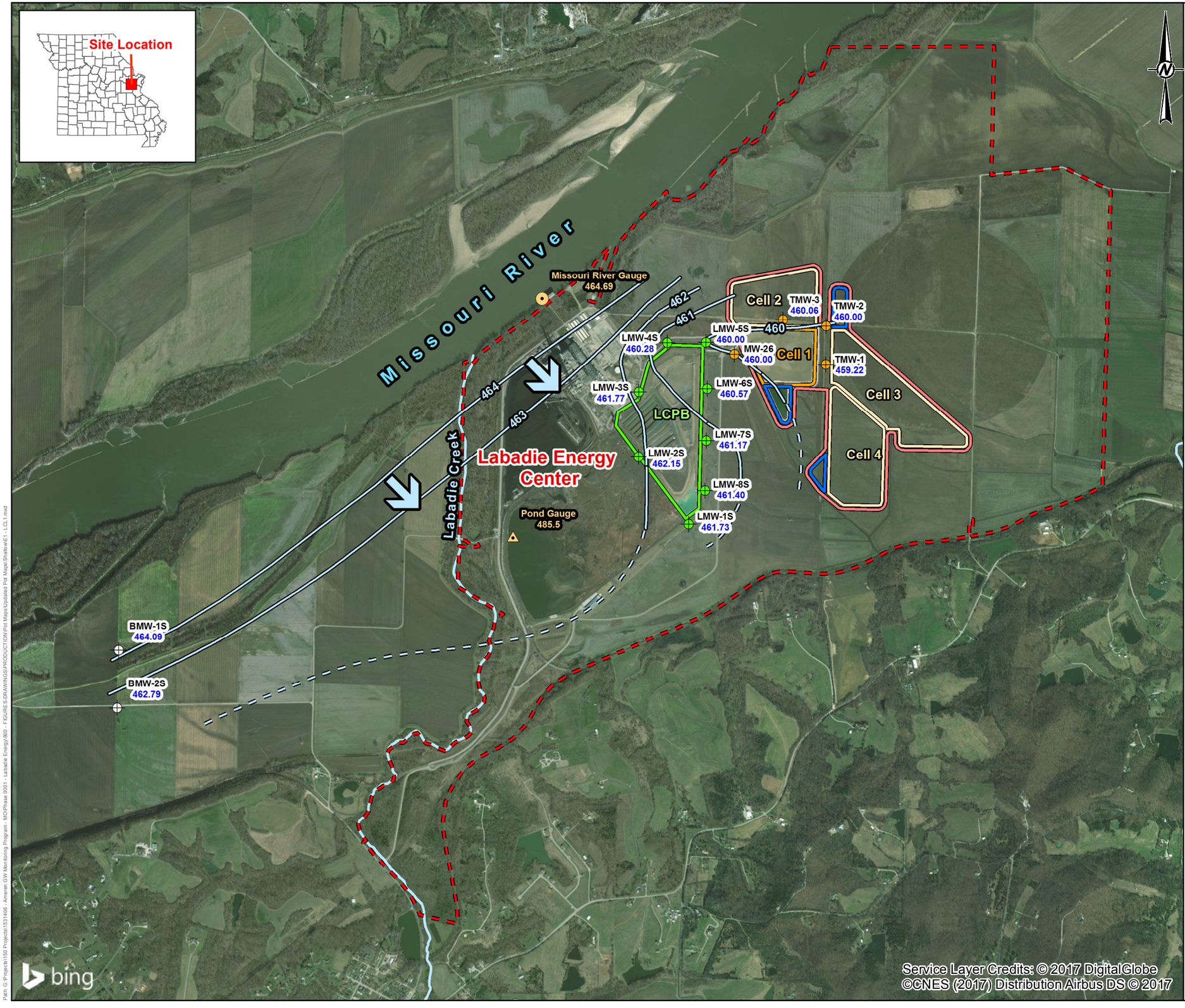
Sample Name	Constituent(s)	Result	Qualifier	Reason
L-TMW-1	Sulfate	83.3	D	Result had a dilution factor (DF) of 10
L-TMW-2	⊥	97.1	D	⊥ 10
L-TMW-3	⊥	72.0	D	⊥ 5
⊥	Alkalinity ($CaCO_3$)	592	J	RPD exceeded limit; Result > MDL
⊥	TDS	307	J	⊥ ⊥
L-MW-26	Boron (B)	100	U	Detected in method blank (MB); PQL > Result > MDL
⊥	Sulfate	25.4	D	DF of 2
L-UWL-DUP-1	⊥	71.1	D	⊥ 5
⊥	Alkalinity	368	J	RPD exceeded limit; Result > MDL
⊥	TDS	673	J	⊥ ⊥
L-UWL-FB-1	B	100	U	MB; PQL > Result > MDL
L-BMW-1S	Sulfate	157	D	DF of 10
L-BMW-2S	Chloride	21.2	D	⊥ 2
⊥	Sulfate	246	D	⊥ 20

TG

Signature: [signature]

Date: 1/3/2018

APPENDIX C – POTENTIOMETRIC SURFACE MAPS



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
5. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
6. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000

Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 2 - MAY 3, 2016

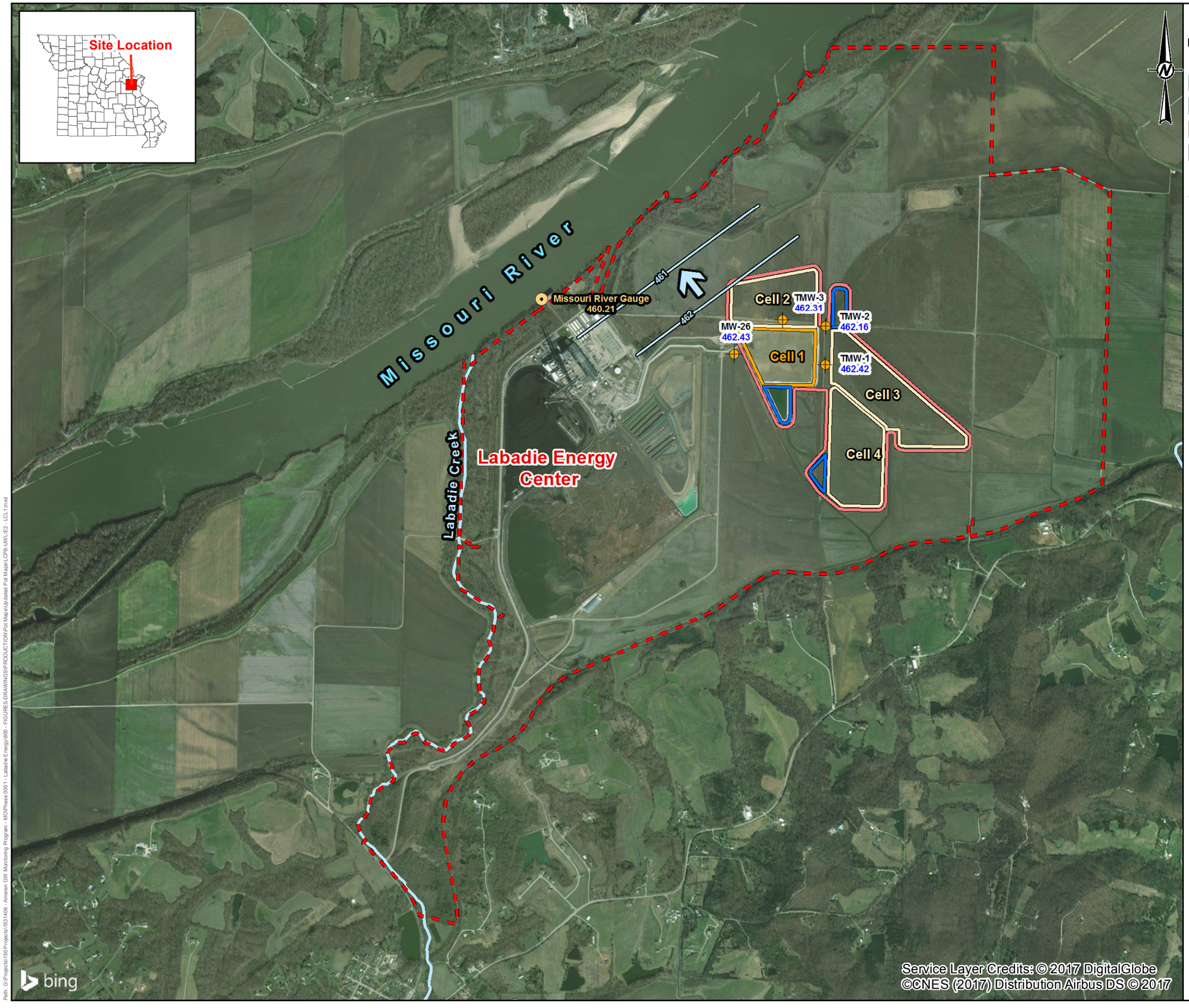
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-05-31
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001C | Rev. 0.0 | FIGURE **P1**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0

Path: G:\Projects\1500 Projects\1531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES-DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\ShallowVE1 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- UWL Monitoring Well
- Missouri River Gauge
- Groundwater Flow Direction

NOTES

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4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
5. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
6. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
7. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 2 - JUNE 15, 2016

