REPORT

2017 ANNUAL GROUNDWATER MONITORING REPORT

LCPA, 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 LCPA Surface Impoundment at the Labadie Energy Center (LEC) is subject to the requirements of the CCR Rule. This is the first Annual Report for the LCPA and describes CCR Rule groundwater monitoring activities through December 31, 2017.

A groundwater monitoring well network was designed and installed for the LCPA to meet the requirements of the CCR Rule. The well network consists of two background monitoring wells and nine downgradient monitoring wells that were installed in November 2015 and February 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 for the LEC was completed November 7-8, 2017. Statistical analysis of the Detection Monitoring data will be performed in 2018. The LCPA will continue Detection Monitoring on a semi-annual basis and, in accordance with the CCR Rule, statistical analysis of sample results will determine the need for Assessment Monitoring or any efforts related to Assessment of Corrective Measures or potential Corrective Action in the future. As of December 31, 2017, the LCPA 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 LCPA. The groundwater monitoring system consists of eleven monitoring wells screened in the uppermost aquifer (alluvial aquifer). Monitoring wells were installed by Cascade Drilling LP using rotosonic drilling techniques under the direct supervision of a Golder Geologist or Engineer and 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 LCPA consist of BMW-1D and BMW-2D. 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-1D and BMW-2D are west of the LCPA. 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 LCPA to monitor downgradient water quality. **Figure 1** shows that the downgradient well network consists of nine groundwater monitoring wells (UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, UMW-7D, UMW-8D, and UMW-9D) around the LCPA 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 LCPA 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 baseline sampling are provided in **Appendix B** and **Tables 2-9**.

3.2 Detection Monitoring

Detection Monitoring samples were collected 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 potential Statistically Significant Increases (SSI) over background in 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 LCPA is generally towards the northwest, flowing from the bluffs towards the river. Horizontal gradients calculated by the program range from 0.0004 to 0.0006 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. The first Detection Monitoring sampling event was completed on November 7-8, 2017. As required by the CCR Rule, **Table 11** provides a summary including the number of groundwater samples that were collected, the date of sample collection, and whether the sample was collected as required by the baseline, detection or assessment monitoring program. 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	Groundwater Monitoring Wells											Baseline, Detection or Assessment Monitoring
	BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D	
	Date of Sample Collection											
Baseline Event 1	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/22/2016	3/22/2016	Baseline
Baseline Event 2	5/3/2016	5/4/2016	5/4/2016	5/4/2016	5/5/2016	5/4/2016	5/5/2016	5/4/2016	5/4/2016	5/4/2016	5/4/2016	Baseline
Baseline Event 3	7/11/2016	7/11/2016	7/12/2016	7/12/2016	7/12/2016	7/13/2016	7/13/2016	7/13/2016	7/11/2016	7/12/2016	7/12/2016	Baseline
Baseline Event 4	9/13/2016	9/9/2016	9/9/2016	9/9/2016	9/13/2016	9/13/2016	9/9/2016	9/9/2016	9/12/2016	9/12/2016	9/9/2016	Baseline
Baseline Event 5	11/11/2016	11/11/2016	11/14/2016	11/11/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	Baseline
Baseline Event 6	1/16/2017	1/16/2017	1/16/2017	1/17/2017	1/17/2017	1/17/2017	1/17/2017	1/17/2017	1/18/2017	1/18/2017	1/18/2017	Baseline
Baseline Event 7	3/1/2017	3/1/2017	3/2/2017	3/2/2017	3/2/2017	3/3/2017	3/2/2017	3/2/2017	3/2/2017	3/2/2017	3/2/2017	Baseline
Baseline Event 8	5/31/2017	5/31/2017	5/31/2017	6/2/2017	6/1/2017	6/1/2017	6/1/2017	6/1/2017	6/1/2017	5/31/2017	5/31/2017	Baseline
November 2017 Detection Monitoring Event	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	Detection
Total Number of Samples Collected	9	9	9	9	9	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

During Baseline Sampling Event 2, sample analysis for L-BMW-2D and L-UMW-2D were switched as the result of an error. Values were determined to be switched based on review of results and professional judgement. Consequently, testing data were matched with the correct wells and these updates are reflected in **Appendix B** and **Table 3**.

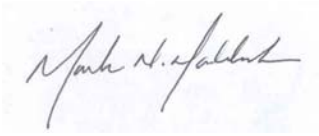
From approximately April 30, 2017 to May 8, 2017, some of the monitoring wells at the LEC were under water due to the flooding of the Missouri River. On May 10, 2017 Golder performed a post-flood monitoring well inspection at the LEC and found that none of the LCPA monitoring wells sustained flood damage. 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 during the Baseline or Detection Monitoring sampling.

5.0 ACTIVITIES PLANNED FOR 2018

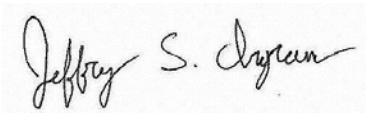
Detection Monitoring sampling is currently scheduled to be completed semi-annually in the second and fourth quarters of 2018, but may be changed due to site conditions (e.g., flooding, access, etc.). Statistical analysis of the November 2017 Detection Monitoring data will be completed by January 15, 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
LCPA Surface Impoundment
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]
UMW-1D	11/19/2015	988822.5	723129.4	489.72	487.8	407.6	397.8	397.4	90.4
UMW-2D	11/21/2015	990437.2	722248.6	484.81	482.7	412.7	402.9	402.5	80.3
UMW-3D	11/22/2015	991830.7	723558.8	490.62	488.8	408.3	398.5	398.1	90.6
UMW-4D	11/24/2015	992512.3	724538.1	494.95	493.2	407.9	398.1	397.7	95.5
UMW-5D	11/23/2015	992027.2	725067.9	496.76	494.9	408.2	398.4	398.0	96.9
UMW-6D	11/22/2015	991382.8	725540.9	496.19	494.5	410.4	400.6	400.2	94.3
UMW-7D	11/20/2015	990722.8	726032.4	469.79	468.0	412.6	402.8	402.4	65.6
UMW-8D	11/19/2015	989892.7	725179.5	469.47	467.5	407.0	397.2	396.8	70.6
UMW-9D	11/19/2015	989220.0	724447.8	470.61	468.8	408.9	399.1	398.7	70.1
BMW-1D	2/1/2016	988310.6	715138.4	473.54	471.2	410.5	400.7	400.3	70.9
BMW-2D	2/2/2016	987204.3	715104.2	474.39	472.4	413.0	403.2	402.8	69.6

Notes:

1.) All elevations and coordinates were surveyed on January 13, 2016 and February 11, 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.

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

Table 2
Baseline Sampling Event 1 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/22/2016	3/22/2016
DISSOLVED OXYGEN	mg/L	0.97	0.37	1.12	0.95	1.93	1.42	0.89	0.80	0.42	0.41	0.39
pH	SU	7.04	7.25	6.97	7.24	7.92	7.80	9.14	7.93	6.98	7.06	7.02
REDOX POTENTIAL	mV	-191.2	-238.4	-104.8	-94.4	-98.5	-61.1	-94.0	-160.1	-167.3	-158.3	-216.1
SPECIFIC CONDUCTIVITY	mS/cm	0.819	0.936	1.381	1.556	1.190	1.225	1.033	1.133	1.104	0.939	0.864
TURBIDITY	NTU	3.95	2.74	4.10	4.55	4.82	2.86	4.95	3.43	4.69	4.19	4.93
APPENDIX III												
BORON, TOTAL	µg/L	85.2 J	69.8 J	540	2,140	8,980	4,010	5,150	18,200	5,810	506	103
CALCIUM, TOTAL	µg/L	115,000	140,000	112,000	108,000	85,100	51,900	75,600	66,200	144,000	126,000	108,000
CHLORIDE, TOTAL	mg/L	10.1	16.1	9.5	20.0	15.8	22.1	19.7	21.7	13.3	8.8	21.0
FLUORIDE, TOTAL	mg/L	0.18 J	0.21	0.21	0.41	0.13 J	0.35	0.081 J	0.12 J	0.33	0.14 J	0.14 J
SULFATE, TOTAL	mg/L	41.7	64.6	7.1	270	364	343	261	278	245	0.49 J	0.26 J
TOTAL DISSOLVED SOLIDS	mg/L	476	555	466	669	601	590	499 J	547	725	493	453
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.11 J	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.26 J	28.2	25.6	2.0	0.57 J	0.26 J	17.2	1.8	10.6	27.9	33.1
BARIUM, TOTAL	µg/L	1,120	364	379	127	81.0	71.4	67.8	129	180	454	516
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.52 J	0.54 J	ND	0.36 J	ND	0.36 J	0.54 J	0.54 J	0.54 J	0.48 J	0.65 J
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	31.8	47.4	26.5	31.6	21.2	35.9	23.8	10.1	20.2	34.6	18.2
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.2 J	7.0 J	1.4 J	45.2	195	148	109	668	201	14.8 J	2.0 J
RADIUM [226 + 228]	pCi/L	2.649	ND	1.724	ND	ND	ND	ND	ND	ND	1.986	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.19 J	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 3
Baseline Sampling Event 2 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	5/3/2016	5/4/2016	5/4/2016	5/4/2016	5/5/2016	5/4/2016	5/5/2016	5/4/2016	5/4/2016	5/4/2016	5/4/2016
DISSOLVED OXYGEN	mg/L	1.77	0.76	1.60	1.32	0.78	0.91	0.70	1.02	1.09	1.54	1.59
pH	SU	6.33	6.70	6.83	7.58	8.47	8.35	9.44	8.04	6.37	6.32	6.28
REDOX POTENTIAL	mV	-48.5	-74.7	-97.1	-118.5	2.6	-142.3	-103.7	151.8	-49.6	-79.2	-74.6
SPECIFIC CONDUCTIVITY	mS/cm	1.359	1.065	1.083	1.077	1.180	1.005	0.893	0.993	1.547	1.360	1.285
TURBIDITY	NTU	4.86	2.40	3.47	3.79	2.86	1.54	2.84	1.81	3.72	3.61	4.85
APPENDIX III												
BORON, TOTAL	µg/L	79.6 J	73.2 J	503	1,920	9,430	3,370	5,220	16,700	5,740	339	106
CALCIUM, TOTAL	µg/L	129,000	132,000	112,000	89,500	105,000	45,100	77,600	62,000	129,000	118,000	107,000
CHLORIDE, TOTAL	mg/L	10.9	12.3	10.2	19.9	13.1	23.1	20.0	23.3	12.4	8.7	22.5
FLUORIDE, TOTAL	mg/L	0.18 J	0.18 J	0.20	0.36	0.12 J	0.35	0.075 J	0.14 J	0.28	0.15 J	0.15 J
SULFATE, TOTAL	mg/L	61.1 J	52.2	14.7	272	473	330	312	400 J	230	ND	ND
TOTAL DISSOLVED SOLIDS	mg/L	570	535	500	613	735	550	548	571	726	476	455
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	0.066 J	ND	0.094 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.12 J	14.7	14.8	1.4	2.3	0.25 J	27.1	5.7	9.6	28.0	32.4
BARIUM, TOTAL	µg/L	1,210	392	413	113	114	68.2	81.5	139	187	458	545
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.95 J	0.70 J	ND	0.56 J	ND	0.55 J	0.58 J	0.80 J	0.77 J	0.62 J	1.1
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.79 J	ND
LEAD, TOTAL	µg/L	ND	ND	4.9 J	ND	ND	ND	5.1	3.2 J	ND	ND	3.0 J
LITHIUM, TOTAL	µg/L	31.4	45.1	27.7	29.1	24.0	36.2	15.9	7.8 J	21.0	34.8	20.4
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.8 J	2.3 J	1.8 J	46.9	171	145	130	634	182	9.5 J	1.6 J
RADIUM [226 + 228]	pCi/L	2.950	0.912	1.878	1.657	ND	ND	ND	ND	ND	1.997	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.20 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 4
Baseline Sampling Event 3 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	7/11/2016	7/11/2016	7/12/2016	7/12/2016	7/12/2016	7/13/2016	7/13/2016	7/13/2016	7/11/2016	7/12/2016	7/12/2016
DISSOLVED OXYGEN	mg/L	1.44	1.80	1.63	1.08	1.58	0.60	1.09	0.77	1.60	1.37	1.32
pH	SU	7.16	7.30	7.22	7.60	8.48	8.11	9.31	8.06	7.32	7.29	7.16
REDOX POTENTIAL	mV	-108.2	-109.5	-141.6	-136.5	-119.0	-153.9	-36.8	-94.3	-159.4	-118.4	-107.5
SPECIFIC CONDUCTIVITY	mS/cm	0.807	0.802	0.708	0.983	0.890	0.935	0.716	0.796	1.045	0.916	0.850
TURBIDITY	NTU	4.10	3.18	4.26	4.58	2.18	2.95	1.93	1.32	4.25	3.03	3.64
APPENDIX III												
BORON, TOTAL	µg/L	80.2 J	71.4 J	547	2,160	9,800	4,340	5,300	17,700	5,820	378	109
CALCIUM, TOTAL	µg/L	135,000	151,000	124,000	117,000	104,000	62,300	81,000	70,700	152,000	138,000	120,000
CHLORIDE, TOTAL	mg/L	10.4	12.7	9.8	40.0	14.8	22.9	20.0	22.6	12.8	9.0	21.7
FLUORIDE, TOTAL	mg/L	0.19 J	0.20	0.20	0.34	0.13 J	0.32	0.096 J	0.14 J	0.29	0.16 J	0.16 J
SULFATE, TOTAL	mg/L	38.8	44.1	7.0	208	382	372	267	350	216	ND	0.33 J
TOTAL DISSOLVED SOLIDS	mg/L	504	538	465	659	670	629	515	548	760	507	469
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	0.079 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.47 J	16.2	28.5	2.0	2.0	ND	19.3	9.6	13.7	31.2	33.1
BARIUM, TOTAL	µg/L	1,150	363	379	124	92.0	78.6	70.6	123	159	448	507
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.81 J	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	30.7	44.1	25.1	28.9	18.2	37.6	19.0	6.5 J	17.7	32.0	16.6
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.2 J	3.3 J	1.8 J	44.3	192	192	117	674	198	13.6 J	1.3 J
RADIUM [226 + 228]	pCi/L	3.080	ND	1.983	ND	ND	ND	ND	1.590	1.738	1.826	1.754
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.19 J	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 5
Baseline Sampling Event 4 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	9/13/2016	9/9/2016	9/9/2016	9/9/2016	9/13/2016	9/13/2016	9/9/2016	9/9/2016	9/12/2016	9/12/2016	9/9/2016
DISSOLVED OXYGEN	mg/L	1.03	0.49	0.52	1.13	0.41	0.74	0.70	0.42	1.10	0.68	0.39
pH	SU	7.11	9.26	6.95	7.47	8.12	7.98	9.34	8.50	7.39	7.15	7.03
REDOX POTENTIAL	mV	-125.1	54.9	-135.2	-117.3	-163.4	-110.4	49.3	-189.9	115.5	-132.8	-2.4
SPECIFIC CONDUCTIVITY	mS/cm	0.878	0.760	0.933	0.975	1.143	1.000	0.652	0.889	1.161	1.013	0.746
TURBIDITY	NTU	2.35	1.97	2.41	2.51	1.71	1.77	1.60	1.86	1.58	2.09	4.10
APPENDIX III												
BORON, TOTAL	µg/L	78.2 J	79.8 J	508	1,790	9,230	3,730	5,080	16,800	4,820	528	122
CALCIUM, TOTAL	µg/L	116,000	149,000	133,000	99,400	118,000	52,400	81,300	77,900	144,000	126,000	120,000
CHLORIDE, TOTAL	mg/L	10.6	14.1	11.4	27.2	13.9	22.6	19.6	22.5	12.0	9.3	21.5
FLUORIDE, TOTAL	mg/L	0.17 J	0.22	0.18 J	0.34	0.12 J	0.34	0.082 J	0.12 J	0.28	0.15 J	0.15 J
SULFATE, TOTAL	mg/L	39.9	51.0	10.2	237	454	360	275	316	213	3.7	ND
TOTAL DISSOLVED SOLIDS	mg/L	514	524	512	625	781	618	513	589	766	497	446
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	0.061 J	0.084 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.51 J	31.6	27.0	2.2	1.1	0.11 J	17.7	16.6	21.6	31.8	35.4
BARIUM, TOTAL	µg/L	1,100	377	421	114	118	75.2	68.9	127	105	497	536
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	0.48 J	2.4	ND	ND	ND	ND	0.56 J	ND	1.0	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	2.6 J	ND	ND	ND	ND	ND	ND	ND	ND	4.8 J
LITHIUM, TOTAL	µg/L	26.9	43.2	23.3	26.9	18.8	34.7	23.4	6.6 J	19.1	31.2	17.2
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	ND	ND	45.9	175	156	120	596	205	14.5 J	ND
RADIUM [226 + 228]	pCi/L	3.510	2.066	2.780	2.284	2.801	1.840	2.010	1.993	ND	2.478	1.716
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 6
Baseline Sampling Event 5 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	11/11/2016	11/11/2016	11/14/2016	11/11/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016	11/14/2016
DISSOLVED OXYGEN	mg/L	1.41	0.33	0.65	1.20	0.44	0.39	0.61	0.41	0.13	0.23	0.56
pH	SU	6.98	7.04	7.10	7.34	7.61	8.14	9.10	8.10	7.44	7.02	7.06
REDOX POTENTIAL	mV	-103.4	-125.6	-135.9	-130.6	-178.4	-193.0	-120.2	-215.5	-242.1	-169.5	-155.8
SPECIFIC CONDUCTIVITY	mS/cm	0.867	0.781	0.807	1.092	1.572	0.724	0.670	0.868	1.119	0.937	0.844
TURBIDITY	NTU	4.52	2.95	2.34	4.06	0.72	1.38	0.82	0.80	3.15	2.90	3.43
APPENDIX III												
BORON, TOTAL	µg/L	74.0 J	61.3 J	462	1,880	8,550	2,900	5,400	15,900	5,260	505	85.5 J
CALCIUM, TOTAL	µg/L	130,000	135,000	121,000	119,000	252,000	42,800	72,300	82,800	164,000	136,000	117,000
CHLORIDE, TOTAL	mg/L	9.9	14.5	10.1	55.3	10.9	20.6	18.9	22.3	12.5	9.3	20.6
FLUORIDE, TOTAL	mg/L	0.20 J	0.27	0.22	0.34	0.16 J	0.40	0.13 J	0.15 J	0.29	0.20 J	0.18 J
SULFATE, TOTAL	mg/L	33.3	39.6	4.3	175	774	274	263	384	252	18.2	ND
TOTAL DISSOLVED SOLIDS	mg/L	486	470	467	669	1,240	463	486	630	740	521	451
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.70 J	38.4	31.1	2.7	ND	ND	16.4	12.9	21.1	32.5	35.6
BARIUM, TOTAL	µg/L	1,170	325	371	138	185	56.5	61.6	129	101	481	506
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.46 J	0.48 J	0.36 J	0.47 J	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	3.6 J	2.7 J	3.9 J	2.7 J
LITHIUM, TOTAL	µg/L	32.8	46.1	24.4	31.3	31.4	32.1	26.3	7.0 J	22.7	31.7	18.5
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	ND	36.9	113	122	122	554	191	11.7 J	0.76 J
RADIUM [226 + 228]	pCi/L	1.508	ND	ND	2.180	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 7
Baseline Sampling Event 6 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	1/16/2017	1/16/2017	1/16/2017	1/17/2017	1/17/2017	1/17/2017	1/17/2017	1/17/2017	1/18/2017	1/18/2017	1/18/2017
DISSOLVED OXYGEN	mg/L	0.46	0.52	0.28	0.48	0.32	0.31	0.31	0.29	0.33	0.79	0.89
pH	SU	7.33	7.50	7.17	7.52	7.72	8.38	9.39	8.33	7.52	7.03	7.11
REDOX POTENTIAL	mV	-12.1	-62.4	-125.8	-71.0	-132.8	-179.9	-150.7	-150.3	-193.5	-96.2	2.0
SPECIFIC CONDUCTIVITY	mS/cm	0.954	0.856	1.495	0.867	1.424	0.603	0.695	1.054	1.246	0.971	0.889
TURBIDITY	NTU	1.67	0.98	2.04	3.51	2.84	3.47	2.01	1.59	2.42	3.23	3.14
APPENDIX III												
BORON, TOTAL	µg/L	80.2 J	63.9 J	555	1,660	7,850	2,130	5,480	14,000	5,570	479	93.1 J
CALCIUM, TOTAL	µg/L	135,000	121,000	121,000	89,600	173,000	29,200	61,400	92,000	156,000	133,000	111,000
CHLORIDE, TOTAL	mg/L	8.4	13.1	12.3	22.9	12.9	19.3	19.3	20.5	13.2	9.1	19.9
FLUORIDE, TOTAL	mg/L	0.20	0.29	0.19 J	0.38	0.24	0.44	0.11 J	0.11 J	0.28	0.19 J	0.17 J
SULFATE, TOTAL	mg/L	36.0	34.0	15.6	184	597	192	250	504	318	38.9	ND
TOTAL DISSOLVED SOLIDS	mg/L	521	476	531	547	1,030	368	473	680	800	511	434
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.63 J	42.6	35.0	2.9	0.11 J	ND	22.1	15.2	20.9	32.8	33.5
BARIUM, TOTAL	µg/L	1,290	307	410	105	136	43.3	54.8	141	113	492	520
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.052 J	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	3.6 J	3.0 J	3.1 J	ND	3.6 J	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	30.5	40.0	24.4	24.2	26.3	25.0	20.8	5.9 J	18.2	30.7	15.7
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.4 J	2.7 J	1.8 J	44.4	127	98.8	106	504	205	14.5 J	ND
RADIUM [226 + 228]	pCi/L	2.920	ND	1.294	ND	ND	ND	ND	ND	1.689	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.22 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 8
Baseline Sampling Event 7 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	3/1/2017	3/1/2017	3/2/2017	3/2/2017	3/2/2017	3/3/2017	3/2/2017	3/2/2017	3/2/2017	3/2/2017	3/2/2017
DISSOLVED OXYGEN	mg/L	0.90	0.30	0.45	0.53	0.26	0.46	0.34	0.38	0.25	0.26	0.36
pH	SU	6.99	7.25	7.69	7.71	8.12	7.86	9.58	9.09	7.25	7.07	6.92
REDOX POTENTIAL	mV	-90.4	-115.6	-84.7	-86.7	-146.8	-51.3	-163.9	-150.6	-130.3	-134.9	-119.5
SPECIFIC CONDUCTIVITY	mS/cm	0.888	0.829	0.890	0.838	1.582	0.603	0.713	1.099	1.168	0.955	0.876
TURBIDITY	NTU	2.39	3.83	1.32	6.22	0.42	1.49	0.53	0.32	1.97	3.82	1.22
APPENDIX III												
BORON, TOTAL	µg/L	79.4 J	62.7 J	516	1,410	7,870	2,560	6,150	14,200	5,840	353	97.5 J
CALCIUM, TOTAL	µg/L	136,000	129,000	126,000	85,100	221,000	36,000	68,700	106,000	172,000	137,000	116,000
CHLORIDE, TOTAL	mg/L	8.6	14.3	11.4	19.7	11.8	19.6	18.4	20.5	12.8	9.2	19.5
FLUORIDE, TOTAL	mg/L	0.19 J	0.25	0.20 J	0.37	0.17 J	0.40	0.13 J	0.14 J	0.27	0.17 J	0.17 J
SULFATE, TOTAL	mg/L	34.2	35.5	8.9	179	634	216	252	446	295	16.7	ND
TOTAL DISSOLVED SOLIDS	mg/L	505	493	517	540	1,150	418	482	749	801	536	458
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	0.036 J	0.031 J	ND	ND	ND	ND	0.10 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.99 J	39.1	35.3	2.8	0.46 J	0.12 J	26.2	14.0	20.7	35.4	33.2
BARIUM, TOTAL	µg/L	1,220	306	398	99.0	163	50.6	61.4	150	123	482	505
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	2.9 J	ND	3.0 J	ND	ND	ND	ND	ND	2.7 J	4.4 J	2.5 J
LITHIUM, TOTAL	µg/L	30.9	41.5	23.3	24.9	27.4	29.3	16.6	7.4 J	20.6	32.4	16.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.6 J	4.8 J	1.5 J	45.4	116	116	111	496	191	12.2 J	2.2 J
RADIUM [226 + 228]	pCi/L	2.897	ND	1.964	1.596	2.721	ND	ND	ND	ND	1.793	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.14 J	ND	0.15 J	0.26 J	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	0.039 J	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

Table 9
Baseline Sampling Event 8 Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	5/31/2017	5/31/2017	5/31/2017	6/2/2017	6/1/2017	6/1/2017	6/1/2017	6/1/2017	6/1/2017	5/31/2017	5/31/2017
DISSOLVED OXYGEN	mg/L	2.18	0.28	0.82	0.60	0.45	0.47	0.55	0.74	0.16	0.22	0.09
pH	SU	6.90	7.21	6.79	7.03	8.00	7.95	9.02	8.08	7.07	7.04	7.02
REDOX POTENTIAL	mV	-99.9	-83.2	-73.5	-75.7	-219.2	-172.6	-125.3	-120.4	-127.2	105.8	-121.0
SPECIFIC CONDUCTIVITY	mS/cm	0.916	0.696	0.953	0.882	1.110	0.945	0.729	1.034	0.998	0.790	0.773
TURBIDITY	NTU	2.25	2.59	0.90	4.67	0.69	2.11	1.58	0.71	3.17	4.80	4.73
APPENDIX III												
BORON, TOTAL	µg/L	70.4 J	61.8 J	624	1,180	12,400	5,240	5,690	17,400	5,980	385	95.1 J
CALCIUM, TOTAL	µg/L	139,000	136,000	131,000	96,000	160,000	55,700	74,800	97,100	178,000	132,000	122,000
CHLORIDE, TOTAL	mg/L	10.2	17.0	12.5	27.8	13.1	21.9	19.0	22.5	13.7	9.7	20.7
FLUORIDE, TOTAL	mg/L	0.18 J	0.19 J	0.19 J	0.37	ND	0.36	ND	0.11 J	0.26	0.15 J	0.15 J
SULFATE, TOTAL	mg/L	35.2	43.0	39.4	138	386	342	246	366	305	1.2	ND
TOTAL DISSOLVED SOLIDS	mg/L	518	482	568	543	777	610	493	672	809	496	468
APPENDIX IV												
ANTIMONY, TOTAL	µg/L	ND	ND	0.029 J	ND	ND	ND	0.10 J	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.85 J	34.7	30.9	1.7	4.0	0.10 J	21.0	12.8	16.5	27.6	34.2
BARIUM, TOTAL	µg/L	1,200	354	437	107	139	78.6	69.2	145	164	465	538
BERYLLIUM, TOTAL	µg/L	ND	0.17 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	27.5	39.2	23.8	25.4	20.4	33.2	13.5	5.8 J	14.6	26.4	14.0
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	1.6 J	3.5 J	2.0 J	40.6	171	192	136	548	188	11.5 J	2.6 J
RADIUM [226 + 228]	pCi/L	3.200	1.541	1.863	1.699	1.772	ND	ND	1.437	ND	1.908	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	0.12 J	0.21 J	0.091 J	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	0.075 J	ND	ND	ND	ND	0.092 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 centimeters, 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 Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: JSI 11/28/2017
Checked By: RJF 12/5/2017
Reviewed By: MNH 12/11/2017

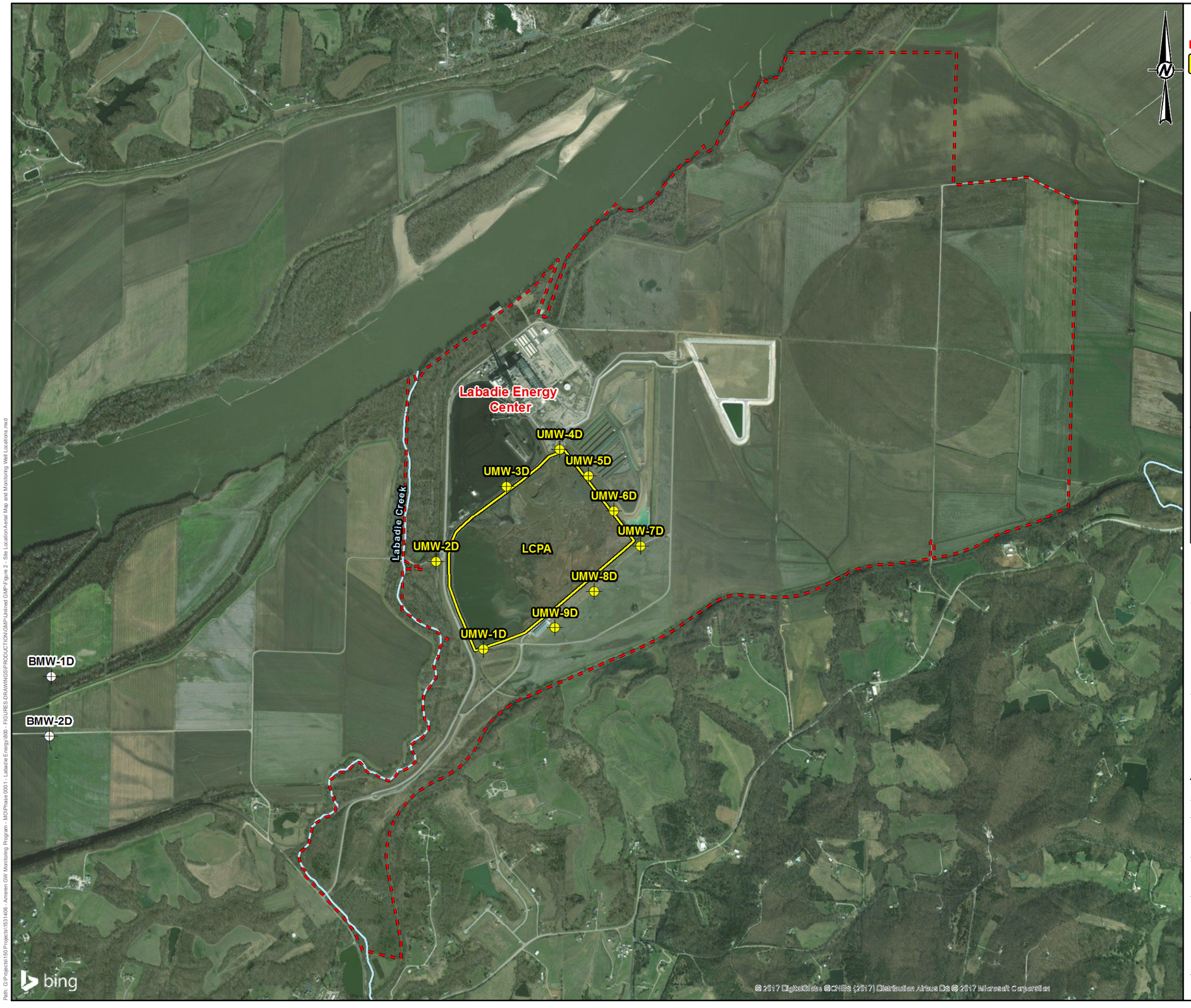
Table 10
November 2017 Detection Monitoring Results
LCPA Surface Impoundment
Labadie Energy Center, Franklin County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1D	BMW-2D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	UMW-7D	UMW-8D	UMW-9D
FIELD PARAMETERS												
DATE	NA	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017	11/7/2017	11/7/2017	11/7/2017	11/8/2017	11/8/2017	11/8/2017
DISSOLVED OXYGEN	mg/L	0.77	0.85	1.33	0.75	0.54	0.77	1.08	0.90	0.83	0.71	0.67
pH	SU	7.15	7.25	7.06	7.52	7.93	7.33	9.21	7.99	7.13	7.05	6.96
REDOX POTENTIAL	mV	-90.1	-69.1	15.4	-36.6	-122.2	25.9	-130.7	-161.4	-77.8	-97.3	-92.2
SPECIFIC CONDUCTIVITY	mS/cm	0.874	0.793	0.855	0.882	0.970	0.826	0.672	0.977	1.189	0.923	0.882
TURBIDITY	NTU	2.61	1.08	3.53	4.68	1.53	1.31	0.36	0.39	2.67	3.09	1.99
APPENDIX III												
BORON, TOTAL	µg/L	106	91.8 J	567	1,990	9,850	4,020	5,920	15,700	6,360	375	126
CALCIUM, TOTAL	µg/L	135,000	134,000	135,000	101,000	127,000	47,400	68,300	95,500	180,000	132,000	119,000
CHLORIDE, TOTAL	mg/L	8.7	18.5	10.9	18.7	14.1	19.7	18.8	21.8	13.0	9.0	19.6
FLUORIDE, TOTAL	mg/L	0.22	0.26	0.24	0.36	0.19 J	0.39	0.14 J	0.16 J	0.32	0.21	0.20
SULFATE, TOTAL	mg/L	35.0	35.8	7.4	241	422	312	236	467	313	3.5	ND
TOTAL DISSOLVED SOLIDS	mg/L	475	454	456	583	596	536	404	645	825	444	462

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, mV - millivolts, mS/cm - millisiemens per centimeters, 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. Values displayed as ND.
4. NA - not applicable.

Prepared By: JSI
Check By: RJF
Reviewed By: MNH

FIGURES



LEGEND

Labadie Energy Center Property Boundary

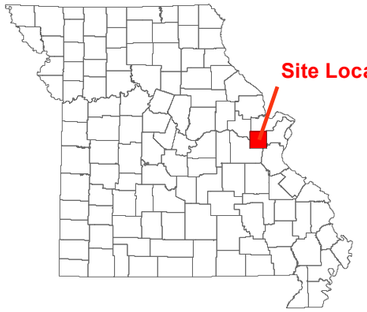
LCPA - Bottom Ash Surface

Ground/Surface Water Measurement Locations

Background Monitoring Well

LCPA - Bottom Ash Surface Impoundment Monitoring Well

KEY MAP



NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER MONITORING WELLS SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.

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	2017-08-07
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001A	0.0	1

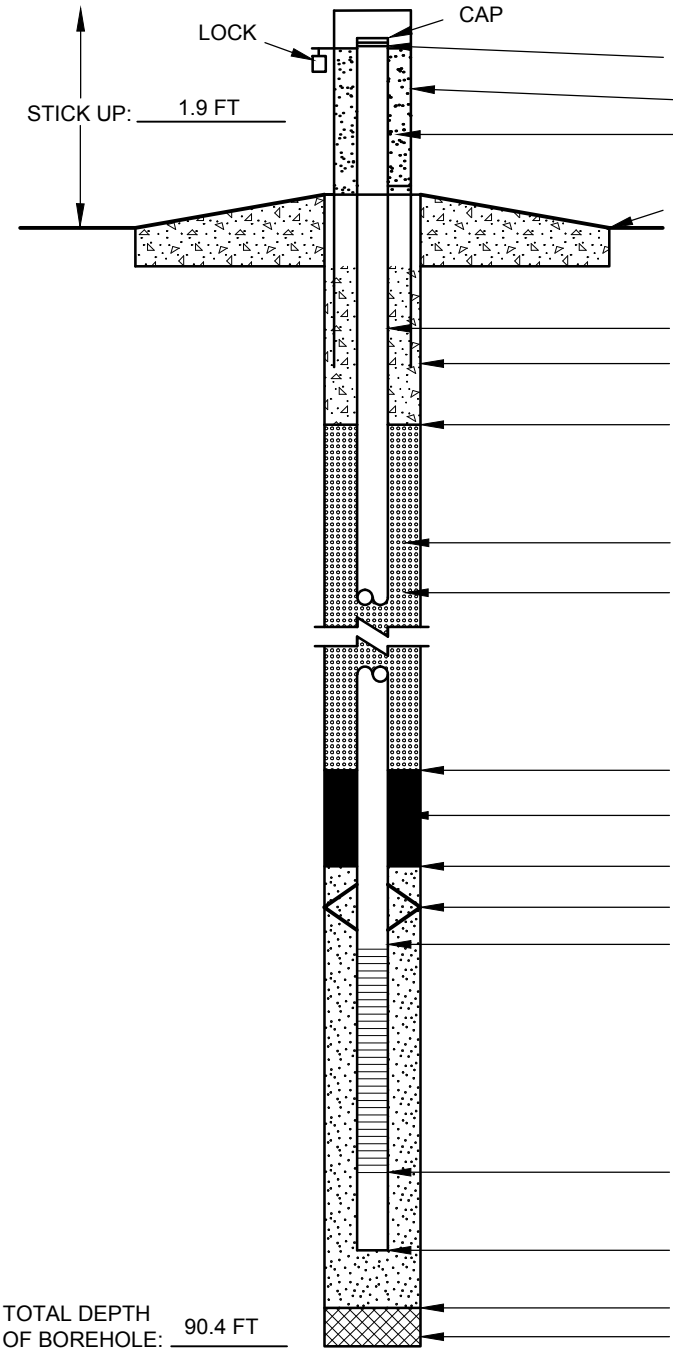
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
1 in
0

Path: G:\Projects\153\Projects\1531406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES,DRAWINGS\PRODUCTION\GMP\Unlined GMP\Figure 2 - Site LocationAerial Map and Monitoring Well Locations.mxd

APPENDIX A – CCR MONITORING WELL CONSTRUCTION DIAGRAMS

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-1D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: UMW-1D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 487.8 FT MSL
GEOLOGIST: J. INGRAM	NORTHING: 988822.5	EASTING: 723129.4
DRILLER: J. DRABEK	STATIC WATER LEVEL: 28.40 FT BTOC	COMPLETION DATE: 11/19/2015
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



TOP OF CASING ELEVATION: 489.72 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 487.8 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: 3/8" BENTONITE CHIPS - 2 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 69.0

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

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 77.5 FINE: 75.0

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 80.2

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): 90.0

BOTTOM OF WELL DEPTH (ft. bgs): 90.4

BOTTOM OF FILTER PACK (ft. bgs): 90.4

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 350 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

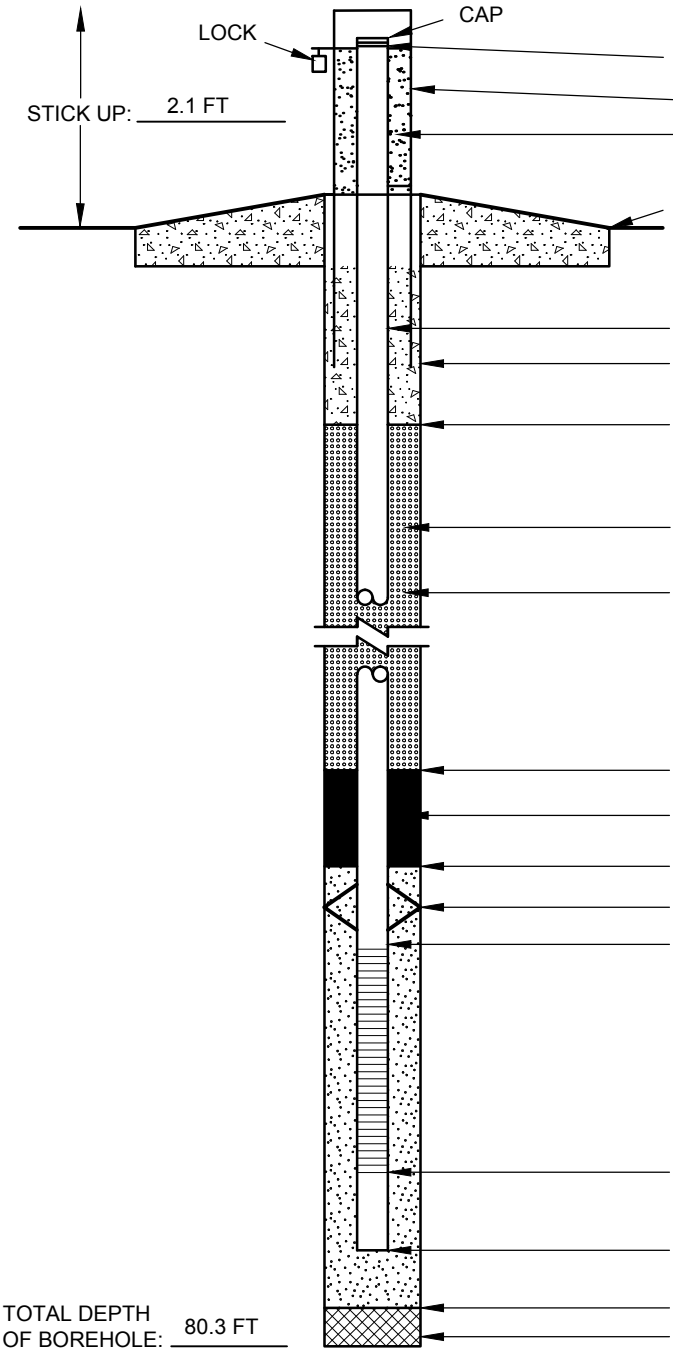
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-2D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: UMW-2D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 482.7 FT MSL
GEOLOGIST: J. SUOZZI	NORTHING: 990437.2	EASTING: 722248.6
DRILLER: J. DRABEK	STATIC WATER LEVEL: 23.81 FT BTOC	COMPLETION DATE: 11/21/2015
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



TOP OF CASING ELEVATION: 484.81 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 482.7 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: 3/8" BENTONITE CHIPS - 2 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 60.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 67.5 FINE: 66.5

CENTRALIZER (yes) / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 70.1

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 79.9

BOTTOM OF WELL DEPTH (ft. bgs): 80.3

BOTTOM OF FILTER PACK (ft. bgs): 80.3

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 200 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

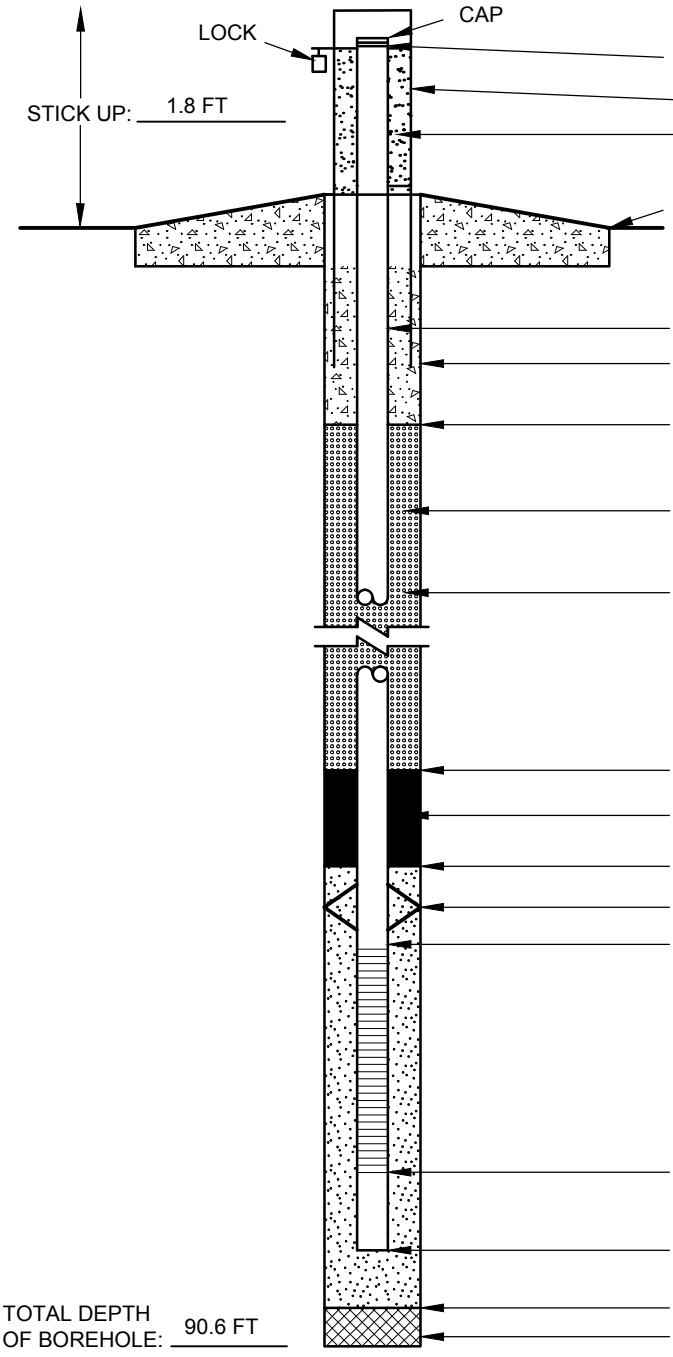
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-3D

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001A	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: UMW-3D	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 488.8 FT MSL	
GEOLOGIST: J. SUOZZI	NORTHING: 991830.7	EASTING: 723558.8
DRILLER: J. DRABEK	STATIC WATER LEVEL: 30.14 FT BTOC	COMPLETION DATE: 11/22/2015
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 490.62 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 488.8 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: 3/8" BENTONITE CHIPS - 2 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 69.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 76.0 FINE: 75.0

CENTRALIZER (yes) / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 80.4

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 90.2

BOTTOM OF WELL DEPTH (ft. bgs): 90.6

BOTTOM OF FILTER PACK (ft. bgs): 90.6

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 350 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

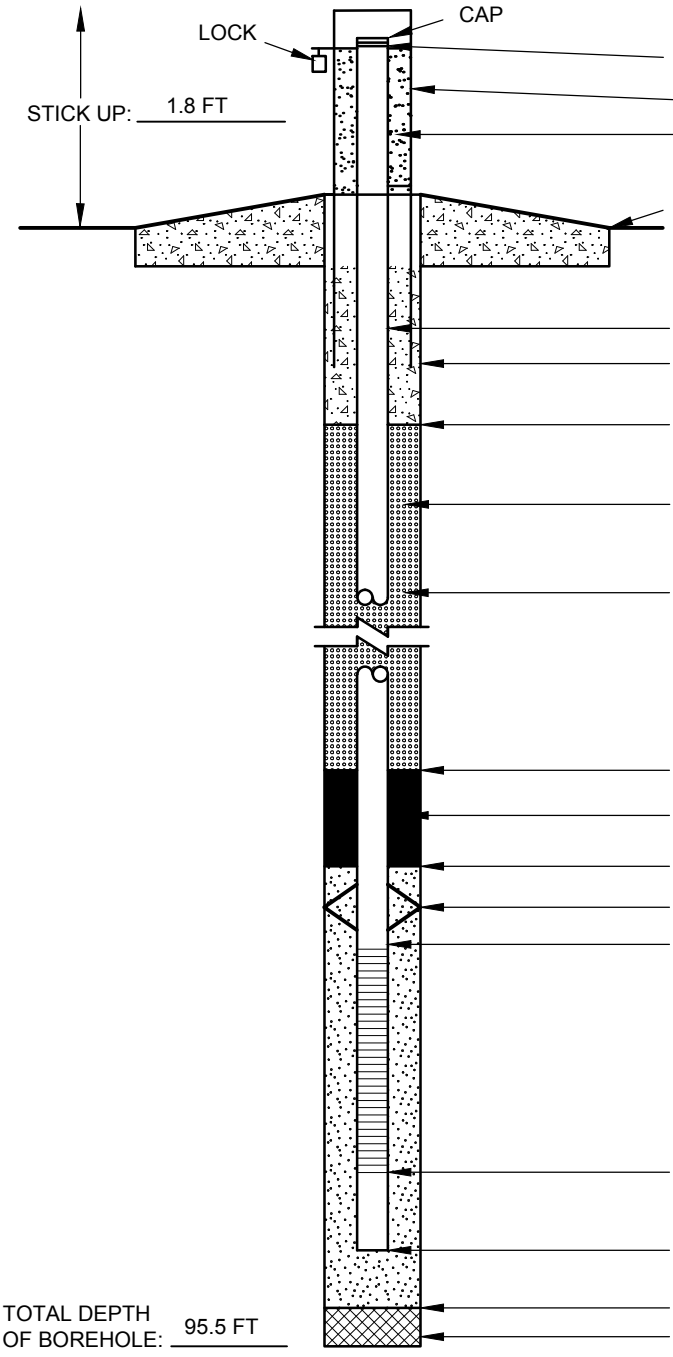
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-4D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: UMW-4D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 493.2 FT MSL
GEOLOGIST: J. INGRAM	NORTHING: 992512.3	EASTING: 724538.1
DRILLER: J. DRABEK	STATIC WATER LEVEL: 34.78 FT BTOC	COMPLETION DATE: 11/24/2015
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



TOP OF CASING ELEVATION: 494.95 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 493.2 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: 3/8" BENTONITE CHIPS - 2 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 78.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 82.5 FINE: 82.0

CENTRALIZER (yes) / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 85.3

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 95.1

BOTTOM OF WELL DEPTH (ft. bgs): 95.5

BOTTOM OF FILTER PACK (ft. bgs): 95.5

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 250 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

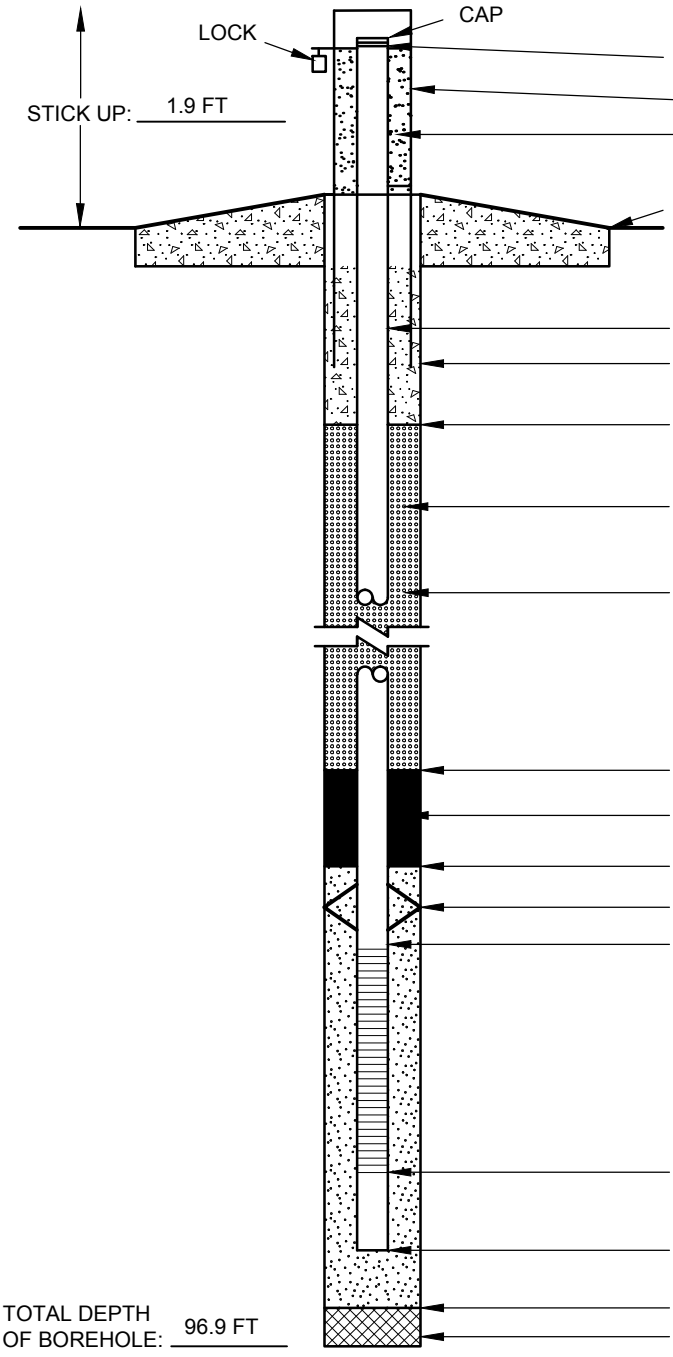
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-5D

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001A	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: UMW-5D	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 494.9 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 992027.2	EASTING: 725067.9
DRILLER: J. DRABEK	STATIC WATER LEVEL: 35.86 FT BTOC	COMPLETION DATE: 11/23/2015
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



- TOP OF CASING ELEVATION: 496.76 FT MSL
- PROTECTIVE CASING (yes / no): 4" X 5' ALUMINUM
- PEA GRAVEL OR SAND
- GROUND SURFACE ELEVATION: 494.9FT 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: 3/8" BENTONITE CHIPS - 6 BAGS
- TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS
- TOP OF BENTONITE SEAL DEPTH (ft. bgs): 75.0
- TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG
- TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 83.0 FINE: 82.0
- CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)
- TOP OF SCREEN DEPTH (ft. bgs): 86.7
- 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: 1/3 BAG
- BOTTOM OF SCREEN DEPTH (ft. bgs): 96.5
- BOTTOM OF WELL DEPTH (ft. bgs): 96.9
- BOTTOM OF FILTER PACK (ft. bgs): 96.9
- TYPE AND AMOUNT OF BACKFILL: NONE

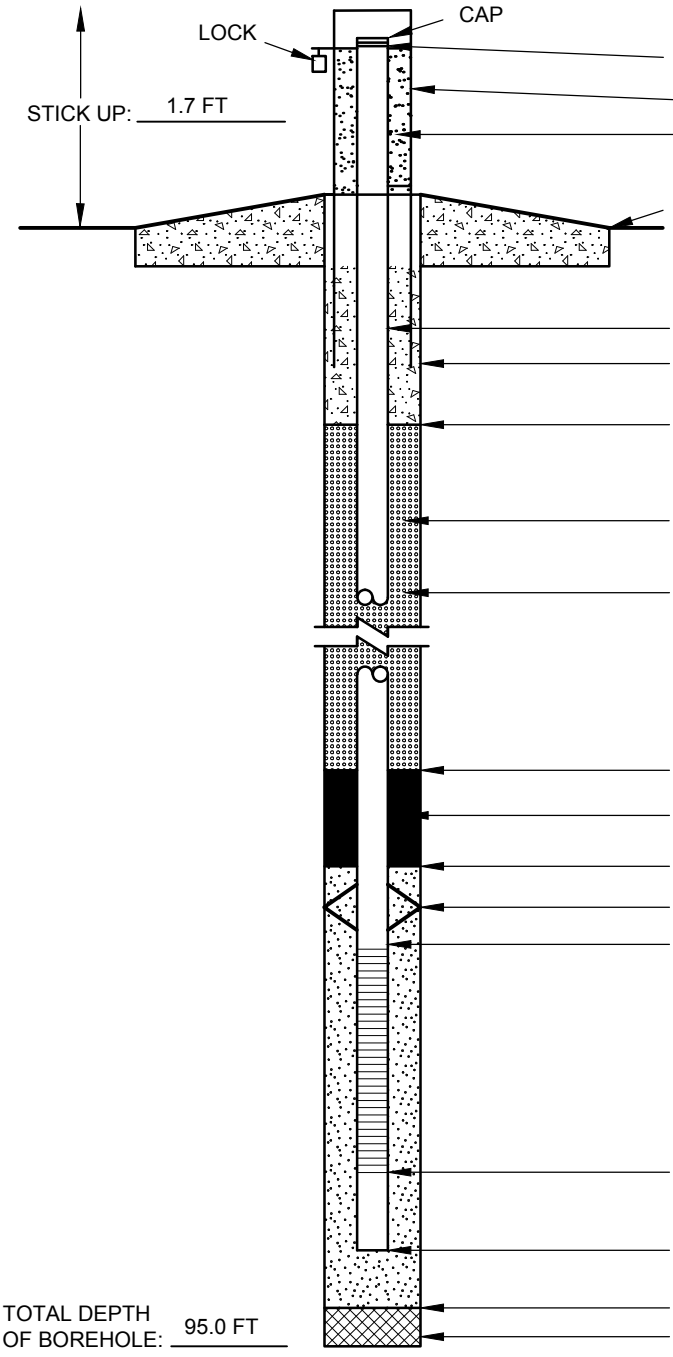
ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 400 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON JANUARY 16, 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 UMW-6D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: UMW-6D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 494.5 FT MSL
GEOLOGIST: J. SUOZZI	NORTHING: 991382.8	EASTING: 725540.9
DRILLER: J. DRABEK	STATIC WATER LEVEL: 35.50 FT BTOC	COMPLETION DATE: 11/22/2015
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



TOP OF CASING ELEVATION: 496.19 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 494.5 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: 3/8" BENTONITE CHIPS - 6 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 5 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 74.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 82.0 FINE: 81.0

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 84.1

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 93.9

BOTTOM OF WELL DEPTH (ft. bgs): 94.3

BOTTOM OF FILTER PACK (ft. bgs): 94.3

TYPE AND AMOUNT OF BACKFILL: 0.7 FT - NATURAL CAVE IN

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 450 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

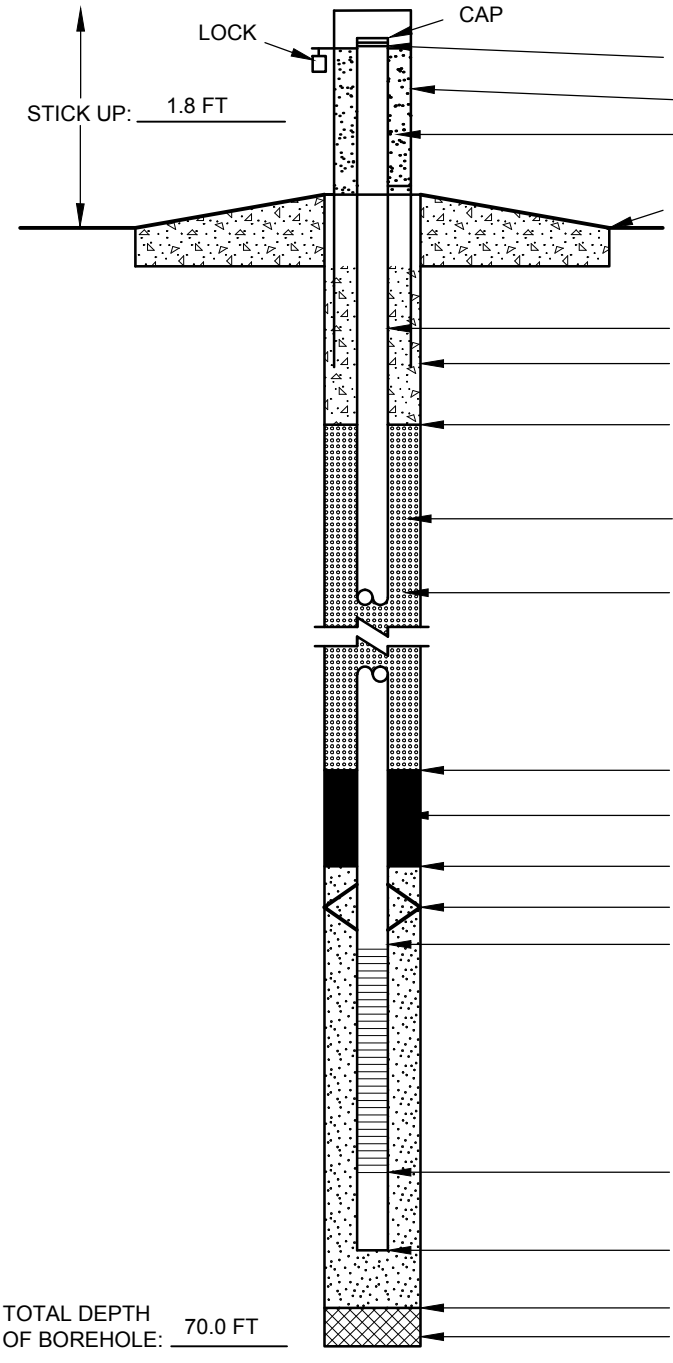
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-7D

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001A	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: UMW-7D	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 468.0 FT MSL	
GEOLOGIST: J. SUOZZI	NORTHING: 990722.8	EASTING: 726032.4
DRILLER: J. DRABEK	STATIC WATER LEVEL: 9.35 FT BTOC	COMPLETION DATE: 11/20/2015
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 469.79 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: 3/8" BENTONITE CHIPS - 1 BAG

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 4 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 46.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 53.0 FINE: 51.0

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 55.4

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 65.2

BOTTOM OF WELL DEPTH (ft. bgs): 65.6

BOTTOM OF FILTER PACK (ft. bgs): 65.6

TYPE AND AMOUNT OF BACKFILL: 4.4 FT - NATURAL CAVE IN

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 150 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

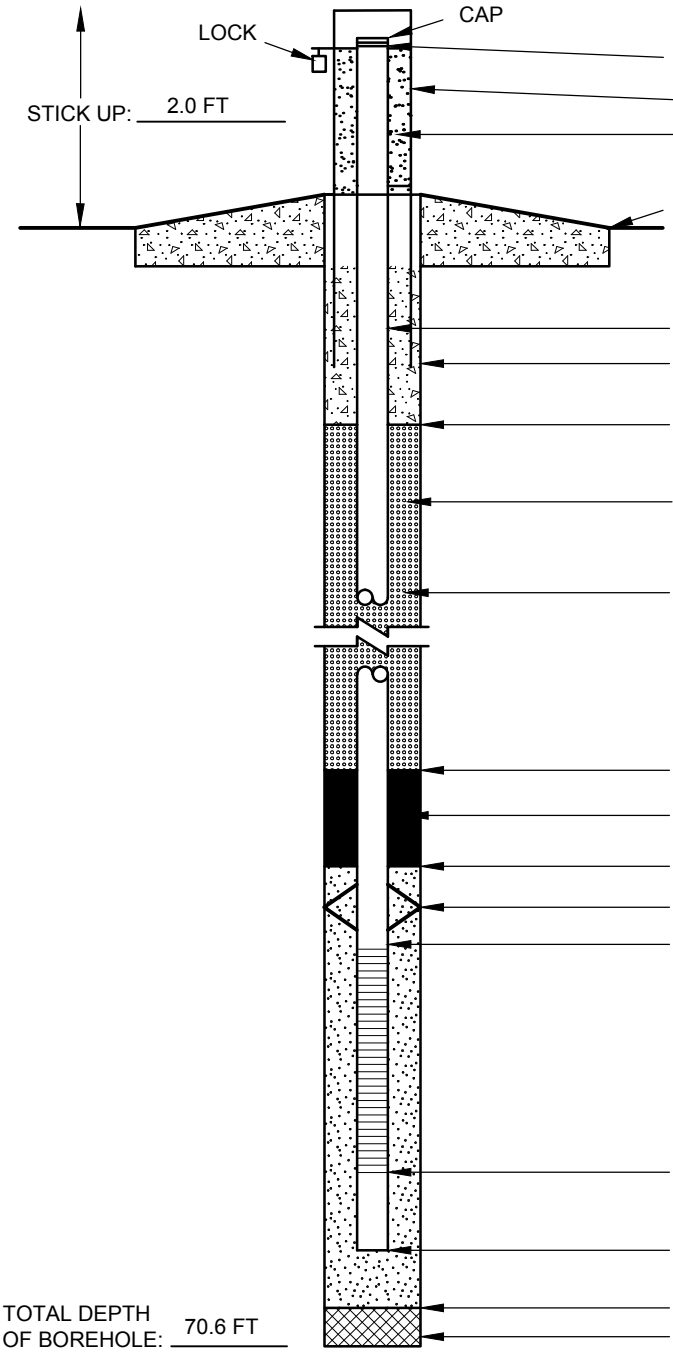
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-8D

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001A	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: UMW-8D	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 467.5 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 989892.7	EASTING: 725179.5
DRILLER: J. DRABEK	STATIC WATER LEVEL: 5.75 FT BTOC	COMPLETION DATE: 11/19/2015
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 469.47 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 467.5 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: 3/8" BENTONITE CHIPS - 2.5 BAGS

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 3 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 51.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 58.0 FINE: 56.0

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 60.4

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 70.2

BOTTOM OF WELL DEPTH (ft. bgs): 70.6

BOTTOM OF FILTER PACK (ft. bgs): 70.6

TYPE AND AMOUNT OF BACKFILL: NONE

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 150 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 JANUARY 16, 2016. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

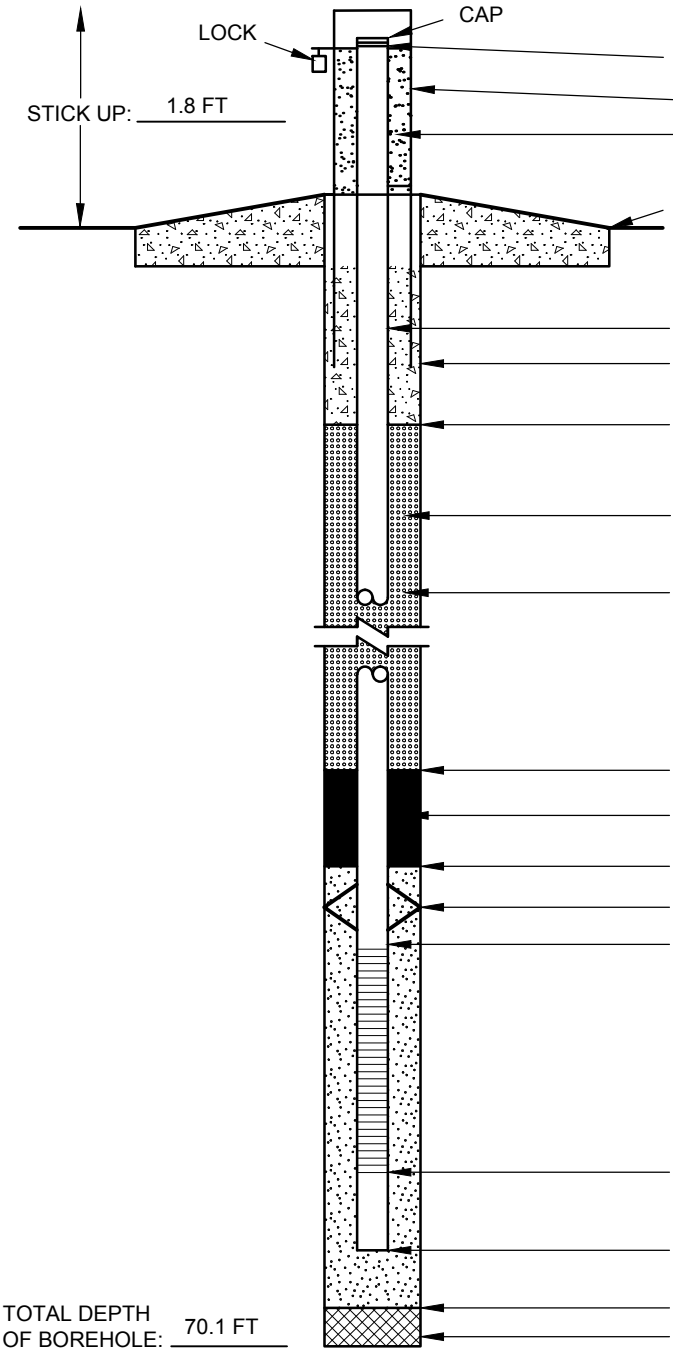
CHECKED BY: J. INGRAM

DATE CHECKED: 4/19/2016

PREPARED BY: J. SUOZZI

ABOVE GROUND MONITORING WELL CONSTRUCTION LOG UMW-9D

PROJECT NAME: AMEREN CCR GW MONITORING	PROJECT NUMBER: 153-1406.0001A	
SITE NAME: LABADIE ENERGY CENTER	LOCATION: UMW-9D	
CLIENT: AMEREN MISSOURI	SURFACE ELEVATION: 468.8 FT MSL	
GEOLOGIST: J. INGRAM	NORTHING: 989220.0	EASTING: 724447.8
DRILLER: J. DRABEK	STATIC WATER LEVEL: 9.20 FT BTOC	COMPLETION DATE: 11/19/2015
DRILLING COMPANY: CASCADE	DRILLING METHODS: SONIC	



TOP OF CASING ELEVATION: 470.61 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 468.8 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: 3/8" BENTONITE CHIPS - 1 BAG

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 4 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 50.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 56.0 FINE: 55.0

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 59.9

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: 1/3 BAG

BOTTOM OF SCREEN DEPTH (ft. bgs): 69.7

BOTTOM OF WELL DEPTH (ft. bgs): 70.1

BOTTOM OF FILTER PACK (ft. bgs): 70.1

TYPE AND AMOUNT OF BACKFILL: NONE

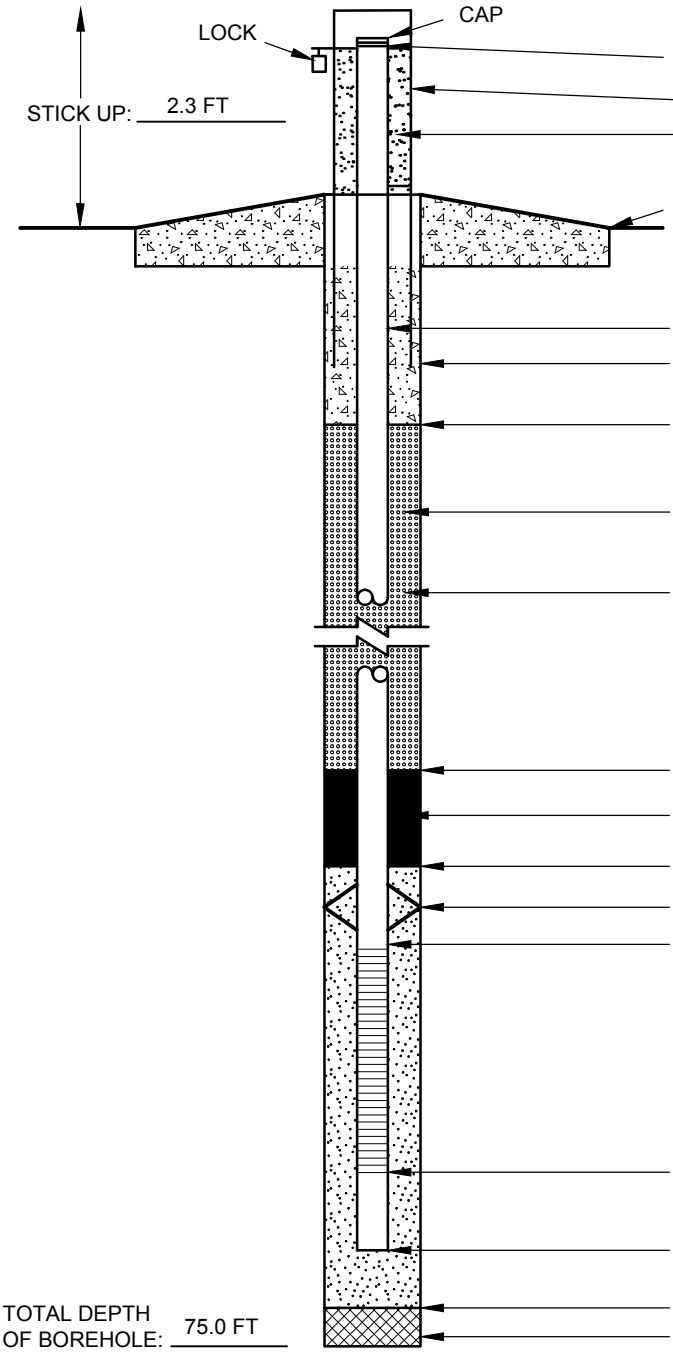
ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL.
175 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON JANUARY 16, 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-1D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: BMW-1D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 471.2 FT MSL
GEOLOGIST: J. INGRAM	NORTHING: 988310.6	EASTING: 715138.4
DRILLER: J. DRABEK	STATIC WATER LEVEL: 13.6 FT BTOC	COMPLETION DATE: 2/1/2016
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



- TOP OF CASING ELEVATION: 473.54 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: 3/8" BENTONITE CHIPS - 2 BAGS
- TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE, 4 BAGS
- TOP OF BENTONITE SEAL DEPTH (ft. bgs): 52.5
- TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG
- TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 58.5 FINE: 57.5
- CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)
- TOP OF SCREEN DEPTH (ft. bgs): 60.7
- 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: 2/3 BAG
- BOTTOM OF SCREEN DEPTH (ft. bgs): 70.5
- BOTTOM OF WELL DEPTH (ft. bgs): 70.9
- BOTTOM OF FILTER PACK (ft. bgs): 70.9
- TYPE AND AMOUNT OF BACKFILL: 3.2 FT - NATURAL CAVE IN

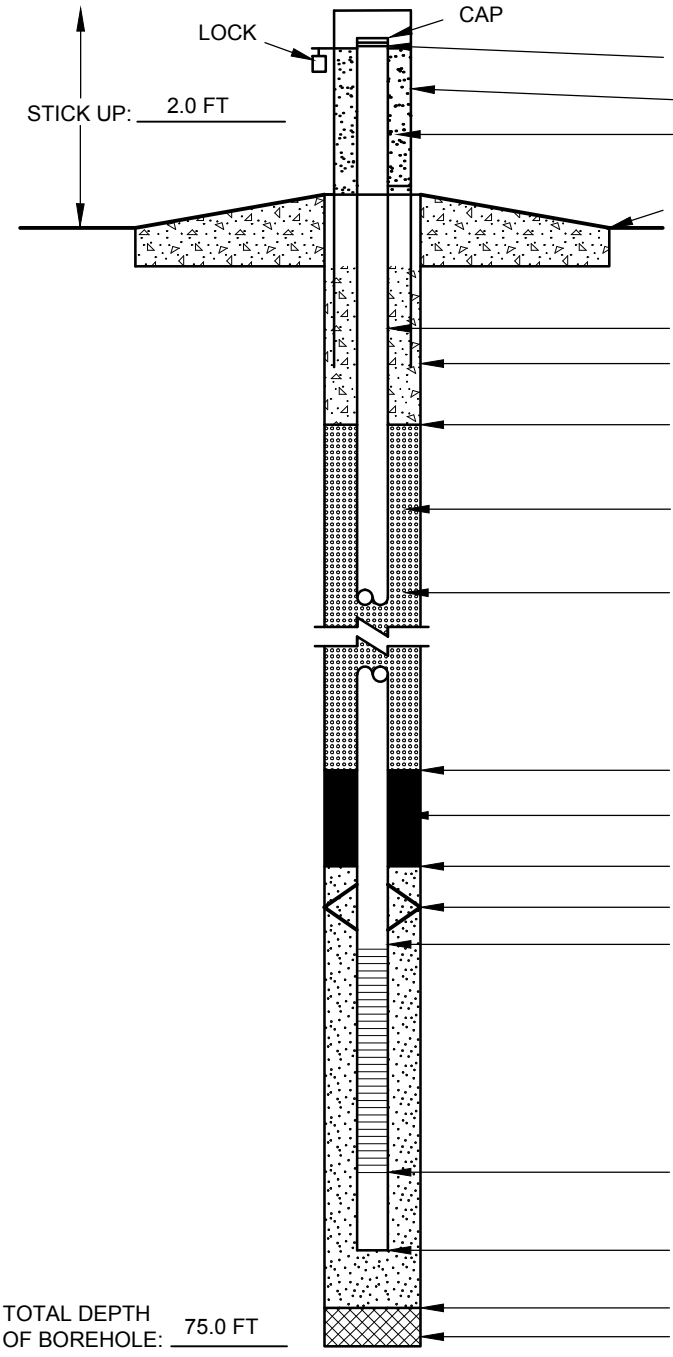
ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 225 GALLONS OF H2O USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON JANUARY 16, 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-2D

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-1406.0001A
SITE NAME: LABADIE ENERGY CENTER		LOCATION: BMW-2D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 472.4 FT MSL
GEOLOGIST: J. INGRAM	NORTHING: 987204.3	EASTING: 715104.2
DRILLER: J. DRABEK	STATIC WATER LEVEL: 14.0 FT BTOC	COMPLETION DATE: 2/2/2016
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



TOP OF CASING ELEVATION: 474.39 FT MSL

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

PEA GRAVEL OR SAND

GROUND SURFACE ELEVATION: 472.4 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: 3/8" BENTONITE CHIPS - 0.5 BAG

TYPE AND AMOUNT OF ANNULAR SEAL: HIGH SOLIDS BENTONITE 4 BAGS

TOP OF BENTONITE SEAL DEPTH (ft. bgs): 52.0

TYPE AND AMOUNT OF BENTONITE SEAL: 3/8" BENTONITE CHIPS - 1 BAG

TOP OF SAND PACK DEPTH (ft. bgs): COARSE: 57.0 FINE: 56.5

CENTRALIZER (yes / no) - TYPE: STAINLESS STEEL (TOP + BOTTOM)

TOP OF SCREEN DEPTH (ft. bgs): 59.4

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): 69.2

BOTTOM OF WELL DEPTH (ft. bgs): 69.6

BOTTOM OF FILTER PACK (ft. bgs): 69.6

TYPE AND AMOUNT OF BACKFILL: 5.5 FT - NATURAL CAVE IN

ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. 200 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, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

April 08, 2016

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Pennsylvania Certification IDs

Georgia Certification #: C040
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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60215628001	**L-UMW-1D**	Water	03/22/16 14:07	03/25/16 03:20
60215628002	**L-UMW-2D**	Water	03/22/16 15:29	03/25/16 03:20
60215628003	**L-UMW-3D**	Water	03/23/16 09:43	03/25/16 03:20
60215628004	**L-UMW-4D**	Water	03/23/16 15:02	03/25/16 03:20
60215628005	**L-UMW-5D**	Water	03/23/16 12:56	03/25/16 03:20
60215628006	**L-UMW-6D**	Water	03/23/16 11:27	03/25/16 03:20
60215628007	**L-UMW-7D**	Water	03/23/16 09:03	03/25/16 03:20
60215628008	**L-UMW-8D**	Water	03/22/16 15:20	03/25/16 03:20
60215628009	**L-UMW-9D**	Water	03/22/16 13:47	03/25/16 03:20
60215628010	**L-BMW-1D**	Water	03/22/16 09:20	03/25/16 03:20
60215628011	**L-BMW-2D**	Water	03/22/16 11:45	03/25/16 03:20
60215628012	**L-UMW-DUP-1**	Water	03/22/16 00:00	03/25/16 03:20
60215628013	**L-UMW-DUP-2**	Water	03/23/16 00:00	03/25/16 03:20
60215628014	**L-UMW-FB-1**	Water	03/22/16 13:27	03/25/16 03:20
60215628015	**L-UMW-FB-2**	Water	03/23/16 09:20	03/25/16 03:20
60215628016	**L-UMW-7D MS**	Water	03/23/16 09:03	03/25/16 03:20
60215628017	**L-UMW-7D MSD**	Water	03/24/16 00:00	03/25/16 11:56

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60215628001	**L-UMW-1D**	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
60215628002	**L-UMW-2D**	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
60215628003	**L-UMW-3D**	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
60215628004	**L-UMW-4D**	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
60215628005	**L-UMW-5D**	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.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60215628006	**L-UMW-6D**	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
60215628007	**L-UMW-7D**	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
60215628008	**L-UMW-8D**	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
60215628009	**L-UMW-9D**	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
60215628010	**L-BMW-1D**	EPA 200.7	NDJ	8	PASI-K
		EPA 200.8	SMW	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60215628011	**L-BMW-2D**	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
60215628012	**L-UMW-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
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60215628013	**L-UMW-DUP-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	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60215628014	**L-UMW-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	AGO	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60215628015	**L-UMW-FB-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	AGO	1	PASI-K
		SM 4500-H+B	CRS	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60215628016	**L-UMW-7D MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60215628017	**L-UMW-7D 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 CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-1D **Lab ID: 60215628001** Collected: 03/22/16 14:07 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	**379**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:07	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:07	7440-41-7	
Boron	**540**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:07	7440-42-8	
Calcium	**112000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:07	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:07	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:07	7439-92-1	
Lithium	**26.5**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:07	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:07	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	03/28/16 14:15	03/29/16 10:54	7440-36-0	
Arsenic	**25.6**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 10:54	7440-38-2	
Cadmium	**0.039J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 10:54	7440-43-9	B
Chromium	**0.42J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 10:54	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 10:54	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 10:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**466**	mg/L	5.0	5.0	1		03/28/16 10:24		
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	**9.5**	mg/L	1.0	0.50	1		03/30/16 00:41	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.073	1		03/30/16 00:41	16984-48-8	
Sulfate	**7.1**	mg/L	1.0	0.25	1		03/30/16 00:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-2D **Lab ID: 60215628002** Collected: 03/22/16 15:29 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	**127**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:16	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:16	7440-41-7	
Boron	**2140**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:16	7440-42-8	
Calcium	**108000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:16	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:16	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:16	7439-92-1	
Lithium	**31.6**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:16	7439-93-2	
Molybdenum	**45.2**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:16	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	03/28/16 14:15	03/29/16 10:59	7440-36-0	
Arsenic	**2.0**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 10:59	7440-38-2	
Cadmium	**0.037J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 10:59	7440-43-9	B
Chromium	**0.36J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 10:59	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 10:59	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 10:59	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**669**	mg/L	5.0	5.0	1		03/28/16 10:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.2**	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	**20.0**	mg/L	1.0	0.50	1		03/30/16 01:19	16887-00-6	
Fluoride	**0.41**	mg/L	0.20	0.073	1		03/30/16 01:19	16984-48-8	
Sulfate	**270**	mg/L	20.0	5.0	20		03/30/16 18:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-3D **Lab ID: 60215628003** Collected: 03/23/16 09:43 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	**81.0**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:18	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:18	7440-41-7	
Boron	**8980**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:18	7440-42-8	
Calcium	**85100**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:18	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:18	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:18	7439-92-1	
Lithium	**21.2**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:18	7439-93-2	
Molybdenum	**195**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:18	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	03/28/16 14:15	03/29/16 11:07	7440-36-0	
Arsenic	**0.57J**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:07	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:07	7440-43-9	
Chromium	**0.50J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:07	7440-47-3	
Selenium	**0.19J**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:07	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**601**	mg/L	5.0	5.0	1		03/30/16 10:13		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.8**	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	**15.8**	mg/L	1.0	0.50	1		03/30/16 01:32	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.073	1		03/30/16 01:32	16984-48-8	
Sulfate	**364**	mg/L	50.0	12.4	50		03/30/16 19:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-4D **Lab ID: 60215628004** Collected: 03/23/16 15:02 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	**71.4**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:20	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:20	7440-41-7	
Boron	**4010**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:20	7440-42-8	
Calcium	**51900**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:20	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:20	7440-48-4	
Lead	**3.3J**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:20	7439-92-1	B
Lithium	**35.9**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:20	7439-93-2	
Molybdenum	**148**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:20	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	03/28/16 14:15	03/29/16 11:12	7440-36-0	
Arsenic	**0.26J**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:12	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:12	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:12	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:12	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:19	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**590**	mg/L	5.0	5.0	1		03/30/16 10:14		
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 12:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**22.1**	mg/L	2.0	1.0	2		03/30/16 19:16	16887-00-6	
Fluoride	**0.35**	mg/L	0.20	0.073	1		03/30/16 01:45	16984-48-8	
Sulfate	**343**	mg/L	50.0	12.4	50		03/30/16 19:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-5D **Lab ID: 60215628005** Collected: 03/23/16 12:56 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	**67.8**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:23	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:23	7440-41-7	
Boron	**5150**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:23	7440-42-8	
Calcium	**75600**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:23	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:23	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:23	7439-92-1	
Lithium	**23.8**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:23	7439-93-2	
Molybdenum	**109**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:23	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	03/28/16 14:15	03/29/16 11:16	7440-36-0	
Arsenic	**17.2**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:16	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:16	7440-43-9	
Chromium	**0.54J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:16	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:16	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:16	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**499**	mg/L	5.0	5.0	1		03/30/16 10:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.1**	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	**19.7**	mg/L	2.0	1.0	2		03/30/16 19:42	16887-00-6	
Fluoride	**0.081J**	mg/L	0.20	0.073	1		03/30/16 01:58	16984-48-8	
Sulfate	**261**	mg/L	20.0	5.0	20		03/30/16 19:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-6D **Lab ID: 60215628006** Collected: 03/23/16 11:27 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	**129**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:25	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:25	7440-41-7	
Boron	**18200**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:25	7440-42-8	
Calcium	**66200**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:25	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:25	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:25	7439-92-1	
Lithium	**10.1**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:25	7439-93-2	
Molybdenum	**668**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:25	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.11J**	ug/L	1.0	0.058	1	03/28/16 14:15	03/29/16 11:20	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:20	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:20	7440-43-9	
Chromium	**0.54J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:20	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:20	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:20	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**547**	mg/L	5.0	5.0	1		03/30/16 10:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.3**	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	**21.7**	mg/L	2.0	1.0	2		03/30/16 20:08	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.073	1		03/30/16 02:11	16984-48-8	
Sulfate	**278**	mg/L	20.0	5.0	20		03/30/16 20:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-7D **Lab ID: 60215628007** Collected: 03/23/16 09:03 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	**180**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:27	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:27	7440-41-7	
Boron	**5810**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:27	7440-42-8	
Calcium	**144000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:27	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:27	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:27	7439-92-1	
Lithium	**20.2**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:27	7439-93-2	
Molybdenum	**201**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:27	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	03/28/16 14:15	03/29/16 11:47	7440-36-0	
Arsenic	**10.6**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:47	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:47	7440-43-9	
Chromium	**0.54J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:47	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:47	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:47	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**725**	mg/L	5.0	5.0	1		03/30/16 10:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.8**	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	**13.3**	mg/L	1.0	0.50	1		03/30/16 02:50	16887-00-6	
Fluoride	**0.33**	mg/L	0.20	0.073	1		03/30/16 02:50	16984-48-8	
Sulfate	**245**	mg/L	20.0	5.0	20		03/30/16 20:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-8D **Lab ID: 60215628008** Collected: 03/22/16 15:20 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	**454**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:34	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:34	7440-41-7	
Boron	**506**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:34	7440-42-8	
Calcium	**126000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:34	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:34	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:34	7439-92-1	
Lithium	**34.6**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:34	7439-93-2	
Molybdenum	**14.8J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:34	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	03/28/16 14:15	03/29/16 11:25	7440-36-0	
Arsenic	**27.9**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:25	7440-38-2	
Cadmium	**0.036J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:25	7440-43-9	B
Chromium	**0.48J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:25	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:25	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:32	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**493**	mg/L	5.0	5.0	1		03/28/16 10:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	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	**8.8**	mg/L	1.0	0.50	1		03/30/16 03:15	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.073	1		03/30/16 03:15	16984-48-8	
Sulfate	**0.49J**	mg/L	1.0	0.25	1		03/30/16 03:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-9D **Lab ID: 60215628009** Collected: 03/22/16 13:47 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	**516**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:40	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:40	7440-41-7	
Boron	**103**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:40	7440-42-8	
Calcium	**108000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:40	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:40	7440-48-4	
Lead	**3.8J**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:40	7439-92-1	B
Lithium	**18.2**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:40	7439-93-2	
Molybdenum	**2.0J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:40	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	03/28/16 14:15	03/29/16 12:00	7440-36-0	
Arsenic	**33.1**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 12:00	7440-38-2	
Cadmium	**0.053J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 12:00	7440-43-9	B
Chromium	**0.65J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 12:00	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 12:00	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 12:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**453**	mg/L	5.0	5.0	1		03/28/16 10:26		
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	**21.0**	mg/L	2.0	1.0	2		03/30/16 21:25	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.073	1		03/30/16 03:28	16984-48-8	
Sulfate	**0.26J**	mg/L	1.0	0.25	1		03/30/16 03:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-BMW-1D **Lab ID: 60215628010** Collected: 03/22/16 09:20 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	**1120**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:43	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:43	7440-41-7	
Boron	**85.2J**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:43	7440-42-8	
Calcium	**115000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:43	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:43	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:43	7439-92-1	
Lithium	**31.8**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:43	7439-93-2	
Molybdenum	**1.2J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:43	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	03/28/16 14:15	03/29/16 12:05	7440-36-0	
Arsenic	**0.26J**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 12:05	7440-38-2	
Cadmium	**0.042J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 12:05	7440-43-9	B
Chromium	**0.52J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 12:05	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 12:05	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 12:05	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**476**	mg/L	5.0	5.0	1		03/28/16 10:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	0.10	0.10	1		04/03/16 12:05		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**10.1**	mg/L	1.0	0.50	1		03/30/16 03:41	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.073	1		03/30/16 03:41	16984-48-8	
Sulfate	**41.7**	mg/L	5.0	1.2	5		03/30/16 21:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-BMW-2D **Lab ID: 60215628011** Collected: 03/22/16 11:45 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	**364**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:45	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:45	7440-41-7	
Boron	**69.8J**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:45	7440-42-8	
Calcium	**140000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:45	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:45	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:45	7439-92-1	
Lithium	**47.4**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:45	7439-93-2	
Molybdenum	**7.0J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:45	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	03/28/16 14:15	03/29/16 12:09	7440-36-0	
Arsenic	**28.2**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 12:09	7440-38-2	
Cadmium	**0.038J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 12:09	7440-43-9	B
Chromium	**0.54J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 12:09	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 12:09	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 12:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:48	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**555**	mg/L	5.0	5.0	1		03/28/16 10:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	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	**16.1**	mg/L	1.0	0.50	1		03/30/16 03:54	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.073	1		03/30/16 03:54	16984-48-8	
Sulfate	**64.6**	mg/L	5.0	1.2	5		03/30/16 21:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-DUP-1 **Lab ID: 60215628012** Collected: 03/22/16 00:00 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	**532**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:47	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:47	7440-41-7	
Boron	**99.9J**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:47	7440-42-8	
Calcium	**109000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:47	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:47	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:47	7439-92-1	
Lithium	**17.3**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:47	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:47	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	03/28/16 14:15	03/29/16 12:13	7440-36-0	
Arsenic	**33.5**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 12:13	7440-38-2	
Cadmium	**0.047J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 12:13	7440-43-9	B
Chromium	**0.56J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 12:13	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 12:13	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 12:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**460**	mg/L	5.0	5.0	1		03/28/16 10:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.10	1		04/03/16 12:05		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.1**	mg/L	2.0	1.0	2		03/30/16 22:04	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.073	1		03/30/16 04:07	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		03/30/16 04:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-DUP-2 **Lab ID: 60215628013** Collected: 03/23/16 00:00 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	**66.0**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:49	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:49	7440-41-7	
Boron	**4960**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:49	7440-42-8	
Calcium	**72000**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:49	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:49	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:49	7439-92-1	
Lithium	**21.7**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:49	7439-93-2	
Molybdenum	**105**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:49	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	03/28/16 14:15	03/29/16 12:18	7440-36-0	
Arsenic	**17.2**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 12:18	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 12:18	7440-43-9	
Chromium	**0.90J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 12:18	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 12:18	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 12:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1790**	mg/L	5.0	5.0	1		03/30/16 10:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.2**	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	**19.6**	mg/L	2.0	1.0	2		03/30/16 22:17	16887-00-6	
Fluoride	**0.074J**	mg/L	0.20	0.073	1		03/30/16 04:20	16984-48-8	
Sulfate	**262**	mg/L	20.0	5.0	20		03/30/16 22:30	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-FB-1 **Lab ID: 60215628014** Collected: 03/22/16 13:27 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	**<0.58**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:52	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:52	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:52	7440-42-8	
Calcium	**43.7J**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:52	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:52	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:52	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:52	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:52	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	03/28/16 14:15	03/29/16 11:38	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:38	7440-38-2	
Cadmium	**0.042J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:38	7440-43-9	B
Chromium	**0.38J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:38	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	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	**6.4**	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	**<0.50**	mg/L	1.0	0.50	1		03/30/16 04:33	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		03/30/16 04:33	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		03/30/16 04:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-FB-2 **Lab ID: 60215628015** Collected: 03/23/16 09:20 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	**<0.58**	ug/L	10.0	0.58	1	03/28/16 14:15	04/04/16 16:54	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	03/28/16 14:15	04/04/16 16:54	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	03/28/16 14:15	04/04/16 16:54	7440-42-8	
Calcium	**31.9J**	ug/L	100	8.1	1	03/28/16 14:15	04/04/16 16:54	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	03/28/16 14:15	04/04/16 16:54	7440-48-4	
Lead	**4.3J**	ug/L	5.0	2.5	1	03/28/16 14:15	04/04/16 16:54	7439-92-1	B
Lithium	**<4.9**	ug/L	10.0	4.9	1	03/28/16 14:15	04/04/16 16:54	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	03/28/16 14:15	04/04/16 16:54	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	03/28/16 14:15	03/29/16 11:43	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	03/28/16 14:15	03/29/16 11:43	7440-38-2	
Cadmium	**0.038J**	ug/L	0.50	0.029	1	03/28/16 14:15	03/29/16 11:43	7440-43-9	B
Chromium	**0.43J**	ug/L	1.0	0.34	1	03/28/16 14:15	03/29/16 11:43	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	03/28/16 14:15	03/29/16 11:43	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	03/28/16 14:15	03/29/16 11:43	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	04/04/16 11:35	04/04/16 15:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**992**	mg/L	5.0	5.0	1		03/30/16 10:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.8**	Std. Units	0.10	0.10	1		04/08/16 11:52		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		03/30/16 04:46	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		03/30/16 04:46	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		03/30/16 04:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: MERP/10471 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

METHOD BLANK: 1735563 Matrix: Water
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.046	0.20	0.046	04/04/16 15:03	

LABORATORY CONTROL SAMPLE: 1735564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1735565 1735566

Parameter	Units	60215628007 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	4.8	4.7	95	94	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: MPRP/35340 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

METHOD BLANK: 1731903 Matrix: Water
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	10.0	0.58	04/04/16 16:04	
Beryllium	ug/L	<0.26	1.0	0.26	04/04/16 16:04	
Boron	ug/L	<50.0	100	50.0	04/04/16 16:04	
Calcium	ug/L	17.6J	100	8.1	04/04/16 16:04	
Cobalt	ug/L	<0.72	5.0	0.72	04/04/16 16:04	
Lead	ug/L	3.7J	5.0	2.5	04/04/16 16:04	
Lithium	ug/L	<4.9	10.0	4.9	04/04/16 16:04	
Molybdenum	ug/L	<0.52	20.0	0.52	04/04/16 16:04	