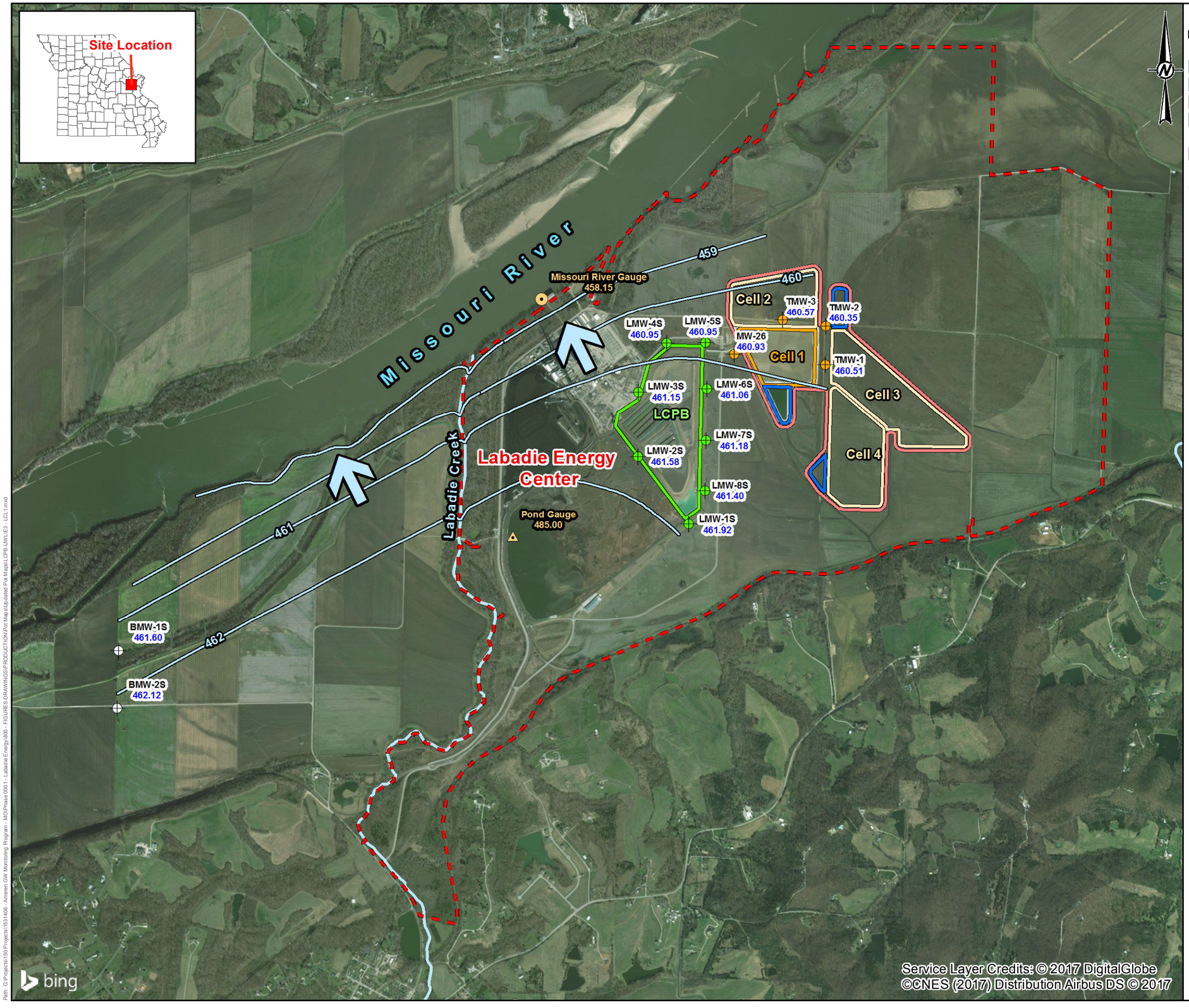
CONSULTANT
Golder Associates

YYYY-MM-DD	2017-08-07
PREPARED	JSI
DESIGN	JSI
REVIEW	RJF
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
1in
0

Path: G:\Projects\153 Projects\15531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWLE2 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

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- Proposed Fence Perimeter
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NOTES

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7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
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4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 3 - JULY 11, 2016

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-09-28
PREPARED	JS
DESIGN	JSI
REVIEW	RJF/JSI
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P3**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0