LABORATORY CONTROL SAMPLE: 1731904

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	971	97	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Boron	ug/L	1000	969	97	85-115	
Calcium	ug/L	10000	9440	94	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Lithium	ug/L	1000	946	95	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	

MATRIX SPIKE SAMPLE: 1731905

Parameter	Units	60215628001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	379	1000	1390	101	70-130	
Beryllium	ug/L	<0.26	1000	981	98	70-130	
Boron	ug/L	540	1000	1580	104	70-130	
Calcium	ug/L	112000	10000	126000	148	70-130	M1
Cobalt	ug/L	<0.72	1000	1010	101	70-130	
Lead	ug/L	<2.5	1000	1000	100	70-130	
Lithium	ug/L	26.5	1000	1030	100	70-130	
Molybdenum	ug/L	1.4J	1000	1090	109	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

MATRIX SPIKE SAMPLE: 1731906

Parameter	Units	60215628007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	180	1000	1180	100	70-130	
Beryllium	ug/L	<0.26	1000	979	98	70-130	
Boron	ug/L	5810	1000	6880	108	70-130	
Calcium	ug/L	144000	10000	156000	125	70-130	
Cobalt	ug/L	<0.72	1000	1000	100	70-130	
Lead	ug/L	<2.5	1000	998	100	70-130	
Lithium	ug/L	20.2	1000	1040	102	70-130	
Molybdenum	ug/L	201	1000	1300	110	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: MPRP/35342 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

METHOD BLANK: 1731913 Matrix: Water
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	03/29/16 10:45	
Arsenic	ug/L	<0.10	1.0	0.10	03/29/16 10:45	
Cadmium	ug/L	0.040J	0.50	0.029	03/29/16 10:45	
Chromium	ug/L	<0.34	1.0	0.34	03/29/16 10:45	
Selenium	ug/L	<0.18	1.0	0.18	03/29/16 10:45	
Thallium	ug/L	<0.50	1.0	0.50	03/29/16 10:45	

LABORATORY CONTROL SAMPLE: 1731914

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	85-115	
Arsenic	ug/L	40	40.8	102	85-115	
Cadmium	ug/L	40	41.0	102	85-115	
Chromium	ug/L	40	39.9	100	85-115	
Selenium	ug/L	40	41.8	105	85-115	
Thallium	ug/L	40	36.7	92	85-115	

MATRIX SPIKE SAMPLE: 1731915

Parameter	Units	60215628002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	41.4	104	70-130	
Arsenic	ug/L	2.0	40	44.1	105	70-130	
Cadmium	ug/L	0.037J	40	39.6	99	70-130	
Chromium	ug/L	0.36J	40	40.6	101	70-130	
Selenium	ug/L	<0.18	40	39.4	98	70-130	
Thallium	ug/L	<0.50	40	41.2	103	70-130	

MATRIX SPIKE SAMPLE: 1731916

Parameter	Units	60215628007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	40.7	102	70-130	
Arsenic	ug/L	10.6	40	52.0	104	70-130	
Cadmium	ug/L	<0.029	40	39.2	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

MATRIX SPIKE SAMPLE: 1731916

Parameter	Units	60215628007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.54J	40	40.5	100	70-130	
Selenium	ug/L	<0.18	40	39.4	98	70-130	
Thallium	ug/L	<0.50	40	40.7	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WET/60837 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60215628001, 60215628002, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628014

METHOD BLANK: 1731234 Matrix: Water
Associated Lab Samples: 60215628001, 60215628002, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628014

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WET/60871 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628013, 60215628015

METHOD BLANK: 1732230 Matrix: Water
Associated Lab Samples: 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628013, 60215628015

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WET/60963
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60215628010, 60215628012

SAMPLE DUPLICATE: 1735395

Parameter	Units	60215288001 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-BOTT
Pace Project No.: 60215628

QC Batch: WET/60970 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628007, 60215628008, 60215628009, 60215628011, 60215628013, 60215628014

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WET/60976 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60215628004, 60215628005, 60215628006

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WET/61081
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60215628015

SAMPLE DUPLICATE: 1737900

Parameter	Units	60216463001 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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: WETA/38752 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

METHOD BLANK: 1732190 Matrix: Water
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/30/16 00:15	
Fluoride	mg/L	<0.073	0.20	0.073	03/30/16 00:15	
Sulfate	mg/L	<0.25	1.0	0.25	03/30/16 00:15	

METHOD BLANK: 1732963 Matrix: Water
Associated Lab Samples: 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/30/16 17:59	
Sulfate	mg/L	<0.25	1.0	0.25	03/30/16 17:59	

LABORATORY CONTROL SAMPLE: 1732191

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	4.8	97	90-110	

LABORATORY CONTROL SAMPLE: 1732964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1732192 1732193

Parameter	Units	60215628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.5	5	5	14.3	14.5	96	99	80-120	1	15	
Fluoride	mg/L	0.21	2.5	2.5	2.7	2.7	98	100	80-120	2	15	
Sulfate	mg/L	7.1	5	5	11.7	11.9	92	96	80-120	2	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

MATRIX SPIKE SAMPLE: 1732194

Parameter	Units	60215628007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	13.3	5	17.6	87	80-120	
Fluoride	mg/L	0.33	2.5	2.7	96	80-120	
Sulfate	mg/L	245	100	348	103	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-1D **Lab ID: 60215628001** Collected: 03/22/16 14:07 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	**0.892 ± 0.562 (0.242) C:NA T:90%**	pCi/L	04/05/16 21:08	13982-63-3	
Radium-228	EPA 904.0	**0.832 ± 0.476 (0.875) C:73% T:87%**	pCi/L	04/06/16 13:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-2D **Lab ID: 60215628002** Collected: 03/22/16 15:29 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	**0.277 ± 0.563 (0.975) C:NA T:90%**	pCi/L	04/05/16 20:14	13982-63-3	
Radium-228	EPA 904.0	**1.49 ± 0.608 (0.978) C:76% T:76%**	pCi/L	04/06/16 13:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-3D **Lab ID: 60215628003** Collected: 03/23/16 09:43 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	**0.259 ± 0.395 (0.635) C:NA T:90%**	pCi/L	04/05/16 21:23	13982-63-3	
Radium-228	EPA 904.0	**0.606 ± 0.438 (0.857) C:83% T:78%**	pCi/L	04/06/16 13:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-4D **Lab ID: 60215628004** Collected: 03/23/16 15:02 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	**-0.081 ± 0.422 (0.978) C:NA T:93%**	pCi/L	04/05/16 20:54	13982-63-3	
Radium-228	EPA 904.0	**0.810 ± 0.503 (0.954) C:78% T:74%**	pCi/L	04/06/16 17:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-5D **Lab ID: 60215628005** Collected: 03/23/16 12:56 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	**-0.086 ± 0.392 (0.925) C:NA T:93%**	pCi/L	04/05/16 21:08	13982-63-3	
Radium-228	EPA 904.0	**0.644 ± 0.490 (0.979) C:80% T:79%**	pCi/L	04/06/16 17:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-6D **Lab ID: 60215628006** Collected: 03/23/16 11:27 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	**0.244 ± 0.372 (0.598) C:NA T:95%**	pCi/L	04/05/16 21:36	13982-63-3	
Radium-228	EPA 904.0	**1.03 ± 0.513 (0.916) C:84% T:77%**	pCi/L	04/06/16 17:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-7D **Lab ID: 60215628007** Collected: 03/23/16 09:03 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	**0.362 ± 0.436 (0.665) C:NA T:96%**	pCi/L	04/05/16 20:28	13982-63-3	
Radium-228	EPA 904.0	**0.869 ± 0.423 (0.735) C:85% T:81%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-8D **Lab ID: 60215628008** Collected: 03/22/16 15:20 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	**0.816 ± 0.606 (0.758) C:NA T:94%**	pCi/L	04/05/16 20:54	13982-63-3	
Radium-228	EPA 904.0	**1.17 ± 0.461 (0.722) C:83% T:86%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-9D **Lab ID: 60215628009** Collected: 03/22/16 13:47 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	**-0.179 ± 0.424 (0.977) C:NA T:97%**	pCi/L	04/05/16 21:49	13982-63-3	
Radium-228	EPA 904.0	**0.805 ± 0.414 (0.737) C:84% T:84%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-BMW-1D **Lab ID: 60215628010** Collected: 03/22/16 09:20 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	**0.939 ± 0.542 (0.212) C:NA T:101%**	pCi/L	04/05/16 21:23	13982-63-3	
Radium-228	EPA 904.0	**1.71 ± 0.579 (0.818) C:82% T:78%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-BMW-2D **Lab ID: 60215628011** Collected: 03/22/16 11:45 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	**0.166 ± 0.399 (0.771) C:NA T:92%**	pCi/L	04/05/16 21:23	13982-63-3	
Radium-228	EPA 904.0	**0.677 ± 0.403 (0.748) C:85% T:81%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-DUP-1 **Lab ID: 60215628012** Collected: 03/22/16 00:00 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	**0.648 ± 0.508 (0.596) C:NA T:94%**	pCi/L	04/05/16 22:01	13982-63-3	
Radium-228	EPA 904.0	**0.663 ± 0.390 (0.720) C:81% T:85%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-DUP-2 **Lab ID: 60215628013** Collected: 03/23/16 00:00 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	**0.0914 ± 0.417 (0.849) C:NA T:86%**	pCi/L	04/05/16 21:08	13982-63-3	
Radium-228	EPA 904.0	**0.548 ± 0.403 (0.790) C:80% T:82%**	pCi/L	04/06/16 17:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-FB-1 **Lab ID: 60215628014** Collected: 03/22/16 13:27 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	**-0.083 ± 0.380 (0.895) C:NA T:99%**	pCi/L	04/05/16 21:36	13982-63-3	
Radium-228	EPA 904.0	**0.230 ± 0.327 (0.701) C:80% T:88%**	pCi/L	04/06/16 17:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-FB-2 **Lab ID: 60215628015** Collected: 03/23/16 09:20 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	**0.0920 ± 0.420 (0.249) C:NA T:84%**	pCi/L	04/05/16 21:49	13982-63-3	
Radium-228	EPA 904.0	**0.105 ± 0.290 (0.650) C:84% T:89%**	pCi/L	04/06/16 17:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-7D MS **Lab ID: 60215628016** Collected: 03/23/16 09:03 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	**102.23 %REC ± NA (NA) C:NA T:NA**	pCi/L	04/05/16 22:39	13982-63-3	
Radium-228	EPA 904.0	**142 %REC +/- NA (NA) C:NA T:NA**	pCi/L	04/06/16 17:13	15262-20-1	1e

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Sample: L-UMW-7D MSD **Lab ID: 60215628017** Collected: 03/24/16 00:00 Received: 03/25/16 11:56 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**99.45 %REC 2.76 RPD ± NA (NA) C:NA T:NA**	pCi/L	04/05/16 21:36	13982-63-3	
Radium-228	EPA 904.0	**90.0 %REC 45.2 RPD +/- NA (NA) C:NA T:NA**	pCi/L	04/06/16 17:13	15262-20-1	2e

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

QC Batch: RADC/28721 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015, 60215628016, 60215628017

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	

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-BOTT
Pace Project No.: 60215628

QC Batch: RADC/28708 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60215628001, 60215628002, 60215628003, 60215628004, 60215628005, 60215628006, 60215628007, 60215628008, 60215628009, 60215628010, 60215628011, 60215628012, 60215628013, 60215628014, 60215628015, 60215628016, 60215628017

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	

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, Inc.
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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

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 (%)

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-228 Matrix Spike performed on sample 60215628016 was high and outside of the default acceptance criteria for MS recovery. The high recovery may indicate a sample matrix interference and a possible high bias in the sample result.
2e	The relative percent difference between the spiked samples 60215628016 and 60215628017 was high and outside of the default RPD limit.
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-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60215628001	**L-UMW-1D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628002	**L-UMW-2D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628003	**L-UMW-3D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628004	**L-UMW-4D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628005	**L-UMW-5D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628006	**L-UMW-6D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628007	**L-UMW-7D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628008	**L-UMW-8D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628009	**L-UMW-9D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628010	**L-BMW-1D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628011	**L-BMW-2D**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628012	**L-UMW-DUP-1**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628013	**L-UMW-DUP-2**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628014	**L-UMW-FB-1**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628015	**L-UMW-FB-2**	EPA 200.7	MPRP/35340	EPA 200.7	ICP/25862
60215628001	**L-UMW-1D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628002	**L-UMW-2D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628003	**L-UMW-3D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628004	**L-UMW-4D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628005	**L-UMW-5D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628006	**L-UMW-6D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628007	**L-UMW-7D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628008	**L-UMW-8D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628009	**L-UMW-9D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628010	**L-BMW-1D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628011	**L-BMW-2D**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628012	**L-UMW-DUP-1**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628013	**L-UMW-DUP-2**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628014	**L-UMW-FB-1**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628015	**L-UMW-FB-2**	EPA 200.8	MPRP/35342	EPA 200.8	ICPM/4163
60215628001	**L-UMW-1D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628002	**L-UMW-2D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628003	**L-UMW-3D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628004	**L-UMW-4D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628005	**L-UMW-5D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628006	**L-UMW-6D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628007	**L-UMW-7D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628008	**L-UMW-8D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628009	**L-UMW-9D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628010	**L-BMW-1D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628011	**L-BMW-2D**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628012	**L-UMW-DUP-1**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628013	**L-UMW-DUP-2**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628014	**L-UMW-FB-1**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628015	**L-UMW-FB-2**	EPA 7470	MERP/10471	EPA 7470	MERC/10418
60215628001	**L-UMW-1D**	EPA 903.1	RADC/28708		
60215628002	**L-UMW-2D**	EPA 903.1	RADC/28708		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60215628003	L-UMW-3D	EPA 903.1	RADC/28708		
60215628004	L-UMW-4D	EPA 903.1	RADC/28708		
60215628005	L-UMW-5D	EPA 903.1	RADC/28708		
60215628006	L-UMW-6D	EPA 903.1	RADC/28708		
60215628007	L-UMW-7D	EPA 903.1	RADC/28708		
60215628008	L-UMW-8D	EPA 903.1	RADC/28708		
60215628009	L-UMW-9D	EPA 903.1	RADC/28708		
60215628010	L-BMW-1D	EPA 903.1	RADC/28708		
60215628011	L-BMW-2D	EPA 903.1	RADC/28708		
60215628012	L-UMW-DUP-1	EPA 903.1	RADC/28708		
60215628013	L-UMW-DUP-2	EPA 903.1	RADC/28708		
60215628014	L-UMW-FB-1	EPA 903.1	RADC/28708		
60215628015	L-UMW-FB-2	EPA 903.1	RADC/28708		
60215628016	L-UMW-7D MS	EPA 903.1	RADC/28708		
60215628017	L-UMW-7D MSD	EPA 903.1	RADC/28708		
60215628001	L-UMW-1D	EPA 904.0	RADC/28721		
60215628002	L-UMW-2D	EPA 904.0	RADC/28721		
60215628003	L-UMW-3D	EPA 904.0	RADC/28721		
60215628004	L-UMW-4D	EPA 904.0	RADC/28721		
60215628005	L-UMW-5D	EPA 904.0	RADC/28721		
60215628006	L-UMW-6D	EPA 904.0	RADC/28721		
60215628007	L-UMW-7D	EPA 904.0	RADC/28721		
60215628008	L-UMW-8D	EPA 904.0	RADC/28721		
60215628009	L-UMW-9D	EPA 904.0	RADC/28721		
60215628010	L-BMW-1D	EPA 904.0	RADC/28721		
60215628011	L-BMW-2D	EPA 904.0	RADC/28721		
60215628012	L-UMW-DUP-1	EPA 904.0	RADC/28721		
60215628013	L-UMW-DUP-2	EPA 904.0	RADC/28721		
60215628014	L-UMW-FB-1	EPA 904.0	RADC/28721		
60215628015	L-UMW-FB-2	EPA 904.0	RADC/28721		
60215628016	L-UMW-7D MS	EPA 904.0	RADC/28721		
60215628017	L-UMW-7D MSD	EPA 904.0	RADC/28721		
60215628001	L-UMW-1D	SM 2540C	WET/60837		
60215628002	L-UMW-2D	SM 2540C	WET/60837		
60215628003	L-UMW-3D	SM 2540C	WET/60871		
60215628004	L-UMW-4D	SM 2540C	WET/60871		
60215628005	L-UMW-5D	SM 2540C	WET/60871		
60215628006	L-UMW-6D	SM 2540C	WET/60871		
60215628007	L-UMW-7D	SM 2540C	WET/60871		
60215628008	L-UMW-8D	SM 2540C	WET/60837		
60215628009	L-UMW-9D	SM 2540C	WET/60837		
60215628010	L-BMW-1D	SM 2540C	WET/60837		
60215628011	L-BMW-2D	SM 2540C	WET/60837		
60215628012	L-UMW-DUP-1	SM 2540C	WET/60837		
60215628013	L-UMW-DUP-2	SM 2540C	WET/60871		
60215628014	L-UMW-FB-1	SM 2540C	WET/60837		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60215628

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60215628015	**L-UMW-FB-2**	SM 2540C	WET/60871		
60215628001	**L-UMW-1D**	SM 4500-H+B	WET/60970		
60215628002	**L-UMW-2D**	SM 4500-H+B	WET/60970		
60215628003	**L-UMW-3D**	SM 4500-H+B	WET/60970		
60215628004	**L-UMW-4D**	SM 4500-H+B	WET/60976		
60215628005	**L-UMW-5D**	SM 4500-H+B	WET/60976		
60215628006	**L-UMW-6D**	SM 4500-H+B	WET/60976		
60215628007	**L-UMW-7D**	SM 4500-H+B	WET/60970		
60215628008	**L-UMW-8D**	SM 4500-H+B	WET/60970		
60215628009	**L-UMW-9D**	SM 4500-H+B	WET/60970		
60215628010	**L-BMW-1D**	SM 4500-H+B	WET/60963		
60215628011	**L-BMW-2D**	SM 4500-H+B	WET/60970		
60215628012	**L-UMW-DUP-1**	SM 4500-H+B	WET/60963		
60215628013	**L-UMW-DUP-2**	SM 4500-H+B	WET/60970		
60215628014	**L-UMW-FB-1**	SM 4500-H+B	WET/60970		
60215628015	**L-UMW-FB-2**	SM 4500-H+B	WET/61081		
60215628001	**L-UMW-1D**	EPA 300.0	WETA/38752		
60215628002	**L-UMW-2D**	EPA 300.0	WETA/38752		
60215628003	**L-UMW-3D**	EPA 300.0	WETA/38752		
60215628004	**L-UMW-4D**	EPA 300.0	WETA/38752		
60215628005	**L-UMW-5D**	EPA 300.0	WETA/38752		
60215628006	**L-UMW-6D**	EPA 300.0	WETA/38752		
60215628007	**L-UMW-7D**	EPA 300.0	WETA/38752		
60215628008	**L-UMW-8D**	EPA 300.0	WETA/38752		
60215628009	**L-UMW-9D**	EPA 300.0	WETA/38752		
60215628010	**L-BMW-1D**	EPA 300.0	WETA/38752		
60215628011	**L-BMW-2D**	EPA 300.0	WETA/38752		
60215628012	**L-UMW-DUP-1**	EPA 300.0	WETA/38752		
60215628013	**L-UMW-DUP-2**	EPA 300.0	WETA/38752		
60215628014	**L-UMW-FB-1**	EPA 300.0	WETA/38752		
60215628015	**L-UMW-FB-2**	EPA 300.0	WETA/38752		

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Sample Condition Upon Receipt

WO# : 60215628

60215628

Client Name: Golder

JLC

Optional
Proj Due Date:
Proj Name:

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

Cooler Temperature: 1.5/1.5.2/16 3/14.9

Temperature should be above freezing to 6°C

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

Chain of Custody present:	☑Yes ☐No ☐N/A	1. only radium volume receive in
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2. the high temp 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):	☑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 3/25/16

Project Manager Review: _____ Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:

Company:	Golder Associates
Address:	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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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.
																		N	N	N	N	N			
1	L-UMW-1D	WT	G	3/22/16	1310	3/22/16	1407		4	1		3							1	1	1	1	2			001
2	L-UMW-2D	WT	G	3/22/16	1447	3/22/16	1529		4	1		3							1	1	1	1	2			002
3	L-UMW-3D	WT	G	3/23/16	0857	3/23/16	0943		4	1		3							1	1	1	1	2			003
4	L-UMW-4D	WT	G	3/23/16	~~0857~~	3/23/16	1502		4	1		3							1	1	1	1	2			004
5	L-UMW-5D	WT	G	3/23/16	1205	3/23/16	1256		4	1		3							1	1	1	1	2			005
6	L-UMW-6D	WT	G	3/23/16	1032	3/23/16	1127		4	1		3							1	1	1	1	2			006
7	L-UMW-7D	WT	G	3/23/16	0823	3/23/16	0903		12	3		9							3	3	3	3	6			007
8	L-UMW-8D	WT	G	3/22/16	1430	3/22/16	1520		4	1		3							1	1	1	1	2			008
9	L-UMW-9D	WT	G	3/22/16	1257	3/22/16	1347		4	1		3							1	1	1	1	2			009
10	L-BMW-1D	WT	G	3/22/16	0850	3/22/16	0920		4	1		3							1	1	1	1	2			010
11	L-BMW-2D	WT	G	3/22/16	1115	3/22/16	1145		4	1		3							1	1	1	1	2			011
12	L-UMW-DUP-1	WT	G	3/22/16	—	3/22/16	—		4	1		3							1	1	1	1	2			012

1436 ←

6021628

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	Golder	3/24/16	1430		3/24/16	14:19
		3/24/16	17:00		3/25/16	0320

SAMPLE CONDITIONS			
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.5	Y	Y	Y
15.2	N	Y	Y
16.3	N	Y	Y
14.9	Y	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.

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

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 Sioux Energy Center - ~~Fly Ash~~ Bottom Ash
Project Number:	153-1406.0003B

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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Metals* (N)	Chloride/Fluoride/Sulfate (N)	TDS (N)	pH (N)	Radium 226 & 228 (N)		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60215628	
1	L-UMW-DUP-2	WT	G	3/23/16	~~[illegible]~~	3/23/16	~~[illegible]~~		4	1		3							1	1	1	1	2	2BP1N		1BP3U 1BP3N ~~[illegible]~~	013
2	L-UMW-FB-1	WT	G	3/22/16	1327	3/22/16	1327		4	1		3							1	1	1	1	2	↓		↓ ↓ r3/25/16	014
3	L-UMW-FB-2	WT	G	3/23/16	0920	3/23/16	0920		4	1		3							1	1	1	1	2	↓		↓ ↓	015
4																				X	X	X					
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

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	3/24/16	1430	[signature]	3/24/16	14:19				
	[signature]	3/24/16	17:10	[signature] PASI	3/25/16	0320	1.5	Y	Y	Y
							15.2	N	Y	Y
							16.3	N		
							14.9			

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Sirozzi

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 03/24/16

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

December 08, 2017

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

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, 12/8/17: Sample L-BMW-2D and L-UMW-2D switched.

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-BOTT
Pace Project No.: 60218640

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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(913)599-5665

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60218640001	**L-UMW-1D**	Water	05/04/16 10:35	05/07/16 04:15
60218640002	**L-BMW-2D**	Water	05/04/16 08:55	05/07/16 04:15
60218640003	**L-UMW-3D**	Water	05/05/16 09:31	05/07/16 04:15
60218640004	**L-UMW-4D**	Water	05/04/16 14:19	05/07/16 04:15
60218640005	**L-UMW-5D**	Water	05/05/16 10:44	05/07/16 04:15
60218640006	**L-UMW-6D**	Water	05/04/16 13:02	05/07/16 04:15
60218640007	**L-UMW-7D**	Water	05/04/16 13:30	05/07/16 04:15
60218640008	**L-UMW-8D**	Water	05/04/16 12:10	05/07/16 04:15
60218640009	**L-UMW-9D**	Water	05/04/16 10:25	05/07/16 04:15
60218640010	**L-BMW-1D**	Water	05/03/16 14:11	05/07/16 04:15
60218640011	**L-UMW-2D**	Water	05/04/16 11:38	05/07/16 04:15
60218640012	**L-UMW-DUP-1**	Water	05/04/16 08:00	05/07/16 04:15
60218640013	**L-UMW-DUP-2**	Water	05/04/16 08:00	05/07/16 04:15
60218640014	**L-UMW-FB-1**	Water	05/04/16 10:15	05/07/16 04:15
60218640015	**L-UMW-FB-2**	Water	05/06/16 09:45	05/07/16 04:15
60218640016	**L-UMW-9D MS**	Water	05/04/16 10:25	05/07/16 04:15
60218640017	**L-UMW-9D MSD**	Water	05/04/16 10:25	05/07/16 04:15

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60218640001	**L-UMW-1D**	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
60218640002	**L-BMW-2D**	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
60218640003	**L-UMW-3D**	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
60218640004	**L-UMW-4D**	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
60218640005	**L-UMW-5D**	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

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-BOTT
Pace Project No.: 60218640

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
60218640006	**L-UMW-6D**	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
60218640007	**L-UMW-7D**	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
60218640008	**L-UMW-8D**	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
60218640009	**L-UMW-9D**	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
60218640010	**L-BMW-1D**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60218640011	**L-UMW-2D**	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
60218640012	**L-UMW-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
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218640013	**L-UMW-DUP-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	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60218640014	**L-UMW-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	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60218640015	**L-UMW-FB-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
60218640016	**L-UMW-9D MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60218640017	**L-UMW-9D MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-1D **Lab ID: 60218640001** Collected: 05/04/16 10:35 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	**413**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:05	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:05	7440-41-7	
Boron	**503**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:05	7440-42-8	
Calcium	**112000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:05	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:05	7440-48-4	
Lead	**4.9J**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:05	7439-92-1	
Lithium	**27.7**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:05	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:05	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	05/11/16 16:10	05/24/16 17:07	7440-36-0	
Arsenic	**14.8**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:07	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:07	7440-43-9	
Chromium	**0.78J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:07	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:07	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:07	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 12:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**500**	mg/L	5.0	5.0	1		05/11/16 15:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**10.2**	mg/L	1.0	0.50	1		05/31/16 15:09	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.073	1		05/31/16 15:09	16984-48-8	
Sulfate	**14.7**	mg/L	1.0	0.25	1		05/31/16 15:09	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-BOTT
Pace Project No.: 60218640

Sample: L-BMW-2D **Lab ID: 60218640002** 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	**392**	ug/L	5.0	0.58	1	05/11/16 16:10	05/23/16 13:07	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:07	7440-41-7	
Boron	**73.2J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:07	7440-42-8	
Calcium	**132000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:07	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:07	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:07	7439-92-1	
Lithium	**45.1**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:07	7439-93-2	
Molybdenum	**2.3J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:07	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 17:10	7440-36-0	
Arsenic	**14.7**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:10	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:10	7440-43-9	
Chromium	**0.70J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:10	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:10	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:10	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 13:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**535**	mg/L	5.0	5.0	1		05/11/16 15:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.3**	mg/L	1.0	0.50	1		05/31/16 16:14	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.073	1		05/31/16 16:14	16984-48-8	
Sulfate	**52.2**	mg/L	5.0	1.2	5		06/01/16 15:56	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-BOTT
Pace Project No.: 60218640

Sample: L-UMW-3D **Lab ID: 60218640003** Collected: 05/05/16 09:31 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	**114**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:09	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:09	7440-41-7	
Boron	**9430**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:09	7440-42-8	
Calcium	**105000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:09	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:09	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:09	7439-92-1	
Lithium	**24.0**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:09	7439-93-2	
Molybdenum	**171**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:09	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.066J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 17:13	7440-36-0	
Arsenic	**2.3**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:13	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:13	7440-43-9	
Chromium	**0.92J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:13	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:13	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:13	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 13:02	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**735**	mg/L	5.0	5.0	1		05/12/16 16:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.3**	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	**13.1**	mg/L	1.0	0.50	1		05/31/16 16:27	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.073	1		05/31/16 16:27	16984-48-8	
Sulfate	**473**	mg/L	50.0	12.4	50		06/01/16 17:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-4D **Lab ID: 60218640004** Collected: 05/04/16 14:19 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	**68.2**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:12	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:12	7440-41-7	
Boron	**3370**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:12	7440-42-8	
Calcium	**45100**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:12	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:12	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:12	7439-92-1	
Lithium	**36.2**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:12	7439-93-2	
Molybdenum	**145**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:12	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 17:16	7440-36-0	
Arsenic	**0.25J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:16	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:16	7440-43-9	
Chromium	**0.55J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:16	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:16	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:16	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 13:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**550**	mg/L	5.0	5.0	1		05/11/16 15:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**23.1**	mg/L	2.0	1.0	2		06/01/16 17:21	16887-00-6	
Fluoride	**0.35**	mg/L	0.20	0.073	1		05/31/16 16:40	16984-48-8	
Sulfate	**330**	mg/L	50.0	12.4	50		06/01/16 17:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-5D **Lab ID: 60218640005** Collected: 05/05/16 10:44 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	**81.5**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:18	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:18	7440-41-7	
Boron	**5220**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:18	7440-42-8	
Calcium	**77600**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:18	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:18	7440-48-4	
Lead	**5.1**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:18	7439-92-1	
Lithium	**15.9**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:18	7439-93-2	
Molybdenum	**130**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:18	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.094J**	ug/L	1.0	0.058	1	05/11/16 16:10	05/24/16 17:22	7440-36-0	
Arsenic	**27.1**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:22	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:22	7440-43-9	
Chromium	**0.58J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:22	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:22	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 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	05/12/16 15:30	05/13/16 13:11	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**548**	mg/L	5.0	5.0	1		05/12/16 16:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.3**	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	**20.0**	mg/L	1.0	0.50	1		05/31/16 16:53	16887-00-6	
Fluoride	**0.075J**	mg/L	0.20	0.073	1		05/31/16 16:53	16984-48-8	
Sulfate	**312**	mg/L	20.0	5.0	20		06/01/16 17:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-6D **Lab ID: 60218640006** Collected: 05/04/16 13:02 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	**139**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:21	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:21	7440-41-7	
Boron	**16700**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:21	7440-42-8	
Calcium	**62000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:21	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:21	7440-48-4	
Lead	**3.2J**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:21	7439-92-1	
Lithium	**7.8J**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:21	7439-93-2	
Molybdenum	**634**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:21	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 17:25	7440-36-0	
Arsenic	**5.7**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:25	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:25	7440-43-9	
Chromium	**0.80J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:25	7440-47-3	
Selenium	**0.20J**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:25	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:25	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 13:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**571**	mg/L	5.0	5.0	1		05/11/16 15:56		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**23.3**	mg/L	2.0	1.0	2		06/01/16 18:03	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.073	1		05/31/16 17:06	16984-48-8	
Sulfate	**400**	mg/L	2.0	0.50	2		06/01/16 18:03	14808-79-8	E

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-7D **Lab ID: 60218640007** Collected: 05/04/16 13:30 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	**187**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:23	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:23	7440-41-7	
Boron	**5740**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:23	7440-42-8	
Calcium	**129000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:23	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:23	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:23	7439-92-1	
Lithium	**21.0**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:23	7439-93-2	
Molybdenum	**182**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:23	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	05/11/16 16:10	05/24/16 17:28	7440-36-0	
Arsenic	**9.6**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:28	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:28	7440-43-9	
Chromium	**0.77J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:28	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:28	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:28	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 13:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**726**	mg/L	5.0	5.0	1		05/11/16 15:57		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.4**	mg/L	1.0	0.50	1		05/31/16 17:19	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.073	1		05/31/16 17:19	16984-48-8	
Sulfate	**230**	mg/L	20.0	5.0	20		06/01/16 18:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-8D **Lab ID: 60218640008** Collected: 05/04/16 12:10 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	**458**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:25	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:25	7440-41-7	
Boron	**339**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:25	7440-42-8	
Calcium	**118000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:25	7440-70-2	
Cobalt	**0.79J**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:25	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:25	7439-92-1	
Lithium	**34.8**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:25	7439-93-2	
Molybdenum	**9.5J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:25	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 17:44	7440-36-0	
Arsenic	**28.0**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:44	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:44	7440-43-9	
Chromium	**0.62J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:44	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:44	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:44	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 13:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**476**	mg/L	5.0	5.0	1		05/11/16 15:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.7**	mg/L	1.0	0.50	1		05/31/16 17:32	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.073	1		05/31/16 17:32	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 17:32	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-BOTT
Pace Project No.: 60218640

Sample: L-UMW-9D **Lab ID: 60218640009** Collected: 05/04/16 10:25 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	**545**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:27	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:27	7440-41-7	
Boron	**106**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:27	7440-42-8	
Calcium	**107000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:27	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:27	7440-48-4	
Lead	**3.0J**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:27	7439-92-1	
Lithium	**20.4**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:27	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:27	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 17:47	7440-36-0	
Arsenic	**32.4**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:47	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:47	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:47	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:47	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:47	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 13:20	7439-97-6	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**455**	mg/L	5.0	5.0	1		05/11/16 15:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**22.5**	mg/L	2.0	1.0	2		06/01/16 18:46	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.073	1		05/31/16 17:45	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 17:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-BMW-1D **Lab ID: 60218640010** Collected: 05/03/16 14:11 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	**1210**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:34	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:34	7440-41-7	
Boron	**79.6J**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:34	7440-42-8	
Calcium	**129000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:34	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:34	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:34	7439-92-1	
Lithium	**31.4**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:34	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:34	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 17:56	7440-36-0	
Arsenic	**0.12J**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:56	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:56	7440-43-9	
Chromium	**0.95J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:56	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:56	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 13:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**570**	mg/L	5.0	5.0	1		05/11/16 13:19		H1
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.8**	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	**10.9**	mg/L	1.0	0.50	1		05/31/16 18:37	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.073	1		05/31/16 18:37	16984-48-8	
Sulfate	**61.1**	mg/L	1.0	0.25	1		05/31/16 18:37	14808-79-8	E

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-2D **Lab ID: 60218640011** Collected: 05/04/16 11:38 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	**113**	ug/L	5.0	0.58	1	05/11/16 16:10	05/23/16 13:36	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:36	7440-41-7	
Boron	**1920**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:36	7440-42-8	
Calcium	**89500**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:36	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:36	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:36	7439-92-1	
Lithium	**29.1**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:36	7439-93-2	
Molybdenum	**46.9**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:36	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 17:59	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:59	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:59	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:59	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:59	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:59	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 13:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**613**	mg/L	5.0	5.0	1		05/11/16 15:59		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		05/10/16 10:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.9**	mg/L	2.0	1.0	2		06/01/16 19:57	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	0.073	1		05/31/16 18:50	16984-48-8	
Sulfate	**272**	mg/L	20.0	5.0	20		06/01/16 20:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-DUP-1 **Lab ID: 60218640012** Collected: 05/04/16 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	**452**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:45	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:45	7440-41-7	
Boron	**310**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:45	7440-42-8	
Calcium	**117000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:45	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:45	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:45	7439-92-1	
Lithium	**33.9**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:45	7439-93-2	
Molybdenum	**9.2J**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:45	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 18:02	7440-36-0	
Arsenic	**27.6**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:02	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:02	7440-43-9	
Chromium	**0.66J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:02	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:02	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:02	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 13:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**487**	mg/L	5.0	5.0	1		05/11/16 15:59		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	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	**8.8**	mg/L	1.0	0.50	1		05/31/16 19:03	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.073	1		05/31/16 19:03	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 19:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-DUP-2 **Lab ID: 60218640013** Collected: 05/04/16 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	**183**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:55	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:55	7440-41-7	
Boron	**5730**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:55	7440-42-8	
Calcium	**132000**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:55	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:55	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:55	7439-92-1	
Lithium	**21.5**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:55	7439-93-2	
Molybdenum	**187**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 13:55	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 18:05	7440-36-0	
Arsenic	**9.9**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 18:05	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 18:05	7440-43-9	
Chromium	**0.76J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 18:05	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 18:05	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 18:05	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 13:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**713**	mg/L	5.0	5.0	1		05/11/16 16:00		
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	**12.5**	mg/L	1.0	0.50	1		05/31/16 19:16	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.073	1		05/31/16 19:16	16984-48-8	
Sulfate	**231**	mg/L	20.0	5.0	20		06/01/16 20:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-FB-1 **Lab ID: 60218640014** Collected: 05/04/16 10:15 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	**0.59J**	ug/L	10.0	0.58	1	05/11/16 16:10	05/23/16 13:58	7440-39-3	B
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 13:58	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 13:58	7440-42-8	
Calcium	**12.6J**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 13:58	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 13:58	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 13:58	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 13:58	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 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	05/11/16 16:10	05/24/16 17:38	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:38	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:38	7440-43-9	
Chromium	**0.60J**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:38	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:38	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 13:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**8.0**	mg/L	5.0	5.0	1		05/11/16 16:00		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.2**	Std. Units	0.10	0.10	1		05/10/16 10:45		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 19:29	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		05/31/16 19:29	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 19:29	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-BOTT
Pace Project No.: 60218640

Sample: L-UMW-FB-2 **Lab ID: 60218640015** Collected: 05/06/16 09:45 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 14:00	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	05/11/16 16:10	05/23/16 14:00	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	05/11/16 16:10	05/23/16 14:00	7440-42-8	
Calcium	**<8.1**	ug/L	100	8.1	1	05/11/16 16:10	05/23/16 14:00	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	05/11/16 16:10	05/23/16 14:00	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	05/11/16 16:10	05/23/16 14:00	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	05/11/16 16:10	05/23/16 14:00	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	05/11/16 16:10	05/23/16 14:00	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 17:41	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	05/11/16 16:10	05/24/16 17:41	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	05/11/16 16:10	05/24/16 17:41	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.34	1	05/11/16 16:10	05/24/16 17:41	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	05/11/16 16:10	05/24/16 17:41	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	05/11/16 16:10	05/24/16 17:41	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 13:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**5.0**	mg/L	5.0	5.0	1		05/13/16 16:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	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	**<0.50**	mg/L	1.0	0.50	1		05/31/16 19:42	16887-00-6	
Fluoride	**<0.073**	mg/L	0.20	0.073	1		05/31/16 19:42	16984-48-8	
Sulfate	**<0.25**	mg/L	1.0	0.25	1		05/31/16 19:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 430132 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

METHOD BLANK: 1757337 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	05/13/16 12:38	

LABORATORY CONTROL SAMPLE: 1757338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1757339 1757340

Parameter	Units	60218640009 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	5.8	6.7	115	134	75-125	15	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429896 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

METHOD BLANK: 1756518 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.79J	5.0	0.58	05/23/16 13:00	
Beryllium	ug/L	<0.26	1.0	0.26	05/23/16 13:00	
Boron	ug/L	<50.0	100	50.0	05/23/16 13:00	
Calcium	ug/L	<8.1	100	8.1	05/23/16 13:00	
Cobalt	ug/L	<0.72	5.0	0.72	05/23/16 13:00	
Lead	ug/L	<2.5	5.0	2.5	05/23/16 13:00	
Lithium	ug/L	<4.9	10.0	4.9	05/23/16 13:00	
Molybdenum	ug/L	<0.52	20.0	0.52	05/23/16 13:00	

LABORATORY CONTROL SAMPLE: 1756519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	991	99	85-115	
Boron	ug/L	1000	971	97	85-115	
Calcium	ug/L	10000	9140	91	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1070	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1756520 1756521

Parameter	Units	60218640009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	545	1000	1000	1580	1600	104	105	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	994	993	99	99	70-130	0	20	
Boron	ug/L	106	1000	1000	1080	1090	98	98	70-130	1	20	
Calcium	ug/L	107000	10000	10000	114000	118000	76	112	70-130	3	20	
Cobalt	ug/L	<0.72	1000	1000	1010	1010	101	101	70-130	0	20	
Lead	ug/L	3.0J	1000	1000	1000	1000	100	100	70-130	0	20	
Lithium	ug/L	20.4	1000	1000	1100	1100	108	108	70-130	0	20	
Molybdenum	ug/L	1.6J	1000	1000	1080	1080	107	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-BOTT
Pace Project No.: 60218640

MATRIX SPIKE SAMPLE: 1756522

Parameter	Units	60218640011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	113	1000	1150	103	70-130	
Beryllium	ug/L	<0.26	1000	983	98	70-130	
Boron	ug/L	1920	1000	2960	104	70-130	
Calcium	ug/L	89500	10000	99800	103	70-130	
Cobalt	ug/L	<0.72	1000	1000	100	70-130	
Lead	ug/L	<2.5	1000	987	99	70-130	
Lithium	ug/L	29.1	1000	1100	107	70-130	
Molybdenum	ug/L	46.9	1000	1120	107	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429898 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

METHOD BLANK: 1756527 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	05/24/16 17:00	
Arsenic	ug/L	<0.10	1.0	0.10	05/24/16 17:00	
Cadmium	ug/L	<0.029	0.50	0.029	05/24/16 17:00	
Chromium	ug/L	<0.34	1.0	0.34	05/24/16 17:00	
Selenium	ug/L	<0.18	1.0	0.18	05/24/16 17:00	
Thallium	ug/L	<0.50	1.0	0.50	05/24/16 17:00	

LABORATORY CONTROL SAMPLE: 1756528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.2	105	85-115	
Arsenic	ug/L	40	42.0	105	85-115	
Cadmium	ug/L	40	42.5	106	85-115	
Chromium	ug/L	40	41.5	104	85-115	
Selenium	ug/L	40	43.1	108	85-115	
Thallium	ug/L	40	38.5	96	85-115	

MATRIX SPIKE SAMPLE: 1756529

Parameter	Units	60218640004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	41.2	103	70-130	
Arsenic	ug/L	0.25J	40	42.2	105	70-130	
Cadmium	ug/L	<0.029	40	39.8	100	70-130	
Chromium	ug/L	0.55J	40	42.0	104	70-130	
Selenium	ug/L	<0.18	40	39.9	99	70-130	
Thallium	ug/L	<0.50	40	40.4	101	70-130	

MATRIX SPIKE SAMPLE: 1756530

Parameter	Units	60218640009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	40.4	101	70-130	
Arsenic	ug/L	32.4	40	74.6	106	70-130	
Cadmium	ug/L	<0.029	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-BOTT
Pace Project No.: 60218640

MATRIX SPIKE SAMPLE: 1756530

Parameter	Units	60218640009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	1.1	40	43.8	107	70-130	
Selenium	ug/L	<0.18	40	41.2	103	70-130	
Thallium	ug/L	<0.50	40	41.2	103	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429637 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218640010

METHOD BLANK: 1755338 Matrix: Water
Associated Lab Samples: 60218640010

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429775 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218640001, 60218640002, 60218640004, 60218640006, 60218640007, 60218640008, 60218640009, 60218640011, 60218640012, 60218640013, 60218640014

METHOD BLANK: 1756023 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640004, 60218640006, 60218640007, 60218640008, 60218640009, 60218640011, 60218640012, 60218640013, 60218640014

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 430027 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218640003, 60218640005

METHOD BLANK: 1756931 Matrix: Water
Associated Lab Samples: 60218640003, 60218640005

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 430217 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218640015

METHOD BLANK: 1757924 Matrix: Water
Associated Lab Samples: 60218640015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/13/16 16:09	

LABORATORY CONTROL SAMPLE: 1757925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1160	116	80-120	

SAMPLE DUPLICATE: 1757926

Parameter	Units	60218035001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3480	3250	7	10	H1

SAMPLE DUPLICATE: 1757927

Parameter	Units	60218651005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2230	2200	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429485 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218640010, 60218640012, 60218640013

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429486 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60218640001, 60218640002, 60218640004, 60218640006, 60218640007, 60218640008, 60218640009, 60218640011, 60218640014

SAMPLE DUPLICATE: 1754754

Parameter	Units	60218640009 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	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-BOTT
Pace Project No.: 60218640

QC Batch: 429646
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60218640003

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429739
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60218640005

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 429774
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60218640015

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 432480 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

METHOD BLANK: 1767783 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	05/31/16 14:43	
Fluoride	mg/L	<0.073	0.20	0.073	05/31/16 14:43	
Sulfate	mg/L	<0.25	1.0	0.25	05/31/16 14:43	

LABORATORY CONTROL SAMPLE: 1767784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1767785 1767786

Parameter	Units	60218640001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.2	5	5	14.8	14.9	92	94	80-120	1	15	
Fluoride	mg/L	0.20	2.5	2.5	2.6	2.6	95	96	80-120	1	15	
Sulfate	mg/L	14.7	5	5	19.4	19.5	95	96	80-120	0	15	

MATRIX SPIKE SAMPLE: 1767787

Parameter	Units	60218640009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.15J	2.5	2.5	95	80-120	
Sulfate	mg/L	<0.25	5	5.1	102	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 432721 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640009, 60218640010, 60218640011, 60218640013

METHOD BLANK: 1768483 Matrix: Water
Associated Lab Samples: 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640009, 60218640010, 60218640011, 60218640013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/01/16 15:27	
Sulfate	mg/L	<0.25	1.0	0.25	06/01/16 15:27	

LABORATORY CONTROL SAMPLE: 1768484

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1768485 1768486

Parameter	Units	60218640002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.3			37.1	37.2				0	15	
Sulfate	mg/L	52.2	25	25	79.5	78.9	109	107	80-120	1	15	

MATRIX SPIKE SAMPLE: 1768487

Parameter	Units	60218640009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	22.5	10	32.2	96	80-120	
Sulfate	mg/L	<0.25		10.2			