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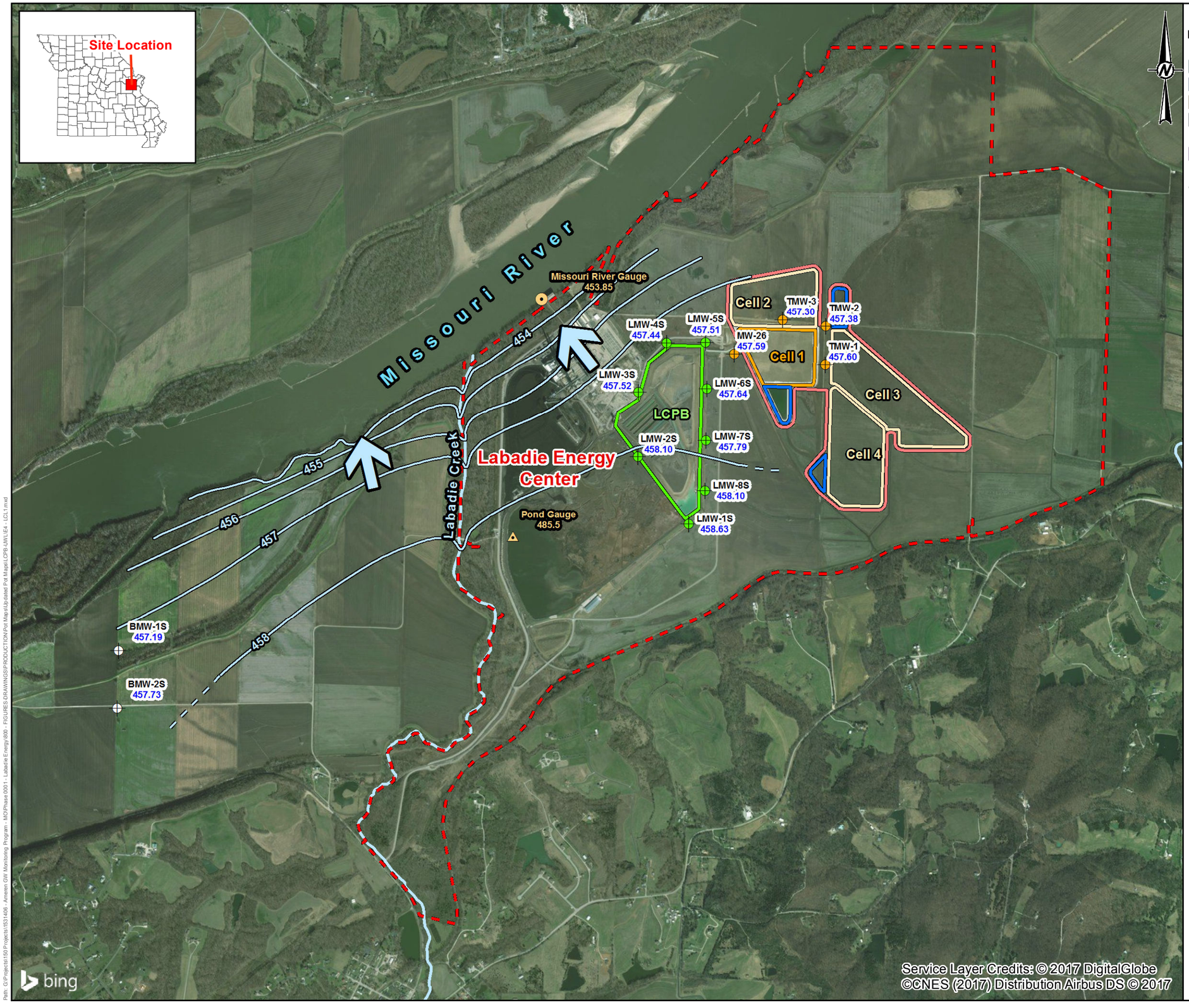

LEGEND

- Labadie Energy Center Property Boundary

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- Groundwater Elevation Contour (FT MSL)
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- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
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REFERENCES

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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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 500 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
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 4 - SEPTEMBER 8, 2016

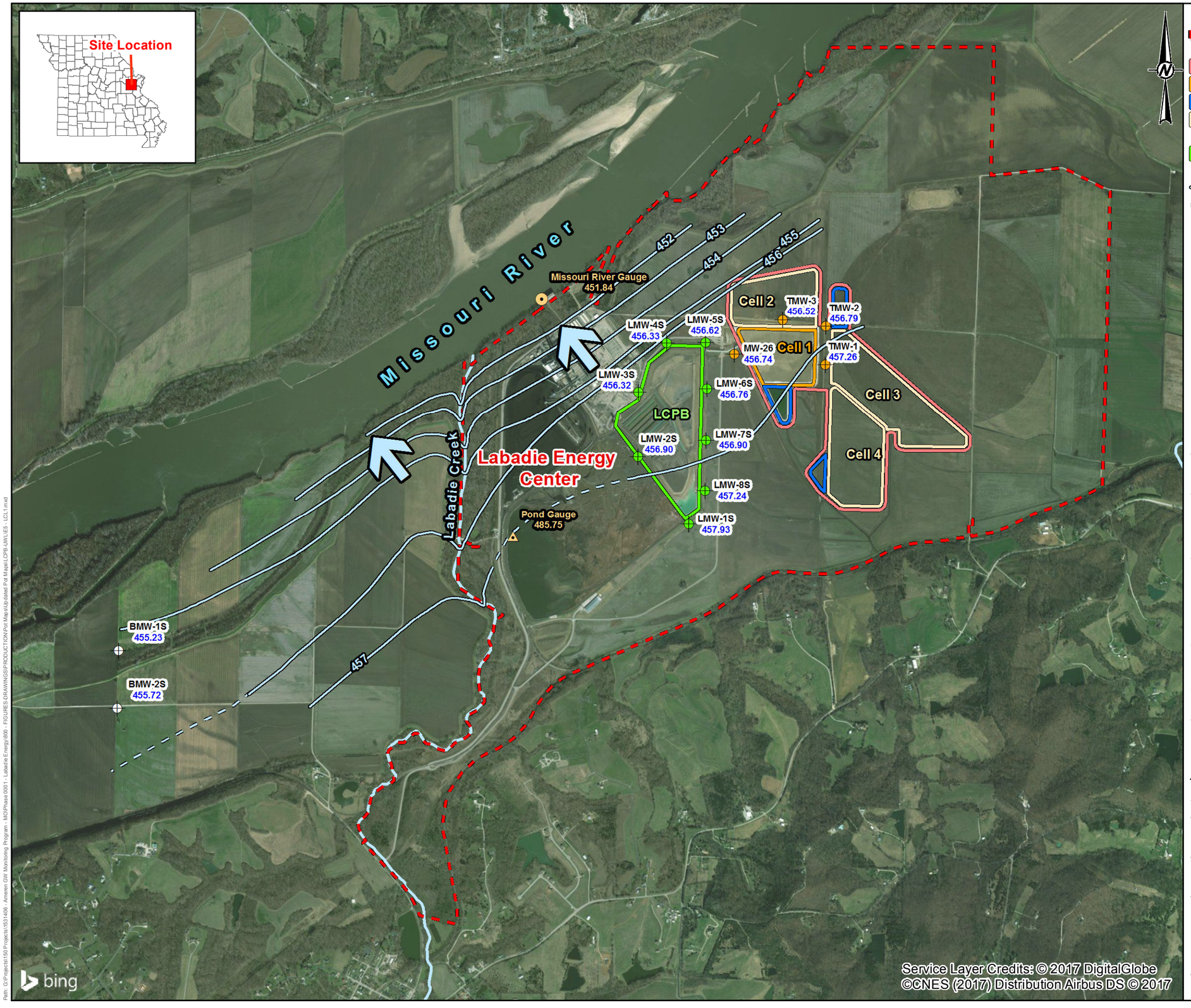
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-09-28
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P4**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in 0

Path: G:\Projects\150 Projects\15314406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWLE4 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
5. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
6. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 5 - NOVEMBER 11, 2016

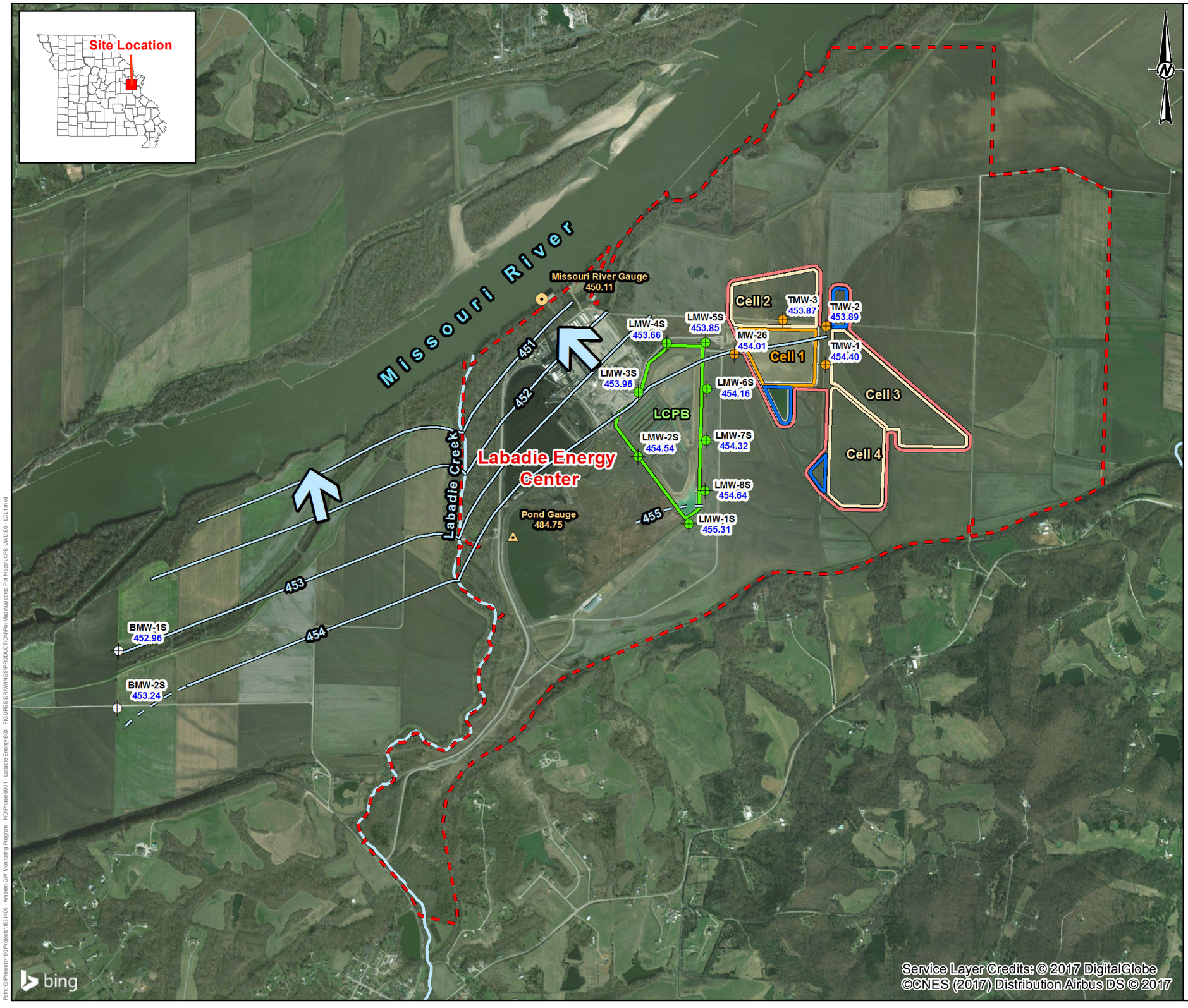
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-11-18
PREPARED	JSI
DESIGN	JSI
REVIEW	MSG
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001C | Rev. 0.0 | FIGURE **P5**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0