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-1D **Lab ID: 60218640001** Collected: 05/04/16 10:35 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	**0.318 ± 0.293 (0.173) C:NA T:95%**	pCi/L	05/31/16 11:25	13982-63-3	
Radium-228	EPA 904.0	**1.56 ± 0.488 (0.629) C:84% T:89%**	pCi/L	05/25/16 19:18	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-BMW-2D **Lab ID: 60218640002** 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	**0.129 ± 0.295 (0.175) C:NA T:91%**	pCi/L	05/31/16 11:11	13982-63-3	
Radium-228	EPA 904.0	**0.783 ± 0.412 (0.736) C:79% T:84%**	pCi/L	05/25/16 19:18	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-3D **Lab ID: 60218640003** Collected: 05/05/16 09:31 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 ± 0.316 (0.510) C:NA T:90%**	pCi/L	05/31/16 11:41	13982-63-3	
Radium-228	EPA 904.0	**0.935 ± 0.439 (0.754) C:83% T:79%**	pCi/L	05/25/16 19:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-4D **Lab ID: 60218640004** Collected: 05/04/16 14:19 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	**0.137 ± 0.425 (0.823) C:NA T:91%**	pCi/L	05/31/16 11:41	13982-63-3	
Radium-228	EPA 904.0	**1.10 ± 0.492 (0.822) C:81% T:72%**	pCi/L	05/25/16 19:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-5D **Lab ID: 60218640005** Collected: 05/05/16 10:44 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	**-0.064 ± 0.291 (0.591) C:NA T:91%**	pCi/L	05/31/16 11:52	13982-63-3	
Radium-228	EPA 904.0	**0.902 ± 0.406 (0.678) C:81% T:86%**	pCi/L	05/25/16 19:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-6D **Lab ID: 60218640006** Collected: 05/04/16 13:02 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	**-0.065 ± 0.295 (0.599) C:NA T:90%**	pCi/L	05/31/16 11:25	13982-63-3	
Radium-228	EPA 904.0	**0.629 ± 0.414 (0.796) C:83% T:80%**	pCi/L	05/25/16 19:20	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-7D **Lab ID: 60218640007** Collected: 05/04/16 13:30 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	**-0.071 ± 0.418 (0.932) C:NA T:84%**	pCi/L	05/31/16 11:58	13982-63-3	
Radium-228	EPA 904.0	**1.16 ± 0.482 (0.767) C:81% T:75%**	pCi/L	05/25/16 19:20	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-8D **Lab ID: 60218640008** Collected: 05/04/16 12:10 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	**0.647 ± 0.543 (0.777) C:NA T:93%**	pCi/L	05/31/16 11:58	13982-63-3	
Radium-228	EPA 904.0	**1.35 ± 0.478 (0.684) C:83% T:82%**	pCi/L	05/25/16 19:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-9D **Lab ID: 60218640009** Collected: 05/04/16 10:25 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 ± 0.481 (0.984) C:NA T:95%**	pCi/L	05/31/16 11:59	13982-63-3	
Radium-228	EPA 904.0	**0.476 ± 0.325 (0.619) C:80% T:88%**	pCi/L	05/25/16 19:20	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-BMW-1D **Lab ID: 60218640010** Collected: 05/03/16 14:11 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	**1.40 ± 0.671 (0.617) C:NA T:86%**	pCi/L	05/31/16 11:42	13982-63-3	
Radium-228	EPA 904.0	**1.55 ± 0.497 (0.653) C:82% T:86%**	pCi/L	05/25/16 19:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-2D **Lab ID: 60218640011** Collected: 05/04/16 11:38 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	**0.749 ± 0.497 (0.580) C:NA T:94%**	pCi/L	05/31/16 12:12	13982-63-3	
Radium-228	EPA 904.0	**0.908 ± 0.437 (0.757) C:82% T:80%**	pCi/L	05/25/16 19:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-DUP-1 **Lab ID: 60218640012** Collected: 05/04/16 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	**0.508 ± 0.502 (0.763) C:NA T:93%**	pCi/L	05/31/16 12:12	13982-63-3	
Radium-228	EPA 904.0	**1.14 ± 0.481 (0.767) C:81% T:81%**	pCi/L	05/25/16 19:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-DUP-2 **Lab ID: 60218640013** Collected: 05/04/16 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 ± 0.315 (0.707) C:NA T:92%**	pCi/L	05/31/16 11:59	13982-63-3	
Radium-228	EPA 904.0	**0.681 ± 0.376 (0.680) C:81% T:86%**	pCi/L	05/25/16 19:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-FB-1 **Lab ID: 60218640014** Collected: 05/04/16 10:15 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	**-0.063 ± 0.285 (0.673) C:NA T:94%**	pCi/L	05/31/16 12:28	13982-63-3	
Radium-228	EPA 904.0	**0.156 ± 0.318 (0.703) C:82% T:81%**	pCi/L	05/25/16 19:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-FB-2 **Lab ID: 60218640015** Collected: 05/06/16 09:45 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	**0.0715 ± 0.465 (0.937) C:NA T:89%**	pCi/L	05/31/16 12:13	13982-63-3	
Radium-228	EPA 904.0	**0.256 ± 0.404 (0.876) C:81% T:71%**	pCi/L	05/25/16 19:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-9D MS **Lab ID: 60218640016** Collected: 05/04/16 10:25 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	**94.9 %REC ± NA (NA) C:NA T:NA**	pCi/L	05/31/16 12:12	13982-63-3	
Radium-228	EPA 904.0	**96.4 %REC +/- NA (NA) C:NA T:NA**	pCi/L	05/25/16 19:17	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Sample: L-UMW-9D MSD **Lab ID: 60218640017** Collected: 05/04/16 10:25 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	**46.8 %REC 67.8 RPD ± NA (NA) C:NA T:NA**	pCi/L	05/31/16 14:06	13982-63-3	
Radium-228	EPA 904.0	**93.2 %REC 3.32 RPD +/- NA (NA) C:NA T:NA**	pCi/L	05/25/16 19:17	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 220016 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015, 60218640016, 60218640017

METHOD BLANK: 1076501 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015, 60218640016, 60218640017

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

QC Batch: 220023 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015, 60218640016, 60218640017

METHOD BLANK: 1076505 Matrix: Water
Associated Lab Samples: 60218640001, 60218640002, 60218640003, 60218640004, 60218640005, 60218640006, 60218640007, 60218640008, 60218640009, 60218640010, 60218640011, 60218640012, 60218640013, 60218640014, 60218640015, 60218640016, 60218640017

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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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

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.
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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218640001	**L-UMW-1D**	EPA 200.7	429896	EPA 200.7	430001
60218640002	**L-BMW-2D**	EPA 200.7	429896	EPA 200.7	430001
60218640003	**L-UMW-3D**	EPA 200.7	429896	EPA 200.7	430001
60218640004	**L-UMW-4D**	EPA 200.7	429896	EPA 200.7	430001
60218640005	**L-UMW-5D**	EPA 200.7	429896	EPA 200.7	430001
60218640006	**L-UMW-6D**	EPA 200.7	429896	EPA 200.7	430001
60218640007	**L-UMW-7D**	EPA 200.7	429896	EPA 200.7	430001
60218640008	**L-UMW-8D**	EPA 200.7	429896	EPA 200.7	430001
60218640009	**L-UMW-9D**	EPA 200.7	429896	EPA 200.7	430001
60218640010	**L-BMW-1D**	EPA 200.7	429896	EPA 200.7	430001
60218640011	**L-UMW-2D**	EPA 200.7	429896	EPA 200.7	430001
60218640012	**L-UMW-DUP-1**	EPA 200.7	429896	EPA 200.7	430001
60218640013	**L-UMW-DUP-2**	EPA 200.7	429896	EPA 200.7	430001
60218640014	**L-UMW-FB-1**	EPA 200.7	429896	EPA 200.7	430001
60218640015	**L-UMW-FB-2**	EPA 200.7	429896	EPA 200.7	430001
60218640001	**L-UMW-1D**	EPA 200.8	429898	EPA 200.8	430006
60218640002	**L-BMW-2D**	EPA 200.8	429898	EPA 200.8	430006
60218640003	**L-UMW-3D**	EPA 200.8	429898	EPA 200.8	430006
60218640004	**L-UMW-4D**	EPA 200.8	429898	EPA 200.8	430006
60218640005	**L-UMW-5D**	EPA 200.8	429898	EPA 200.8	430006
60218640006	**L-UMW-6D**	EPA 200.8	429898	EPA 200.8	430006
60218640007	**L-UMW-7D**	EPA 200.8	429898	EPA 200.8	430006
60218640008	**L-UMW-8D**	EPA 200.8	429898	EPA 200.8	430006
60218640009	**L-UMW-9D**	EPA 200.8	429898	EPA 200.8	430006
60218640010	**L-BMW-1D**	EPA 200.8	429898	EPA 200.8	430006
60218640011	**L-UMW-2D**	EPA 200.8	429898	EPA 200.8	430006
60218640012	**L-UMW-DUP-1**	EPA 200.8	429898	EPA 200.8	430006
60218640013	**L-UMW-DUP-2**	EPA 200.8	429898	EPA 200.8	430006
60218640014	**L-UMW-FB-1**	EPA 200.8	429898	EPA 200.8	430006
60218640015	**L-UMW-FB-2**	EPA 200.8	429898	EPA 200.8	430006
60218640001	**L-UMW-1D**	EPA 7470	430132	EPA 7470	430152
60218640002	**L-BMW-2D**	EPA 7470	430132	EPA 7470	430152
60218640003	**L-UMW-3D**	EPA 7470	430132	EPA 7470	430152
60218640004	**L-UMW-4D**	EPA 7470	430132	EPA 7470	430152
60218640005	**L-UMW-5D**	EPA 7470	430132	EPA 7470	430152
60218640006	**L-UMW-6D**	EPA 7470	430132	EPA 7470	430152
60218640007	**L-UMW-7D**	EPA 7470	430132	EPA 7470	430152
60218640008	**L-UMW-8D**	EPA 7470	430132	EPA 7470	430152
60218640009	**L-UMW-9D**	EPA 7470	430132	EPA 7470	430152
60218640010	**L-BMW-1D**	EPA 7470	430132	EPA 7470	430152
60218640011	**L-UMW-2D**	EPA 7470	430132	EPA 7470	430152
60218640012	**L-UMW-DUP-1**	EPA 7470	430132	EPA 7470	430152
60218640013	**L-UMW-DUP-2**	EPA 7470	430132	EPA 7470	430152
60218640014	**L-UMW-FB-1**	EPA 7470	430132	EPA 7470	430152
60218640015	**L-UMW-FB-2**	EPA 7470	430132	EPA 7470	430152
60218640001	**L-UMW-1D**	EPA 903.1	220016		
60218640002	**L-BMW-2D**	EPA 903.1	220016		

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-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218640003	L-UMW-3D	EPA 903.1	220016		
60218640004	L-UMW-4D	EPA 903.1	220016		
60218640005	L-UMW-5D	EPA 903.1	220016		
60218640006	L-UMW-6D	EPA 903.1	220016		
60218640007	L-UMW-7D	EPA 903.1	220016		
60218640008	L-UMW-8D	EPA 903.1	220016		
60218640009	L-UMW-9D	EPA 903.1	220016		
60218640010	L-BMW-1D	EPA 903.1	220016		
60218640011	L-UMW-2D	EPA 903.1	220016		
60218640012	L-UMW-DUP-1	EPA 903.1	220016		
60218640013	L-UMW-DUP-2	EPA 903.1	220016		
60218640014	L-UMW-FB-1	EPA 903.1	220016		
60218640015	L-UMW-FB-2	EPA 903.1	220016		
60218640016	L-UMW-9D MS	EPA 903.1	220016		
60218640017	L-UMW-9D MSD	EPA 903.1	220016		
60218640001	L-UMW-1D	EPA 904.0	220023		
60218640002	L-BMW-2D	EPA 904.0	220023		
60218640003	L-UMW-3D	EPA 904.0	220023		
60218640004	L-UMW-4D	EPA 904.0	220023		
60218640005	L-UMW-5D	EPA 904.0	220023		
60218640006	L-UMW-6D	EPA 904.0	220023		
60218640007	L-UMW-7D	EPA 904.0	220023		
60218640008	L-UMW-8D	EPA 904.0	220023		
60218640009	L-UMW-9D	EPA 904.0	220023		
60218640010	L-BMW-1D	EPA 904.0	220023		
60218640011	L-UMW-2D	EPA 904.0	220023		
60218640012	L-UMW-DUP-1	EPA 904.0	220023		
60218640013	L-UMW-DUP-2	EPA 904.0	220023		
60218640014	L-UMW-FB-1	EPA 904.0	220023		
60218640015	L-UMW-FB-2	EPA 904.0	220023		
60218640016	L-UMW-9D MS	EPA 904.0	220023		
60218640017	L-UMW-9D MSD	EPA 904.0	220023		
60218640001	L-UMW-1D	SM 2540C	429775		
60218640002	L-BMW-2D	SM 2540C	429775		
60218640003	L-UMW-3D	SM 2540C	430027		
60218640004	L-UMW-4D	SM 2540C	429775		
60218640005	L-UMW-5D	SM 2540C	430027		
60218640006	L-UMW-6D	SM 2540C	429775		
60218640007	L-UMW-7D	SM 2540C	429775		
60218640008	L-UMW-8D	SM 2540C	429775		
60218640009	L-UMW-9D	SM 2540C	429775		
60218640010	L-BMW-1D	SM 2540C	429637		
60218640011	L-UMW-2D	SM 2540C	429775		
60218640012	L-UMW-DUP-1	SM 2540C	429775		
60218640013	L-UMW-DUP-2	SM 2540C	429775		

Pace Analytical Services, LLC
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Lenexa, KS 66219
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218640014	L-UMW-FB-1	SM 2540C	429775		
60218640015	L-UMW-FB-2	SM 2540C	430217		
60218640001	L-UMW-1D	SM 4500-H+B	429486		
60218640002	L-BMW-2D	SM 4500-H+B	429486		
60218640003	L-UMW-3D	SM 4500-H+B	429646		
60218640004	L-UMW-4D	SM 4500-H+B	429486		
60218640005	L-UMW-5D	SM 4500-H+B	429739		
60218640006	L-UMW-6D	SM 4500-H+B	429486		
60218640007	L-UMW-7D	SM 4500-H+B	429486		
60218640008	L-UMW-8D	SM 4500-H+B	429486		
60218640009	L-UMW-9D	SM 4500-H+B	429486		
60218640010	L-BMW-1D	SM 4500-H+B	429485		
60218640011	L-UMW-2D	SM 4500-H+B	429486		
60218640012	L-UMW-DUP-1	SM 4500-H+B	429485		
60218640013	L-UMW-DUP-2	SM 4500-H+B	429485		
60218640014	L-UMW-FB-1	SM 4500-H+B	429486		
60218640015	L-UMW-FB-2	SM 4500-H+B	429774		
60218640001	L-UMW-1D	EPA 300.0	432480		
60218640002	L-BMW-2D	EPA 300.0	432480		
60218640002	L-BMW-2D	EPA 300.0	432721		
60218640003	L-UMW-3D	EPA 300.0	432480		
60218640003	L-UMW-3D	EPA 300.0	432721		
60218640004	L-UMW-4D	EPA 300.0	432480		
60218640004	L-UMW-4D	EPA 300.0	432721		
60218640005	L-UMW-5D	EPA 300.0	432480		
60218640005	L-UMW-5D	EPA 300.0	432721		
60218640006	L-UMW-6D	EPA 300.0	432480		
60218640006	L-UMW-6D	EPA 300.0	432721		
60218640006	L-UMW-6D	EPA 300.0	432885		
60218640007	L-UMW-7D	EPA 300.0	432480		
60218640007	L-UMW-7D	EPA 300.0	432721		
60218640008	L-UMW-8D	EPA 300.0	432480		
60218640009	L-UMW-9D	EPA 300.0	432480		
60218640009	L-UMW-9D	EPA 300.0	432721		
60218640010	L-BMW-1D	EPA 300.0	432480		

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-BOTT
Pace Project No.: 60218640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218640010	**L-BMW-1D**	EPA 300.0	432721		
60218640011	**L-UMW-2D**	EPA 300.0	432480		
60218640011	**L-UMW-2D**	EPA 300.0	432721		
60218640012	**L-UMW-DUP-1**	EPA 300.0	432480		
60218640013	**L-UMW-DUP-2**	EPA 300.0	432480		
60218640013	**L-UMW-DUP-2**	EPA 300.0	432721		
60218640014	**L-UMW-FB-1**	EPA 300.0	432480		
60218640015	**L-UMW-FB-2**	EPA 300.0	432480		

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Sample Condition Upon Receipt

WO# : 60218640

60218640

Client Name: Golder

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Other ☑ XPE 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 0.0 T-262 **Type of Ice:** Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.6 13.9 13.6

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.
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: Jami Check 5/9/17 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.

Page: 1 of 2

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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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							
1	L-UMW-1D	WT	G			5/4/16	1035		4	1		3							1	1	1	1	2	2BP1N						60218010 01
2	L-UMW-2D	WT	G			5/4/16	1138																						02
3	L-UMW-3D	WT	G			5/5/16	0931																						03
4	L-UMW-4D	WT	G			5/4/16	1419																						04
5	L-UMW-5D	WT	G			5/5/16	1044																						05
6	L-UMW-6D	WT	G			5/4/16	1302																						06
7	L-UMW-7D	WT	G				1330																						07
8	L-UMW-8D	WT	G				1210																						08
9	L-UMW-9D	WT	G				1025		12	3		9												6BP1N					3	09
10	L-BMW-1D	WT	G			5/3/16	1035		4	1		3												2BP1N						10
11	L-BMW-2D	WT	G			5/4/16	0855																						11
12	L-UMW-DUP-1	WT	G																										12

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	Courtney w/Golder	5/6/16	1520		5/7/16					
	CR MD	5/6/16	1725	[illegible] /PACE	5/6/16	1725				
	[illegible] /PACE	5/6/16	1745	[illegible]	5/9/16	0415	1.6 15.9, 13.6	Y	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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A Required Client Information:		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 Ctr - Bottom Ash Por	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001A	Pace Profile #:	9285

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER _____

Site Location STATE: MO

Requested Analysis Filtered (Y/N)

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.
																		Y/N	N	N	N	N	N		
1	L-UMW-DUP-2	WT	G			5/4/16	—		4	1		3							1	1	1	1	2		60310
2	L-UMW-FB-1	WT	G			5/4/16	1015		1	1		1							1	1	1	1	1		014
3	L-UMW-FB-2	WT	G			5/6/16	0945		1	1		1							1	1	1	1	1		015
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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	[signature] / Golder	5/6/16	1520	[signature]	5/6/16		
	CR WD	5/6/16	1725	[signature]	5/6/16	1725	
	[signature]	5/6/16	1745	[signature]	5/7/16	0415	Temp in °C: 1.6, 3.9, 1.6 / Received on Ice (Y/N): Y / Custody Sealed Cooler (Y/N): Y / Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	
SIGNATURE of SAMPLER:	DATE Signed (MM/DD/YY):

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

August 09, 2016

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

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 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,

Emily Webb for
Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures

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

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

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 CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60223480001	**L-UMW-1D**	Water	07/12/16 13:45	07/14/16 04:55
60223480002	**L-UMW-2D**	Water	07/12/16 12:50	07/14/16 04:55
60223480003	**L-UMW-3D**	Water	07/12/16 10:00	07/14/16 04:55
60223480004	**L-UMW-4D**	Water	07/13/16 13:45	07/14/16 04:55
60223480005	**L-UMW-5D**	Water	07/13/16 10:32	07/14/16 04:55
60223480006	**L-UMW-6D**	Water	07/13/16 09:18	07/14/16 04:55
60223480007	**L-UMW-7D**	Water	07/11/16 15:18	07/14/16 04:55
60223480008	**L-UMW-8D**	Water	07/12/16 11:30	07/14/16 04:55
60223480009	**L-UMW-9D**	Water	07/12/16 09:50	07/14/16 04:55
60223480010	**L-BMW-1D**	Water	07/11/16 12:29	07/14/16 04:55
60223480011	**L-BMW-2D**	Water	07/11/16 13:40	07/14/16 04:55
60223480012	**L-UMW-DUP-1**	Water	07/11/16 00:00	07/14/16 04:55
60223480013	**L-UMW-DUP-2**	Water	07/12/16 00:00	07/14/16 04:55
60223480014	**L-UMW-FB-1**	Water	07/13/16 08:33	07/14/16 04:55
60223480015	**L-UMW-FB-2**	Water	07/12/16 10:30	07/14/16 04:55
60223480016	**L-UMW-1D MS**	Water	07/12/16 13:45	07/14/16 04:55
60223480017	**L-UMW-1D MSD**	Water	07/12/16 13:45	07/14/16 04:55

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60223480001	**L-UMW-1D**	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
60223480002	**L-UMW-2D**	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
60223480003	**L-UMW-3D**	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
60223480004	**L-UMW-4D**	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
60223480005	**L-UMW-5D**	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-BOT
Pace Project No.: 60223480

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
60223480006	**L-UMW-6D**	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
60223480007	**L-UMW-7D**	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
60223480008	**L-UMW-8D**	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
60223480009	**L-UMW-9D**	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
60223480010	**L-BMW-1D**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60223480011	**L-BMW-2D**	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
60223480012	**L-UMW-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
		SM 2540C	HAC	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60223480013	**L-UMW-DUP-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
60223480014	**L-UMW-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

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60223480015	**L-UMW-FB-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
60223480016	**L-UMW-1D MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60223480017	**L-UMW-1D 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 CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-1D **Lab ID: 60223480001** Collected: 07/12/16 13:45 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	**379**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:18	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:18	7440-41-7	
Boron	**547**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:18	7440-42-8	
Calcium	**124000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:18	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:18	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:18	7439-92-1	
Lithium	**25.1**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:18	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:18	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 15:35	07/22/16 18:56	7440-36-0	
Arsenic	**28.5**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 18:56	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 18:56	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 18:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 18:56	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 18:56	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 09:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**465**	mg/L	5.0	5.0	1		07/19/16 09:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	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	**9.8**	mg/L	1.0	0.50	1		07/31/16 16:08	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.027	1		07/31/16 16:08	16984-48-8	
Sulfate	**7.0**	mg/L	1.0	0.15	1		07/31/16 16:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-2D **Lab ID: 60223480002** Collected: 07/12/16 12:50 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	**124**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:28	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:28	7440-41-7	
Boron	**2160**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:28	7440-42-8	
Calcium	**117000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:28	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:28	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:28	7439-92-1	
Lithium	**28.9**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:28	7439-93-2	
Molybdenum	**44.3**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:28	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 15:35	07/22/16 19:08	7440-36-0	
Arsenic	**2.0**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:08	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:08	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:08	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:08	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:08	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 09:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**659**	mg/L	5.0	5.0	1		07/19/16 09:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.8**	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	**40.0**	mg/L	5.0	2.5	5		08/02/16 13:03	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	0.027	1		07/31/16 17:18	16984-48-8	
Sulfate	**208**	mg/L	20.0	3.1	20		08/02/16 13:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-3D **Lab ID: 60223480003** Collected: 07/12/16 10:00 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	**92.0**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:31	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:31	7440-41-7	
Boron	**9800**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:31	7440-42-8	
Calcium	**104000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:31	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:31	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:31	7439-92-1	
Lithium	**18.2**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:31	7439-93-2	
Molybdenum	**192**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:31	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 15:35	07/22/16 19:13	7440-36-0	
Arsenic	**2.0**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:13	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:13	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:13	7440-47-3	
Selenium	**0.19J**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:13	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:13	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 09:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**670**	mg/L	5.0	5.0	1		07/19/16 09:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	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	**14.8**	mg/L	1.0	0.50	1		07/31/16 17:46	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.027	1		07/31/16 17:46	16984-48-8	
Sulfate	**382**	mg/L	50.0	7.7	50		08/02/16 14:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-4D **Lab ID: 60223480004** Collected: 07/13/16 13:45 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	**78.6**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:33	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:33	7440-41-7	
Boron	**4340**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:33	7440-42-8	
Calcium	**62300**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:33	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:33	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:33	7439-92-1	
Lithium	**37.6**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:33	7439-93-2	
Molybdenum	**192**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:33	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 15:35	07/22/16 19:17	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:17	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:17	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:17	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:17	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:17	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 09:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**629**	mg/L	5.0	5.0	1		07/20/16 11:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	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	**22.9**	mg/L	2.0	1.0	2		08/02/16 15:10	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.027	1		07/31/16 18:00	16984-48-8	
Sulfate	**372**	mg/L	50.0	7.7	50		08/02/16 15:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-5D **Lab ID: 60223480005** Collected: 07/13/16 10:32 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	**70.6**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:35	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:35	7440-41-7	
Boron	**5300**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:35	7440-42-8	
Calcium	**81000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:35	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:35	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:35	7439-92-1	
Lithium	**19.0**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:35	7439-93-2	
Molybdenum	**117**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:35	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	07/15/16 15:35	07/22/16 19:21	7440-36-0	
Arsenic	**19.3**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:21	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:21	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:21	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:21	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:21	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 09:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**515**	mg/L	5.0	5.0	1		07/20/16 11:18		
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	**20.0**	mg/L	2.0	1.0	2		08/02/16 15:39	16887-00-6	
Fluoride	**0.096J**	mg/L	0.20	0.027	1		07/31/16 18:15	16984-48-8	
Sulfate	**267**	mg/L	20.0	3.1	20		08/02/16 15:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-6D **Lab ID: 60223480006** Collected: 07/13/16 09:18 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	**123**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:37	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:37	7440-41-7	
Boron	**17700**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:37	7440-42-8	
Calcium	**70700**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:37	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:37	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:37	7439-92-1	
Lithium	**6.5J**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:37	7439-93-2	
Molybdenum	**674**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:37	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 15:35	07/22/16 19:26	7440-36-0	
Arsenic	**9.6**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:26	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:26	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:26	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:26	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 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 09:33	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**548**	mg/L	5.0	5.0	1		07/20/16 11:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	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	**22.6**	mg/L	2.0	1.0	2		08/02/16 16:07	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.027	1		07/31/16 18:29	16984-48-8	
Sulfate	**350**	mg/L	20.0	3.1	20		08/02/16 16:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-7D **Lab ID: 60223480007** Collected: 07/11/16 15:18 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	**159**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:40	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:40	7440-41-7	
Boron	**5820**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:40	7440-42-8	
Calcium	**152000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:40	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:40	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:40	7439-92-1	
Lithium	**17.7**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:40	7439-93-2	
Molybdenum	**198**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:40	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 15:35	07/22/16 19:52	7440-36-0	
Arsenic	**13.7**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:52	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:52	7440-43-9	
Chromium	**0.81J**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:52	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:52	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 09:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**760**	mg/L	5.0	5.0	1		07/18/16 16:34		
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	**12.8**	mg/L	1.0	0.50	1		07/31/16 18:43	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.027	1		07/31/16 18:43	16984-48-8	
Sulfate	**216**	mg/L	20.0	3.1	20		08/02/16 16:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-8D **Lab ID: 60223480008** Collected: 07/12/16 11:30 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	**448**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:42	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:42	7440-41-7	
Boron	**378**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:42	7440-42-8	
Calcium	**138000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:42	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:42	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:42	7439-92-1	
Lithium	**32.0**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:42	7439-93-2	
Molybdenum	**13.6J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:42	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 15:35	07/22/16 19:56	7440-36-0	
Arsenic	**31.2**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:56	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:56	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:56	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:56	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 09:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**507**	mg/L	5.0	5.0	1		07/19/16 09:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**9.0**	mg/L	1.0	0.50	1		07/31/16 18:57	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.027	1		07/31/16 18:57	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		07/31/16 18:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-9D **Lab ID: 60223480009** Collected: 07/12/16 09:50 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	**507**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:44	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:44	7440-41-7	
Boron	**109**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:44	7440-42-8	
Calcium	**120000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:44	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:44	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:44	7439-92-1	
Lithium	**16.6**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:44	7439-93-2	
Molybdenum	**1.3J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:44	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 15:35	07/22/16 20:01	7440-36-0	
Arsenic	**33.1**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 20:01	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 20:01	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 20:01	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 20:01	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 20:01	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 09:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**469**	mg/L	5.0	5.0	1		07/19/16 09:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	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	**21.7**	mg/L	2.0	1.0	2		08/02/16 17:17	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.027	1		07/31/16 19:39	16984-48-8	
Sulfate	**0.33J**	mg/L	1.0	0.15	1		07/31/16 19:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-BMW-1D **Lab ID: 60223480010** Collected: 07/11/16 12:29 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	**1150**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:50	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:50	7440-41-7	
Boron	**80.2J**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:50	7440-42-8	
Calcium	**135000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:50	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:50	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:50	7439-92-1	
Lithium	**30.7**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:50	7439-93-2	
Molybdenum	**1.2J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:50	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 15:35	07/22/16 20:05	7440-36-0	
Arsenic	**0.47J**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 20:05	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 20:05	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 20:05	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 20:05	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 20:05	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 09:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**504**	mg/L	5.0	5.0	1		07/18/16 16:35		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	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	**10.4**	mg/L	1.0	0.50	1		07/31/16 19:53	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.027	1		07/31/16 19:53	16984-48-8	
Sulfate	**38.8**	mg/L	5.0	0.77	5		08/02/16 17:31	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 CTR-BOT
Pace Project No.: 60223480

Sample: L-BMW-2D **Lab ID: 60223480011** Collected: 07/11/16 13:40 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	**363**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:55	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:55	7440-41-7	
Boron	**71.4J**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:55	7440-42-8	
Calcium	**151000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:55	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:55	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:55	7439-92-1	
Lithium	**44.1**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:55	7439-93-2	
Molybdenum	**3.3J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:55	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 15:35	07/25/16 13:38	7440-36-0	
Arsenic	**16.2**	ug/L	1.0	0.10	1	07/15/16 15:35	07/25/16 13:38	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/25/16 13:38	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/25/16 13:38	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/25/16 13:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/25/16 13:38	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 09:48	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**538**	mg/L	5.0	5.0	1		07/18/16 16:35		
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	**12.7**	mg/L	1.0	0.50	1		07/31/16 20:07	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.027	1		07/31/16 20:07	16984-48-8	
Sulfate	**44.1**	mg/L	5.0	0.77	5		08/02/16 17:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-DUP-1 **Lab ID: 60223480012** Collected: 07/11/16 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	**163**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:57	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:57	7440-41-7	
Boron	**5980**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:57	7440-42-8	
Calcium	**159000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:57	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:57	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:57	7439-92-1	
Lithium	**18.2**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:57	7439-93-2	
Molybdenum	**206**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:57	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 15:35	07/25/16 13:43	7440-36-0	
Arsenic	**14.7**	ug/L	1.0	0.10	1	07/15/16 15:35	07/25/16 13:43	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/25/16 13:43	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/25/16 13:43	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/25/16 13:43	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/25/16 13:43	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 09:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**759**	mg/L	5.0	5.0	1		07/18/16 16:36		
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	**12.9**	mg/L	1.0	0.50	1		07/31/16 20:22	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.027	1		07/31/16 20:22	16984-48-8	
Sulfate	**216**	mg/L	20.0	3.1	20		08/02/16 18:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-DUP-2 **Lab ID: 60223480013** Collected: 07/12/16 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	**520**	ug/L	10.0	0.58	1	07/15/16 15:35	07/19/16 17:59	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 17:59	7440-41-7	
Boron	**104**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 17:59	7440-42-8	
Calcium	**121000**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 17:59	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 17:59	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 17:59	7439-92-1	
Lithium	**16.7**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 17:59	7439-93-2	
Molybdenum	**1.2J**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 17:59	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 15:35	07/25/16 13:47	7440-36-0	
Arsenic	**34.0**	ug/L	1.0	0.10	1	07/15/16 15:35	07/25/16 13:47	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/25/16 13:47	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/25/16 13:47	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/25/16 13:47	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/25/16 13:47	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 09:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**471**	mg/L	5.0	5.0	1		07/19/16 09:30		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	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	**21.6**	mg/L	2.0	1.0	2		08/02/16 18:14	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		07/31/16 20:36	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		07/31/16 20:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-FB-1 **Lab ID: 60223480014** Collected: 07/13/16 08:33 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 15:35	07/19/16 18:01	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 18:01	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 18:01	7440-42-8	
Calcium	**24.3J**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 18:01	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 18:01	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 18:01	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 18:01	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 18:01	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 15:35	07/22/16 19:39	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:39	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:39	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:39	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:39	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:39	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 09:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		07/20/16 11:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	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	**<0.50**	mg/L	1.0	0.50	1		07/31/16 20:50	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		07/31/16 20:50	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		07/31/16 20:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-FB-2 **Lab ID: 60223480015** Collected: 07/12/16 10:30 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 15:35	07/19/16 18:04	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	07/15/16 15:35	07/19/16 18:04	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	07/15/16 15:35	07/19/16 18:04	7440-42-8	
Calcium	**10.1J**	ug/L	100	8.1	1	07/15/16 15:35	07/19/16 18:04	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	07/15/16 15:35	07/19/16 18:04	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	07/15/16 15:35	07/19/16 18:04	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	07/15/16 15:35	07/19/16 18:04	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	07/15/16 15:35	07/19/16 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	07/15/16 15:35	07/22/16 19:43	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	07/15/16 15:35	07/22/16 19:43	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	07/15/16 15:35	07/22/16 19:43	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	07/15/16 15:35	07/22/16 19:43	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	07/15/16 15:35	07/22/16 19:43	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	07/15/16 15:35	07/22/16 19:43	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 09:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**8.0**	mg/L	5.0	5.0	1		07/19/16 09:30		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.7**	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	**<0.50**	mg/L	1.0	0.50	1		07/31/16 21:04	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		07/31/16 21:04	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		07/31/16 21:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

QC Batch: 438581 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

METHOD BLANK: 1793915 Matrix: Water
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

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-BOT
Pace Project No.: 60223480

QC Batch: 438689 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

METHOD BLANK: 1794386 Matrix: Water
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	10.0	0.58	07/19/16 17:14	
Beryllium	ug/L	<0.26	1.0	0.26	07/19/16 17:14	
Boron	ug/L	<50.0	100	50.0	07/19/16 17:14	
Calcium	ug/L	<8.1	100	8.1	07/19/16 17:14	
Cobalt	ug/L	<0.72	5.0	0.72	07/19/16 17:14	
Lead	ug/L	<2.5	5.0	2.5	07/19/16 17:14	
Lithium	ug/L	<4.9	10.0	4.9	07/19/16 17:14	
Molybdenum	ug/L	<0.52	20.0	0.52	07/19/16 17:14	

LABORATORY CONTROL SAMPLE: 1794387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	999	100	85-115	
Beryllium	ug/L	1000	1070	107	85-115	
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10600	106	85-115	
Cobalt	ug/L	1000	1120	112	85-115	
Lead	ug/L	1000	1090	109	85-115	
Lithium	ug/L	1000	989	99	85-115	
Molybdenum	ug/L	1000	1130	113	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794388 1794389

Parameter	Units	60223480001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	379	1000	1000	1310	1340	93	96	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	1020	1050	102	105	70-130	2	20	
Boron	ug/L	547	1000	1000	1510	1560	96	101	70-130	3	20	
Calcium	ug/L	124000	10000	10000	127000	130000	30	58	70-130	2	20	M1
Cobalt	ug/L	<0.72	1000	1000	1020	1050	102	105	70-130	3	20	
Lead	ug/L	<2.5	1000	1000	1000	1020	100	102	70-130	2	20	
Lithium	ug/L	25.1	1000	1000	999	1030	97	100	70-130	3	20	
Molybdenum	ug/L	1.8J	1000	1000	1070	1100	107	110	70-130	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

MATRIX SPIKE SAMPLE: 1794390

Parameter	Units	60223480010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1150	1000	2160	101	70-130	
Beryllium	ug/L	<0.26	1000	1080	108	70-130	
Boron	ug/L	80.2J	1000	1140	106	70-130	
Calcium	ug/L	135000	10000	147000	115	70-130	
Cobalt	ug/L	<0.72	1000	1100	110	70-130	
Lead	ug/L	<2.5	1000	1070	107	70-130	
Lithium	ug/L	30.7	1000	1060	103	70-130	
Molybdenum	ug/L	1.2J	1000	1150	115	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

QC Batch: 438691 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

METHOD BLANK: 1794421 Matrix: Water
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.058	1.0	0.058	07/22/16 18:47	
Arsenic	ug/L	<0.10	1.0	0.10	07/22/16 18:47	
Cadmium	ug/L	<0.029	0.50	0.029	07/22/16 18:47	
Chromium	ug/L	<0.34	1.0	0.34	07/22/16 18:47	
Selenium	ug/L	<0.18	1.0	0.18	07/22/16 18:47	
Thallium	ug/L	<0.50	1.0	0.50	07/22/16 18:47	

LABORATORY CONTROL SAMPLE: 1794422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.4	101	85-115	
Arsenic	ug/L	40	40.5	101	85-115	
Cadmium	ug/L	40	40.3	101	85-115	
Chromium	ug/L	40	40.1	100	85-115	
Selenium	ug/L	40	40.9	102	85-115	
Thallium	ug/L	40	37.4	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1794423 1794424

Parameter	Units	60223480001 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	41.1	40.7	103	102	70-130	1	20	
Arsenic	ug/L	28.5	40	40	69.5	69.3	102	102	70-130	0	20	
Cadmium	ug/L	<0.029	40	40	40.2	40.2	100	100	70-130	0	20	
Chromium	ug/L	<0.34	40	40	40.9	41.3	102	103	70-130	1	20	
Selenium	ug/L	<0.18	40	40	39.8	40.0	99	100	70-130	0	20	
Thallium	ug/L	<0.50	40	40	40.1	39.8	100	99	70-130	1	20	

MATRIX SPIKE SAMPLE: 1794425

Parameter	Units	60223480006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.058	40	41.1	103	70-130	
Arsenic	ug/L	9.6	40	50.0	101	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

MATRIX SPIKE SAMPLE: 1794425

Parameter	Units	60223480006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	<0.029	40	39.6	99	70-130	
Chromium	ug/L	<0.34	40	40.5	101	70-130	
Selenium	ug/L	<0.18	40	38.5	96	70-130	
Thallium	ug/L	<0.50	40	39.1	98	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

QC Batch: 438865 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223480007, 60223480010, 60223480011, 60223480012

METHOD BLANK: 1795295 Matrix: Water
Associated Lab Samples: 60223480007, 60223480010, 60223480011, 60223480012

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-BOT
Pace Project No.: 60223480

QC Batch: 439017 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480008, 60223480009, 60223480013, 60223480015

METHOD BLANK: 1795646 Matrix: Water
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480008, 60223480009, 60223480013, 60223480015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/19/16 09:17	

LABORATORY CONTROL SAMPLE: 1795647

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

SAMPLE DUPLICATE: 1795648

Parameter	Units	60223480001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	465	464	0	10	

SAMPLE DUPLICATE: 1795649

Parameter	Units	60223486008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	862	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

QC Batch: 439280 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60223480004, 60223480005, 60223480006, 60223480014

METHOD BLANK: 1796638 Matrix: Water
Associated Lab Samples: 60223480004, 60223480005, 60223480006, 60223480014

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-BOT
Pace Project No.: 60223480

QC Batch: 438827 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

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-BOT
Pace Project No.: 60223480

QC Batch: 440717 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

METHOD BLANK: 1803292 Matrix: Water
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	07/31/16 15:39	
Fluoride	mg/L	<0.027	0.20	0.027	07/31/16 15:39	
Sulfate	mg/L	<0.15	1.0	0.15	07/31/16 15:39	

LABORATORY CONTROL SAMPLE: 1803293

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	93	90-110	
Sulfate	mg/L	5	4.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1803294 1803295

Parameter	Units	60223480001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.8	5	5	14.4	14.6	93	96	80-120	1	15	
Fluoride	mg/L	0.20	2.5	2.5	2.5	2.6	92	96	80-120	4	15	
Sulfate	mg/L	7.0	5	5	11.5	11.7	91	94	80-120	1	15	

MATRIX SPIKE SAMPLE: 1803296

Parameter	Units	60223480002 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-BOT
Pace Project No.: 60223480

QC Batch: 440988 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013

METHOD BLANK: 1803964 Matrix: Water
Associated Lab Samples: 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	08/02/16 08:56	
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
Chloride	mg/L	5	4.8	97	90-110	
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
Chloride	mg/L	40.0	25	25	65.2	65.5	101	102	80-120	0	15	
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
Chloride	mg/L	6.1		30.6			
Sulfate	mg/L	71.9	25	96.5	98	80-120	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-1D **Lab ID: 60223480001** Collected: 07/12/16 13:45 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	**0.493 ± 0.461 (0.654) C:NA T:94%**	pCi/L	08/08/16 21:46	13982-63-3	
Radium-228	EPA 904.0	**1.49 ± 0.424 (0.480) C:79% T:90%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-2D **Lab ID: 60223480002** Collected: 07/12/16 12:50 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 ± 0.362 (0.811) C:NA T:83%**	pCi/L	08/08/16 21:45	13982-63-3	
Radium-228	EPA 904.0	**1.23 ± 0.405 (0.537) C:78% T:82%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-3D **Lab ID: 60223480003** Collected: 07/12/16 10:00 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	**0.0842 ± 0.472 (0.905) C:NA T:85%**	pCi/L	08/08/16 22:21	13982-63-3	
Radium-228	EPA 904.0	**1.07 ± 0.413 (0.626) C:71% T:82%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-4D **Lab ID: 60223480004** Collected: 07/13/16 13:45 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 ± 0.328 (0.667) C:NA T:87%**	pCi/L	08/08/16 21:56	13982-63-3	
Radium-228	EPA 904.0	**1.04 ± 0.421 (0.651) C:73% T:73%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-5D **Lab ID: 60223480005** Collected: 07/13/16 10:32 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 ± 0.374 (0.603) C:NA T:84%**	pCi/L	08/08/16 23:01	13982-63-3	
Radium-228	EPA 904.0	**0.720 ± 0.308 (0.481) C:81% T:84%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-6D **Lab ID: 60223480006** Collected: 07/13/16 09:18 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 ± 0.355 (0.722) C:NA T:84%**	pCi/L	08/08/16 22:21	13982-63-3	
Radium-228	EPA 904.0	**1.59 ± 0.494 (0.630) C:77% T:76%**	pCi/L	08/05/16 23:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-7D **Lab ID: 60223480007** Collected: 07/11/16 15:18 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	**0.228 ± 0.347 (0.559) C:NA T:84%**	pCi/L	08/08/16 22:33	13982-63-3	
Radium-228	EPA 904.0	**1.51 ± 0.462 (0.588) C:80% T:82%**	pCi/L	08/05/16 23:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-8D **Lab ID: 60223480008** Collected: 07/12/16 11:30 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	**0.136 ± 0.377 (0.732) C:NA T:103%**	pCi/L	08/08/16 22:33	13982-63-3	
Radium-228	EPA 904.0	**1.69 ± 0.466 (0.509) C:78% T:90%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-9D **Lab ID: 60223480009** Collected: 07/12/16 09:50 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	**0.734 ± 0.506 (0.540) C:NA T:91%**	pCi/L	08/08/16 22:46	13982-63-3	
Radium-228	EPA 904.0	**1.02 ± 0.343 (0.453) C:78% T:93%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-BMW-1D **Lab ID: 60223480010** Collected: 07/11/16 12:29 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	**1.26 ± 0.661 (0.651) C:NA T:90%**	pCi/L	08/08/16 22:08	13982-63-3	
Radium-228	EPA 904.0	**1.82 ± 0.501 (0.558) C:75% T:90%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-BMW-2D **Lab ID: 60223480011** Collected: 07/11/16 13:40 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 ± 0.326 (0.730) C:NA T:90%**	pCi/L	08/08/16 22:46	13982-63-3	
Radium-228	EPA 904.0	**1.15 ± 0.391 (0.548) C:78% T:91%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-DUP-1 **Lab ID: 60223480012** Collected: 07/11/16 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	**0.541 ± 0.506 (0.717) C:NA T:83%**	pCi/L	08/08/16 23:24	13982-63-3	
Radium-228	EPA 904.0	**0.324 ± 0.292 (0.577) C:76% T:85%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-DUP-2 **Lab ID: 60223480013** Collected: 07/12/16 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	**0.0926 ± 0.437 (0.840) C:NA T:95%**	pCi/L	08/08/16 23:00	13982-63-3	
Radium-228	EPA 904.0	**0.994 ± 0.389 (0.601) C:76% T:85%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-FB-1 **Lab ID: 60223480014** Collected: 07/13/16 08:33 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	**0.0939 ± 0.443 (0.852) C:NA T:89%**	pCi/L	08/08/16 22:47	13982-63-3	
Radium-228	EPA 904.0	**0.224 ± 0.247 (0.499) C:77% T:91%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-FB-2 **Lab ID: 60223480015** Collected: 07/12/16 10:30 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 ± 0.323 (0.521) C:NA T:89%**	pCi/L	08/08/16 23:13	13982-63-3	
Radium-228	EPA 904.0	**0.724 ± 0.344 (0.581) C:77% T:87%**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-1D MS **Lab ID: 60223480016** Collected: 07/12/16 13:45 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	**100 %REC ± NA (NA) C:NA T:NA**	pCi/L	08/08/16 22:46	13982-63-3	
Radium-228	EPA 904.0	**78.0 %REC +/- NA (NA) C:NA T:NA**	pCi/L	08/05/16 23:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Sample: L-UMW-1D MSD **Lab ID: 60223480017** Collected: 07/12/16 13:45 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	**96.3 %REC 3.92 RPD ± NA (NA) C:NA T:NA**	pCi/L	08/08/16 23:12	13982-63-3	
Radium-228	EPA 904.0	**64.5 %REC 19.1 RPD +/- NA (NA) C:NA T:NA**	pCi/L	08/05/16 23:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

QC Batch: 227884 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015, 60223480016, 60223480017

METHOD BLANK: 1116170 Matrix: Water
Associated Lab Samples:

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.259 ± 0.395 (0.928) C:NA T:84%	pCi/L	08/08/16 22:01	

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-BOT
Pace Project No.: 60223480

QC Batch: 227853 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60223480001, 60223480002, 60223480003, 60223480004, 60223480005, 60223480006, 60223480007, 60223480008, 60223480009, 60223480010, 60223480011, 60223480012, 60223480013, 60223480014, 60223480015, 60223480016, 60223480017

METHOD BLANK: 1116120 Matrix: Water
Associated Lab Samples:

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	

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

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

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 (%)