Path: G:\Projects\1530 Projects\1531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES\DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWLIES - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
5. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
6. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 500 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
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 6 - JANUARY 16, 2017

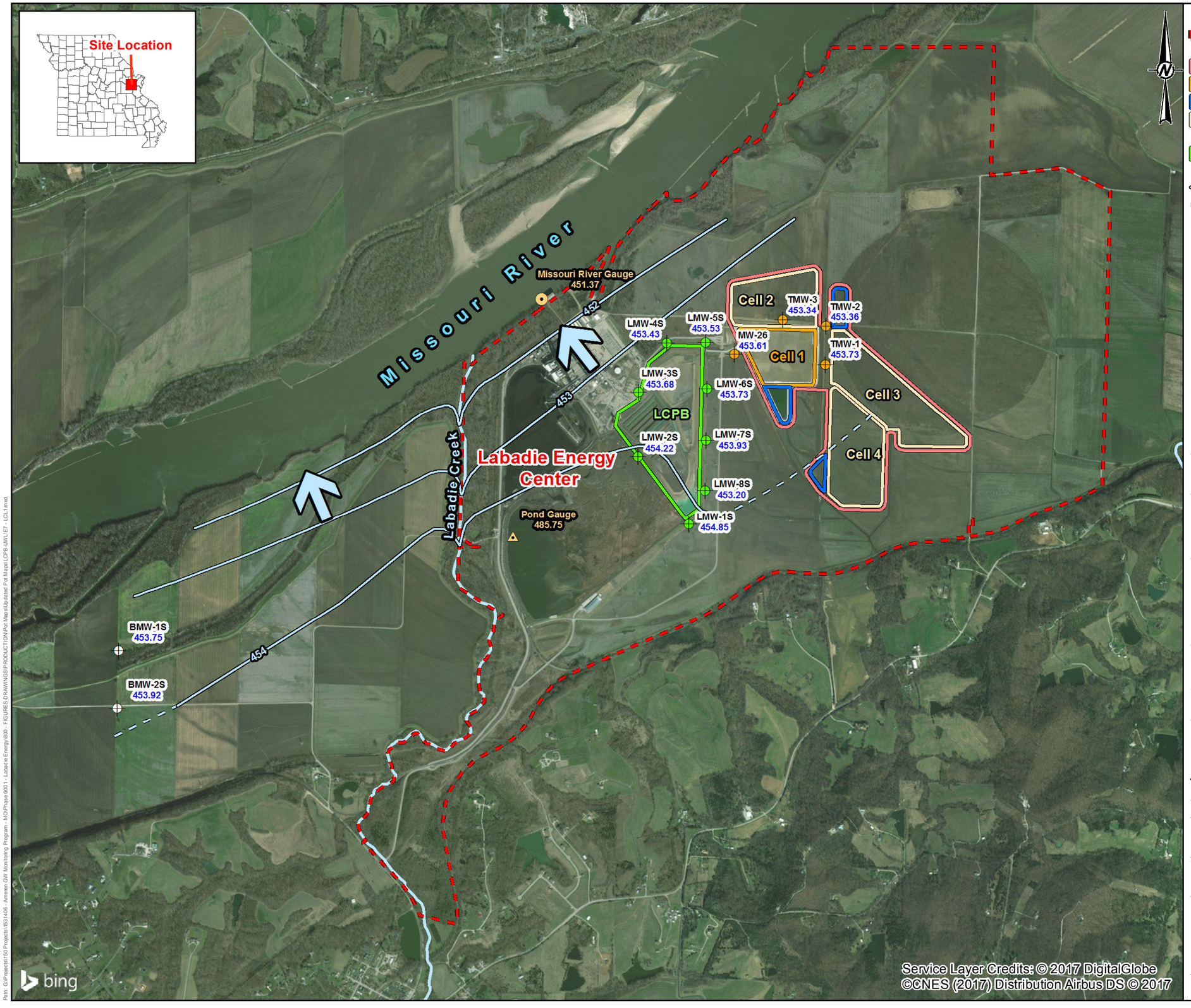
CONSULTANT
Golder Associates

YYYY-MM-DD	2017-01-20
PREPARED	JS
DESIGN	JSI
REVIEW	BEF
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P6**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in 0

Path: G:\Projects\153 Projects\15314406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWLE8 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER MONITORING WELLS TMW-1 AND MW-26 INSTALLED BY RIETZ & JENS, INC. AND SURVEYED BY KDG INC.
5. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
6. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