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

H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223480001	L-UMW-1D	EPA 200.7	438689	EPA 200.7	438778
60223480002	L-UMW-2D	EPA 200.7	438689	EPA 200.7	438778
60223480003	L-UMW-3D	EPA 200.7	438689	EPA 200.7	438778
60223480004	L-UMW-4D	EPA 200.7	438689	EPA 200.7	438778
60223480005	L-UMW-5D	EPA 200.7	438689	EPA 200.7	438778
60223480006	L-UMW-6D	EPA 200.7	438689	EPA 200.7	438778
60223480007	L-UMW-7D	EPA 200.7	438689	EPA 200.7	438778
60223480008	L-UMW-8D	EPA 200.7	438689	EPA 200.7	438778
60223480009	L-UMW-9D	EPA 200.7	438689	EPA 200.7	438778
60223480010	L-BMW-1D	EPA 200.7	438689	EPA 200.7	438778
60223480011	L-BMW-2D	EPA 200.7	438689	EPA 200.7	438778
60223480012	L-UMW-DUP-1	EPA 200.7	438689	EPA 200.7	438778
60223480013	L-UMW-DUP-2	EPA 200.7	438689	EPA 200.7	438778
60223480014	L-UMW-FB-1	EPA 200.7	438689	EPA 200.7	438778
60223480015	L-UMW-FB-2	EPA 200.7	438689	EPA 200.7	438778
60223480001	L-UMW-1D	EPA 200.8	438691	EPA 200.8	438779
60223480002	L-UMW-2D	EPA 200.8	438691	EPA 200.8	438779
60223480003	L-UMW-3D	EPA 200.8	438691	EPA 200.8	438779
60223480004	L-UMW-4D	EPA 200.8	438691	EPA 200.8	438779
60223480005	L-UMW-5D	EPA 200.8	438691	EPA 200.8	438779
60223480006	L-UMW-6D	EPA 200.8	438691	EPA 200.8	438779
60223480007	L-UMW-7D	EPA 200.8	438691	EPA 200.8	438779
60223480008	L-UMW-8D	EPA 200.8	438691	EPA 200.8	438779
60223480009	L-UMW-9D	EPA 200.8	438691	EPA 200.8	438779
60223480010	L-BMW-1D	EPA 200.8	438691	EPA 200.8	438779
60223480011	L-BMW-2D	EPA 200.8	438691	EPA 200.8	438779
60223480012	L-UMW-DUP-1	EPA 200.8	438691	EPA 200.8	438779
60223480013	L-UMW-DUP-2	EPA 200.8	438691	EPA 200.8	438779
60223480014	L-UMW-FB-1	EPA 200.8	438691	EPA 200.8	438779
60223480015	L-UMW-FB-2	EPA 200.8	438691	EPA 200.8	438779
60223480001	L-UMW-1D	EPA 7470	438581	EPA 7470	438588
60223480002	L-UMW-2D	EPA 7470	438581	EPA 7470	438588
60223480003	L-UMW-3D	EPA 7470	438581	EPA 7470	438588
60223480004	L-UMW-4D	EPA 7470	438581	EPA 7470	438588
60223480005	L-UMW-5D	EPA 7470	438581	EPA 7470	438588
60223480006	L-UMW-6D	EPA 7470	438581	EPA 7470	438588
60223480007	L-UMW-7D	EPA 7470	438581	EPA 7470	438588
60223480008	L-UMW-8D	EPA 7470	438581	EPA 7470	438588
60223480009	L-UMW-9D	EPA 7470	438581	EPA 7470	438588
60223480010	L-BMW-1D	EPA 7470	438581	EPA 7470	438588
60223480011	L-BMW-2D	EPA 7470	438581	EPA 7470	438588
60223480012	L-UMW-DUP-1	EPA 7470	438581	EPA 7470	438588
60223480013	L-UMW-DUP-2	EPA 7470	438581	EPA 7470	438588
60223480014	L-UMW-FB-1	EPA 7470	438581	EPA 7470	438588
60223480015	L-UMW-FB-2	EPA 7470	438581	EPA 7470	438588
60223480001	L-UMW-1D	EPA 903.1	227884		
60223480002	L-UMW-2D	EPA 903.1	227884		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223480003	**L-UMW-3D**	EPA 903.1	227884		
60223480004	**L-UMW-4D**	EPA 903.1	227884		
60223480005	**L-UMW-5D**	EPA 903.1	227884		
60223480006	**L-UMW-6D**	EPA 903.1	227884		
60223480007	**L-UMW-7D**	EPA 903.1	227884		
60223480008	**L-UMW-8D**	EPA 903.1	227884		
60223480009	**L-UMW-9D**	EPA 903.1	227884		
60223480010	**L-BMW-1D**	EPA 903.1	227884		
60223480011	**L-BMW-2D**	EPA 903.1	227884		
60223480012	**L-UMW-DUP-1**	EPA 903.1	227884		
60223480013	**L-UMW-DUP-2**	EPA 903.1	227884		
60223480014	**L-UMW-FB-1**	EPA 903.1	227884		
60223480015	**L-UMW-FB-2**	EPA 903.1	227884		
60223480016	**L-UMW-1D MS**	EPA 903.1	227884		
60223480017	**L-UMW-1D MSD**	EPA 903.1	227884		
60223480001	**L-UMW-1D**	EPA 904.0	227853		
60223480002	**L-UMW-2D**	EPA 904.0	227853		
60223480003	**L-UMW-3D**	EPA 904.0	227853		
60223480004	**L-UMW-4D**	EPA 904.0	227853		
60223480005	**L-UMW-5D**	EPA 904.0	227853		
60223480006	**L-UMW-6D**	EPA 904.0	227853		
60223480007	**L-UMW-7D**	EPA 904.0	227853		
60223480008	**L-UMW-8D**	EPA 904.0	227853		
60223480009	**L-UMW-9D**	EPA 904.0	227853		
60223480010	**L-BMW-1D**	EPA 904.0	227853		
60223480011	**L-BMW-2D**	EPA 904.0	227853		
60223480012	**L-UMW-DUP-1**	EPA 904.0	227853		
60223480013	**L-UMW-DUP-2**	EPA 904.0	227853		
60223480014	**L-UMW-FB-1**	EPA 904.0	227853		
60223480015	**L-UMW-FB-2**	EPA 904.0	227853		
60223480016	**L-UMW-1D MS**	EPA 904.0	227853		
60223480017	**L-UMW-1D MSD**	EPA 904.0	227853		
60223480001	**L-UMW-1D**	SM 2540C	439017		
60223480002	**L-UMW-2D**	SM 2540C	439017		
60223480003	**L-UMW-3D**	SM 2540C	439017		
60223480004	**L-UMW-4D**	SM 2540C	439280		
60223480005	**L-UMW-5D**	SM 2540C	439280		
60223480006	**L-UMW-6D**	SM 2540C	439280		
60223480007	**L-UMW-7D**	SM 2540C	438865		
60223480008	**L-UMW-8D**	SM 2540C	439017		
60223480009	**L-UMW-9D**	SM 2540C	439017		
60223480010	**L-BMW-1D**	SM 2540C	438865		
60223480011	**L-BMW-2D**	SM 2540C	438865		
60223480012	**L-UMW-DUP-1**	SM 2540C	438865		
60223480013	**L-UMW-DUP-2**	SM 2540C	439017		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223480014	L-UMW-FB-1	SM 2540C	439280		
60223480015	L-UMW-FB-2	SM 2540C	439017		
60223480001	L-UMW-1D	SM 4500-H+B	438827		
60223480002	L-UMW-2D	SM 4500-H+B	438827		
60223480003	L-UMW-3D	SM 4500-H+B	438827		
60223480004	L-UMW-4D	SM 4500-H+B	438827		
60223480005	L-UMW-5D	SM 4500-H+B	438827		
60223480006	L-UMW-6D	SM 4500-H+B	438827		
60223480007	L-UMW-7D	SM 4500-H+B	438827		
60223480008	L-UMW-8D	SM 4500-H+B	438827		
60223480009	L-UMW-9D	SM 4500-H+B	438827		
60223480010	L-BMW-1D	SM 4500-H+B	438827		
60223480011	L-BMW-2D	SM 4500-H+B	438827		
60223480012	L-UMW-DUP-1	SM 4500-H+B	438827		
60223480013	L-UMW-DUP-2	SM 4500-H+B	438827		
60223480014	L-UMW-FB-1	SM 4500-H+B	438827		
60223480015	L-UMW-FB-2	SM 4500-H+B	438827		
60223480001	L-UMW-1D	EPA 300.0	440717		
60223480002	L-UMW-2D	EPA 300.0	440717		
60223480002	L-UMW-2D	EPA 300.0	440988		
60223480003	L-UMW-3D	EPA 300.0	440717		
60223480003	L-UMW-3D	EPA 300.0	440988		
60223480004	L-UMW-4D	EPA 300.0	440717		
60223480004	L-UMW-4D	EPA 300.0	440988		
60223480005	L-UMW-5D	EPA 300.0	440717		
60223480005	L-UMW-5D	EPA 300.0	440988		
60223480006	L-UMW-6D	EPA 300.0	440717		
60223480006	L-UMW-6D	EPA 300.0	440988		
60223480007	L-UMW-7D	EPA 300.0	440717		
60223480007	L-UMW-7D	EPA 300.0	440988		
60223480008	L-UMW-8D	EPA 300.0	440717		
60223480009	L-UMW-9D	EPA 300.0	440717		
60223480009	L-UMW-9D	EPA 300.0	440988		
60223480010	L-BMW-1D	EPA 300.0	440717		
60223480010	L-BMW-1D	EPA 300.0	440988		
60223480011	L-BMW-2D	EPA 300.0	440717		
60223480011	L-BMW-2D	EPA 300.0	440988		
60223480012	L-UMW-DUP-1	EPA 300.0	440717		

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60223480

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60223480012	**L-UMW-DUP-1**	EPA 300.0	440988		
60223480013	**L-UMW-DUP-2**	EPA 300.0	440717		
60223480013	**L-UMW-DUP-2**	EPA 300.0	440988		
60223480014	**L-UMW-FB-1**	EPA 300.0	440717		
60223480015	**L-UMW-FB-2**	EPA 300.0	440717		

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Sample Condition Upon Receipt

WO# : 60223480

60223480

5LC

Client Name: Golder

Optional
Proj Due Date:
Proj Name:

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 +1.1 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: 2.1/17.3/16.3

Date and initials of person examining contents: pv 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.
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: _____

Jami Church 7/14/16

Project Manager Review: _____ Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:

Company:	Golder Associates
Address:	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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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		
1	L-UMW-1D	WT	G			7/12/16	1345		12	3		9							3	3	3	3	6		3BP3U 3BP3N 6BP1N 001
2	L-UMW-2D	WT	G			7/12/16	1256		4	1		3							1	1	1	1	2		1BP3U 1BP3N 2BP1N 002
3	L-UMW-3D	WT	G			7/12/16	1000																		003
4	L-UMW-4D	WT	G			7/13/16	1375																		004
5	L-UMW-5D	WT	G			7/13/16	1032																		005
6	L-UMW-6D	WT	G			7/13/16	0918																		006
7	L-UMW-7D	WT	G			7/11/16	1518																		007
8	L-UMW-8D	WT	G			7/12/16	1130																		008
9	L-UMW-9D	WT	G			7/12/16	0950																		009
10	L-BMW-1D	WT	G			7/11/16	1229																		010
11	L-BMW-2D	WT	G			7/11/16	1340																		011
12	L-UMW-DUP-1	WT	G			7/11/16	—																		012

60223480

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	John Snozzi/Golder	7/13/16	1650	PACE	7/13/16	1650
	PACE	7-13-16	1750		7/14/16	0455

SAMPLE CONDITIONS	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	2.1	Y	Y	Y
	17-3			
	16-3			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Snozzi

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
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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 Ctr - Bottom Ash Por	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001A	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

ITEM #	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	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		60223480
1	L-UMW-DUP-2	WT	G			7/12/16	—		4	1		3							1	1	1	1	2		1B1BU 013
2	L-UMW-FB-1	WT	G			7/13/16	0833		1	1		1							1	1	1	1	1		1B1BN20 014
3	L-UMW-FB-2	WT	G			7/12/16	1030		1	1		1							1	1	1	1	1		2B1IN 015
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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 Fiorazi	7/13/16	1650	PACE	7/13/16	1650	21	Y	Y	Y
	PACE	7-13-16	1760		7/14/16	0455	17.3			
							16.3			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Fiorazi

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 7/13/16

Chain of Custody

30190174

Pace Analytical®
www.pacelabs.com

Workorder: 60223480 **Workorder Name:**AMEREN LABADIE ENERGY CTR-BOT **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#:30190174

30190174

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: BP1N	Requested Analysis: Radium 226 & 228	LAB USE ONLY
1	L-UMW-1D	RQS	7/12/2016 13:45	60223480001	Water	2	X	001
2	L-UMW-2D	PS	7/12/2016 12:50	60223480002	Water	2	X	002
3	L-UMW-3D	PS	7/12/2016 10:00	60223480003	Water	2	X	003
4	L-UMW-4D	PS	7/13/2016 13:45	60223480004	Water	2	X	004
5	L-UMW-5D	PS	7/13/2016 10:32	60223480005	Water	2	X	005
6	L-UMW-6D	PS	7/13/2016 09:18	60223480006	Water	2	X	006
7	L-UMW-7D	PS	7/11/2016 15:18	60223480007	Water	2	X	007
8	L-UMW-8D	PS	7/12/2016 11:30	60223480008	Water	2	X	008
9	L-UMW-9D	PS	7/12/2016 09:50	60223480009	Water	2	X	009
10	L-BMW-1D	PS	7/11/2016 12:29	60223480010	Water	2	X	010
11	L-BMW-2D	PS	7/11/2016 13:40	60223480011	Water	2	X	011
12	L-UMW-DUP-1	PS	7/11/2016 00:00	60223480012	Water	2	X	012
13	L-UMW-DUP-2	PS	7/12/2016 00:00	60223480013	Water	2	X	013
14	L-UMW-FB-1	PS	7/13/2016 08:33	60223480014	Water	2	X	014
15	L-UMW-FB-2	PS	7/12/2016 10:30	60223480015	Water	2	X	015
16	L-UMW-1D MS	PS	7/12/2016 13:45	60223480016	Water	2	X	016
17	L-UMW-1D MSD	PS	7/12/2016 13:45	60223480017	Water	2	X	017

30190174

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature] /PASI	07/15/16 1700	Karen E. Hill	7/19/20 0955
2				
3				

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

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

30190174

Client Name: Pace, Kansas Project #

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:	✓			5.
-Includes date/time/ID/Analysis Matrix: WT				
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:	✓			10.
-Pace Containers Used:	✓			
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests			✓	12.
All containers needing preservation have been checked.	✓			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	✓			
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)

Sample Condition Upon Receipt Pittsburgh

30190174

Pace Analytical

Client Name: Pace, Kansas Project #

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:	✓			10.
-Pace Containers Used:	✓			
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests			✓	12.
All containers needing preservation have been checked.	✓			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	✓			
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 Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 12, 2016

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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.

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227403001	**L-UMW-1D**	Water	09/09/16 12:12	09/10/16 03:30
60227403002	**L-UMW-2D**	Water	09/09/16 11:10	09/10/16 03:30
60227403003	**L-UMW-5D**	Water	09/09/16 12:20	09/10/16 03:30
60227403004	**L-UMW-6D**	Water	09/09/16 13:55	09/10/16 03:30
60227403005	**L-UMW-9D**	Water	09/09/16 13:55	09/10/16 03:30
60227403006	**L-BMW-2D**	Water	09/09/16 09:20	09/10/16 03:30
60227403007	**L-UMW-DUP-1**	Water	09/09/16 08:00	09/10/16 03:30
60227403008	**L-UMW-DUP-2**	Water	09/09/16 08:00	09/10/16 03:30
60227403009	**L-UMW-FB-1**	Water	09/09/16 12:00	09/10/16 03:30
60227403010	**L-UMW-5D MS**	Water	09/04/16 12:20	09/10/16 03:30
60227403011	**L-UMW-5D MSD**	Water	09/04/16 12:20	09/10/16 03:30
60227403012	**L-UMW-3D**	Water	09/13/16 13:35	09/14/16 04:40
60227403013	**L-UMW-4D**	Water	09/13/16 12:37	09/14/16 04:40
60227403014	**L-UMW-7D**	Water	09/12/16 14:10	09/14/16 04:40
60227403015	**L-UMW-8D**	Water	09/12/16 15:15	09/14/16 04:40
60227403016	**L-BMW-1D**	Water	09/13/16 15:06	09/14/16 04:40
60227403017	**L-UMW-FB-2**	Water	09/13/16 13:23	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-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60227403001	**L-UMW-1D**	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
60227403002	**L-UMW-2D**	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
60227403003	**L-UMW-5D**	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
60227403004	**L-UMW-6D**	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
60227403005	**L-UMW-9D**	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

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-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227403006	**L-BMW-2D**	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
60227403007	**L-UMW-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
		SM 2540C	JMC1	1	PASI-K
		SM 4500-H+B	HAC	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60227403008	**L-UMW-DUP-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
60227403009	**L-UMW-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
60227403010	**L-UMW-5D MS**	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-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60227403011	**L-UMW-5D MSD**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60227403012	**L-UMW-3D**	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
60227403013	**L-UMW-4D**	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
60227403014	**L-UMW-7D**	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
60227403015	**L-UMW-8D**	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
60227403016	**L-BMW-1D**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	NDJ	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60227403017	**L-UMW-FB-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

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-1D **Lab ID: 60227403001** Collected: 09/09/16 12:12 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	**421**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 16:42	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 16:42	7440-41-7	
Boron	**508**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 16:42	7440-42-8	
Calcium	**133000**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 16:42	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 16:42	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 16:42	7439-92-1	
Lithium	**23.3**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 16:42	7439-93-2	
Molybdenum	**1.1J**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 16:42	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	09/13/16 10:25	09/20/16 14:39	7440-36-0	
Arsenic	**27.0**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 14:39	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 14:39	7440-43-9	
Chromium	**2.4**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 14:39	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 14:39	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 14:39	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/13/16 08:30	09/13/16 11:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**512**	mg/L	5.0	5.0	1		09/16/16 10:18		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**11.4**	mg/L	1.0	0.50	1		10/01/16 11:20	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		10/01/16 11:20	16984-48-8	
Sulfate	**10.2**	mg/L	1.0	0.15	1		10/01/16 11:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-2D **Lab ID: 60227403002** Collected: 09/09/16 11:10 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	**114**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 16:46	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 16:46	7440-41-7	
Boron	**1790**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 16:46	7440-42-8	
Calcium	**99400**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 16:46	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 16:46	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 16:46	7439-92-1	
Lithium	**26.9**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 16:46	7439-93-2	
Molybdenum	**45.9**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 16:46	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	09/13/16 10:25	09/20/16 14:43	7440-36-0	
Arsenic	**2.2**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 14:43	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 14:43	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 14:43	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 14:43	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 14:43	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 12:01	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**625**	mg/L	5.0	5.0	1		09/16/16 10:18		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.2**	mg/L	2.0	1.0	2		10/02/16 12:34	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	0.027	1		10/01/16 11:34	16984-48-8	
Sulfate	**237**	mg/L	20.0	3.1	20		10/02/16 13:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-5D **Lab ID: 60227403003** Collected: 09/09/16 12:20 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	**68.9**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 16:49	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 16:49	7440-41-7	
Boron	**5080**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 16:49	7440-42-8	
Calcium	**81300**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 16:49	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 16:49	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 16:49	7439-92-1	
Lithium	**23.4**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 16:49	7439-93-2	
Molybdenum	**120**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 16:49	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.084J**	ug/L	1.0	0.058	1	09/13/16 10:25	09/20/16 14:48	7440-36-0	
Arsenic	**17.7**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 14:48	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 14:48	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 14:48	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 14:48	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 14:48	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	09/13/16 08:30	09/13/16 12:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**513**	mg/L	5.0	5.0	1		09/16/16 10:18		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.2**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.6**	mg/L	2.0	1.0	2		10/02/16 13:30	16887-00-6	
Fluoride	**0.082J**	mg/L	0.20	0.027	1		10/01/16 11:48	16984-48-8	
Sulfate	**275**	mg/L	20.0	3.1	20		10/02/16 13:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-6D **Lab ID: 60227403004** Collected: 09/09/16 13:55 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	**127**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:07	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:07	7440-41-7	
Boron	**16800**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:07	7440-42-8	
Calcium	**77900**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:07	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:07	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:07	7439-92-1	
Lithium	**6.6J**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:07	7439-93-2	
Molybdenum	**596**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:07	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	09/13/16 10:25	09/20/16 15:23	7440-36-0	
Arsenic	**16.6**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:23	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:23	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:23	7440-47-3	
Selenium	**0.28J**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:23	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:23	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 12:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**589**	mg/L	5.0	5.0	1		09/16/16 10:19		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.3**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**22.5**	mg/L	2.0	1.0	2		10/02/16 14:27	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.027	1		10/01/16 12:17	16984-48-8	
Sulfate	**316**	mg/L	20.0	3.1	20		10/02/16 14:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-9D **Lab ID: 60227403005** Collected: 09/09/16 13:55 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	**536**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:11	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:11	7440-41-7	
Boron	**122**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:11	7440-42-8	
Calcium	**120000**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:11	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:11	7440-48-4	
Lead	**4.8J**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:11	7439-92-1	
Lithium	**17.2**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:11	7439-93-2	
Molybdenum	**1.9J**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:11	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	09/13/16 10:25	09/20/16 15:27	7440-36-0	
Arsenic	**35.4**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:27	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:27	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:27	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:27	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:27	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 12:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**446**	mg/L	5.0	5.0	1		09/16/16 10:19		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.5**	mg/L	2.0	1.0	2		10/02/16 14:55	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		10/01/16 12:31	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		10/01/16 12:31	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-BOT
Pace Project No.: 60227403

Sample: L-BMW-2D **Lab ID: 60227403006** Collected: 09/09/16 09:20 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	**377**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:15	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:15	7440-41-7	
Boron	**79.8J**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:15	7440-42-8	
Calcium	**149000**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:15	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:15	7440-48-4	
Lead	**2.6J**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:15	7439-92-1	
Lithium	**43.2**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:15	7439-93-2	
Molybdenum	**3.0J**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:15	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	09/13/16 10:25	09/20/16 15:32	7440-36-0	
Arsenic	**31.6**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:32	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:32	7440-43-9	
Chromium	**0.48J**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:32	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:32	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:32	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 12:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**524**	mg/L	5.0	5.0	1		09/16/16 10:19		
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	**14.1**	mg/L	1.0	0.50	1		10/01/16 12:53	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.027	1		10/01/16 12:53	16984-48-8	
Sulfate	**51.0**	mg/L	5.0	0.77	5		10/02/16 15:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-DUP-1 **Lab ID: 60227403007** Collected: 09/09/16 08:00 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	**130**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:18	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:18	7440-41-7	
Boron	**17000**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:18	7440-42-8	
Calcium	**77500**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:18	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:18	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:18	7439-92-1	
Lithium	**7.2J**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:18	7439-93-2	
Molybdenum	**600**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:18	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	09/13/16 10:25	09/20/16 15:36	7440-36-0	
Arsenic	**16.4**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:36	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:36	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:36	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:36	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:36	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 12:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**585**	mg/L	5.0	5.0	1		09/16/16 10:19		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.3**	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	**22.5**	mg/L	2.0	1.0	2		10/02/16 16:06	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.027	1		10/01/16 13:07	16984-48-8	
Sulfate	**316**	mg/L	20.0	3.1	20		10/02/16 16:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-DUP-2 **Lab ID: 60227403008** Collected: 09/09/16 08:00 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	**528**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:22	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:22	7440-41-7	
Boron	**124**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:22	7440-42-8	
Calcium	**118000**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:22	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:22	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:22	7439-92-1	
Lithium	**16.8**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:22	7439-93-2	
Molybdenum	**1.5J**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:22	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	09/13/16 10:25	09/20/16 15:41	7440-36-0	
Arsenic	**35.1**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:41	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:41	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:41	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:41	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:41	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 12:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**440**	mg/L	5.0	5.0	1		09/16/16 10:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**21.5**	mg/L	2.0	1.0	2		10/02/16 16:34	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		10/01/16 13:21	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		10/01/16 13:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-FB-1 **Lab ID: 60227403009** Collected: 09/09/16 12:00 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	**<0.58**	ug/L	10.0	0.58	1	09/13/16 10:25	09/13/16 17:26	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/13/16 10:25	09/13/16 17:26	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	09/13/16 10:25	09/13/16 17:26	7440-42-8	
Calcium	**22.4J**	ug/L	100	8.1	1	09/13/16 10:25	09/13/16 17:26	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/13/16 10:25	09/13/16 17:26	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/13/16 10:25	09/13/16 17:26	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	09/13/16 10:25	09/13/16 17:26	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	09/13/16 10:25	09/13/16 17:26	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	09/13/16 10:25	09/20/16 15:45	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	09/13/16 10:25	09/20/16 15:45	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/13/16 10:25	09/20/16 15:45	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/13/16 10:25	09/20/16 15:45	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/13/16 10:25	09/20/16 15:45	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/13/16 10:25	09/20/16 15:45	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 12:25	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		09/16/16 10:20		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.8**	Std. Units	0.10	0.10	1		09/13/16 10:15		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		10/01/16 13:35	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		10/01/16 13:35	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		10/01/16 13:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-3D **Lab ID: 60227403012** Collected: 09/13/16 13:35 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	**118**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:10	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:10	7440-41-7	
Boron	**9230**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:10	7440-42-8	
Calcium	**118000**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:10	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:10	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:10	7439-92-1	
Lithium	**18.8**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:10	7439-93-2	
Molybdenum	**175**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:10	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	09/14/16 15:40	09/21/16 15:21	7440-36-0	
Arsenic	**1.1**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 15:21	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 15:21	7440-43-9	
Chromium	**0.63J**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 15:21	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 15:21	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 15:21	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 13:01	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**781**	mg/L	5.0	5.0	1		09/19/16 09:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	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	**13.9**	mg/L	1.0	0.50	1		10/06/16 13:07	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.027	1		10/06/16 13:07	16984-48-8	
Sulfate	**454**	mg/L	50.0	7.7	50		10/07/16 22:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-4D **Lab ID: 60227403013** Collected: 09/13/16 12:37 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	**75.2**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:13	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:13	7440-41-7	
Boron	**3730**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:13	7440-42-8	
Calcium	**52400**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:13	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:13	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:13	7439-92-1	
Lithium	**34.7**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:13	7439-93-2	
Molybdenum	**156**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:13	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.061J**	ug/L	1.0	0.058	1	09/14/16 15:40	09/21/16 15:26	7440-36-0	
Arsenic	**0.11J**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 15:26	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 15:26	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 15:26	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 15:26	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 15:26	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 13:04	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**618**	mg/L	5.0	5.0	1		09/19/16 09:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	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	**22.6**	mg/L	2.0	1.0	2		10/07/16 23:32	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	0.027	1		10/06/16 13:53	16984-48-8	
Sulfate	**360**	mg/L	50.0	7.7	50		10/07/16 23:46	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-BOT
Pace Project No.: 60227403

Sample: L-UMW-7D **Lab ID: 60227403014** Collected: 09/12/16 14:10 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	**105**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:17	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:17	7440-41-7	
Boron	**4820**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:17	7440-42-8	
Calcium	**144000**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:17	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:17	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:17	7439-92-1	
Lithium	**19.1**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:17	7439-93-2	
Molybdenum	**205**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:17	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	09/14/16 15:40	09/21/16 15:30	7440-36-0	
Arsenic	**21.6**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 15:30	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 15:30	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 15:30	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 15:30	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 15:30	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 13:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**766**	mg/L	5.0	5.0	1		09/19/16 08:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	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	**12.0**	mg/L	1.0	0.50	1		10/06/16 14:24	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.027	1		10/06/16 14:24	16984-48-8	
Sulfate	**213**	mg/L	20.0	3.1	20		10/08/16 00:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-8D **Lab ID: 60227403015** Collected: 09/12/16 15:15 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	**497**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:28	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:28	7440-41-7	
Boron	**528**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:28	7440-42-8	
Calcium	**126000**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:28	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:28	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:28	7439-92-1	
Lithium	**31.2**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:28	7439-93-2	
Molybdenum	**14.5J**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:28	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 15:34	7440-36-0	
Arsenic	**31.8**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 15:34	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 15:34	7440-43-9	
Chromium	**1.0**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 15:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 15:34	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 15:34	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 13:08	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**497**	mg/L	5.0	5.0	1		09/19/16 08:59		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	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	**9.3**	mg/L	1.0	0.50	1		10/08/16 00:57	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		10/08/16 00:57	16984-48-8	
Sulfate	**3.7**	mg/L	1.0	0.15	1		10/08/16 00:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-BMW-1D **Lab ID: 60227403016** 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	**1100**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:32	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:32	7440-41-7	
Boron	**78.2J**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:32	7440-42-8	
Calcium	**116000**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:32	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:32	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:32	7439-92-1	
Lithium	**26.9**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:32	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:32	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 15:47	7440-36-0	
Arsenic	**0.51J**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 15:47	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 15:47	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 15:47	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 15:47	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 15:47	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 13:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**514**	mg/L	5.0	5.0	1		09/19/16 09:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	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	**10.6**	mg/L	1.0	0.50	1		10/06/16 14:55	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		10/06/16 14:55	16984-48-8	
Sulfate	**39.9**	mg/L	5.0	0.77	5		10/08/16 01:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-FB-2 **Lab ID: 60227403017** Collected: 09/13/16 13:23 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	**1.2J**	ug/L	10.0	0.58	1	09/14/16 15:40	09/15/16 16:35	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	09/14/16 15:40	09/15/16 16:35	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	09/14/16 15:40	09/15/16 16:35	7440-42-8	
Calcium	**804**	ug/L	100	8.1	1	09/14/16 15:40	09/15/16 16:35	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	09/14/16 15:40	09/15/16 16:35	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	09/14/16 15:40	09/15/16 16:35	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	09/14/16 15:40	09/15/16 16:35	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	09/14/16 15:40	09/15/16 16:35	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.059J**	ug/L	1.0	0.058	1	09/14/16 15:40	09/21/16 16:04	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	09/14/16 15:40	09/21/16 16:04	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	09/14/16 15:40	09/21/16 16:04	7440-43-9	
Chromium	**0.90J**	ug/L	1.0	0.34	1	09/14/16 15:40	09/21/16 16:04	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	09/14/16 15:40	09/21/16 16:04	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	09/14/16 15:40	09/21/16 16:04	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 13:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**16.0**	mg/L	5.0	5.0	1		09/19/16 09:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.8**	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	**<0.50**	mg/L	1.0	0.50	1		10/08/16 01:25	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		10/08/16 01:25	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		10/08/16 01:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 446246 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

METHOD BLANK: 1824355 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

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-BOT
Pace Project No.: 60227403

QC Batch: 446591 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

METHOD BLANK: 1826124 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

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

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-BOT
Pace Project No.: 60227403

QC Batch: 446273 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

METHOD BLANK: 1824423 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 446525 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

METHOD BLANK: 1825615 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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-BOT
Pace Project No.: 60227403

QC Batch: 446276 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

METHOD BLANK: 1824434 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

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	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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
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	
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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 446524 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

METHOD BLANK: 1825609 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

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-BOT
Pace Project No.: 60227403

QC Batch: 446819 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

METHOD BLANK: 1827312 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

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-BOT
Pace Project No.: 60227403

QC Batch: 446979 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227403014, 60227403015

METHOD BLANK: 1828613 Matrix: Water
Associated Lab Samples: 60227403014, 60227403015

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 446982 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227403012, 60227403013, 60227403016, 60227403017

METHOD BLANK: 1828622 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403016, 60227403017

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-BOT
Pace Project No.: 60227403

QC Batch: 446274 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227403006, 60227403007, 60227403008

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-BOT
Pace Project No.: 60227403

QC Batch: 446275 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403009

SAMPLE DUPLICATE: 1824432

Parameter	Units	60227402001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.4	9.4	0	5	H6

SAMPLE DUPLICATE: 1824433

Parameter	Units	60227403003 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-BOT
Pace Project No.: 60227403

QC Batch: 446989 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227403014, 60227403015

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 447131 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60227403012, 60227403013, 60227403016, 60227403017

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-BOT
Pace Project No.: 60227403

QC Batch: 448782 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

METHOD BLANK: 1836679 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009

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-BOT
Pace Project No.: 60227403

QC Batch: 448790 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008

METHOD BLANK: 1836865 Matrix: Water
Associated Lab Samples: 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	10/02/16 11:23	
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
Chloride	mg/L	5	4.6	93	90-110	
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
Chloride	mg/L	19.6	10	28.8	92	80-120	
Sulfate	mg/L	275	100	373	98	80-120	

MATRIX SPIKE SAMPLE: 1836869

Parameter	Units	60227172005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	25.3	10	34.8	95	80-120	

MATRIX SPIKE SAMPLE: 1836870

Parameter	Units	60227580001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.3		26.2			
Sulfate	mg/L	63.4	25	85.9	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836871 1836872

Parameter	Units	60227402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	19.1			113	113				0	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 449284 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403016

METHOD BLANK: 1838547 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403016

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-BOT
Pace Project No.: 60227403

QC Batch: 449623 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

METHOD BLANK: 1839827 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	10/07/16 22:21	
Fluoride	mg/L	<0.027	0.20	0.027	10/07/16 22:21	
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
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.3	90	90-110	
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
Chloride	mg/L	13.9			248	248				0	15	
Fluoride	mg/L	0.12J			118	117				1	15	
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
Chloride	mg/L	12.0		109			
Fluoride	mg/L	0.28		49.7			
Sulfate	mg/L	213	100	313	100	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-1D **Lab ID: 60227403001** Collected: 09/09/16 12:12 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	**-0.060 ± 0.310 (0.719) C:NA T:88%**	pCi/L	09/28/16 11:33	13982-63-3	
Radium-228	EPA 904.0	**2.84 ± 0.744 (0.761) C:79% T:89%**	pCi/L	10/03/16 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-2D **Lab ID: 60227403002** Collected: 09/09/16 11:10 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	**-0.056 ± 0.289 (0.669) C:NA T:92%**	pCi/L	09/28/16 11:33	13982-63-3	
Radium-228	EPA 904.0	**2.34 ± 0.711 (0.896) C:82% T:77%**	pCi/L	10/03/16 12:58	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-5D **Lab ID: 60227403003** Collected: 09/09/16 12:20 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	**0.180 ± 0.390 (0.720) C:NA T:82%**	pCi/L	09/28/16 11:38	13982-63-3	
Radium-228	EPA 904.0	**1.83 ± 0.641 (0.929) C:77% T:77%**	pCi/L	10/03/16 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-6D **Lab ID: 60227403004** Collected: 09/09/16 13:55 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	**0.763 ± 0.409 (0.148) C:NA T:89%**	pCi/L	09/28/16 11:32	13982-63-3	
Radium-228	EPA 904.0	**1.23 ± 0.494 (0.777) C:79% T:84%**	pCi/L	10/03/16 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-9D **Lab ID: 60227403005** Collected: 09/09/16 13:55 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	**0.506 ± 0.370 (0.414) C:NA T:90%**	pCi/L	09/28/16 11:34	13982-63-3	
Radium-228	EPA 904.0	**1.21 ± 0.478 (0.737) C:81% T:86%**	pCi/L	10/03/16 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-BMW-2D **Lab ID: 60227403006** Collected: 09/09/16 09:20 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	**0.476 ± 0.498 (0.780) C:NA T:82%**	pCi/L	09/28/16 11:33	13982-63-3	
Radium-228	EPA 904.0	**1.59 ± 0.537 (0.712) C:79% T:83%**	pCi/L	10/03/16 12:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-DUP-1 **Lab ID: 60227403007** Collected: 09/09/16 08:00 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	**0.454 ± 0.448 (0.682) C:NA T:87%**	pCi/L	09/28/16 11:50	13982-63-3	
Radium-228	EPA 904.0	**1.40 ± 0.529 (0.778) C:77% T:78%**	pCi/L	10/03/16 13:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-DUP-2 **Lab ID: 60227403008** Collected: 09/09/16 08:00 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	**-0.054 ± 0.351 (0.762) C:NA T:89%**	pCi/L	09/28/16 11:50	13982-63-3	
Radium-228	EPA 904.0	**1.19 ± 0.448 (0.643) C:81% T:85%**	pCi/L	10/03/16 13:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-FB-1 **Lab ID: 60227403009** Collected: 09/09/16 12:00 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	**0.127 ± 0.304 (0.587) C:NA T:77%**	pCi/L	09/28/16 11:49	13982-63-3	
Radium-228	EPA 904.0	**1.60 ± 0.514 (0.637) C:81% T:87%**	pCi/L	10/03/16 13:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-5D MS **Lab ID: 60227403010** Collected: 09/04/16 12:20 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	**83.6 %REC ± NA (NA) C:NA T:NA**	pCi/L	09/28/16 11:49	13982-63-3	
Radium-228	EPA 904.0	**134 %REC +/- NA (NA) C:NA T:NA**	pCi/L	10/03/16 13:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-5D MSD **Lab ID: 60227403011** Collected: 09/04/16 12:20 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	**99.5 %REC 17.3 RPD ± NA (NA) C:NA T:NA**	pCi/L	09/28/16 11:50	13982-63-3	
Radium-228	EPA 904.0	**134 %REC 0.34 RPD +/- NA (NA) C:NA T:NA**	pCi/L	10/03/16 13:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-3D **Lab ID: 60227403012** Collected: 09/13/16 13:35 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	**0.551 ± 0.573 (0.852) C:NA T:85%**	pCi/L	09/30/16 10:45	13982-63-3	
Radium-228	EPA 904.0	**2.25 ± 0.631 (0.715) C:75% T:72%**	pCi/L	09/29/16 02:45	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-4D **Lab ID: 60227403013** Collected: 09/13/16 12:37 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	**0.370 ± 0.446 (0.680) C:NA T:81%**	pCi/L	09/30/16 10:33	13982-63-3	
Radium-228	EPA 904.0	**1.47 ± 0.498 (0.681) C:70% T:76%**	pCi/L	09/29/16 02:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-7D **Lab ID: 60227403014** Collected: 09/12/16 14:10 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	**0.274 ± 0.537 (0.982) C:NA T:84%**	pCi/L	09/30/16 10:35	13982-63-3	
Radium-228	EPA 904.0	**1.14 ± 0.430 (0.619) C:79% T:69%**	pCi/L	09/29/16 02:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-8D **Lab ID: 60227403015** Collected: 09/12/16 15:15 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	**0.728 ± 0.794 (1.25) C:NA T:76%**	pCi/L	09/30/16 10:46	13982-63-3	
Radium-228	EPA 904.0	**1.75 ± 0.517 (0.595) C:65% T:91%**	pCi/L	09/29/16 03:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-BMW-1D **Lab ID: 60227403016** 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	**1.23 ± 0.856 (1.15) C:NA T:83%**	pCi/L	09/30/16 10:46	13982-63-3	
Radium-228	EPA 904.0	**2.28 ± 0.617 (0.647) C:61% T:90%**	pCi/L	09/29/16 02:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Sample: L-UMW-FB-2 **Lab ID: 60227403017** Collected: 09/13/16 13:23 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	**-0.090 ± 0.467 (1.08) C:NA T:89%**	pCi/L	09/30/16 10:48	13982-63-3	
Radium-228	EPA 904.0	**0.232 ± 0.311 (0.643) C:69% T:92%**	pCi/L	09/29/16 02:46	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 233812 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60227403012, 60227403013, 60227403014

METHOD BLANK: 1146451 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 234044 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

METHOD BLANK: 1147794 Matrix: Water
Associated Lab Samples: 60227403012, 60227403013, 60227403014, 60227403015, 60227403016, 60227403017

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-BOT
Pace Project No.: 60227403

QC Batch: 233282 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009, 60227403010, 60227403011

METHOD BLANK: 1143381 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009, 60227403010, 60227403011

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	

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 - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 233297 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009, 60227403010, 60227403011

METHOD BLANK: 1143403 Matrix: Water
Associated Lab Samples: 60227403001, 60227403002, 60227403003, 60227403004, 60227403005, 60227403006, 60227403007, 60227403008, 60227403009, 60227403010, 60227403011

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	

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 - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

QC Batch: 233941 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60227403015, 60227403016, 60227403017

METHOD BLANK: 1147217 Matrix: Water
Associated Lab Samples: 60227403015, 60227403016, 60227403017

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	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

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 (%)

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-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227403001	L-UMW-1D	EPA 200.7	446273	EPA 200.7	446311
60227403002	L-UMW-2D	EPA 200.7	446273	EPA 200.7	446311
60227403003	L-UMW-5D	EPA 200.7	446273	EPA 200.7	446311
60227403004	L-UMW-6D	EPA 200.7	446273	EPA 200.7	446311
60227403005	L-UMW-9D	EPA 200.7	446273	EPA 200.7	446311
60227403006	L-BMW-2D	EPA 200.7	446273	EPA 200.7	446311
60227403007	L-UMW-DUP-1	EPA 200.7	446273	EPA 200.7	446311
60227403008	L-UMW-DUP-2	EPA 200.7	446273	EPA 200.7	446311
60227403009	L-UMW-FB-1	EPA 200.7	446273	EPA 200.7	446311
60227403012	L-UMW-3D	EPA 200.7	446525	EPA 200.7	446567
60227403013	L-UMW-4D	EPA 200.7	446525	EPA 200.7	446567
60227403014	L-UMW-7D	EPA 200.7	446525	EPA 200.7	446567
60227403015	L-UMW-8D	EPA 200.7	446525	EPA 200.7	446567
60227403016	L-BMW-1D	EPA 200.7	446525	EPA 200.7	446567
60227403017	L-UMW-FB-2	EPA 200.7	446525	EPA 200.7	446567
60227403001	L-UMW-1D	EPA 200.8	446276	EPA 200.8	446312
60227403002	L-UMW-2D	EPA 200.8	446276	EPA 200.8	446312
60227403003	L-UMW-5D	EPA 200.8	446276	EPA 200.8	446312
60227403004	L-UMW-6D	EPA 200.8	446276	EPA 200.8	446312
60227403005	L-UMW-9D	EPA 200.8	446276	EPA 200.8	446312
60227403006	L-BMW-2D	EPA 200.8	446276	EPA 200.8	446312
60227403007	L-UMW-DUP-1	EPA 200.8	446276	EPA 200.8	446312
60227403008	L-UMW-DUP-2	EPA 200.8	446276	EPA 200.8	446312
60227403009	L-UMW-FB-1	EPA 200.8	446276	EPA 200.8	446312
60227403012	L-UMW-3D	EPA 200.8	446524	EPA 200.8	446573
60227403013	L-UMW-4D	EPA 200.8	446524	EPA 200.8	446573
60227403014	L-UMW-7D	EPA 200.8	446524	EPA 200.8	446573
60227403015	L-UMW-8D	EPA 200.8	446524	EPA 200.8	446573
60227403016	L-BMW-1D	EPA 200.8	446524	EPA 200.8	446573
60227403017	L-UMW-FB-2	EPA 200.8	446524	EPA 200.8	446573
60227403001	L-UMW-1D	EPA 7470	446246	EPA 7470	446282
60227403002	L-UMW-2D	EPA 7470	446246	EPA 7470	446282
60227403003	L-UMW-5D	EPA 7470	446246	EPA 7470	446282
60227403004	L-UMW-6D	EPA 7470	446246	EPA 7470	446282
60227403005	L-UMW-9D	EPA 7470	446246	EPA 7470	446282
60227403006	L-BMW-2D	EPA 7470	446246	EPA 7470	446282
60227403007	L-UMW-DUP-1	EPA 7470	446246	EPA 7470	446282
60227403008	L-UMW-DUP-2	EPA 7470	446246	EPA 7470	446282
60227403009	L-UMW-FB-1	EPA 7470	446246	EPA 7470	446282
60227403012	L-UMW-3D	EPA 7470	446591	EPA 7470	446630
60227403013	L-UMW-4D	EPA 7470	446591	EPA 7470	446630
60227403014	L-UMW-7D	EPA 7470	446591	EPA 7470	446630
60227403015	L-UMW-8D	EPA 7470	446591	EPA 7470	446630
60227403016	L-BMW-1D	EPA 7470	446591	EPA 7470	446630
60227403017	L-UMW-FB-2	EPA 7470	446591	EPA 7470	446630
60227403001	L-UMW-1D	EPA 903.1	233282		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227403002	L-UMW-2D	EPA 903.1	233282		
60227403003	L-UMW-5D	EPA 903.1	233282		
60227403004	L-UMW-6D	EPA 903.1	233282		
60227403005	L-UMW-9D	EPA 903.1	233282		
60227403006	L-BMW-2D	EPA 903.1	233282		
60227403007	L-UMW-DUP-1	EPA 903.1	233282		
60227403008	L-UMW-DUP-2	EPA 903.1	233282		
60227403009	L-UMW-FB-1	EPA 903.1	233282		
60227403010	L-UMW-5D MS	EPA 903.1	233282		
60227403011	L-UMW-5D MSD	EPA 903.1	233282		
60227403012	L-UMW-3D	EPA 903.1	234044		
60227403013	L-UMW-4D	EPA 903.1	234044		
60227403014	L-UMW-7D	EPA 903.1	234044		
60227403015	L-UMW-8D	EPA 903.1	234044		
60227403016	L-BMW-1D	EPA 903.1	234044		
60227403017	L-UMW-FB-2	EPA 903.1	234044		
60227403001	L-UMW-1D	EPA 904.0	233297		
60227403002	L-UMW-2D	EPA 904.0	233297		
60227403003	L-UMW-5D	EPA 904.0	233297		
60227403004	L-UMW-6D	EPA 904.0	233297		
60227403005	L-UMW-9D	EPA 904.0	233297		
60227403006	L-BMW-2D	EPA 904.0	233297		
60227403007	L-UMW-DUP-1	EPA 904.0	233297		
60227403008	L-UMW-DUP-2	EPA 904.0	233297		
60227403009	L-UMW-FB-1	EPA 904.0	233297		
60227403010	L-UMW-5D MS	EPA 904.0	233297		
60227403011	L-UMW-5D MSD	EPA 904.0	233297		
60227403012	L-UMW-3D	EPA 904.0	233812		
60227403013	L-UMW-4D	EPA 904.0	233812		
60227403014	L-UMW-7D	EPA 904.0	233812		
60227403015	L-UMW-8D	EPA 904.0	233941		
60227403016	L-BMW-1D	EPA 904.0	233941		
60227403017	L-UMW-FB-2	EPA 904.0	233941		
60227403001	L-UMW-1D	SM 2540C	446819		
60227403002	L-UMW-2D	SM 2540C	446819		
60227403003	L-UMW-5D	SM 2540C	446819		
60227403004	L-UMW-6D	SM 2540C	446819		
60227403005	L-UMW-9D	SM 2540C	446819		
60227403006	L-BMW-2D	SM 2540C	446819		
60227403007	L-UMW-DUP-1	SM 2540C	446819		
60227403008	L-UMW-DUP-2	SM 2540C	446819		
60227403009	L-UMW-FB-1	SM 2540C	446819		
60227403012	L-UMW-3D	SM 2540C	446982		
60227403013	L-UMW-4D	SM 2540C	446982		
60227403014	L-UMW-7D	SM 2540C	446979		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227403015	L-UMW-8D	SM 2540C	446979		
60227403016	L-BMW-1D	SM 2540C	446982		
60227403017	L-UMW-FB-2	SM 2540C	446982		
60227403001	L-UMW-1D	SM 4500-H+B	446275		
60227403002	L-UMW-2D	SM 4500-H+B	446275		
60227403003	L-UMW-5D	SM 4500-H+B	446275		
60227403004	L-UMW-6D	SM 4500-H+B	446275		
60227403005	L-UMW-9D	SM 4500-H+B	446275		
60227403006	L-BMW-2D	SM 4500-H+B	446274		
60227403007	L-UMW-DUP-1	SM 4500-H+B	446274		
60227403008	L-UMW-DUP-2	SM 4500-H+B	446274		
60227403009	L-UMW-FB-1	SM 4500-H+B	446275		
60227403012	L-UMW-3D	SM 4500-H+B	447131		
60227403013	L-UMW-4D	SM 4500-H+B	447131		
60227403014	L-UMW-7D	SM 4500-H+B	446989		
60227403015	L-UMW-8D	SM 4500-H+B	446989		
60227403016	L-BMW-1D	SM 4500-H+B	447131		
60227403017	L-UMW-FB-2	SM 4500-H+B	447131		
60227403001	L-UMW-1D	EPA 300.0	448782		
60227403002	L-UMW-2D	EPA 300.0	448782		
60227403002	L-UMW-2D	EPA 300.0	448790		
60227403003	L-UMW-5D	EPA 300.0	448782		
60227403003	L-UMW-5D	EPA 300.0	448790		
60227403004	L-UMW-6D	EPA 300.0	448782		
60227403004	L-UMW-6D	EPA 300.0	448790		
60227403005	L-UMW-9D	EPA 300.0	448782		
60227403005	L-UMW-9D	EPA 300.0	448790		
60227403006	L-BMW-2D	EPA 300.0	448782		
60227403006	L-BMW-2D	EPA 300.0	448790		
60227403007	L-UMW-DUP-1	EPA 300.0	448782		
60227403007	L-UMW-DUP-1	EPA 300.0	448790		
60227403008	L-UMW-DUP-2	EPA 300.0	448782		
60227403008	L-UMW-DUP-2	EPA 300.0	448790		
60227403009	L-UMW-FB-1	EPA 300.0	448782		
60227403012	L-UMW-3D	EPA 300.0	449284		
60227403012	L-UMW-3D	EPA 300.0	449623		

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60227403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227403013	**L-UMW-4D**	EPA 300.0	449284		
60227403013	**L-UMW-4D**	EPA 300.0	449623		
60227403014	**L-UMW-7D**	EPA 300.0	449284		
60227403014	**L-UMW-7D**	EPA 300.0	449623		
60227403015	**L-UMW-8D**	EPA 300.0	449623		
60227403016	**L-BMW-1D**	EPA 300.0	449284		
60227403016	**L-BMW-1D**	EPA 300.0	449623		
60227403017	**L-UMW-FB-2**	EPA 300.0	449623		

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Sample Condition Upon Receipt

WO# : 60227403

60227403

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 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: BB 9/10/16

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 Church 9/12/16 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.