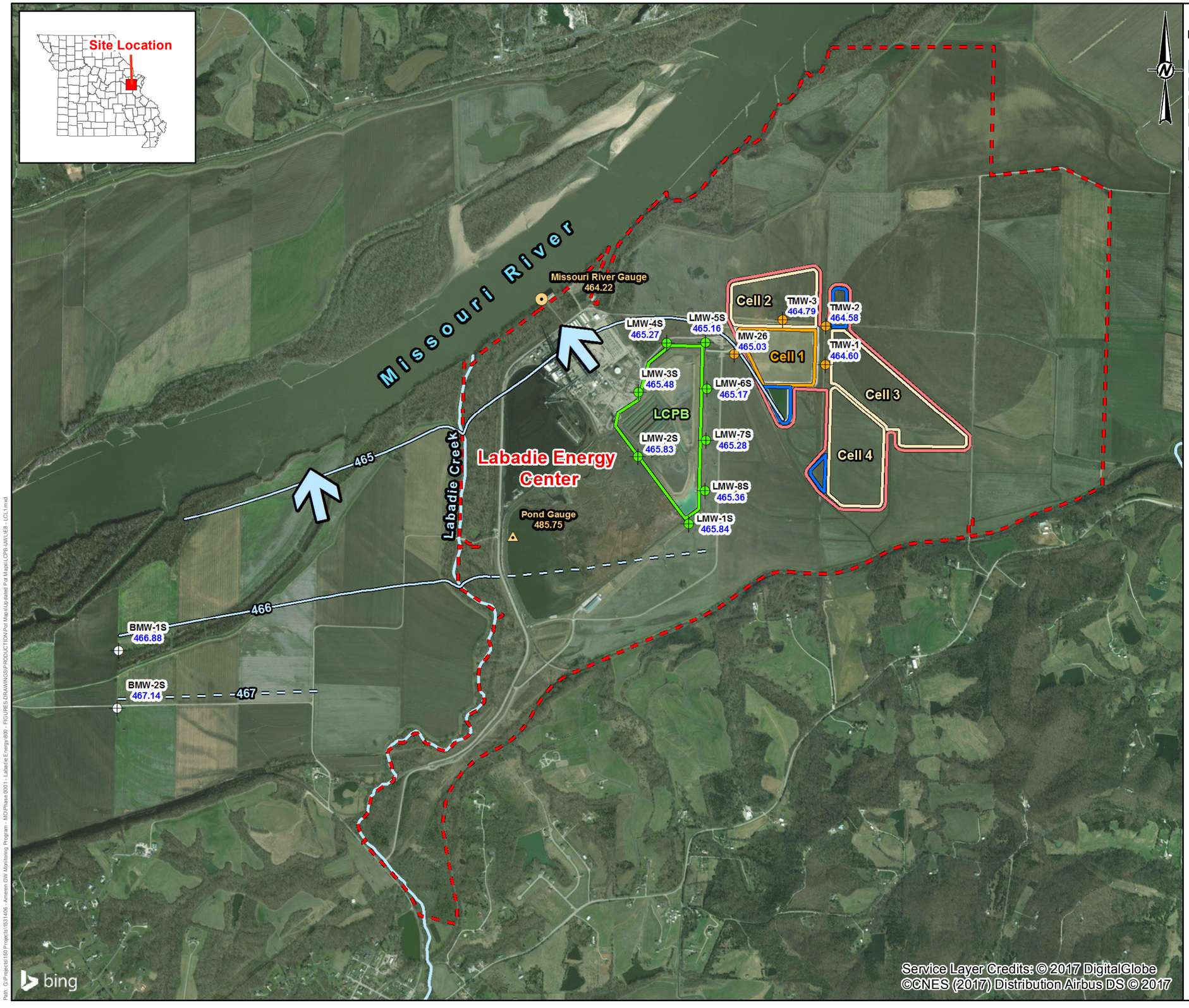
TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 7 - MARCH 1, 2017

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-06-14
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P7**

Path: G:\Projects\1530 Projects\1531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES\DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWL\E7 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
3. GROUNDWATER MONITORING WELLS (EXCEPT TMW-1 AND MW-26) SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
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7. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.
8. 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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 8 - MAY 31, 2017