Page: 1 of 2

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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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*	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-UMW-1D	WT	G			9/9/14	1242		4	1		3							1	1	1	1	2		2BPIN BP3N BP3U 001
2	L-UMW-2D	WT	G			9/9/14	1110		4	1		3							1	1	1	1	2		002
3	L-UMW-3D	WT	G																						
4	L-UMW-4D	WT	G																						
5	L-UMW-5D	WT	G			9/9/14	1220		12	3		9							3	3	3	3	6		6BPIN 3BP3N 3BP3U 003
6	L-UMW-6D	WT	G			↓	1355		4	1		3							1	1	1	1	2		2BPIN BP3N BP3U 004
7	L-UMW-7D	WT	G																						
8	L-UMW-8D	WT	G																						
9	L-UMW-9D	WT	G			9/9/14	1355		4	1		3							1	1	1	1	2		005
10	L-BMW-1D	WT	G																						
11	L-BMW-2D	WT	G			9/9/14	0920		4	1		3							1	1	1	1	2		006
12	L-UMW-DUP-1	WT	G			9/9/14	—												1	1	1	1	2		007

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)	9/9/14	1415		9/10/14	0330

SAMPLE CONDITIONS

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

DATE Signed (MM/DD/YY): 09/09/14

*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

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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 Ctr - Bottom Ash Pon
Project Number:	153-1406.0001A

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)																	Y/N	N	N	N	N	N		
1	L-UMW-DUP-2	WT	G			9/9/16	~~1345~~		4	1		3							1	1	1	1	2		25410 RP3U RP3U 008
2	L-UMW-FB-1	WT	G			9/9/16	1200		4	1		3							1	1	1	1	2		↓ ↓ ↓ 009
3	~~L-UMW-FB-2~~	WT	G																						
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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	9/7/16	1615	Kan KW	9/10/16	0330	4.6	Y	Y	Y
							4.2	N	Y	Y
							1611	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 09/09/16

multiple COC

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Sample Condition Upon Receipt

WO# : 60227403

Indeed

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) T-266 / (CF -0.1) 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, 1.6, 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: JAS 9/14/16 MG

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? (HNO3, H2SO4, 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: _____

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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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: 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.: 60227453

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~L-UMW-1D~~	~~WT~~	~~G~~																					
2	~~L-UMW-2D~~	~~WT~~	~~G~~																					
3	L-UMW-3D	WT	G			9/13/16	1335		4	1		3						1	1	1	1	2		(1BBn) 1(BBn)^1.5 2BP(N) 012
4	L-UMW-4D	WT	G			9/13/16	1237		4	1		3						1	1	1	1	2		013
5	~~L-UMW-5D~~	~~WT~~	~~G~~																					
6	~~L-UMW-6D~~	~~WT~~	~~G~~																					
7	L-UMW-7D	WT	G			9/12/16	1410		4	1		3						1	1	1	1	2		1(BBn) 1(BBn) 2(BPN) 014
8	L-UMW-8D	WT	G			↓	1515		4	1		3						1	1	1	1	2		015
9	~~L-UMW-9D~~	~~WT~~	~~G~~																					
10	L-BMW-1D	WT	G			9/13/16	1506		4	1		3						1	1	1	1	2		1(BBn) 1(BBn)^1.5 2(BPN) 016
11	~~L-BMW-2D~~	~~WT~~	~~G~~																					
12	~~L-UMW-DUP-1~~	~~WT~~	~~G~~																					

ADDITIONAL COMMENTS:
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg
EPA 200.8: Sb, As, Cd, Cr, Se, Tl

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)
J. Ingram (Golder)	9/13/16	1800	[signature] / PASI	9/13/16	1800				
[signature] / PASI	9-13-16	1830	[signature] / Pace	9/14/16	0440	0.1	Y	Y	Y
						20.3	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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CHAIN-OF-CUSTODY / Analytical Request Document

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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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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

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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		60227403
1	~~L-UMW-DUP-2~~	~~WT~~	~~G~~																						
2	~~L-UMW-FB-1~~	~~WT~~	~~G~~																						
3	L-UMW-FB-2	WT	G			9/13/16	1323		4	1		3							1	1	1	2			(B3N) (B3N) 200.8 (N) GW
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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	1500	AFFL	9/13/16	1500
	AFFL	9-13-16	1850		9/14/16	0440

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 09/13/16

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 CTR-BOT
Pace Project No.: 60232173

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, 1/2/18: Sample ID correction

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-BOT
Pace Project No.: 60232173

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
(913)599-5665

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60232173001	**L-UMW-2D**	Water	11/11/16 13:55	11/12/16 03:35
60232173002	**L-BMW-1D**	Water	11/11/16 12:03	11/12/16 03:35
60232173003	**L-BMW-2D**	Water	11/11/16 09:17	11/12/16 03:35
60232345001	**L-UMW-DUP-2**	Water	11/14/16 08:00	11/16/16 03:45
60232345002	**L-UMW-FB-1**	Water	11/14/16 10:07	11/16/16 03:45
60232345003	**L-UMW-FB-2**	Water	11/14/16 13:37	11/16/16 03:45
60232345004	**L-UMW-1D**	Water	11/14/16 09:10	11/16/16 03:45
60232345005	**L-UMW-8D**	Water	11/14/16 10:10	11/16/16 03:45
60232345006	**L-UMW-DUP-1**	Water	11/14/16 08:00	11/16/16 03:45
60232345007	**L-UMW-9D**	Water	11/14/16 09:05	11/16/16 03:45
60232345008	**L-UMW-3D**	Water	11/14/16 10:24	11/16/16 03:45
60232345009	**L-UMW-7D**	Water	11/14/16 11:10	11/16/16 03:45
60232345010	**L-UMW-6D**	Water	11/14/16 11:37	11/16/16 03:45
60232345011	**L-UMW-5D**	Water	11/14/16 12:38	11/16/16 03:45
60232345012	**L-UMW-4D**	Water	11/14/16 14:45	11/16/16 03:45
60232173016	**L-UMW-7D MS**	Water	11/14/16 11:10	11/16/16 03:45
60232173017	**L-UMW-7D MSD**	Water	11/14/16 11:10	11/16/16 03:45

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60232173001	**L-UMW-2D**	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
60232173002	**L-BMW-1D**	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
60232173003	**L-BMW-2D**	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
60232345001	**L-UMW-DUP-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
60232345002	**L-UMW-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

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

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

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
60232345003	**L-UMW-FB-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
60232345004	**L-UMW-1D**	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
60232345005	**L-UMW-8D**	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
60232345006	**L-UMW-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
		SM 2540C	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60232345007	**L-UMW-9D**	EPA 200.7	SMW	8	PASI-K
		EPA 200.8	SMW	6	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60232345008	**L-UMW-3D**	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
60232345009	**L-UMW-7D**	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
60232345010	**L-UMW-6D**	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
60232345011	**L-UMW-5D**	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

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60232345012	**L-UMW-4D**	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
60232173016	**L-UMW-7D MS**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60232173017	**L-UMW-7D MSD**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-2D **Lab ID: 60232173001** Collected: 11/11/16 13:55 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	**138**	ug/L	5.0	0.58	1	11/15/16 08:30	11/15/16 17:15	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/15/16 08:30	11/15/16 17:15	7440-41-7	
Boron	**1880**	ug/L	100	50.0	1	11/15/16 08:30	11/15/16 17:15	7440-42-8	
Calcium	**119000**	ug/L	100	8.1	1	11/15/16 08:30	11/15/16 17:15	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/15/16 08:30	11/15/16 17:15	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/15/16 08:30	11/15/16 17:15	7439-92-1	
Lithium	**31.3**	ug/L	10.0	4.9	1	11/15/16 08:30	11/15/16 17:15	7439-93-2	
Molybdenum	**36.9**	ug/L	20.0	0.52	1	11/15/16 08:30	11/15/16 17:15	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 13:19	7440-36-0	
Arsenic	**2.7**	ug/L	1.0	0.10	1	11/15/16 08:30	11/28/16 13:19	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/15/16 08:30	11/28/16 13:19	7440-43-9	
Chromium	**0.47J**	ug/L	1.0	0.34	1	11/15/16 08:30	11/28/16 13:19	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/15/16 08:30	11/28/16 13:19	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/15/16 08:30	11/28/16 13:19	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 12:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**669**	mg/L	5.0	5.0	1		11/17/16 16:06		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		11/19/16 08:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**55.3**	mg/L	5.0	2.5	5		12/05/16 01:41	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	0.027	1		12/04/16 02:44	16984-48-8	
Sulfate	**175**	mg/L	20.0	3.1	20		12/05/16 01:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-BMW-1D **Lab ID: 60232173002** Collected: 11/11/16 12:03 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	**1170**	ug/L	5.0	0.58	1	11/15/16 08:30	11/15/16 17:21	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/15/16 08:30	11/15/16 17:21	7440-41-7	
Boron	**74.0J**	ug/L	100	50.0	1	11/15/16 08:30	11/15/16 17:21	7440-42-8	
Calcium	**130000**	ug/L	100	8.1	1	11/15/16 08:30	11/15/16 17:21	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/15/16 08:30	11/15/16 17:21	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/15/16 08:30	11/15/16 17:21	7439-92-1	
Lithium	**32.8**	ug/L	10.0	4.9	1	11/15/16 08:30	11/15/16 17:21	7439-93-2	
Molybdenum	**1.3J**	ug/L	20.0	0.52	1	11/15/16 08:30	11/15/16 17:21	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	11/15/16 08:30	11/28/16 13:23	7440-36-0	
Arsenic	**0.70J**	ug/L	1.0	0.10	1	11/15/16 08:30	11/28/16 13:23	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/15/16 08:30	11/28/16 13:23	7440-43-9	
Chromium	**0.46J**	ug/L	1.0	0.34	1	11/15/16 08:30	11/28/16 13:23	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/15/16 08:30	11/28/16 13:23	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/15/16 08:30	11/28/16 13:23	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 12:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**486**	mg/L	5.0	5.0	1		11/17/16 16:06		
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 08:47		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.9**	mg/L	1.0	0.50	1		12/04/16 02:58	16887-00-6	
Fluoride	**0.20J**	mg/L	0.20	0.027	1		12/04/16 02:58	16984-48-8	
Sulfate	**33.3**	mg/L	5.0	0.77	5		12/05/16 02:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-BMW-2D **Lab ID: 60232173003** Collected: 11/11/16 09:17 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	**325**	ug/L	5.0	0.58	1	11/15/16 08:30	11/15/16 17:24	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/15/16 08:30	11/15/16 17:24	7440-41-7	
Boron	**61.3J**	ug/L	100	50.0	1	11/15/16 08:30	11/15/16 17:24	7440-42-8	
Calcium	**135000**	ug/L	100	8.1	1	11/15/16 08:30	11/15/16 17:24	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/15/16 08:30	11/15/16 17:24	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/15/16 08:30	11/15/16 17:24	7439-92-1	
Lithium	**46.1**	ug/L	10.0	4.9	1	11/15/16 08:30	11/15/16 17:24	7439-93-2	
Molybdenum	**2.6J**	ug/L	20.0	0.52	1	11/15/16 08:30	11/15/16 17:24	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	11/15/16 08:30	11/28/16 13:28	7440-36-0	
Arsenic	**38.4**	ug/L	1.0	0.10	1	11/15/16 08:30	11/28/16 13:28	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/15/16 08:30	11/28/16 13:28	7440-43-9	
Chromium	**0.48J**	ug/L	1.0	0.34	1	11/15/16 08:30	11/28/16 13:28	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/15/16 08:30	11/28/16 13:28	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/15/16 08:30	11/28/16 13:28	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 12:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**470**	mg/L	5.0	5.0	1		11/17/16 16:07		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		11/19/16 08:48		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.5**	mg/L	1.0	0.50	1		12/04/16 03:12	16887-00-6	
Fluoride	**0.27**	mg/L	0.20	0.027	1		12/04/16 03:12	16984-48-8	
Sulfate	**39.6**	mg/L	5.0	0.77	5		12/05/16 02:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-DUP-2 **Lab ID: 60232345001** Collected: 11/14/16 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	**493**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 16:55	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 16:55	7440-41-7	
Boron	**518**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:55	7440-42-8	
Calcium	**138000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 16:55	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 16:55	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 16:55	7439-92-1	
Lithium	**33.6**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 16:55	7439-93-2	
Molybdenum	**12.3J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 16:55	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.20J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 14:49	7440-36-0	B
Arsenic	**34.1**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 14:49	7440-38-2	
Cadmium	**0.046J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 14:49	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 14:49	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 14:49	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 14:49	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 13:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**507**	mg/L	5.0	5.0	1		11/18/16 15:04		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**9.0**	mg/L	1.0	0.50	1		12/09/16 13:40	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		12/09/16 13:40	16984-48-8	
Sulfate	**17.9**	mg/L	1.0	0.15	1		12/09/16 13:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-FB-1 **Lab ID: 60232345002** Collected: 11/14/16 10:07 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	11/22/16 16:59	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 16:59	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 16:59	7440-42-8	
Calcium	**26.1J**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 16:59	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 16:59	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 16:59	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 16:59	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 16:59	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 14:54	7440-36-0	B
Arsenic	**0.11J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 14:54	7440-38-2	B
Cadmium	**0.043J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 14:54	7440-43-9	B
Chromium	**0.36J**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 14:54	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 14:54	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 14:54	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 13:46	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 15:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.2**	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	**<0.50**	mg/L	1.0	0.50	1		12/09/16 13:53	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		12/09/16 13:53	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		12/09/16 13:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-FB-2 **Lab ID: 60232345003** Collected: 11/14/16 13:37 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	11/22/16 17:03	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:03	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:03	7440-42-8	
Calcium	**14.7J**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:03	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:03	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:03	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:03	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:03	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 14:58	7440-36-0	B
Arsenic	**0.13J**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 14:58	7440-38-2	B
Cadmium	**0.042J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 14:58	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 14:58	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 14:58	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 14:58	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 13:48	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 15:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.3**	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	**<0.50**	mg/L	1.0	0.50	1		12/09/16 14:07	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		12/09/16 14:07	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		12/09/16 14:07	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-BOT
Pace Project No.: 60232173

Sample: L-UMW-1D **Lab ID: 60232345004** Collected: 11/14/16 09:10 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	**371**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:07	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:07	7440-41-7	
Boron	**462**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:07	7440-42-8	
Calcium	**121000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:07	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:07	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:07	7439-92-1	
Lithium	**24.4**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:07	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:07	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 15:03	7440-36-0	B
Arsenic	**31.1**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 15:03	7440-38-2	
Cadmium	**0.042J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:03	7440-43-9	B
Chromium	**0.36J**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:03	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:03	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:03	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 13:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**467**	mg/L	5.0	5.0	1		11/18/16 15:06		
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	**10.1**	mg/L	1.0	0.50	1		12/09/16 14:21	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.027	1		12/09/16 14:21	16984-48-8	
Sulfate	**4.3**	mg/L	1.0	0.15	1		12/09/16 14:21	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-BOT
Pace Project No.: 60232173

Sample: L-UMW-8D **Lab ID: 60232345005** Collected: 11/14/16 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	**481**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:10	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:10	7440-41-7	
Boron	**505**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:10	7440-42-8	
Calcium	**136000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:10	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:10	7440-48-4	
Lead	**3.9J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:10	7439-92-1	
Lithium	**31.7**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:10	7439-93-2	
Molybdenum	**11.7J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:10	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	11/16/16 18:45	11/30/16 15:07	7440-36-0	B
Arsenic	**32.5**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 15:07	7440-38-2	
Cadmium	**0.044J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:07	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:07	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:07	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:07	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 13:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**521**	mg/L	5.0	5.0	1		11/18/16 15:07		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**9.3**	mg/L	1.0	0.50	1		12/09/16 14:35	16887-00-6	
Fluoride	**0.20J**	mg/L	0.20	0.027	1		12/09/16 14:35	16984-48-8	
Sulfate	**18.2**	mg/L	1.0	0.15	1		12/09/16 14:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-DUP-1 **Lab ID: 60232345006** Collected: 11/14/16 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	**518**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:14	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:14	7440-41-7	
Boron	**86.1J**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:14	7440-42-8	
Calcium	**118000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:14	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:14	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:14	7439-92-1	
Lithium	**17.5**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:14	7439-93-2	
Molybdenum	**0.60J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:14	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.20J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 15:11	7440-36-0	B
Arsenic	**36.4**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 15:11	7440-38-2	
Cadmium	**0.043J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:11	7440-43-9	B
Chromium	**1.3**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:11	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:11	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.039**	ug/L	0.20	0.039	1	11/28/16 09:45	11/28/16 13:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**449**	mg/L	5.0	5.0	1		11/18/16 15:08		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**20.7**	mg/L	2.0	1.0	2		12/10/16 20:48	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		12/09/16 14:49	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		12/09/16 14:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-9D **Lab ID: 60232345007** Collected: 11/14/16 09:05 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	**506**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:18	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:18	7440-41-7	
Boron	**85.5J**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:18	7440-42-8	
Calcium	**117000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:18	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:18	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:18	7439-92-1	
Lithium	**18.5**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:18	7439-93-2	
Molybdenum	**0.76J**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:18	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.20J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 15:16	7440-36-0	B
Arsenic	**35.6**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 15:16	7440-38-2	
Cadmium	**0.043J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:16	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:16	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:16	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:16	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 13:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**451**	mg/L	5.0	5.0	1		11/18/16 15:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	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	**20.6**	mg/L	2.0	1.0	2		12/10/16 21:31	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.027	1		12/09/16 15:03	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		12/09/16 15:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-3D **Lab ID: 60232345008** Collected: 11/14/16 10:24 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	**185**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:21	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:21	7440-41-7	
Boron	**8550**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:21	7440-42-8	
Calcium	**252000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:21	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:21	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:21	7439-92-1	
Lithium	**31.4**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:21	7439-93-2	
Molybdenum	**113**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:21	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	11/16/16 18:45	11/30/16 15:20	7440-36-0	B
Arsenic	**<0.10**	ug/L	1.0	0.10	1	11/16/16 18:45	11/30/16 15:20	7440-38-2	
Cadmium	**0.033J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:20	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:20	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:20	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:20	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 14:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1240**	mg/L	5.0	5.0	1		11/18/16 15:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	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	**10.9**	mg/L	1.0	0.50	1		12/09/16 15:17	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.027	1		12/09/16 15:17	16984-48-8	
Sulfate	**774**	mg/L	50.0	7.7	50		12/12/16 09:52	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-7D **Lab ID: 60232345009** Collected: 11/14/16 11:10 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	**101**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:25	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:25	7440-41-7	
Boron	**5260**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:25	7440-42-8	
Calcium	**164000**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:25	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:25	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:25	7439-92-1	
Lithium	**22.7**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:25	7439-93-2	
Molybdenum	**191**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:25	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	11/16/16 18:45	11/30/16 15:34	7440-36-0	B
Arsenic	**21.1**	ug/L	1.0	0.10	1	11/16/16 18:45	12/02/16 14:39	7440-38-2	
Cadmium	**0.029J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:34	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:34	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:34	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 14:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**740**	mg/L	5.0	5.0	1		11/18/16 15:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	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	**12.5**	mg/L	1.0	0.50	1		12/09/16 15:31	16887-00-6	M1
Fluoride	**0.29**	mg/L	0.20	0.027	1		12/09/16 15:31	16984-48-8	
Sulfate	**252**	mg/L	20.0	3.1	20		12/12/16 11:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-6D **Lab ID: 60232345010** Collected: 11/14/16 11:37 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	**129**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:43	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:43	7440-41-7	
Boron	**15900**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:43	7440-42-8	
Calcium	**82800**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:43	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:43	7440-48-4	
Lead	**3.6J**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:43	7439-92-1	
Lithium	**7.0J**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:43	7439-93-2	
Molybdenum	**554**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:43	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.20J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 15:47	7440-36-0	B
Arsenic	**12.9**	ug/L	1.0	0.10	1	11/16/16 18:45	12/02/16 14:26	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:47	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:47	7440-47-3	
Selenium	**0.33J**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:47	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:47	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 14:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**630**	mg/L	5.0	5.0	1		11/18/16 15:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	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	**22.3**	mg/L	2.0	1.0	2		12/10/16 22:28	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.027	1		12/09/16 16:26	16984-48-8	
Sulfate	**384**	mg/L	50.0	7.7	50		12/12/16 11:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-5D **Lab ID: 60232345011** Collected: 11/14/16 12:38 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	**61.6**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:50	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:50	7440-41-7	
Boron	**5400**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:50	7440-42-8	
Calcium	**72300**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:50	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:50	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:50	7439-92-1	
Lithium	**26.3**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:50	7439-93-2	
Molybdenum	**122**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:50	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.28J**	ug/L	1.0	0.058	1	11/16/16 18:45	11/30/16 15:52	7440-36-0	B
Arsenic	**16.4**	ug/L	1.0	0.10	1	11/16/16 18:45	12/02/16 14:30	7440-38-2	
Cadmium	**0.042J**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 15:52	7440-43-9	B
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 15:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 15:52	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 15:52	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 14:19	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**486**	mg/L	5.0	5.0	1		11/18/16 15:13		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.2**	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	**18.9**	mg/L	1.0	0.50	1		12/09/16 16:40	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.027	1		12/09/16 16:40	16984-48-8	
Sulfate	**263**	mg/L	20.0	3.1	20		12/12/16 11:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-4D **Lab ID: 60232345012** Collected: 11/14/16 14:45 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	**56.5**	ug/L	5.0	0.58	1	11/16/16 18:45	11/22/16 17:54	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	11/16/16 18:45	11/22/16 17:54	7440-41-7	
Boron	**2900**	ug/L	100	50.0	1	11/16/16 18:45	11/22/16 17:54	7440-42-8	
Calcium	**42800**	ug/L	100	8.1	1	11/16/16 18:45	11/22/16 17:54	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	11/16/16 18:45	11/22/16 17:54	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	11/16/16 18:45	11/22/16 17:54	7439-92-1	
Lithium	**32.1**	ug/L	10.0	4.9	1	11/16/16 18:45	11/22/16 17:54	7439-93-2	
Molybdenum	**122**	ug/L	20.0	0.52	1	11/16/16 18:45	11/22/16 17:54	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	11/16/16 18:45	11/30/16 16:00	7440-36-0	B
Arsenic	**<0.10**	ug/L	1.0	0.10	1	11/16/16 18:45	12/02/16 14:34	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	11/16/16 18:45	11/30/16 16:00	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	11/16/16 18:45	11/30/16 16:00	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	11/16/16 18:45	11/30/16 16:00	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	11/16/16 18:45	11/30/16 16:00	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 14:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**463**	mg/L	5.0	5.0	1		11/18/16 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	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	**20.6**	mg/L	2.0	1.0	2		12/10/16 23:10	16887-00-6	
Fluoride	**0.40**	mg/L	0.20	0.027	1		12/09/16 16:54	16984-48-8	
Sulfate	**274**	mg/L	20.0	3.1	20		12/12/16 12:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 456114 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1867553 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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-BOT
Pace Project No.: 60232173

QC Batch: 456521 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010

METHOD BLANK: 1869421 Matrix: Water
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.039	0.20	0.039	11/28/16 13:03	

LABORATORY CONTROL SAMPLE: 1869422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1869423 1869424

Parameter	Units	60232344001 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	6.0	110	120	75-125	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1869425 1869426

Parameter	Units	60232345009 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	5.8	102	117	75-125	14	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 456523 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60232345011, 60232345012

METHOD BLANK: 1869427 Matrix: Water
Associated Lab Samples: 60232345011, 60232345012

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-BOT
Pace Project No.: 60232173

QC Batch: 454893 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1862815 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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-BOT
Pace Project No.: 60232173

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-BOT
Pace Project No.: 60232173

QC Batch: 455255 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1864206 Matrix: Water
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	11/22/16 16:44	
Beryllium	ug/L	<0.26	1.0	0.26	11/22/16 16:44	
Boron	ug/L	<50.0	100	50.0	11/22/16 16:44	
Calcium	ug/L	<8.1	100	8.1	11/22/16 16:44	
Cobalt	ug/L	<0.72	5.0	0.72	11/22/16 16:44	
Lead	ug/L	<2.5	5.0	2.5	11/22/16 16:44	
Lithium	ug/L	<4.9	10.0	4.9	11/22/16 16:44	
Molybdenum	ug/L	<0.52	20.0	0.52	11/22/16 16:44	

LABORATORY CONTROL SAMPLE: 1864207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	996	100	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	982	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	984	98	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864208 1864209

Parameter	Units	60232345009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	101	1000	1000	1090	1110	99	101	70-130	2	20	
Beryllium	ug/L	<0.26	1000	1000	993	1000	99	100	70-130	1	20	
Boron	ug/L	5260	1000	1000	6170	6300	91	104	70-130	2	20	
Calcium	ug/L	164000	10000	10000	177000	177000	129	130	70-130	0	20	
Cobalt	ug/L	<0.72	1000	1000	980	1000	98	100	70-130	2	20	
Lead	ug/L	2.7J	1000	1000	966	988	96	99	70-130	2	20	
Lithium	ug/L	22.7	1000	1000	1020	1030	100	101	70-130	1	20	
Molybdenum	ug/L	191	1000	1000	1230	1260	104	106	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

MATRIX SPIKE SAMPLE: 1864210

Parameter	Units	60232345010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	129	1000	1100	97	70-130	
Beryllium	ug/L	<0.26	1000	970	97	70-130	
Boron	ug/L	15900	1000	17000	116	70-130	
Calcium	ug/L	82800	10000	92200	94	70-130	
Cobalt	ug/L	<0.72	1000	976	98	70-130	
Lead	ug/L	3.6J	1000	958	95	70-130	
Lithium	ug/L	7.0J	1000	979	97	70-130	
Molybdenum	ug/L	554	1000	1590	103	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 454894 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1862820 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 455257 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1864211 Matrix: Water
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.17J	1.0	0.058	11/30/16 14:40	
Arsenic	ug/L	0.12J	1.0	0.10	11/30/16 14:40	
Cadmium	ug/L	0.043J	0.50	0.029	11/30/16 14:40	
Chromium	ug/L	<0.34	1.0	0.34	11/30/16 14:40	
Selenium	ug/L	<0.18	1.0	0.18	11/30/16 14:40	
Thallium	ug/L	<0.50	1.0	0.50	11/30/16 14:40	

LABORATORY CONTROL SAMPLE: 1864212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.2	103	85-115	
Arsenic	ug/L	40	41.0	102	85-115	
Cadmium	ug/L	40	40.2	101	85-115	
Chromium	ug/L	40	40.7	102	85-115	
Selenium	ug/L	40	38.8	97	85-115	
Thallium	ug/L	40	37.9	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1864213 1864214

Parameter	Units	60232345009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.19J	40	40	42.6	41.1	106	102	70-130	4	20	
Arsenic	ug/L	21.1	40	40	60.7	59.1	99	95	70-130	3	20	
Cadmium	ug/L	0.029J	40	40	39.3	38.1	98	95	70-130	3	20	
Chromium	ug/L	<0.34	40	40	41.6	40.0	103	99	70-130	4	20	
Selenium	ug/L	<0.18	40	40	37.4	36.6	93	91	70-130	2	20	
Thallium	ug/L	<0.50	40	40	40.7	39.4	102	98	70-130	3	20	

MATRIX SPIKE SAMPLE: 1864215

Parameter	Units	60232345011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.28J	40	41.6	103	70-130	
Arsenic	ug/L	16.4	40	55.7	98	70-130	
Cadmium	ug/L	0.042J	40	39.3	98	70-130	
Chromium	ug/L	<0.34	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-BOT
Pace Project No.: 60232173

MATRIX SPIKE SAMPLE: 1864215

Parameter	Units	60232345011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	ug/L	<0.18	40	33.6	84	70-130	
Thallium	ug/L	<0.50	40	39.8	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 455505 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1865080 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 455613 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1865557 Matrix: Water
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/18/16 14:53	

LABORATORY CONTROL SAMPLE: 1865558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	954	95	80-120	

SAMPLE DUPLICATE: 1865559

Parameter	Units	60232344001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	688	699	2	10	

SAMPLE DUPLICATE: 1865560

Parameter	Units	60232345009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	740	752	2	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 455737 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 456166 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

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-BOT
Pace Project No.: 60232173

QC Batch: 457500 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1873090 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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	

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	

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 457515 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1873341 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	12/04/16 16:24	
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
Chloride	mg/L	5	4.7	94	90-110	
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
Chloride	mg/L	42.2	50	50	97.2	97.5	110	111	80-120	0	15	
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
Chloride	mg/L	23.9	10	35.6	117	80-120	
Sulfate	mg/L	348	250	625	111	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 458212 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1875980 Matrix: Water
Associated Lab Samples: 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	12/09/16 09:57	
Fluoride	mg/L	<0.027	0.20	0.027	12/09/16 09:57	
Sulfate	mg/L	<0.15	1.0	0.15	12/09/16 09:57	

LABORATORY CONTROL SAMPLE: 1875981

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	2.6	104	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1875982 1875983

Parameter	Units	60232344001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.8	5	5	9.5	9.5	113	115	80-120	1	15	
Fluoride	mg/L	0.17J	2.5	2.5	3.1	3.1	115	116	80-120	1	15	

MATRIX SPIKE SAMPLE: 1875984

Parameter	Units	60232345009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	5	18.5	121	80-120	M1
Fluoride	mg/L	0.29	2.5	3.1	112	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 458451 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232345006, 60232345007, 60232345010, 60232345012

METHOD BLANK: 1876991 Matrix: Water
Associated Lab Samples: 60232345006, 60232345007, 60232345010, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	12/10/16 18:55	

LABORATORY CONTROL SAMPLE: 1876992

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

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 458459 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1877110 Matrix: Water
Associated Lab Samples: 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	12/12/16 09:20	

LABORATORY CONTROL SAMPLE: 1877111

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: 1877112 1877113

Parameter	Units	60232345008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	774	250	250	1090	1090	127	127	80-120	0	15	M1

MATRIX SPIKE SAMPLE: 1877114

Parameter	Units	60232345009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	252	100	372	120	80-120	

MATRIX SPIKE SAMPLE: 1877590

Parameter	Units	60232344001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	224	100	345	121	80-120	M1

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-2D **Lab ID: 60232173001** Collected: 11/11/16 13:55 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	**0.410 ± 0.332 (0.185) C:NA T:87%**	pCi/L	12/14/16 11:35	13982-63-3	
Radium-228	EPA 904.0	**1.77 ± 0.615 (0.873) C:66% T:81%**	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-BOT
Pace Project No.: 60232173

Sample: L-BMW-1D **Lab ID: 60232173002** Collected: 11/11/16 12:03 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	**0.488 ± 0.366 (0.189) C:NA T:85%**	pCi/L	12/14/16 11:35	13982-63-3	
Radium-228	EPA 904.0	**1.02 ± 0.499 (0.871) C:67% T:89%**	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-BOT
Pace Project No.: 60232173

Sample: L-BMW-2D **Lab ID: 60232173003** Collected: 11/11/16 09:17 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	**0.430 ± 0.447 (0.665) C:NA T:90%**	pCi/L	12/14/16 11:36	13982-63-3	
Radium-228	EPA 904.0	**0.524 ± 0.369 (0.710) C:76% T:85%**	pCi/L	12/21/16 11:34	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-DUP-2 **Lab ID: 60232345001** Collected: 11/14/16 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	**0.0685 ± 0.313 (0.636) C:NA T:88%**	pCi/L	12/14/16 12:26	13982-63-3	
Radium-228	EPA 904.0	**2.04 ± 0.659 (0.944) C:73% T:88%**	pCi/L	12/15/16 11:29	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-FB-1 **Lab ID: 60232345002** Collected: 11/14/16 10:07 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 ± 0.353 (0.764) C:NA T:90%**	pCi/L	12/14/16 12:47	13982-63-3	
Radium-228	EPA 904.0	**-0.118 ± 0.334 (0.805) C:69% T:86%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-FB-2 **Lab ID: 60232345003** Collected: 11/14/16 13:37 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	**-0.066 ± 0.303 (0.616) C:NA T:86%**	pCi/L	12/14/16 12:47	13982-63-3	
Radium-228	EPA 904.0	**0.437 ± 0.410 (0.837) C:61% T:90%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-1D **Lab ID: 60232345004** Collected: 11/14/16 09:10 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	**0.0628 ± 0.444 (0.885) C:NA T:93%**	pCi/L	12/14/16 12:47	13982-63-3	
Radium-228	EPA 904.0	**0.890 ± 0.475 (0.852) C:67% T:83%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-8D **Lab ID: 60232345005** Collected: 11/14/16 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	**0.263 ± 0.447 (0.789) C:NA T:88%**	pCi/L	12/14/16 12:54	13982-63-3	
Radium-228	EPA 904.0	**0.710 ± 0.414 (0.754) C:68% T:84%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-DUP-1 **Lab ID: 60232345006** Collected: 11/14/16 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	**0.130 ± 0.360 (0.699) C:NA T:94%**	pCi/L	12/14/16 19:50	13982-63-3	
Radium-228	EPA 904.0	**0.606 ± 0.430 (0.838) C:70% T:83%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-9D **Lab ID: 60232345007** Collected: 11/14/16 09:05 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	**0.472 ± 0.405 (0.548) C:NA T:96%**	pCi/L	12/14/16 19:50	13982-63-3	
Radium-228	EPA 904.0	**0.418 ± 0.335 (0.664) C:73% T:90%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-3D **Lab ID: 60232345008** Collected: 11/14/16 10:24 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	**0.276 ± 0.384 (0.641) C:NA T:86%**	pCi/L	12/14/16 19:50	13982-63-3	
Radium-228	EPA 904.0	**1.12 ± 0.483 (0.793) C:74% T:80%**	pCi/L	12/15/16 11:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-7D **Lab ID: 60232345009** Collected: 11/14/16 11:10 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	**0.0720 ± 0.329 (0.669) C:NA T:84%**	pCi/L	12/14/16 19:51	13982-63-3	
Radium-228	EPA 904.0	**0.340 ± 0.358 (0.744) C:72% T:82%**	pCi/L	12/15/16 11:31	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-6D **Lab ID: 60232345010** Collected: 11/14/16 11:37 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	**0.360 ± 0.376 (0.530) C:NA T:90%**	pCi/L	12/14/16 19:51	13982-63-3	
Radium-228	EPA 904.0	**0.309 ± 0.394 (0.839) C:67% T:85%**	pCi/L	12/15/16 11:31	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-5D **Lab ID: 60232345011** Collected: 11/14/16 12:38 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	**0.0653 ± 0.339 (0.703) C:NA T:85%**	pCi/L	12/14/16 19:51	13982-63-3	
Radium-228	EPA 904.0	**0.783 ± 0.504 (0.950) C:63% T:75%**	pCi/L	12/15/16 11:31	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-4D **Lab ID: 60232345012** Collected: 11/14/16 14:45 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 ± 0.337 (0.685) C:NA T:78%**	pCi/L	12/14/16 20:13	13982-63-3	
Radium-228	EPA 904.0	**0.239 ± 0.380 (0.824) C:68% T:78%**	pCi/L	12/15/16 11:31	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-7D MS **Lab ID: 60232173016** Collected: 11/14/16 11:10 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	**92.3%REC ± NA (NA)**	pCi/L	12/14/16 20:25	13982-63-3	
Radium-228	EPA 904.0	**130.07 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/15/16 11:31	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Sample: L-UMW-7D MSD **Lab ID: 60232173017** Collected: 11/14/16 11:10 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	**112.7%REC 19.92RPD ± NA (NA)**	pCi/L	12/14/16 20:25	13982-63-3	
Radium-228	EPA 904.0	**113.56 %REC 13.55 RPD ± NA (NA) C:NA T:NA**	pCi/L	12/15/16 11:32	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 242425 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1191788 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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-BOT
Pace Project No.: 60232173

QC Batch: 242430 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60232173001, 60232173002, 60232173003

METHOD BLANK: 1191795 Matrix: Water
Associated Lab Samples: 60232173001, 60232173002, 60232173003

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-BOT
Pace Project No.: 60232173

QC Batch: 242436 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60232173016, 60232173017, 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1191802 Matrix: Water
Associated Lab Samples: 60232173016, 60232173017, 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.334 (0.539) C:NA T:85%	pCi/L	12/14/16 12:29	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

QC Batch: 242437 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60232173016, 60232173017, 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

METHOD BLANK: 1191803 Matrix: Water
Associated Lab Samples: 60232173016, 60232173017, 60232345001, 60232345002, 60232345003, 60232345004, 60232345005, 60232345006, 60232345007, 60232345008, 60232345009, 60232345010, 60232345011, 60232345012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.210 ± 0.352 (0.767) C:65% T:81%	pCi/L	12/15/16 11:29	

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

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-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232173001	L-UMW-2D	EPA 200.7	454893	EPA 200.7	455015
60232173002	L-BMW-1D	EPA 200.7	454893	EPA 200.7	455015
60232173003	L-BMW-2D	EPA 200.7	454893	EPA 200.7	455015
60232345001	L-UMW-DUP-2	EPA 200.7	455255	EPA 200.7	455371
60232345002	L-UMW-FB-1	EPA 200.7	455255	EPA 200.7	455371
60232345003	L-UMW-FB-2	EPA 200.7	455255	EPA 200.7	455371
60232345004	L-UMW-1D	EPA 200.7	455255	EPA 200.7	455371
60232345005	L-UMW-8D	EPA 200.7	455255	EPA 200.7	455371
60232345006	L-UMW-DUP-1	EPA 200.7	455255	EPA 200.7	455371
60232345007	L-UMW-9D	EPA 200.7	455255	EPA 200.7	455371
60232345008	L-UMW-3D	EPA 200.7	455255	EPA 200.7	455371
60232345009	L-UMW-7D	EPA 200.7	455255	EPA 200.7	455371
60232345010	L-UMW-6D	EPA 200.7	455255	EPA 200.7	455371
60232345011	L-UMW-5D	EPA 200.7	455255	EPA 200.7	455371
60232345012	L-UMW-4D	EPA 200.7	455255	EPA 200.7	455371
60232173001	L-UMW-2D	EPA 200.8	454894	EPA 200.8	455017
60232173002	L-BMW-1D	EPA 200.8	454894	EPA 200.8	455017
60232173003	L-BMW-2D	EPA 200.8	454894	EPA 200.8	455017
60232345001	L-UMW-DUP-2	EPA 200.8	455257	EPA 200.8	455373
60232345002	L-UMW-FB-1	EPA 200.8	455257	EPA 200.8	455373
60232345003	L-UMW-FB-2	EPA 200.8	455257	EPA 200.8	455373
60232345004	L-UMW-1D	EPA 200.8	455257	EPA 200.8	455373
60232345005	L-UMW-8D	EPA 200.8	455257	EPA 200.8	455373
60232345006	L-UMW-DUP-1	EPA 200.8	455257	EPA 200.8	455373
60232345007	L-UMW-9D	EPA 200.8	455257	EPA 200.8	455373
60232345008	L-UMW-3D	EPA 200.8	455257	EPA 200.8	455373
60232345009	L-UMW-7D	EPA 200.8	455257	EPA 200.8	455373
60232345010	L-UMW-6D	EPA 200.8	455257	EPA 200.8	455373
60232345011	L-UMW-5D	EPA 200.8	455257	EPA 200.8	455373
60232345012	L-UMW-4D	EPA 200.8	455257	EPA 200.8	455373
60232173001	L-UMW-2D	EPA 7470	456114	EPA 7470	456252
60232173002	L-BMW-1D	EPA 7470	456114	EPA 7470	456252
60232173003	L-BMW-2D	EPA 7470	456114	EPA 7470	456252
60232345001	L-UMW-DUP-2	EPA 7470	456521	EPA 7470	456569
60232345002	L-UMW-FB-1	EPA 7470	456521	EPA 7470	456569
60232345003	L-UMW-FB-2	EPA 7470	456521	EPA 7470	456569
60232345004	L-UMW-1D	EPA 7470	456521	EPA 7470	456569
60232345005	L-UMW-8D	EPA 7470	456521	EPA 7470	456569
60232345006	L-UMW-DUP-1	EPA 7470	456521	EPA 7470	456569
60232345007	L-UMW-9D	EPA 7470	456521	EPA 7470	456569
60232345008	L-UMW-3D	EPA 7470	456521	EPA 7470	456569
60232345009	L-UMW-7D	EPA 7470	456521	EPA 7470	456569
60232345010	L-UMW-6D	EPA 7470	456521	EPA 7470	456569
60232345011	L-UMW-5D	EPA 7470	456523	EPA 7470	456570
60232345012	L-UMW-4D	EPA 7470	456523	EPA 7470	456570

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232173001	**L-UMW-2D**	EPA 903.1	242425		
60232173002	**L-BMW-1D**	EPA 903.1	242425		
60232173003	**L-BMW-2D**	EPA 903.1	242425		
60232345001	**L-UMW-DUP-2**	EPA 903.1	242436		
60232345002	**L-UMW-FB-1**	EPA 903.1	242436		
60232345003	**L-UMW-FB-2**	EPA 903.1	242436		
60232345004	**L-UMW-1D**	EPA 903.1	242436		
60232345005	**L-UMW-8D**	EPA 903.1	242436		
60232345006	**L-UMW-DUP-1**	EPA 903.1	242436		
60232345007	**L-UMW-9D**	EPA 903.1	242436		
60232345008	**L-UMW-3D**	EPA 903.1	242436		
60232345009	**L-UMW-7D**	EPA 903.1	242436		
60232345010	**L-UMW-6D**	EPA 903.1	242436		
60232345011	**L-UMW-5D**	EPA 903.1	242436		
60232345012	**L-UMW-4D**	EPA 903.1	242436		
60232173016	**L-UMW-7D MS**	EPA 903.1	242436		
60232173017	**L-UMW-7D MSD**	EPA 903.1	242436		
60232173001	**L-UMW-2D**	EPA 904.0	242430		
60232173002	**L-BMW-1D**	EPA 904.0	242430		
60232173003	**L-BMW-2D**	EPA 904.0	242430		
60232345001	**L-UMW-DUP-2**	EPA 904.0	242437		
60232345002	**L-UMW-FB-1**	EPA 904.0	242437		
60232345003	**L-UMW-FB-2**	EPA 904.0	242437		
60232345004	**L-UMW-1D**	EPA 904.0	242437		
60232345005	**L-UMW-8D**	EPA 904.0	242437		
60232345006	**L-UMW-DUP-1**	EPA 904.0	242437		
60232345007	**L-UMW-9D**	EPA 904.0	242437		
60232345008	**L-UMW-3D**	EPA 904.0	242437		
60232345009	**L-UMW-7D**	EPA 904.0	242437		
60232345010	**L-UMW-6D**	EPA 904.0	242437		
60232345011	**L-UMW-5D**	EPA 904.0	242437		
60232345012	**L-UMW-4D**	EPA 904.0	242437		
60232173016	**L-UMW-7D MS**	EPA 904.0	242437		
60232173017	**L-UMW-7D MSD**	EPA 904.0	242437		
60232173001	**L-UMW-2D**	SM 2540C	455505		
60232173002	**L-BMW-1D**	SM 2540C	455505		
60232173003	**L-BMW-2D**	SM 2540C	455505		
60232345001	**L-UMW-DUP-2**	SM 2540C	455613		
60232345002	**L-UMW-FB-1**	SM 2540C	455613		
60232345003	**L-UMW-FB-2**	SM 2540C	455613		
60232345004	**L-UMW-1D**	SM 2540C	455613		
60232345005	**L-UMW-8D**	SM 2540C	455613		
60232345006	**L-UMW-DUP-1**	SM 2540C	455613		
60232345007	**L-UMW-9D**	SM 2540C	455613		
60232345008	**L-UMW-3D**	SM 2540C	455613		
60232345009	**L-UMW-7D**	SM 2540C	455613		

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232345010	L-UMW-6D	SM 2540C	455613		
60232345011	L-UMW-5D	SM 2540C	455613		
60232345012	L-UMW-4D	SM 2540C	455613		
60232173001	L-UMW-2D	SM 4500-H+B	455737		
60232173002	L-BMW-1D	SM 4500-H+B	455737		
60232173003	L-BMW-2D	SM 4500-H+B	455737		
60232345001	L-UMW-DUP-2	SM 4500-H+B	456166		
60232345002	L-UMW-FB-1	SM 4500-H+B	456166		
60232345003	L-UMW-FB-2	SM 4500-H+B	456166		
60232345004	L-UMW-1D	SM 4500-H+B	456166		
60232345005	L-UMW-8D	SM 4500-H+B	456166		
60232345006	L-UMW-DUP-1	SM 4500-H+B	456166		
60232345007	L-UMW-9D	SM 4500-H+B	456166		
60232345008	L-UMW-3D	SM 4500-H+B	456166		
60232345009	L-UMW-7D	SM 4500-H+B	456166		
60232345010	L-UMW-6D	SM 4500-H+B	456166		
60232345011	L-UMW-5D	SM 4500-H+B	456166		
60232345012	L-UMW-4D	SM 4500-H+B	456166		
60232173001	L-UMW-2D	EPA 300.0	457500		
60232173001	L-UMW-2D	EPA 300.0	457515		
60232173002	L-BMW-1D	EPA 300.0	457500		
60232173002	L-BMW-1D	EPA 300.0	457515		
60232173003	L-BMW-2D	EPA 300.0	457500		
60232173003	L-BMW-2D	EPA 300.0	457515		
60232345001	L-UMW-DUP-2	EPA 300.0	458212		
60232345002	L-UMW-FB-1	EPA 300.0	458212		
60232345003	L-UMW-FB-2	EPA 300.0	458212		
60232345004	L-UMW-1D	EPA 300.0	458212		
60232345005	L-UMW-8D	EPA 300.0	458212		
60232345006	L-UMW-DUP-1	EPA 300.0	458212		
60232345006	L-UMW-DUP-1	EPA 300.0	458451		
60232345007	L-UMW-9D	EPA 300.0	458212		
60232345007	L-UMW-9D	EPA 300.0	458451		
60232345008	L-UMW-3D	EPA 300.0	458212		
60232345008	L-UMW-3D	EPA 300.0	458459		
60232345009	L-UMW-7D	EPA 300.0	458212		
60232345009	L-UMW-7D	EPA 300.0	458459		
60232345010	L-UMW-6D	EPA 300.0	458212		
60232345010	L-UMW-6D	EPA 300.0	458451		

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-BOT
Pace Project No.: 60232173

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232345010	**L-UMW-6D**	EPA 300.0	458459		
60232345011	**L-UMW-5D**	EPA 300.0	458212		
60232345011	**L-UMW-5D**	EPA 300.0	458459		
60232345012	**L-UMW-4D**	EPA 300.0	458212		
60232345012	**L-UMW-4D**	EPA 300.0	458451		
60232345012	**L-UMW-4D**	EPA 300.0	458459		

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Sample Condition Upon Receipt

WO# : 60232173

60232173

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

Cooler Temperature (°C): **As-read** 1.1/17.1 **Corr. Factor** CF +0.7 CF -0.5 **Corrected** 1.8/17.8

Date and initials of person examining contents: RB 11/12/16

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: _____

Jann Check 11/14/16

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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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.: 60232173

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-UMW-1D	WT	G																						
2	L-UMW-2D	WT	G			11/11/16	1355		4	1		3							1	1	1	1	2		BP2U BP3N 2BPN 001
3	L-UMW-3D	WT	G																						
4	L-UMW-4D	WT	G																						
5	L-UMW-5D	WT	G																						
6	L-UMW-6D	WT	G																						
7	L-UMW-7D	WT	G																						
8	L-UMW-8D	WT	G																						
9	L-UMW-9D	WT	G																						
10	L-BMW-1D	WT	G			11/11/16	1203		4	1		3							1	1	1	1	2		002
11	L-BMW-2D	WT	G			11/11/16	0917		4	1		3							1	1	1	1	2		003
12	L-UMW-DUP-1	WT	G																						

ADDITIONAL COMMENTS:
*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg
EPA 200.8: Sb, As, Cd, Cr, Se, Tl

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)
John Snozzi / golder	11/11/16	1630	[signature] / PACE	11/11/16	1630				
[signature] / PACE	11/11/16	1700	[signature]	11/12/16	0335	1.8	Y	Y	Y
						17.8	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Snozzi

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.