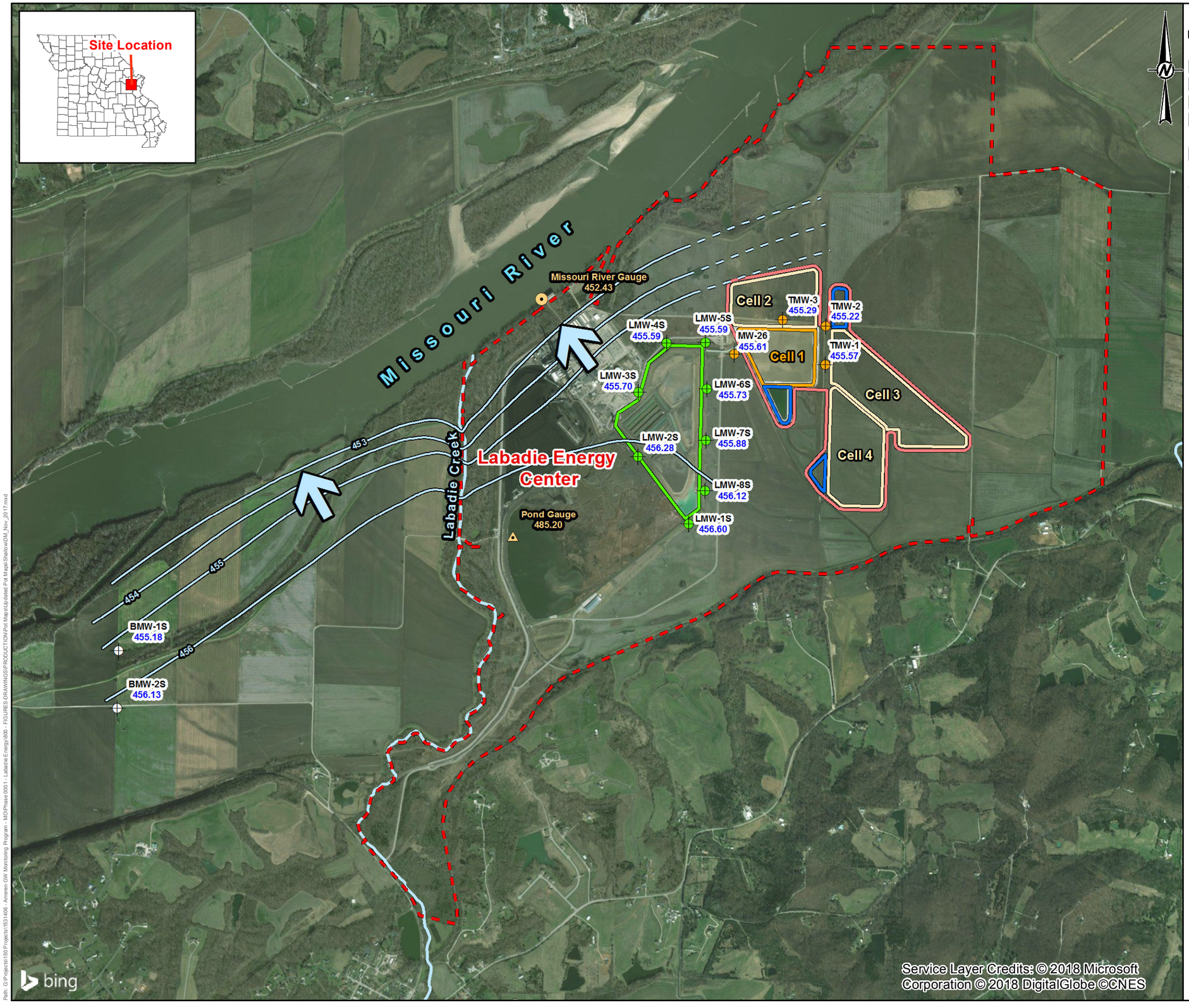
CONSULTANT
Golder Associates

YYYY-MM-DD	2017-06-14
PREPARED	JS
DESIGN	JSI
REVIEW	RJF
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P8**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

Path: G:\Projects\150 Projects\15314406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPB-UWLE8 - LCL1.mxd



LEGEND

- Labadie Energy Center Property Boundary

Utility Waste Landfill (UWL)

- Proposed Fence Perimeter
- Cell LCL1
- Proposed Stormwater Pond
- Proposed Future Cell

Surface Impoundment

- LCPB - Fly Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- LCPB Fly Ash Surface Impoundment Monitoring Well
- Background Monitoring Well
- UWL Monitoring Well
- Missouri River Gauge
- LCPA Bottom Ash Surface Impoundment Gauge
- Groundwater Flow Direction

NOTES

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8. THE UWL BOUNDARIES AND DESIGNATIONS ARE BASED ON AMEREN LABADIE CONSTRUCTION PERMIT APPLICATION DRAWINGS.

REFERENCES

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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.
4. REITZ & JENS, INC. 2014. ADDITIONAL GROUND WATER DETECTION MONITORING WELLS INSTALLATION REPORT.

0 5001,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCL1 POTENTIOMETRIC SURFACE MAP
DETECTION MONITORING EVENT - NOVEMBER 7, 2017

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-11-17
PREPARED	RJF
DESIGN	JSI
REVIEW	JS/JSI
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001C	0.0	**P9**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
1in
0

Path: G:\Projects\150 Projects\15314-06 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\ShallowIDM_Nov_2017.mxd

Established in 1960, Golder Associates is a global, employee-owned organization that helps clients find sustainable solutions to the challenges of finite resources, energy and water supply and management, waste management, urbanization, and climate change. We provide a wide range of independent consulting, design, and construction services in our specialist areas of earth, environment, and energy. By building strong relationships and meeting the needs of clients, our people have created one of the most trusted professional services organizations in the world.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA
Tel: (636) 724-9191
Fax: (636) 724-9323

Golder Associates

Engineering Earth's Development, Preserving Earth's Integrity