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

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Sample Condition Upon Receipt

WO# : 60232345

60232345

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

Cooler Temperature (°C): As-read 3.7/17.8/17.8 **Corr. Factor** CF +0.7 CF -0.5 **Corrected** 4.4/18.5/18.5

Date and initials of person examining contents: 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? (HNO3, H2SO4, 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 11/16/16

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 71 of 71

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 Ctr - Bottom Ash Po	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001A	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.: 60232345

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-UMW-DUP-2	WT	G	N/14		11/14/16	—		4	1		3						1	1	1	1	2		1BP3N 2-0 1BP2U 2BP1N 001
2	L-UMW-FB-1	WT	G				1007																	002
3	L-UMW-FB-2	WT	G				1332																	003
4	L-UMW-1D						0910																	004
5	L-UMW-8D						1010																	005
6	L-DUP-1						—																	006
7	L-UMW-9D						0905																	007
8	L-UMW-3D						1024																	008
9	L-UMW-7D						1110		12	3		4						3	3	3	3	9		3BP3N 2-0 3BP2U 6BP1N 009
10	L-UMW-6D						1137		4	1		3						1	1	1	1	2		010
11	L-UMW-5D						1236																	011
12	L-UMW-4D						1445																	012

ADDITIONAL COMMENTS: *EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg; EPA 200.8: Sb, As, Cd, Cr, Se, Tl

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)
Jeff Ingram (Golder)	11/15/16	1700	[signature] / PACE	11/15/16	1700				
[signature] / PACE	11/15/16	1700	[signature] / PASI	11/16/16	0345	4.4	Y	X	X
						18.5	N		
						18.5	N		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/15/16

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

February 10, 2017

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Dear Mark Haddock:
Enclosed are the analytical results for sample(s) received by the laboratory between January 18, 2017 and January 19, 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.

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

CERTIFICATIONS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

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
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236162001	**L-UMW-1D**	Water	01/16/17 13:33	01/18/17 04:20
60236162002	**L-UMW-2D**	Water	01/17/17 07:51	01/18/17 04:20
60236162003	**L-UMW-3D**	Water	01/17/17 11:04	01/18/17 04:20
60236162004	**L-UMW-4D**	Water	01/17/17 12:10	01/18/17 04:20
60236162005	**L-UMW-5D**	Water	01/17/17 13:30	01/18/17 04:20
60236162006	**L-UMW-6D**	Water	01/17/17 15:29	01/18/17 04:20
60236162007	**L-UMW-DUP-2**	Water	01/17/17 08:00	01/18/17 04:20
60236162008	**L-UMW-FB-1**	Water	01/16/17 13:20	01/18/17 04:20
60236162009	**L-UMW-FB-2**	Water	01/17/17 11:54	01/18/17 04:20
60236162010	**L-BMW-1D**	Water	01/16/17 10:25	01/18/17 04:20
60236162011	**L-BMW-2D**	Water	01/16/17 14:15	01/18/17 04:20
60236162012	**L-UMW-DUP-1**	Water	01/17/17 08:00	01/18/17 04:20
60236274001	**L-UMW-7D**	Water	01/18/17 09:25	01/19/17 04:55
60236274002	**L-UMW-8D**	Water	01/18/17 10:15	01/19/17 04:55
60236274003	**L-UMW-9D**	Water	01/18/17 09:10	01/19/17 04:55
60236274004	**L-UMW-7D MS**	Water	01/18/17 09:25	01/19/17 04:55
60236274005	**L-UMW-7D MSD**	Water	01/18/17 09:25	01/19/17 04:55

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236162001	**L-UMW-1D**	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
60236162002	**L-UMW-2D**	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
60236162003	**L-UMW-3D**	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
60236162004	**L-UMW-4D**	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
60236162005	**L-UMW-5D**	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

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236162006	**L-UMW-6D**	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
60236162007	**L-UMW-DUP-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	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236162008	**L-UMW-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	JSS	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236162009	**L-UMW-FB-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
60236162010	**L-BMW-1D**	EPA 200.7	ZBM	8	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236162011	**L-BMW-2D**	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
60236162012	**L-UMW-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
		SM 2540C	AGO	1	PASI-K
		SM 4500-H+B	AGO	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236274001	**L-UMW-7D**	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	JSS	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236274002	**L-UMW-8D**	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	JSS	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60236274003	**L-UMW-9D**	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	JSS	1	PASI-K
		SM 4500-H+B	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60236274004	**L-UMW-7D MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60236274005	**L-UMW-7D 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 CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-1D **Lab ID: 60236162001** Collected: 01/16/17 13:33 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	**410**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:21	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:21	7440-41-7	
Boron	**555**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:21	7440-42-8	
Calcium	**121000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:21	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:21	7440-48-4	
Lead	**3.6J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:21	7439-92-1	
Lithium	**24.4**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:21	7439-93-2	
Molybdenum	**1.8J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:21	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 17:12	7440-36-0	
Arsenic	**35.0**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:12	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:12	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:12	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:12	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:12	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 14:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**531**	mg/L	5.0	5.0	1		01/20/17 09:57		
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 15:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.3**	mg/L	1.0	0.50	1		01/24/17 15:44	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.027	1		01/24/17 15:44	16984-48-8	
Sulfate	**15.6**	mg/L	1.0	0.15	1		01/24/17 15:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-2D **Lab ID: 60236162002** Collected: 01/17/17 07:51 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	**105**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:25	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:25	7440-41-7	
Boron	**1660**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:25	7440-42-8	
Calcium	**89600**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:25	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:25	7440-48-4	
Lead	**3.0J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:25	7439-92-1	
Lithium	**24.2**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:25	7439-93-2	
Molybdenum	**44.4**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:25	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 17:17	7440-36-0	
Arsenic	**2.9**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:17	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:17	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:17	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:17	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:17	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 14:09	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**547**	mg/L	5.0	5.0	1		01/24/17 09:50		
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 15:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**22.9**	mg/L	2.0	1.0	2		01/25/17 19:40	16887-00-6	
Fluoride	**0.38**	mg/L	0.20	0.027	1		01/24/17 16:25	16984-48-8	
Sulfate	**184**	mg/L	20.0	3.1	20		01/25/17 19:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-3D **Lab ID: 60236162003** Collected: 01/17/17 11:04 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	**136**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:27	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:27	7440-41-7	
Boron	**7850**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:27	7440-42-8	
Calcium	**173000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:27	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:27	7440-48-4	
Lead	**3.1J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:27	7439-92-1	
Lithium	**26.3**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:27	7439-93-2	
Molybdenum	**127**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:27	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 17:25	7440-36-0	
Arsenic	**0.11J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:25	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:25	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:25	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:25	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:25	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 14:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1030**	mg/L	5.0	5.0	1		01/24/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		01/25/17 10:25		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.9**	mg/L	1.0	0.50	1		01/24/17 16:53	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	0.027	1		01/24/17 16:53	16984-48-8	
Sulfate	**597**	mg/L	50.0	7.7	50		01/25/17 20:10	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-4D **Lab ID: 60236162004** Collected: 01/17/17 12:10 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	**43.3**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:30	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:30	7440-41-7	
Boron	**2130**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:30	7440-42-8	
Calcium	**29200**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:30	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:30	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:30	7439-92-1	
Lithium	**25.0**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:30	7439-93-2	
Molybdenum	**98.8**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:30	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 17:29	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:29	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:29	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:29	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:29	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:29	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 14:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**368**	mg/L	5.0	5.0	1		01/24/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		01/25/17 10:38		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.3**	mg/L	1.0	0.50	1		01/24/17 17:07	16887-00-6	
Fluoride	**0.44**	mg/L	0.20	0.027	1		01/24/17 17:07	16984-48-8	
Sulfate	**192**	mg/L	20.0	3.1	20		01/25/17 20:26	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-BOTT
Pace Project No.: 60236162

Sample: L-UMW-5D **Lab ID: 60236162005** Collected: 01/17/17 13:30 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	**54.8**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:32	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:32	7440-41-7	
Boron	**5480**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:32	7440-42-8	
Calcium	**61400**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:32	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:32	7440-48-4	
Lead	**3.6J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:32	7439-92-1	
Lithium	**20.8**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:32	7439-93-2	
Molybdenum	**106**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:32	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 17:34	7440-36-0	
Arsenic	**22.1**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:34	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:34	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:34	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:34	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 14:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**473**	mg/L	5.0	5.0	1		01/24/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.1**	Std. Units	0.10	0.10	1		01/25/17 10:43		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.3**	mg/L	1.0	0.50	1		01/24/17 17:21	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.027	1		01/24/17 17:21	16984-48-8	
Sulfate	**250**	mg/L	20.0	3.1	20		01/25/17 21:12	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-BOTT
Pace Project No.: 60236162

Sample: L-UMW-6D **Lab ID: 60236162006** Collected: 01/17/17 15:29 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	**141**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:34	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:34	7440-41-7	
Boron	**14000**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:34	7440-42-8	
Calcium	**92000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:34	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:34	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:34	7439-92-1	
Lithium	**5.9J**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:34	7439-93-2	
Molybdenum	**504**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:34	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 17:38	7440-36-0	
Arsenic	**15.2**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:38	7440-38-2	
Cadmium	**0.052J**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:38	7440-43-9	
Chromium	**0.42J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:38	7440-47-3	
Selenium	**0.22J**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:38	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:38	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 14:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**680**	mg/L	5.0	5.0	1		01/24/17 09:52		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.10	1		01/26/17 11:42		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**20.5**	mg/L	2.0	1.0	2		01/25/17 21:27	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.027	1		01/24/17 17:35	16984-48-8	
Sulfate	**504**	mg/L	50.0	7.7	50		01/25/17 21:43	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-BOTT
Pace Project No.: 60236162

Sample: L-UMW-DUP-2 **Lab ID: 60236162007** Collected: 01/17/17 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	**140**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:36	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:36	7440-41-7	
Boron	**8200**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 13:36	7440-42-8	
Calcium	**175000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:36	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:36	7440-48-4	
Lead	**3.5J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:36	7439-92-1	
Lithium	**25.0**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:36	7439-93-2	
Molybdenum	**135**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:36	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 17:42	7440-36-0	
Arsenic	**0.13J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:42	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:42	7440-43-9	
Chromium	**0.68J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:42	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:42	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:42	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 14:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1010**	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	**7.5**	Std. Units	0.10	0.10	1		01/24/17 15:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.9**	mg/L	1.0	0.50	1		01/25/17 21:58	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.027	1		01/25/17 21:58	16984-48-8	
Sulfate	**713**	mg/L	50.0	7.7	50		01/25/17 22:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-FB-1 **Lab ID: 60236162008** 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	**<0.58**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:43	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:43	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:29	7440-42-8	
Calcium	**9.8J**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:43	7440-70-2	B
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:43	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:43	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:43	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:43	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 17:56	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 17:56	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 17:56	7440-43-9	
Chromium	**0.50J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 17:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 17:56	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 17:56	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 14:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		01/20/17 09:57		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.10	1		01/24/17 15:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		01/25/17 22:29	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		01/25/17 22:29	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		01/25/17 22:29	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-BOTT
Pace Project No.: 60236162

Sample: L-UMW-FB-2 **Lab ID: 60236162009** Collected: 01/17/17 11:54 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 13:45	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:45	7440-41-7	
Boron	**<50.0**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:31	7440-42-8	
Calcium	**<8.1**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:45	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:45	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:45	7439-92-1	
Lithium	**<4.9**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:45	7439-93-2	
Molybdenum	**<0.52**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:45	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 18:00	7440-36-0	
Arsenic	**<0.10**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:00	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:00	7440-43-9	
Chromium	**0.57J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:00	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:00	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:00	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 14:25	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 09:53		
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 10:36		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		01/25/17 22:44	16887-00-6	
Fluoride	**<0.027**	mg/L	0.20	0.027	1		01/25/17 22:44	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		01/25/17 22:44	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-BOTT
Pace Project No.: 60236162

Sample: L-BMW-1D **Lab ID: 60236162010** Collected: 01/16/17 10:25 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	**1290**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:47	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:47	7440-41-7	
Boron	**80.2J**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:34	7440-42-8	
Calcium	**135000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:47	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:47	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:47	7439-92-1	
Lithium	**30.5**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:47	7439-93-2	
Molybdenum	**1.4J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:47	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 18:04	7440-36-0	
Arsenic	**0.63J**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:04	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:04	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:04	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:04	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:04	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 14:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**521**	mg/L	5.0	5.0	1		01/20/17 09:57		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		01/26/17 11:38		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.4**	mg/L	1.0	0.50	1		01/25/17 23:00	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.027	1		01/25/17 23:00	16984-48-8	
Sulfate	**36.0**	mg/L	5.0	0.77	5		01/25/17 23:15	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-BOTT
Pace Project No.: 60236162

Sample: L-BMW-2D **Lab ID: 60236162011** Collected: 01/16/17 14:15 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	**307**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:50	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:50	7440-41-7	
Boron	**63.9J**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:36	7440-42-8	
Calcium	**121000**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:50	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:50	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:50	7439-92-1	
Lithium	**40.0**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:50	7439-93-2	
Molybdenum	**2.7J**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 13:50	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 18:09	7440-36-0	
Arsenic	**42.6**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:09	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:09	7440-43-9	
Chromium	**0.64J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:09	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:09	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:09	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 14:34	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**476**	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	**7.3**	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	**13.1**	mg/L	1.0	0.50	1		01/25/17 23:31	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.027	1		01/25/17 23:31	16984-48-8	
Sulfate	**34.0**	mg/L	2.0	0.31	2		01/26/17 00:17	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-DUP-1 **Lab ID: 60236162012** Collected: 01/17/17 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	**104**	ug/L	5.0	0.58	1	01/18/17 14:00	01/23/17 13:52	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/18/17 14:00	01/23/17 13:52	7440-41-7	
Boron	**1730**	ug/L	100	50.0	1	01/18/17 14:00	01/23/17 16:38	7440-42-8	
Calcium	**86500**	ug/L	100	8.1	1	01/18/17 14:00	01/23/17 13:52	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/18/17 14:00	01/23/17 13:52	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.5	1	01/18/17 14:00	01/23/17 13:52	7439-92-1	
Lithium	**23.8**	ug/L	10.0	4.9	1	01/18/17 14:00	01/23/17 13:52	7439-93-2	
Molybdenum	**42.8**	ug/L	20.0	0.52	1	01/18/17 14:00	01/23/17 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	01/18/17 14:00	01/19/17 18:13	7440-36-0	
Arsenic	**2.8**	ug/L	1.0	0.10	1	01/18/17 14:00	01/19/17 18:13	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/18/17 14:00	01/19/17 18:13	7440-43-9	
Chromium	**0.52J**	ug/L	1.0	0.34	1	01/18/17 14:00	01/19/17 18:13	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/18/17 14:00	01/19/17 18:13	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/18/17 14:00	01/19/17 18:13	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 14:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**533**	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	**7.4**	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	**22.3**	mg/L	5.0	2.5	5		01/26/17 00:48	16887-00-6	
Fluoride	**0.41**	mg/L	0.20	0.027	1		01/26/17 00:32	16984-48-8	
Sulfate	**188**	mg/L	20.0	3.1	20		01/27/17 10:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-7D **Lab ID: 60236274001** Collected: 01/18/17 09:25 Received: 01/19/17 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	**113**	ug/L	5.0	0.58	1	01/20/17 09:30	01/20/17 16:32	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/20/17 09:30	01/20/17 16:32	7440-41-7	
Boron	**5570**	ug/L	100	50.0	1	01/20/17 09:30	01/20/17 16:32	7440-42-8	
Calcium	**156000**	ug/L	100	8.1	1	01/20/17 09:30	01/20/17 16:32	7440-70-2	M1
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/20/17 09:30	01/20/17 16:32	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/20/17 09:30	01/20/17 16:32	7439-92-1	
Lithium	**18.2**	ug/L	10.0	4.9	1	01/20/17 09:30	01/20/17 16:32	7439-93-2	
Molybdenum	**205**	ug/L	20.0	0.52	1	01/20/17 09:30	01/20/17 16:32	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	01/20/17 09:30	01/23/17 14:44	7440-36-0	
Arsenic	**20.9**	ug/L	1.0	0.10	1	01/20/17 09:30	01/23/17 14:44	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/20/17 09:30	01/23/17 14:44	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	01/20/17 09:30	01/23/17 14:44	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/20/17 09:30	01/23/17 14:44	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/20/17 09:30	01/23/17 14:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.12J**	ug/L	0.20	0.039	1	02/06/17 09:45	02/06/17 12:46	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**800**	mg/L	5.0	5.0	1		01/25/17 14:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		01/26/17 11:54		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.2**	mg/L	1.0	0.50	1		01/24/17 17:22	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.027	1		01/24/17 17:22	16984-48-8	
Sulfate	**318**	mg/L	50.0	7.7	50		01/25/17 19:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-8D **Lab ID: 60236274002** Collected: 01/18/17 10:15 Received: 01/19/17 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	**492**	ug/L	5.0	0.58	1	01/20/17 09:30	01/20/17 16:42	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/20/17 09:30	01/20/17 16:42	7440-41-7	
Boron	**479**	ug/L	100	50.0	1	01/20/17 09:30	01/20/17 16:42	7440-42-8	
Calcium	**133000**	ug/L	100	8.1	1	01/20/17 09:30	01/20/17 16:42	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/20/17 09:30	01/20/17 16:42	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/20/17 09:30	01/20/17 16:42	7439-92-1	
Lithium	**30.7**	ug/L	10.0	4.9	1	01/20/17 09:30	01/20/17 16:42	7439-93-2	
Molybdenum	**14.5J**	ug/L	20.0	0.52	1	01/20/17 09:30	01/20/17 16:42	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	01/20/17 09:30	01/23/17 14:57	7440-36-0	
Arsenic	**32.8**	ug/L	1.0	0.10	1	01/20/17 09:30	01/23/17 14:57	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/20/17 09:30	01/23/17 14:57	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	01/20/17 09:30	01/23/17 14:57	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/20/17 09:30	01/23/17 14:57	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/20/17 09:30	01/23/17 14:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.071J**	ug/L	0.20	0.039	1	02/06/17 09:45	02/06/17 12:57	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**511**	mg/L	5.0	5.0	1		01/25/17 14:42		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		01/26/17 11:59		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.1**	mg/L	1.0	0.50	1		01/24/17 18:39	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.027	1		01/24/17 18:39	16984-48-8	
Sulfate	**38.9**	mg/L	5.0	0.77	5		01/25/17 20:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-9D **Lab ID: 60236274003** Collected: 01/18/17 09:10 Received: 01/19/17 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	**520**	ug/L	5.0	0.58	1	01/20/17 09:30	01/20/17 16:44	7440-39-3	
Beryllium	**<0.26**	ug/L	1.0	0.26	1	01/20/17 09:30	01/20/17 16:44	7440-41-7	
Boron	**93.1J**	ug/L	100	50.0	1	01/20/17 09:30	01/20/17 16:44	7440-42-8	
Calcium	**111000**	ug/L	100	8.1	1	01/20/17 09:30	01/20/17 16:44	7440-70-2	
Cobalt	**<0.72**	ug/L	5.0	0.72	1	01/20/17 09:30	01/20/17 16:44	7440-48-4	
Lead	**<2.5**	ug/L	5.0	2.5	1	01/20/17 09:30	01/20/17 16:44	7439-92-1	
Lithium	**15.7**	ug/L	10.0	4.9	1	01/20/17 09:30	01/20/17 16:44	7439-93-2	
Molybdenum	**2.7J**	ug/L	20.0	0.52	1	01/20/17 09:30	01/20/17 16:44	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	01/20/17 09:30	01/23/17 15:01	7440-36-0	
Arsenic	**33.5**	ug/L	1.0	0.10	1	01/20/17 09:30	01/23/17 15:01	7440-38-2	
Cadmium	**<0.029**	ug/L	0.50	0.029	1	01/20/17 09:30	01/23/17 15:01	7440-43-9	
Chromium	**<0.34**	ug/L	1.0	0.34	1	01/20/17 09:30	01/23/17 15:01	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	01/20/17 09:30	01/23/17 15:01	7782-49-2	
Thallium	**<0.50**	ug/L	1.0	0.50	1	01/20/17 09:30	01/23/17 15:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.084J**	ug/L	0.20	0.039	1	02/06/17 09:45	02/06/17 13:00	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**434**	mg/L	5.0	5.0	1		01/25/17 14:43		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		01/26/17 11:51		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.9**	mg/L	2.0	1.0	2		01/25/17 20:45	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.027	1		01/24/17 18:54	16984-48-8	
Sulfate	**<0.15**	mg/L	1.0	0.15	1		01/24/17 18:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 464115 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1899425 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

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	

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-BOTT
Pace Project No.: 60236162

QC Batch: 464462 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60236274001, 60236274002, 60236274003

METHOD BLANK: 1901187 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.10J	0.20	0.039	02/06/17 12:42	

LABORATORY CONTROL SAMPLE: 1901188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1901189 1901190

Parameter	Units	60236274001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.12J	5	5	5.5	5.2	107	102	75-125	5	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462397 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1893084 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

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-BOTT
Pace Project No.: 60236162

QC Batch: 462631 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60236274001, 60236274002, 60236274003

METHOD BLANK: 1894039 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.58	5.0	0.58	01/20/17 15:36	
Beryllium	ug/L	<0.26	1.0	0.26	01/20/17 15:36	
Boron	ug/L	<50.0	100	50.0	01/20/17 15:36	
Calcium	ug/L	<8.1	100	8.1	01/20/17 15:36	
Cobalt	ug/L	<0.72	5.0	0.72	01/20/17 15:36	
Lead	ug/L	<2.5	5.0	2.5	01/20/17 15:36	
Lithium	ug/L	<4.9	10.0	4.9	01/20/17 15:36	
Molybdenum	ug/L	0.89J	20.0	0.52	01/20/17 15:36	

LABORATORY CONTROL SAMPLE: 1894040

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	998	100	85-115	
Beryllium	ug/L	1000	980	98	85-115	
Boron	ug/L	1000	952	95	85-115	
Calcium	ug/L	10000	9740	97	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1070	107	85-115	

MATRIX SPIKE SAMPLE: 1894041

Parameter	Units	60236322002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	0.047 mg/L	1000	1050	100	70-130	
Beryllium	ug/L	ND	1000	991	99	70-130	
Boron	ug/L	ND	1000	968	95	70-130	
Calcium	ug/L	35.8 mg/L	10000	45200	94	70-130	
Cobalt	ug/L	ND	1000	1010	101	70-130	
Lead	ug/L	ND	1000	1020	101	70-130	
Lithium	ug/L	ND	1000	1040	103	70-130	
Molybdenum	ug/L	ND	1000	1070	107	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1894042 1894043

Parameter	Units	60236274001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	113	1000	1000	1110	1120	100	101	70-130	1	20	
Beryllium	ug/L	<0.26	1000	1000	967	982	97	98	70-130	1	20	
Boron	ug/L	5570	1000	1000	6680	6490	110	92	70-130	3	20	
Calcium	ug/L	156000	10000	10000	167000	172000	107	156	70-130	3	20	M1
Cobalt	ug/L	<0.72	1000	1000	1010	1000	101	100	70-130	1	20	
Lead	ug/L	<2.5	1000	1000	1000	996	100	100	70-130	1	20	
Lithium	ug/L	18.2	1000	1000	1050	1060	103	104	70-130	0	20	
Molybdenum	ug/L	205	1000	1000	1310	1310	111	111	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462398 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1893089 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.055	1.0	0.055	01/19/17 17:04	
Arsenic	ug/L	<0.25	1.0	0.25	01/19/17 17:04	
Cadmium	ug/L	<0.082	0.50	0.082	01/19/17 17:04	
Chromium	ug/L	0.27J	1.0	0.16	01/19/17 17:04	
Selenium	ug/L	<0.12	1.0	0.12	01/19/17 17:04	
Thallium	ug/L	<0.052	1.0	0.052	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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

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
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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462633 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60236274001, 60236274002, 60236274003

METHOD BLANK: 1894047 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	01/23/17 13:05	
Arsenic	ug/L	<0.052	1.0	0.052	01/23/17 13:05	
Cadmium	ug/L	<0.018	0.50	0.018	01/23/17 13:05	
Chromium	ug/L	0.11J	1.0	0.054	01/23/17 13:05	
Selenium	ug/L	<0.086	1.0	0.086	01/23/17 13:05	
Thallium	ug/L	0.085J	1.0	0.036	01/23/17 13:05	

LABORATORY CONTROL SAMPLE: 1894048

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	85-115	
Arsenic	ug/L	40	40.6	102	85-115	
Cadmium	ug/L	40	41.0	103	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	41.9	105	85-115	
Thallium	ug/L	40	39.5	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1894049 1894050

Parameter	Units	60236274001 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	39.9	38.9	100	97	70-130	2	20	
Arsenic	ug/L	20.9	40	40	61.4	59.8	101	97	70-130	3	20	
Cadmium	ug/L	<0.029	40	40	38.9	37.9	97	95	70-130	3	20	
Chromium	ug/L	<0.34	40	40	38.8	38.1	96	95	70-130	2	20	
Selenium	ug/L	<0.18	40	40	39.3	37.6	98	94	70-130	4	20	
Thallium	ug/L	<0.50	40	40	40.7	40.6	101	101	70-130	0	20	

MATRIX SPIKE SAMPLE: 1894051

Parameter	Units	60236365001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.62J	40	40.3	99	70-130	
Arsenic	ug/L	1.0	40	41.6	102	70-130	
Cadmium	ug/L	5.8	40	45.5	99	70-130	
Chromium	ug/L	1.7	40	41.1	98	70-130	
Selenium	ug/L	4.1	40	44.6	101	70-130	
Thallium	ug/L	6.4	40	47.9	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462642 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236162001, 60236162008, 60236162010, 60236162011

METHOD BLANK: 1894078 Matrix: Water
Associated Lab Samples: 60236162001, 60236162008, 60236162010, 60236162011

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-BOTT
Pace Project No.: 60236162

QC Batch: 462912 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162009, 60236162012

METHOD BLANK: 1895338 Matrix: Water
Associated Lab Samples: 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162009, 60236162012

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-BOTT
Pace Project No.: 60236162

QC Batch: 463211 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236274001, 60236274002, 60236274003

METHOD BLANK: 1896338 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/25/17 14:32	

LABORATORY CONTROL SAMPLE: 1896339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	973	97	80-120	

SAMPLE DUPLICATE: 1896340

Parameter	Units	60236263001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5900	6030	2	10	

SAMPLE DUPLICATE: 1896341

Parameter	Units	60236274001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	800	773	3	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462921 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60236162001, 60236162002, 60236162007, 60236162008, 60236162011, 60236162012

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-BOTT
Pace Project No.: 60236162

QC Batch: 462929 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60236162003, 60236162004, 60236162005, 60236162009

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-BOTT
Pace Project No.: 60236162

QC Batch: 463214 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60236162006, 60236162010, 60236274001, 60236274002, 60236274003

SAMPLE DUPLICATE: 1896353

Parameter	Units	60236274001 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-BOTT
Pace Project No.: 60236162

QC Batch: 462962 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006

METHOD BLANK: 1895526 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	01/24/17 14:48	
Fluoride	mg/L	<0.027	0.20	0.027	01/24/17 14:48	
Sulfate	mg/L	<0.15	1.0	0.15	01/24/17 14:48	

LABORATORY CONTROL SAMPLE: 1895527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895528 1895529

Parameter	Units	60236162001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.3	5	5	17.7	17.7	109	110	80-120	0	15	
Fluoride	mg/L	0.19J	2.5	2.5	2.9	2.9	108	109	80-120	1	15	

MATRIX SPIKE SAMPLE: 1895530

Parameter	Units	60236162002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.38	2.5	3.1	107	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462964 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236274003

METHOD BLANK: 1895533 Matrix: Water
Associated Lab Samples: 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
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
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
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

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 462968 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236274001, 60236274002

METHOD BLANK: 1895542 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	01/24/17 15:34	
Fluoride	mg/L	<0.027	0.20	0.027	01/24/17 15:34	

LABORATORY CONTROL SAMPLE: 1895543

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	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895544 1895545

Parameter	Units	60236274001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	13.2	5	5	18.7	18.8	109	113	80-120	1	15	
Fluoride	mg/L	0.28	2.5	2.5	2.8	2.9	101	104	80-120	3	15	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 463224 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1896364 Matrix: Water
Associated Lab Samples: 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	01/25/17 15:02	
Sulfate	mg/L	<0.15	1.0	0.15	01/25/17 15:02	

LABORATORY CONTROL SAMPLE: 1896365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1896366 1896367

Parameter	Units	60236480004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	18.5	10	10	29.6	29.5	111	110	80-120	0	15	

MATRIX SPIKE SAMPLE: 1896368

Parameter	Units	60236480007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.3		37.8			
Sulfate	mg/L	42.8	25	69.8	108	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 463225 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236274001, 60236274002, 60236274003

METHOD BLANK: 1896369 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	01/25/17 10:55	
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
Chloride	mg/L	5	4.8	96	90-110	
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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 463454
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60236162012

METHOD BLANK: 1897214 Matrix: Water
Associated Lab Samples: 60236162012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.15	1.0	0.15	01/27/17 09:02	

LABORATORY CONTROL SAMPLE: 1897215

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1897216 1897217

Parameter	Units	60236162012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	188	100	100	291	285	103	97	80-120	2	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-1D **Lab ID: 60236162001** Collected: 01/16/17 13:33 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	**0.328 ± 0.373 (0.588) C:NA T:88%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.966 ± 0.414 (0.659) C:75% T:87%**	pCi/L	02/09/17 12:04	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-2D **Lab ID: 60236162002** Collected: 01/17/17 07:51 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	**0.233 ± 0.429 (0.765) C:NA T:82%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.693 ± 0.371 (0.649) C:73% T:87%**	pCi/L	02/09/17 12:04	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-3D **Lab ID: 60236162003** Collected: 01/17/17 11:04 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	**0.121 ± 0.277 (0.447) C:NA T:84%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.389 ± 0.395 (0.813) C:70% T:74%**	pCi/L	02/09/17 12:04	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-4D **Lab ID: 60236162004** Collected: 01/17/17 12:10 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	**0.122 ± 0.292 (0.564) C:NA T:83%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.322 ± 0.313 (0.633) C:69% T:81%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-5D **Lab ID: 60236162005** Collected: 01/17/17 13:30 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	**0.365 ± 0.379 (0.565) C:NA T:80%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.707 ± 0.395 (0.702) C:72% T:81%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-6D **Lab ID: 60236162006** Collected: 01/17/17 15:29 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	**0.550 ± 0.403 (0.450) C:NA T:81%**	pCi/L	02/09/17 22:28	13982-63-3	
Radium-228	EPA 904.0	**0.388 ± 0.330 (0.659) C:71% T:89%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-DUP-2 **Lab ID: 60236162007** Collected: 01/17/17 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	**-0.235 ± 0.406 (1.02) C:NA T:63%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**1.51 ± 0.536 (0.768) C:77% T:78%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-FB-1 **Lab ID: 60236162008** 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	**0.0584 ± 0.267 (0.542) C:NA T:83%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**0.529 ± 0.356 (0.671) C:79% T:78%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-FB-2 **Lab ID: 60236162009** Collected: 01/17/17 11:54 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	**-0.059 ± 0.268 (0.546) C:NA T:85%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**0.858 ± 0.401 (0.653) C:71% T:83%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-BMW-1D **Lab ID: 60236162010** Collected: 01/16/17 10:25 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	**1.29 ± 0.618 (0.569) C:NA T:84%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**1.63 ± 0.544 (0.736) C:71% T:88%**	pCi/L	02/09/17 12:05	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-BMW-2D **Lab ID: 60236162011** Collected: 01/16/17 14:15 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	**0.000 ± 0.262 (0.533) C:NA T:85%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**0.687 ± 0.426 (0.789) C:66% T:83%**	pCi/L	02/09/17 12:06	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-DUP-1 **Lab ID: 60236162012** Collected: 01/17/17 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	**0.245 ± 0.450 (0.803) C:NA T:84%**	pCi/L	02/09/17 22:48	13982-63-3	
Radium-228	EPA 904.0	**1.26 ± 0.448 (0.597) C:76% T:81%**	pCi/L	02/09/17 12:06	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-7D **Lab ID: 60236274001** Collected: 01/18/17 09:25 Received: 01/19/17 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	**1.58 ± 0.679 (0.566) C:NA T:86%**	pCi/L	02/09/17 11:00	13982-63-3	
Radium-228	EPA 904.0	**0.109 ± 0.402 (0.911) C:63% T:84%**	pCi/L	02/09/17 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-8D **Lab ID: 60236274002** Collected: 01/18/17 10:15 Received: 01/19/17 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	**0.173 ± 0.375 (0.691) C:NA T:90%**	pCi/L	02/09/17 11:00	13982-63-3	
Radium-228	EPA 904.0	**0.675 ± 0.472 (0.915) C:60% T:87%**	pCi/L	02/09/17 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-9D **Lab ID: 60236274003** Collected: 01/18/17 09:10 Received: 01/19/17 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	**0.294 ± 0.271 (0.159) C:NA T:94%**	pCi/L	02/09/17 11:15	13982-63-3	
Radium-228	EPA 904.0	**0.639 ± 0.456 (0.899) C:71% T:87%**	pCi/L	02/09/17 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-7D MS **Lab ID: 60236274004** Collected: 01/18/17 09:25 Received: 01/19/17 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	**78.0 %REC ± NA (NA) C:NA T:NA**	pCi/L	02/09/17 11:15	13982-63-3	
Radium-228	EPA 904.0	**105 %REC +/- NA (NA) C:NA T:NA**	pCi/L	02/09/17 15:26	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Sample: L-UMW-7D MSD **Lab ID: 60236274005** Collected: 01/18/17 09:25 Received: 01/19/17 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	**88.5 %REC 11.27 RPD ± NA (NA) C:NA T:NA**	pCi/L	02/09/17 11:15	13982-63-3	
Radium-228	EPA 904.0	**128 %REC 19.9 RPD +/- NA (NA) C:NA T:NA**	pCi/L	02/09/17 15:26	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 248060 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60236274001, 60236274002, 60236274003, 60236274004, 60236274005

METHOD BLANK: 1220035 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003, 60236274004, 60236274005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.133 ± 0.355 (0.857) C:70% T:76%	pCi/L	02/09/17 15:25	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 247723 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1218296 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.243 (0.392) C:NA T:92%	pCi/L	02/09/17 22:09	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 248059 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60236274001, 60236274002, 60236274003, 60236274004, 60236274005

METHOD BLANK: 1220034 Matrix: Water
Associated Lab Samples: 60236274001, 60236274002, 60236274003, 60236274004, 60236274005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0639 ± 0.331 (0.688) C:NA T:86%	pCi/L	02/09/17 11:00	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

QC Batch: 247724 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

METHOD BLANK: 1218297 Matrix: Water
Associated Lab Samples: 60236162001, 60236162002, 60236162003, 60236162004, 60236162005, 60236162006, 60236162007, 60236162008, 60236162009, 60236162010, 60236162011, 60236162012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.221 ± 0.316 (0.680) C:81% T:87%	pCi/L	02/09/17 12:04	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

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 (%)

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.
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-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236162001	L-UMW-1D	EPA 200.7	462397	EPA 200.7	462406
60236162002	L-UMW-2D	EPA 200.7	462397	EPA 200.7	462406
60236162003	L-UMW-3D	EPA 200.7	462397	EPA 200.7	462406
60236162004	L-UMW-4D	EPA 200.7	462397	EPA 200.7	462406
60236162005	L-UMW-5D	EPA 200.7	462397	EPA 200.7	462406
60236162006	L-UMW-6D	EPA 200.7	462397	EPA 200.7	462406
60236162007	L-UMW-DUP-2	EPA 200.7	462397	EPA 200.7	462406
60236162008	L-UMW-FB-1	EPA 200.7	462397	EPA 200.7	462406
60236162009	L-UMW-FB-2	EPA 200.7	462397	EPA 200.7	462406
60236162010	L-BMW-1D	EPA 200.7	462397	EPA 200.7	462406
60236162011	L-BMW-2D	EPA 200.7	462397	EPA 200.7	462406
60236162012	L-UMW-DUP-1	EPA 200.7	462397	EPA 200.7	462406
60236274001	L-UMW-7D	EPA 200.7	462631	EPA 200.7	462676
60236274002	L-UMW-8D	EPA 200.7	462631	EPA 200.7	462676
60236274003	L-UMW-9D	EPA 200.7	462631	EPA 200.7	462676
60236162001	L-UMW-1D	EPA 200.8	462398	EPA 200.8	462407
60236162002	L-UMW-2D	EPA 200.8	462398	EPA 200.8	462407
60236162003	L-UMW-3D	EPA 200.8	462398	EPA 200.8	462407
60236162004	L-UMW-4D	EPA 200.8	462398	EPA 200.8	462407
60236162005	L-UMW-5D	EPA 200.8	462398	EPA 200.8	462407
60236162006	L-UMW-6D	EPA 200.8	462398	EPA 200.8	462407
60236162007	L-UMW-DUP-2	EPA 200.8	462398	EPA 200.8	462407
60236162008	L-UMW-FB-1	EPA 200.8	462398	EPA 200.8	462407
60236162009	L-UMW-FB-2	EPA 200.8	462398	EPA 200.8	462407
60236162010	L-BMW-1D	EPA 200.8	462398	EPA 200.8	462407
60236162011	L-BMW-2D	EPA 200.8	462398	EPA 200.8	462407
60236162012	L-UMW-DUP-1	EPA 200.8	462398	EPA 200.8	462407
60236274001	L-UMW-7D	EPA 200.8	462633	EPA 200.8	462677
60236274002	L-UMW-8D	EPA 200.8	462633	EPA 200.8	462677
60236274003	L-UMW-9D	EPA 200.8	462633	EPA 200.8	462677
60236162001	L-UMW-1D	EPA 7470	464115	EPA 7470	464196
60236162002	L-UMW-2D	EPA 7470	464115	EPA 7470	464196
60236162003	L-UMW-3D	EPA 7470	464115	EPA 7470	464196
60236162004	L-UMW-4D	EPA 7470	464115	EPA 7470	464196
60236162005	L-UMW-5D	EPA 7470	464115	EPA 7470	464196
60236162006	L-UMW-6D	EPA 7470	464115	EPA 7470	464196
60236162007	L-UMW-DUP-2	EPA 7470	464115	EPA 7470	464196
60236162008	L-UMW-FB-1	EPA 7470	464115	EPA 7470	464196
60236162009	L-UMW-FB-2	EPA 7470	464115	EPA 7470	464196
60236162010	L-BMW-1D	EPA 7470	464115	EPA 7470	464196
60236162011	L-BMW-2D	EPA 7470	464115	EPA 7470	464196
60236162012	L-UMW-DUP-1	EPA 7470	464115	EPA 7470	464196
60236274001	L-UMW-7D	EPA 7470	464462	EPA 7470	464469
60236274002	L-UMW-8D	EPA 7470	464462	EPA 7470	464469
60236274003	L-UMW-9D	EPA 7470	464462	EPA 7470	464469
60236162001	L-UMW-1D	EPA 903.1	247723		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236162002	L-UMW-2D	EPA 903.1	247723		
60236162003	L-UMW-3D	EPA 903.1	247723		
60236162004	L-UMW-4D	EPA 903.1	247723		
60236162005	L-UMW-5D	EPA 903.1	247723		
60236162006	L-UMW-6D	EPA 903.1	247723		
60236162007	L-UMW-DUP-2	EPA 903.1	247723		
60236162008	L-UMW-FB-1	EPA 903.1	247723		
60236162009	L-UMW-FB-2	EPA 903.1	247723		
60236162010	L-BMW-1D	EPA 903.1	247723		
60236162011	L-BMW-2D	EPA 903.1	247723		
60236162012	L-UMW-DUP-1	EPA 903.1	247723		
60236274001	L-UMW-7D	EPA 903.1	248059		
60236274002	L-UMW-8D	EPA 903.1	248059		
60236274003	L-UMW-9D	EPA 903.1	248059		
60236274004	L-UMW-7D MS	EPA 903.1	248059		
60236274005	L-UMW-7D MSD	EPA 903.1	248059		
60236162001	L-UMW-1D	EPA 904.0	247724		
60236162002	L-UMW-2D	EPA 904.0	247724		
60236162003	L-UMW-3D	EPA 904.0	247724		
60236162004	L-UMW-4D	EPA 904.0	247724		
60236162005	L-UMW-5D	EPA 904.0	247724		
60236162006	L-UMW-6D	EPA 904.0	247724		
60236162007	L-UMW-DUP-2	EPA 904.0	247724		
60236162008	L-UMW-FB-1	EPA 904.0	247724		
60236162009	L-UMW-FB-2	EPA 904.0	247724		
60236162010	L-BMW-1D	EPA 904.0	247724		
60236162011	L-BMW-2D	EPA 904.0	247724		
60236162012	L-UMW-DUP-1	EPA 904.0	247724		
60236274001	L-UMW-7D	EPA 904.0	248060		
60236274002	L-UMW-8D	EPA 904.0	248060		
60236274003	L-UMW-9D	EPA 904.0	248060		
60236274004	L-UMW-7D MS	EPA 904.0	248060		
60236274005	L-UMW-7D MSD	EPA 904.0	248060		
60236162001	L-UMW-1D	SM 2540C	462642		
60236162002	L-UMW-2D	SM 2540C	462912		
60236162003	L-UMW-3D	SM 2540C	462912		
60236162004	L-UMW-4D	SM 2540C	462912		
60236162005	L-UMW-5D	SM 2540C	462912		
60236162006	L-UMW-6D	SM 2540C	462912		
60236162007	L-UMW-DUP-2	SM 2540C	462912		
60236162008	L-UMW-FB-1	SM 2540C	462642		
60236162009	L-UMW-FB-2	SM 2540C	462912		
60236162010	L-BMW-1D	SM 2540C	462642		
60236162011	L-BMW-2D	SM 2540C	462642		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236162012	L-UMW-DUP-1	SM 2540C	462912		
60236274001	L-UMW-7D	SM 2540C	463211		
60236274002	L-UMW-8D	SM 2540C	463211		
60236274003	L-UMW-9D	SM 2540C	463211		
60236162001	L-UMW-1D	SM 4500-H+B	462921		
60236162002	L-UMW-2D	SM 4500-H+B	462921		
60236162003	L-UMW-3D	SM 4500-H+B	462929		
60236162004	L-UMW-4D	SM 4500-H+B	462929		
60236162005	L-UMW-5D	SM 4500-H+B	462929		
60236162006	L-UMW-6D	SM 4500-H+B	463214		
60236162007	L-UMW-DUP-2	SM 4500-H+B	462921		
60236162008	L-UMW-FB-1	SM 4500-H+B	462921		
60236162009	L-UMW-FB-2	SM 4500-H+B	462929		
60236162010	L-BMW-1D	SM 4500-H+B	463214		
60236162011	L-BMW-2D	SM 4500-H+B	462921		
60236162012	L-UMW-DUP-1	SM 4500-H+B	462921		
60236274001	L-UMW-7D	SM 4500-H+B	463214		
60236274002	L-UMW-8D	SM 4500-H+B	463214		
60236274003	L-UMW-9D	SM 4500-H+B	463214		
60236162001	L-UMW-1D	EPA 300.0	462962		
60236162002	L-UMW-2D	EPA 300.0	462962		
60236162002	L-UMW-2D	EPA 300.0	463224		
60236162003	L-UMW-3D	EPA 300.0	462962		
60236162003	L-UMW-3D	EPA 300.0	463224		
60236162004	L-UMW-4D	EPA 300.0	462962		
60236162004	L-UMW-4D	EPA 300.0	463224		
60236162005	L-UMW-5D	EPA 300.0	462962		
60236162005	L-UMW-5D	EPA 300.0	463224		
60236162006	L-UMW-6D	EPA 300.0	462962		
60236162006	L-UMW-6D	EPA 300.0	463224		
60236162007	L-UMW-DUP-2	EPA 300.0	463224		
60236162008	L-UMW-FB-1	EPA 300.0	463224		
60236162009	L-UMW-FB-2	EPA 300.0	463224		
60236162010	L-BMW-1D	EPA 300.0	463224		
60236162011	L-BMW-2D	EPA 300.0	463224		
60236162012	L-UMW-DUP-1	EPA 300.0	463224		
60236162012	L-UMW-DUP-1	EPA 300.0	463454		
60236274001	L-UMW-7D	EPA 300.0	462968		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60236162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236274001	**L-UMW-7D**	EPA 300.0	463225		
60236274002	**L-UMW-8D**	EPA 300.0	462968		
60236274002	**L-UMW-8D**	EPA 300.0	463225		
60236274003	**L-UMW-9D**	EPA 300.0	462964		
60236274003	**L-UMW-9D**	EPA 300.0	463225		

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Sample Condition Upon Receipt

WO# : 60236162

60236162

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 13.0/14.4/6.2 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 14.5/12.9/1.7

Date and initials of person examining contents: pv 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): pv 1/18/17	☑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 Cheek 1/18/17 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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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		60236662
1	L-UMW-1D	WT	G			1/16/17	1333		4	1		3							1	1	1	1	2		01
2	L-UMW-2D	WT	G			1/17/17	0751		4	1		3							1	1	1	1	1		02
3	L-UMW-3D	WT	G			1/17/17	1104		1	1		3													03
4	L-UMW-4D	WT	G			1/17/17	1210		1	1		3													04
5	L-UMW-5D	WT	G			1/17/17	1330		1	1		3													05
6	L-UMW-6D	WT	G			1/17/17	1529		1	1		1													06
7	~~L-UMW-7D~~ L-UMW-DUP-2	WT	G			1/17/17	—		1	1															07
8	~~L-UMW-8D~~ L-UMW-FB-1	WT	G			1/16/17	1320		1	1															08
9	~~L-UMW-9D~~ L-UMW-FB-2	WT	G			1/17/17	1157		1	1															09
10	L-BMW-1D	WT	G			1/16/17	1025		1	1															10
11	L-BMW-2D	WT	G			1/16/17	1415		1	1															11
12	L-UMW-DUP-1	WT	G			1/17/17	—		1	1		1													12

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)
	14.5	✗	Y	Y
	12.9	N		
	1-7	Y		

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# : 60236274

60236274

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 +0.9 T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 3.7/11.1 **Corr. Factor** CF +1.5 (CF +0.9) **Corrected** 2.2/12.6

Date and initials of person examining contents: PVI 1/19/17

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: _____

Jami Check 1/19/17

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.

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Page: 2 of 2

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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

Section C Invoice Information:

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

REGULATORY AGENCY

NPDES | X 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): Metals* N; Chloride/Fluoride/Sulfate N; TDS N; pH N; Radium 226 & 228 N

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60236774
1	~~L-UMW-DUP-2~~	WT	G		Th	~~[illegible]~~																		
2	~~L-UMW-FB-1~~	WT	G		Th	~~[illegible]~~	~~1330~~																	
3	~~L-UMW-FB-2~~	WT	G		Th	~~[illegible]~~	~~1157~~																	
4	L-UMW-7D					1/18/17	0925		12	3		9						3	3	3	3	6		3BP3U 3BP2U 6BP1N 001
5	L-UMW-8D					↓	1015		4	1		3						1	1	1	1	2		1BP3U 1BP2U 2BP1N 002
6	L-UMW-9D					↓	0910		4	1		3						1	1	1	1	2		↓ ↓ ↓ 003
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS

*EPA 200.7: Ba, Be, B, Ca, Co, Pb, Li, Mo + EPA 7470A Hg
EPA 200.8: Sb, As, Cd, Cr, Se, Tl

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)
John Suozzi / Golder	1/18/17	1500	[signature] / PACE	1/18/17	1500				
[signature] / PACE	1/18/17	1700	[signature] MASE	1/19/17	0455	2.2	Y	Y	Y
						12.6	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Suozzi

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 01/18/17

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

March 28, 2017

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

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.

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

Sincerely,

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

Enclosures

cc: Jeffrey Ingram, 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-BOTT
Pace Project No.: 60239002

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
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60239002001	**L-UMW-1D**	Water	03/02/17 11:04	03/04/17 03:10
60239002002	**L-UMW-2D**	Water	03/02/17 10:02	03/04/17 03:10
60239002003	**L-UMW-3D**	Water	03/02/17 12:02	03/04/17 03:10
60239002004	**L-UMW-4D**	Water	03/03/17 09:22	03/04/17 03:10
60239002005	**L-UMW-5D**	Water	03/02/17 14:46	03/04/17 03:10
60239002006	**L-UMW-6D**	Water	03/02/17 13:02	03/04/17 03:10
60239002007	**L-UMW-7D**	Water	03/02/17 10:45	03/04/17 03:10
60239002008	**L-UMW-8D**	Water	03/02/17 09:40	03/04/17 03:10
60239002009	**L-UMW-9D**	Water	03/02/17 09:05	03/04/17 03:10
60239002010	**L-BMW-1D**	Water	03/01/17 13:58	03/04/17 03:10
60239002011	**L-BMW-2D**	Water	03/01/17 16:09	03/04/17 03:10
60239002012	**L-UMW-DUP-1**	Water	03/02/17 08:00	03/04/17 03:10
60239002013	**L-UMW-DUP-2**	Water	03/02/17 08:00	03/04/17 03:10
60239002014	**L-UMW-FB-1**	Water	03/02/17 08:50	03/04/17 03:10
60239002015	**L-UMW-FB-2**	Water	03/02/17 10:50	03/04/17 03:10
60239002016	**L-UMW-7D MS**	Water	03/02/17 10:45	03/04/17 03:10
60239002017	**L-UMW-7D MSD**	Water	03/02/17 10:45	03/04/17 03:10

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60239002001	**L-UMW-1D**	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
60239002002	**L-UMW-2D**	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
60239002003	**L-UMW-3D**	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
60239002004	**L-UMW-4D**	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
60239002005	**L-UMW-5D**	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

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

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
60239002006	**L-UMW-6D**	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
60239002007	**L-UMW-7D**	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	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
60239002008	**L-UMW-8D**	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
60239002009	**L-UMW-9D**	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
60239002010	**L-BMW-1D**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60239002011	**L-BMW-2D**	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
60239002012	**L-UMW-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	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
60239002013	**L-UMW-DUP-2**	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
60239002014	**L-UMW-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	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

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	OL	3	PASI-K
60239002015	**L-UMW-FB-2**	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
60239002016	**L-UMW-7D MS**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60239002017	**L-UMW-7D MSD**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA

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

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-1D **Lab ID: 60239002001** Collected: 03/02/17 11:04 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	**398**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:43	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:43	7440-41-7	
Boron	**516**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:43	7440-42-8	
Calcium	**126000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:43	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:43	7440-48-4	
Lead	**3.0J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:43	7439-92-1	
Lithium	**23.3**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:43	7439-93-2	
Molybdenum	**1.5J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:43	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 09:35	03/09/17 10:51	7440-36-0	
Arsenic	**35.3**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 10:51	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 10:51	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 10:51	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 10:51	7782-49-2	
Thallium	**0.039J**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 10:51	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 12:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**517**	mg/L	5.0	5.0	1		03/06/17 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		03/08/17 13:43		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**11.4**	mg/L	1.0	0.50	1		03/07/17 18:06	16887-00-6	
Fluoride	**0.20J**	mg/L	0.20	0.10	1		03/07/17 18:06	16984-48-8	
Sulfate	**8.9**	mg/L	1.0	0.50	1		03/07/17 18:06	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-BOTT
Pace Project No.: 60239002

Sample: L-UMW-2D **Lab ID: 60239002002** Collected: 03/02/17 10:02 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	**99.0**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:46	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:46	7440-41-7	
Boron	**1410**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:46	7440-42-8	
Calcium	**85100**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:46	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:46	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:46	7439-92-1	
Lithium	**24.9**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:46	7439-93-2	
Molybdenum	**45.4**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:46	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	03/07/17 09:35	03/09/17 10:55	7440-36-0	
Arsenic	**2.8**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 10:55	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 10:55	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 10:55	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 10:55	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 10:55	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 12:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**540**	mg/L	5.0	5.0	1		03/06/17 13:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		03/08/17 13:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.7**	mg/L	2.0	1.0	2		03/08/17 15:55	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.10	1		03/07/17 19:13	16984-48-8	
Sulfate	**179**	mg/L	20.0	10.0	20		03/08/17 16:10	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-BOTT
Pace Project No.: 60239002

Sample: L-UMW-3D **Lab ID: 60239002003** Collected: 03/02/17 12:02 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	**163**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:52	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:52	7440-41-7	
Boron	**7870**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:52	7440-42-8	
Calcium	**221000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:52	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:52	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:52	7439-92-1	
Lithium	**27.4**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:52	7439-93-2	
Molybdenum	**116**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:52	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 09:35	03/09/17 10:59	7440-36-0	
Arsenic	**0.46J**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 10:59	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 10:59	7440-43-9	
Chromium	**0.88J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 10:59	7440-47-3	B
Selenium	**0.14J**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 10:59	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 10:59	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 12:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1150**	mg/L	5.0	5.0	1		03/06/17 13:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.10	1		03/08/17 12:13		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**11.8**	mg/L	1.0	0.50	1		03/07/17 19:27	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 19:27	16984-48-8	
Sulfate	**634**	mg/L	50.0	25.0	50		03/08/17 16:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-4D **Lab ID: 60239002004** Collected: 03/03/17 09:22 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	**50.6**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:55	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:55	7440-41-7	
Boron	**2560**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:55	7440-42-8	
Calcium	**36000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:55	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:55	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:55	7439-92-1	
Lithium	**29.3**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:55	7439-93-2	
Molybdenum	**116**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:55	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 09:35	03/09/17 11:04	7440-36-0	
Arsenic	**0.12J**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:04	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:04	7440-43-9	
Chromium	**1.8**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:04	7440-47-3	
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:04	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:04	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 12:09	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**418**	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	**7.4**	Std. Units	0.10	0.10	1		03/08/17 15:29		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.6**	mg/L	1.0	0.50	1		03/07/17 19:40	16887-00-6	
Fluoride	**0.40**	mg/L	0.20	0.10	1		03/07/17 19:40	16984-48-8	
Sulfate	**216**	mg/L	20.0	10.0	20		03/08/17 17:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-5D **Lab ID: 60239002005** Collected: 03/02/17 14:46 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	**61.4**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:57	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:57	7440-41-7	
Boron	**6150**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:57	7440-42-8	
Calcium	**68700**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:57	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:57	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:57	7439-92-1	
Lithium	**16.6**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:57	7439-93-2	
Molybdenum	**111**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:57	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.10J**	ug/L	1.0	0.026	1	03/07/17 09:35	03/09/17 11:08	7440-36-0	
Arsenic	**26.2**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:08	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:08	7440-43-9	
Chromium	**0.46J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:08	7440-47-3	B
Selenium	**0.15J**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:08	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:08	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 12:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**482**	mg/L	5.0	5.0	1		03/06/17 13:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.1**	Std. Units	0.10	0.10	1		03/08/17 15:19		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**18.4**	mg/L	1.0	0.50	1		03/07/17 19:54	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.10	1		03/07/17 19:54	16984-48-8	
Sulfate	**252**	mg/L	20.0	10.0	20		03/08/17 17:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-6D **Lab ID: 60239002006** Collected: 03/02/17 13:02 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	**150**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 11:59	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 11:59	7440-41-7	
Boron	**14200**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 11:59	7440-42-8	
Calcium	**106000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 11:59	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 11:59	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 11:59	7439-92-1	
Lithium	**7.4J**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 11:59	7439-93-2	
Molybdenum	**496**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 11:59	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 09:35	03/09/17 11:12	7440-36-0	
Arsenic	**14.0**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:12	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:12	7440-43-9	
Chromium	**0.72J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:12	7440-47-3	B
Selenium	**0.26J**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:12	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:12	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 12:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**749**	mg/L	5.0	5.0	1		03/06/17 13:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.10	1		03/08/17 12:21		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**20.5**	mg/L	2.0	1.0	2		03/08/17 17:36	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		03/07/17 20:07	16984-48-8	
Sulfate	**446**	mg/L	50.0	25.0	50		03/08/17 17:50	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-BOTT
Pace Project No.: 60239002

Sample: L-UMW-7D **Lab ID: 60239002007** Collected: 03/02/17 10:45 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	**123**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:02	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:02	7440-41-7	
Boron	**5840**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:02	7440-42-8	
Calcium	**172000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:02	7440-70-2	M1
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:02	7440-48-4	
Lead	**2.7J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:02	7439-92-1	
Lithium	**20.6**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:02	7439-93-2	
Molybdenum	**191**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:02	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 09:35	03/09/17 11:16	7440-36-0	
Arsenic	**20.7**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:16	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:16	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:16	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:16	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:16	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 12:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**801**	mg/L	5.0	5.0	1		03/06/17 13:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		03/08/17 13:38		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.8**	mg/L	1.0	0.50	1		03/07/17 20:21	16887-00-6	
Fluoride	**0.27**	mg/L	0.20	0.10	1		03/07/17 20:21	16984-48-8	
Sulfate	**295**	mg/L	20.0	10.0	20		03/08/17 18:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-8D **Lab ID: 60239002008** Collected: 03/02/17 09:40 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	**482**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:08	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:08	7440-41-7	
Boron	**353**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:08	7440-42-8	
Calcium	**137000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:08	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:08	7440-48-4	
Lead	**4.4J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:08	7439-92-1	
Lithium	**32.4**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:08	7439-93-2	
Molybdenum	**12.2J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:08	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 09:35	03/09/17 11:47	7440-36-0	
Arsenic	**35.4**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:47	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:47	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:47	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:47	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:47	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 12:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**536**	mg/L	5.0	5.0	1		03/06/17 13:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		03/08/17 13:27		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.2**	mg/L	1.0	0.50	1		03/07/17 20:48	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 20:48	16984-48-8	
Sulfate	**16.7**	mg/L	1.0	0.50	1		03/07/17 20:48	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-BOTT
Pace Project No.: 60239002

Sample: L-UMW-9D **Lab ID: 60239002009** Collected: 03/02/17 09:05 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	**505**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:10	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:10	7440-41-7	
Boron	**97.5J**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:10	7440-42-8	
Calcium	**116000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:10	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:10	7440-48-4	
Lead	**2.5J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:10	7439-92-1	
Lithium	**16.9**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:10	7439-93-2	
Molybdenum	**2.2J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:10	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 09:35	03/09/17 11:52	7440-36-0	
Arsenic	**33.2**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:52	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:52	7440-43-9	
Chromium	**0.38J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:52	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:52	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:52	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 12:34	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**458**	mg/L	5.0	5.0	1		03/06/17 16:43		
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 13:24		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.5**	mg/L	2.0	1.0	2		03/08/17 18:34	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 21:01	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		03/07/17 21:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-BMW-1D **Lab ID: 60239002010** Collected: 03/01/17 13:58 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	**1220**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:13	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:13	7440-41-7	
Boron	**79.4J**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:13	7440-42-8	
Calcium	**136000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:13	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:13	7440-48-4	
Lead	**2.9J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:13	7439-92-1	
Lithium	**30.9**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:13	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:13	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.036J**	ug/L	1.0	0.026	1	03/07/17 09:35	03/09/17 12:00	7440-36-0	
Arsenic	**0.99J**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 12:00	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 12:00	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 12:00	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 12:00	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 12:00	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 12:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**505**	mg/L	5.0	5.0	1		03/06/17 13:35		
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 17:31		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.6**	mg/L	1.0	0.50	1		03/07/17 21:41	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		03/07/17 21:41	16984-48-8	
Sulfate	**34.2**	mg/L	2.0	1.0	2		03/08/17 18:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-BMW-2D **Lab ID: 60239002011** Collected: 03/01/17 16:09 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	**306**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:19	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:19	7440-41-7	
Boron	**62.7J**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:19	7440-42-8	
Calcium	**129000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:19	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:19	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:19	7439-92-1	
Lithium	**41.5**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:19	7439-93-2	
Molybdenum	**4.8J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:19	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.031J**	ug/L	1.0	0.026	1	03/07/17 09:35	03/09/17 12:05	7440-36-0	
Arsenic	**39.1**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 12:05	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 12:05	7440-43-9	
Chromium	**0.42J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 12:05	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 12:05	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 12:05	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 12:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**493**	mg/L	5.0	5.0	1		03/06/17 13:35		
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 17:38		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.3**	mg/L	1.0	0.50	1		03/07/17 21:55	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.10	1		03/07/17 21:55	16984-48-8	
Sulfate	**35.5**	mg/L	2.0	1.0	2		03/08/17 19:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-DUP-1 **Lab ID: 60239002012** Collected: 03/02/17 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	**516**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:22	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:22	7440-41-7	
Boron	**89.9J**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:22	7440-42-8	
Calcium	**118000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:22	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:22	7440-48-4	
Lead	**3.2J**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:22	7439-92-1	
Lithium	**17.1**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:22	7439-93-2	
Molybdenum	**2.3J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:22	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 09:35	03/09/17 12:09	7440-36-0	
Arsenic	**33.3**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 12:09	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 12:09	7440-43-9	
Chromium	**0.38J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 12:09	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 12:09	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 12:09	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 12:45	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**467**	mg/L	5.0	5.0	1		03/06/17 16:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		03/07/17 17:45		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.6**	mg/L	2.0	1.0	2		03/08/17 19:17	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 22:08	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		03/07/17 22:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-DUP-2 **Lab ID: 60239002013** Collected: 03/02/17 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	**464**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:24	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:24	7440-41-7	
Boron	**332**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:24	7440-42-8	
Calcium	**135000**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:24	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:24	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:24	7439-92-1	
Lithium	**30.4**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:24	7439-93-2	
Molybdenum	**11.8J**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 12:24	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 09:35	03/09/17 12:14	7440-36-0	
Arsenic	**36.0**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 12:14	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 12:14	7440-43-9	
Chromium	**2.3**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 12:14	7440-47-3	
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 12:14	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 12:14	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 12:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**509**	mg/L	5.0	5.0	1		03/06/17 16:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		03/07/17 17:47		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.1**	mg/L	1.0	0.50	1		03/07/17 22:21	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.10	1		03/07/17 22:21	16984-48-8	
Sulfate	**16.1**	mg/L	1.0	0.50	1		03/07/17 22:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-FB-1 **Lab ID: 60239002014** Collected: 03/02/17 08:50 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	**1.6J**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 15:39	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 15:39	7440-41-7	
Boron	**<3.5**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 15:39	7440-42-8	
Calcium	**<36.0**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 15:39	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 15:39	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 15:39	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 15:39	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 15:39	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 09:35	03/09/17 11:34	7440-36-0	
Arsenic	**0.076J**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:34	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:34	7440-43-9	
Chromium	**0.17J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:34	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:34	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:34	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 12:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**5.5**	mg/L	5.0	5.0	1		03/06/17 16:46		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.10	1		03/08/17 13:20		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 22:35	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		03/07/17 22:35	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		03/07/17 22:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-FB-2 **Lab ID: 60239002015** Collected: 03/02/17 10:50 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	**1.4J**	ug/L	5.0	0.91	1	03/07/17 09:35	03/08/17 12:31	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	03/07/17 09:35	03/08/17 12:31	7440-41-7	
Boron	**<3.5**	ug/L	100	3.5	1	03/07/17 09:35	03/08/17 12:31	7440-42-8	
Calcium	**<36.0**	ug/L	100	36.0	1	03/07/17 09:35	03/08/17 12:31	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	03/07/17 09:35	03/08/17 12:31	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	03/07/17 09:35	03/08/17 12:31	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	03/07/17 09:35	03/08/17 12:31	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	03/07/17 09:35	03/08/17 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 09:35	03/09/17 11:38	7440-36-0	
Arsenic	**0.072J**	ug/L	1.0	0.052	1	03/07/17 09:35	03/09/17 11:38	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	03/07/17 09:35	03/09/17 11:38	7440-43-9	
Chromium	**0.45J**	ug/L	1.0	0.054	1	03/07/17 09:35	03/09/17 11:38	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	03/07/17 09:35	03/09/17 11:38	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	03/07/17 09:35	03/09/17 11:38	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 12:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**17.0**	mg/L	5.0	5.0	1		03/06/17 16:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		03/08/17 13:41		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 22:48	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		03/07/17 22:48	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		03/07/17 22:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467663 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007

METHOD BLANK: 1914206 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467664 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1914212 Matrix: Water
Associated Lab Samples: 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467648 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1914156 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	03/08/17 11:41	
Beryllium	ug/L	<0.16	1.0	0.16	03/08/17 11:41	
Boron	ug/L	<3.5	100	3.5	03/08/17 11:41	
Calcium	ug/L	<36.0	100	36.0	03/08/17 11:41	
Cobalt	ug/L	<0.73	5.0	0.73	03/08/17 11:41	
Lead	ug/L	<2.4	5.0	2.4	03/08/17 11:41	
Lithium	ug/L	<2.9	10.0	2.9	03/08/17 11:41	
Molybdenum	ug/L	<1.3	20.0	1.3	03/08/17 11:41	

LABORATORY CONTROL SAMPLE: 1914157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	962	96	85-115	
Beryllium	ug/L	1000	975	97	85-115	
Boron	ug/L	1000	949	95	85-115	
Calcium	ug/L	10000	9810	98	85-115	
Cobalt	ug/L	1000	999	100	85-115	
Lead	ug/L	1000	1000	100	85-115	
Lithium	ug/L	1000	973	97	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914158 1914159

Parameter	Units	60239002007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	123	1000	1000	1100	1060	98	94	70-130	4	20	
Beryllium	ug/L	<0.16	1000	1000	990	958	99	96	70-130	3	20	
Boron	ug/L	5840	1000	1000	6810	6640	96	79	70-130	3	20	
Calcium	ug/L	172000	10000	10000	183000	175000	107	32	70-130	4	20	M1
Cobalt	ug/L	<0.73	1000	1000	966	954	97	95	70-130	1	20	
Lead	ug/L	2.7J	1000	1000	952	945	95	94	70-130	1	20	
Lithium	ug/L	20.6	1000	1000	1020	978	100	96	70-130	4	20	
Molybdenum	ug/L	191	1000	1000	1210	1190	102	100	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

MATRIX SPIKE SAMPLE: 1914160

Parameter	Units	60239002013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	464	1000	1470	100	70-130	
Beryllium	ug/L	<0.16	1000	1020	102	70-130	
Boron	ug/L	332	1000	1310	98	70-130	
Calcium	ug/L	135000	10000	147000	124	70-130	
Cobalt	ug/L	<0.73	1000	966	97	70-130	
Lead	ug/L	<2.4	1000	956	95	70-130	
Lithium	ug/L	30.4	1000	1050	102	70-130	
Molybdenum	ug/L	11.8J	1000	1020	101	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467649 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1914161 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	03/09/17 10:42	
Arsenic	ug/L	<0.052	1.0	0.052	03/09/17 10:42	
Cadmium	ug/L	<0.018	0.50	0.018	03/09/17 10:42	
Chromium	ug/L	0.14J	1.0	0.054	03/09/17 10:42	
Selenium	ug/L	<0.086	1.0	0.086	03/09/17 10:42	
Thallium	ug/L	<0.036	1.0	0.036	03/09/17 10:42	

LABORATORY CONTROL SAMPLE: 1914162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.7	99	85-115	
Arsenic	ug/L	40	40.4	101	85-115	
Cadmium	ug/L	40	40.3	101	85-115	
Chromium	ug/L	40	41.2	103	85-115	
Selenium	ug/L	40	38.9	97	85-115	
Thallium	ug/L	40	37.6	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914163 1914164

Parameter	Units	60239002007 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	40.3	40.2	101	101	70-130	0	20	
Arsenic	ug/L	20.7	40	40	61.2	61.5	101	102	70-130	1	20	
Cadmium	ug/L	<0.018	40	40	39.4	39.3	98	98	70-130	0	20	
Chromium	ug/L	0.39J	40	40	43.1	42.8	107	106	70-130	1	20	
Selenium	ug/L	<0.086	40	40	37.4	37.1	93	93	70-130	1	20	
Thallium	ug/L	<0.036	40	40	38.2	38.4	96	96	70-130	0	20	

MATRIX SPIKE SAMPLE: 1914165

Parameter	Units	60239002009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.026	40	40.6	101	70-130	
Arsenic	ug/L	33.2	40	75.0	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

MATRIX SPIKE SAMPLE: 1914165

Parameter	Units	60239002009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	<0.018	40	40.2	100	70-130	
Chromium	ug/L	0.38J	40	42.0	104	70-130	
Selenium	ug/L	<0.086	40	37.8	95	70-130	
Thallium	ug/L	<0.036	40	38.8	97	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467655 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002005, 60239002006, 60239002007, 60239002008, 60239002010, 60239002011

METHOD BLANK: 1914179 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002005, 60239002006, 60239002007, 60239002008, 60239002010, 60239002011

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467708 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60239002004, 60239002009, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1914312 Matrix: Water
Associated Lab Samples: 60239002004, 60239002009, 60239002012, 60239002013, 60239002014, 60239002015

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-BOTT
Pace Project No.: 60239002

QC Batch: 467783 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239002010, 60239002011, 60239002012, 60239002013

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-BOTT
Pace Project No.: 60239002

QC Batch: 467881 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239002001, 60239002002, 60239002007, 60239002008, 60239002009, 60239002014, 60239002015

SAMPLE DUPLICATE: 1915005

Parameter	Units	60239002007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	1	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467953 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60239002003, 60239002006

SAMPLE DUPLICATE: 1915231

Parameter	Units	60239001001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.1	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 468014
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60239002004, 60239002005

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-BOTT
Pace Project No.: 60239002

QC Batch: 467751 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1914487 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/07/17 17:40	
Fluoride	mg/L	<0.10	0.20	0.10	03/07/17 17:40	
Sulfate	mg/L	<0.50	1.0	0.50	03/07/17 17:40	

LABORATORY CONTROL SAMPLE: 1914488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1914489 1914490

Parameter	Units	60239002001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	11.4	5	5	17.2	17.0	117	112	80-120	1	15	
Fluoride	mg/L	0.20J	2.5	2.5	2.9	2.9	108	108	80-120	0	15	
Sulfate	mg/L	8.9	5	5	14.8	14.6	119	114	80-120	2	15	

MATRIX SPIKE SAMPLE: 1914491

Parameter	Units	60239002007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.8	5	18.2	108	80-120	
Fluoride	mg/L	0.27	2.5	3.0	110	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 467870 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002009, 60239002010, 60239002011, 60239002012

METHOD BLANK: 1914965 Matrix: Water
Associated Lab Samples: 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002009, 60239002010, 60239002011, 60239002012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	03/08/17 09:09	
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
Chloride	mg/L	5	5.1	103	90-110	
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
Chloride	mg/L	4.8			31.7	31.9				1	15	
Sulfate	mg/L	57.6	25	25	84.6	84.9	108	109	80-120	0	15	

MATRIX SPIKE SAMPLE: 1914969

Parameter	Units	60239002007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.8		121			

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

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-1D **Lab ID: 60239002001** Collected: 03/02/17 11:04 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	**0.0538 ± 0.316 (0.646) C:NA T:92%**	pCi/L	03/23/17 22:56	13982-63-3	
Radium-228	EPA 904.0	**1.91 ± 0.645 (0.899) C:65% T:82%**	pCi/L	03/23/17 11:46	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-2D **Lab ID: 60239002002** Collected: 03/02/17 10:02 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	**0.226 ± 0.259 (0.153) C:NA T:92%**	pCi/L	03/23/17 22:56	13982-63-3	
Radium-228	EPA 904.0	**1.37 ± 0.560 (0.886) C:68% T:77%**	pCi/L	03/23/17 11:46	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-3D **Lab ID: 60239002003** Collected: 03/02/17 12:02 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	**0.701 ± 0.458 (0.469) C:NA T:84%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**2.02 ± 0.871 (1.50) C:62% T:76%**	pCi/L	03/23/17 16:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-4D **Lab ID: 60239002004** Collected: 03/03/17 09:22 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	**0.191 ± 0.483 (0.896) C:NA T:79%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**0.777 ± 0.538 (1.05) C:62% T:86%**	pCi/L	03/23/17 16:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-5D **Lab ID: 60239002005** Collected: 03/02/17 14:46 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 ± 0.358 (0.777) C:NA T:80%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**-0.298 ± 0.613 (1.46) C:59% T:76%**	pCi/L	03/23/17 16:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-6D **Lab ID: 60239002006** Collected: 03/02/17 13:02 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	**0.220 ± 0.265 (0.405) C:NA T:92%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**0.888 ± 0.707 (1.42) C:53% T:79%**	pCi/L	03/23/17 16:09	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-7D **Lab ID: 60239002007** Collected: 03/02/17 10:45 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	**0.0612 ± 0.317 (0.658) C:NA T:85%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**0.528 ± 0.851 (1.85) C:79% T:40%**	pCi/L	03/27/17 16:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-8D **Lab ID: 60239002008** Collected: 03/02/17 09:40 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	**0.233 ± 0.281 (0.429) C:NA T:87%**	pCi/L	03/23/17 23:22	13982-63-3	
Radium-228	EPA 904.0	**1.56 ± 0.586 (0.847) C:60% T:87%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-9D **Lab ID: 60239002009** Collected: 03/02/17 09:05 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	**0.211 ± 0.328 (0.567) C:NA T:94%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**1.08 ± 0.495 (0.803) C:63% T:83%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-BMW-1D **Lab ID: 60239002010** Collected: 03/01/17 13:58 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	**0.817 ± 0.521 (0.654) C:NA T:92%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**2.08 ± 0.682 (0.850) C:56% T:86%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-BMW-2D **Lab ID: 60239002011** Collected: 03/01/17 16:09 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	**0.227 ± 0.316 (0.528) C:NA T:89%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**0.595 ± 0.485 (0.962) C:59% T:83%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-DUP-1 **Lab ID: 60239002012** Collected: 03/02/17 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	**0.247 ± 0.343 (0.573) C:NA T:86%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**0.821 ± 0.425 (0.723) C:62% T:89%**	pCi/L	03/23/17 16:07	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-DUP-2 **Lab ID: 60239002013** Collected: 03/02/17 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	**0.582 ± 0.401 (0.428) C:NA T:88%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**1.56 ± 0.552 (0.733) C:63% T:85%**	pCi/L	03/23/17 16:07	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-FB-1 **Lab ID: 60239002014** Collected: 03/02/17 08:50 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	**0.248 ± 0.345 (0.576) C:NA T:83%**	pCi/L	03/23/17 23:46	13982-63-3	
Radium-228	EPA 904.0	**0.219 ± 0.451 (0.997) C:61% T:77%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-FB-2 **Lab ID: 60239002015** Collected: 03/02/17 10:50 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 ± 0.291 (0.469) C:NA T:92%**	pCi/L	03/24/17 00:13	13982-63-3	
Radium-228	EPA 904.0	**0.600 ± 0.505 (1.01) C:65% T:74%**	pCi/L	03/23/17 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-7D MS **Lab ID: 60239002016** Collected: 03/02/17 10:45 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	**99.1%REC ± NA (NA)**	pCi/L	03/24/17 00:13	13982-63-3	
Radium-228	EPA 904.0	**96.92 %REC ± NA (NA) C:NA T:NA**	pCi/L	03/27/17 16:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

Sample: L-UMW-7D MSD **Lab ID: 60239002017** Collected: 03/02/17 10:45 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	**96.2%REC 2.95RPD ± NA (NA)**	pCi/L	03/24/17 00:13	13982-63-3	
Radium-228	EPA 904.0	**107.86 %REC 10.68 RPD ± NA (NA) C:NA T:NA**	pCi/L	03/27/17 16:15	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 252120 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015, 60239002016, 60239002017

METHOD BLANK: 1240464 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002007, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015, 60239002016, 60239002017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.114 ± 0.275 (0.530) C:NA T:90%	pCi/L	03/23/17 22:56	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 252121 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

METHOD BLANK: 1240465 Matrix: Water
Associated Lab Samples: 60239002001, 60239002002, 60239002003, 60239002004, 60239002005, 60239002006, 60239002008, 60239002009, 60239002010, 60239002011, 60239002012, 60239002013, 60239002014, 60239002015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.688 ± 0.386 (0.680) C:64% T:87%	pCi/L	03/23/17 11:45	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

QC Batch: 253238 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60239002007, 60239002016, 60239002017

METHOD BLANK: 1246067 Matrix: Water
Associated Lab Samples: 60239002007, 60239002016, 60239002017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0844 ± 0.376 (0.857) C:78% T:73%	pCi/L	03/27/17 16:18	

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60239002

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

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-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239002001	L-UMW-1D	EPA 200.7	467648	EPA 200.7	467803
60239002002	L-UMW-2D	EPA 200.7	467648	EPA 200.7	467803
60239002003	L-UMW-3D	EPA 200.7	467648	EPA 200.7	467803
60239002004	L-UMW-4D	EPA 200.7	467648	EPA 200.7	467803
60239002005	L-UMW-5D	EPA 200.7	467648	EPA 200.7	467803
60239002006	L-UMW-6D	EPA 200.7	467648	EPA 200.7	467803
60239002007	L-UMW-7D	EPA 200.7	467648	EPA 200.7	467803
60239002008	L-UMW-8D	EPA 200.7	467648	EPA 200.7	467803
60239002009	L-UMW-9D	EPA 200.7	467648	EPA 200.7	467803
60239002010	L-BMW-1D	EPA 200.7	467648	EPA 200.7	467803
60239002011	L-BMW-2D	EPA 200.7	467648	EPA 200.7	467803
60239002012	L-UMW-DUP-1	EPA 200.7	467648	EPA 200.7	467803
60239002013	L-UMW-DUP-2	EPA 200.7	467648	EPA 200.7	467803
60239002014	L-UMW-FB-1	EPA 200.7	467648	EPA 200.7	467803
60239002015	L-UMW-FB-2	EPA 200.7	467648	EPA 200.7	467803
60239002001	L-UMW-1D	EPA 200.8	467649	EPA 200.8	467804
60239002002	L-UMW-2D	EPA 200.8	467649	EPA 200.8	467804
60239002003	L-UMW-3D	EPA 200.8	467649	EPA 200.8	467804
60239002004	L-UMW-4D	EPA 200.8	467649	EPA 200.8	467804
60239002005	L-UMW-5D	EPA 200.8	467649	EPA 200.8	467804
60239002006	L-UMW-6D	EPA 200.8	467649	EPA 200.8	467804
60239002007	L-UMW-7D	EPA 200.8	467649	EPA 200.8	467804
60239002008	L-UMW-8D	EPA 200.8	467649	EPA 200.8	467804
60239002009	L-UMW-9D	EPA 200.8	467649	EPA 200.8	467804
60239002010	L-BMW-1D	EPA 200.8	467649	EPA 200.8	467804
60239002011	L-BMW-2D	EPA 200.8	467649	EPA 200.8	467804
60239002012	L-UMW-DUP-1	EPA 200.8	467649	EPA 200.8	467804
60239002013	L-UMW-DUP-2	EPA 200.8	467649	EPA 200.8	467804
60239002014	L-UMW-FB-1	EPA 200.8	467649	EPA 200.8	467804
60239002015	L-UMW-FB-2	EPA 200.8	467649	EPA 200.8	467804
60239002001	L-UMW-1D	EPA 7470	467663	EPA 7470	467684
60239002002	L-UMW-2D	EPA 7470	467663	EPA 7470	467684
60239002003	L-UMW-3D	EPA 7470	467663	EPA 7470	467684
60239002004	L-UMW-4D	EPA 7470	467663	EPA 7470	467684
60239002005	L-UMW-5D	EPA 7470	467663	EPA 7470	467684
60239002006	L-UMW-6D	EPA 7470	467663	EPA 7470	467684
60239002007	L-UMW-7D	EPA 7470	467663	EPA 7470	467684
60239002008	L-UMW-8D	EPA 7470	467664	EPA 7470	467682
60239002009	L-UMW-9D	EPA 7470	467664	EPA 7470	467682
60239002010	L-BMW-1D	EPA 7470	467664	EPA 7470	467682
60239002011	L-BMW-2D	EPA 7470	467664	EPA 7470	467682
60239002012	L-UMW-DUP-1	EPA 7470	467664	EPA 7470	467682
60239002013	L-UMW-DUP-2	EPA 7470	467664	EPA 7470	467682
60239002014	L-UMW-FB-1	EPA 7470	467664	EPA 7470	467682
60239002015	L-UMW-FB-2	EPA 7470	467664	EPA 7470	467682
60239002001	L-UMW-1D	EPA 903.1	252120		
60239002002	L-UMW-2D	EPA 903.1	252120		

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-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239002003	L-UMW-3D	EPA 903.1	252120		
60239002004	L-UMW-4D	EPA 903.1	252120		
60239002005	L-UMW-5D	EPA 903.1	252120		
60239002006	L-UMW-6D	EPA 903.1	252120		
60239002007	L-UMW-7D	EPA 903.1	252120		
60239002008	L-UMW-8D	EPA 903.1	252120		
60239002009	L-UMW-9D	EPA 903.1	252120		
60239002010	L-BMW-1D	EPA 903.1	252120		
60239002011	L-BMW-2D	EPA 903.1	252120		
60239002012	L-UMW-DUP-1	EPA 903.1	252120		
60239002013	L-UMW-DUP-2	EPA 903.1	252120		
60239002014	L-UMW-FB-1	EPA 903.1	252120		
60239002015	L-UMW-FB-2	EPA 903.1	252120		
60239002016	L-UMW-7D MS	EPA 903.1	252120		
60239002017	L-UMW-7D MSD	EPA 903.1	252120		
60239002001	L-UMW-1D	EPA 904.0	252121		
60239002002	L-UMW-2D	EPA 904.0	252121		
60239002003	L-UMW-3D	EPA 904.0	252121		
60239002004	L-UMW-4D	EPA 904.0	252121		
60239002005	L-UMW-5D	EPA 904.0	252121		
60239002006	L-UMW-6D	EPA 904.0	252121		
60239002007	L-UMW-7D	EPA 904.0	253238		
60239002008	L-UMW-8D	EPA 904.0	252121		
60239002009	L-UMW-9D	EPA 904.0	252121		
60239002010	L-BMW-1D	EPA 904.0	252121		
60239002011	L-BMW-2D	EPA 904.0	252121		
60239002012	L-UMW-DUP-1	EPA 904.0	252121		
60239002013	L-UMW-DUP-2	EPA 904.0	252121		
60239002014	L-UMW-FB-1	EPA 904.0	252121		
60239002015	L-UMW-FB-2	EPA 904.0	252121		
60239002016	L-UMW-7D MS	EPA 904.0	253238		
60239002017	L-UMW-7D MSD	EPA 904.0	253238		
60239002001	L-UMW-1D	SM 2540C	467655		
60239002002	L-UMW-2D	SM 2540C	467655		
60239002003	L-UMW-3D	SM 2540C	467655		
60239002004	L-UMW-4D	SM 2540C	467708		
60239002005	L-UMW-5D	SM 2540C	467655		
60239002006	L-UMW-6D	SM 2540C	467655		
60239002007	L-UMW-7D	SM 2540C	467655		
60239002008	L-UMW-8D	SM 2540C	467655		
60239002009	L-UMW-9D	SM 2540C	467708		
60239002010	L-BMW-1D	SM 2540C	467655		
60239002011	L-BMW-2D	SM 2540C	467655		
60239002012	L-UMW-DUP-1	SM 2540C	467708		

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-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239002013	L-UMW-DUP-2	SM 2540C	467708		
60239002014	L-UMW-FB-1	SM 2540C	467708		
60239002015	L-UMW-FB-2	SM 2540C	467708		
60239002001	L-UMW-1D	SM 4500-H+B	467881		
60239002002	L-UMW-2D	SM 4500-H+B	467881		
60239002003	L-UMW-3D	SM 4500-H+B	467953		
60239002004	L-UMW-4D	SM 4500-H+B	468014		
60239002005	L-UMW-5D	SM 4500-H+B	468014		
60239002006	L-UMW-6D	SM 4500-H+B	467953		
60239002007	L-UMW-7D	SM 4500-H+B	467881		
60239002008	L-UMW-8D	SM 4500-H+B	467881		
60239002009	L-UMW-9D	SM 4500-H+B	467881		
60239002010	L-BMW-1D	SM 4500-H+B	467783		
60239002011	L-BMW-2D	SM 4500-H+B	467783		
60239002012	L-UMW-DUP-1	SM 4500-H+B	467783		
60239002013	L-UMW-DUP-2	SM 4500-H+B	467783		
60239002014	L-UMW-FB-1	SM 4500-H+B	467881		
60239002015	L-UMW-FB-2	SM 4500-H+B	467881		
60239002001	L-UMW-1D	EPA 300.0	467751		
60239002002	L-UMW-2D	EPA 300.0	467751		
60239002002	L-UMW-2D	EPA 300.0	467870		
60239002003	L-UMW-3D	EPA 300.0	467751		
60239002003	L-UMW-3D	EPA 300.0	467870		
60239002004	L-UMW-4D	EPA 300.0	467751		
60239002004	L-UMW-4D	EPA 300.0	467870		
60239002005	L-UMW-5D	EPA 300.0	467751		
60239002005	L-UMW-5D	EPA 300.0	467870		
60239002006	L-UMW-6D	EPA 300.0	467751		
60239002006	L-UMW-6D	EPA 300.0	467870		
60239002007	L-UMW-7D	EPA 300.0	467751		
60239002007	L-UMW-7D	EPA 300.0	467870		
60239002008	L-UMW-8D	EPA 300.0	467751		
60239002009	L-UMW-9D	EPA 300.0	467751		
60239002009	L-UMW-9D	EPA 300.0	467870		
60239002010	L-BMW-1D	EPA 300.0	467751		
60239002010	L-BMW-1D	EPA 300.0	467870		
60239002011	L-BMW-2D	EPA 300.0	467751		

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-BOTT
Pace Project No.: 60239002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60239002011	**L-BMW-2D**	EPA 300.0	467870		
60239002012	**L-UMW-DUP-1**	EPA 300.0	467751		
60239002012	**L-UMW-DUP-1**	EPA 300.0	467870		
60239002013	**L-UMW-DUP-2**	EPA 300.0	467751		
60239002014	**L-UMW-FB-1**	EPA 300.0	467751		
60239002015	**L-UMW-FB-2**	EPA 300.0	467751		

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Sample Condition Upon Receipt

WO# : 60239002

60239002

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 +0.9 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 0.4/14.6 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 2.4/16.1/15.3 13.8

Temperature should be above freezing to 6°C

Date and initials of person examining contents: PM 3/4/17

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: _____

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
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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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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		60239002
1	L-UMW-1D	WT	G			3/2/17	1104		4	1		3							1	1	1	1	2		1BP3N2-0, 1BP2N 2BP1N 01
2	L-UMW-2D	WT	G			1	1002		1	1		1							1	1	1	1	1		02
3	L-UMW-3D	WT	G			1	1202		1	1		1							1	1	1	1	1		03
4	L-UMW-4D	WT	G			3/3/17	0922		1	1		1							1	1	1	1	1		04
5	L-UMW-5D	WT	G			3/2/17	1446		1	1		1							1	1	1	1	1		05
6	L-UMW-6D	WT	G			1	1302		1	1		1							1	1	1	1	1		06
7	L-UMW-7D	WT	G			1	1045		12	3		9							3	3	3	3	6		3BP3N/ 3BP2N 6BP1N 07
8	L-UMW-8D	WT	G			1	0940		4	1		1							1	1	1	1	2		08
9	L-UMW-9D	WT	G			1	0905		1	1		1							1	1	1	1	1		09
10	L-BMW-1D	WT	G			3/1/17	1358		1	1		1							1	1	1	1	1		10
11	L-BMW-2D	WT	G			1	1609		1	1		1							1	1	1	1	1		11
12	L-UMW-DUP-1	WT	G			3/2/17	—		1	1		1							1	1	1	1	1		12

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	Golder	3/3/17	1430		3/3/17	1430
		3/3/17	1700		3/4/17	0910

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2-4	X	X	X
16.1	N		
15-3	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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A Required Client Information:		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 Ctr - Bottom Ash Po	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001A	Pace Profile #:	9285

REGULATORY AGENCY		
NPDES	X 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.: 60239002

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	Metals*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-UMW-DUP-2	WT	G			3/2/17	—		4	1		3							1	1	1	1	2		13B3N2-18B2N 28B/N 093
2	L-UMW-FB-1	WT	G			↓	0850		↓	↓		↓							↓	↓	↓	↓	↓		94
3	L-UMW-FB-2	WT	G			↓	1050		↓	↓		↓							↓	↓	↓	↓	↓		95
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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	3/3/17	1430	[signature]	3/3/17	1430				
	[signature]	3/3/17	1700	[signature]	3/4/17	0310	2.4	Y	Y	Y
							16.1	N	↓	↓
							15.3	N	↓	↓

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Ingram

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 3/3/17

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

June 23, 2017

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

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.

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

Sincerely,

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

Enclosures

cc: Jeffrey Ingram, 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-BOTT
Pace Project No.: 60245563

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
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60245563001	**L-UMW-1D**	Water	05/31/17 16:00	06/02/17 04:05
60245563002	**L-UMW-3D**	Water	06/01/17 14:25	06/02/17 04:05
60245563003	**L-UMW-4D**	Water	06/01/17 13:29	06/02/17 04:05
60245563004	**L-UMW-5D**	Water	06/01/17 11:59	06/02/17 04:05
60245563005	**L-UMW-6D**	Water	06/01/17 09:56	06/02/17 04:05
60245563006	**L-UMW-7D**	Water	06/01/17 09:14	06/02/17 04:05
60245563007	**L-UMW-8D**	Water	05/31/17 16:44	06/02/17 04:05
60245563008	**L-UMW-9D**	Water	05/31/17 14:51	06/02/17 04:05
60245563009	**L-BMW-1D**	Water	05/31/17 09:48	06/02/17 04:05
60245563010	**L-BMW-2D**	Water	05/31/17 13:17	06/02/17 04:05
60245563011	**L-UMW-DUP-1**	Water	06/01/17 08:00	06/02/17 04:05
60245563012	**L-UMW-FB-1**	Water	05/31/17 15:33	06/02/17 04:05
60245563013	**L-UMW-FB-2**	Water	06/01/17 09:19	06/02/17 04:05
60245679001	**L-UMW-2D**	Water	06/02/17 09:16	06/03/17 08:00
60245679002	**L-UMW-DUP-2**	Water	06/02/17 08:00	06/03/17 08:00
60245563016	**L-UMW-5D MS**	Water	06/01/17 11:59	06/02/17 04:05
60245563017	**L-UMW-5D MSD**	Water	06/01/17 11:59	06/02/17 04:05

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60245563001	**L-UMW-1D**	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
60245563002	**L-UMW-3D**	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
60245563003	**L-UMW-4D**	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
60245563004	**L-UMW-5D**	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
60245563005	**L-UMW-6D**	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

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

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
60245563006	**L-UMW-7D**	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
60245563007	**L-UMW-8D**	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
60245563008	**L-UMW-9D**	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
60245563009	**L-BMW-1D**	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
60245563010	**L-BMW-2D**	EPA 200.7	TDS	8	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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
60245563011	**L-UMW-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
		SM 2540C	LDF	1	PASI-K
		SM 4500-H+B	JSS	1	PASI-K
		EPA 300.0	RAD	3	PASI-K
60245563012	**L-UMW-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
60245563013	**L-UMW-FB-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
60245679001	**L-UMW-2D**	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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	RAD	3	PASI-K
60245679002	**L-UMW-DUP-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
60245563016	**L-UMW-5D MS**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
60245563017	**L-UMW-5D 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 CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-1D **Lab ID: 60245563001** Collected: 05/31/17 16:00 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	**437**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 17:41	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 17:41	7440-41-7	
Boron	**624**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 17:41	7440-42-8	
Calcium	**131000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 17:41	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 17:41	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 17:41	7439-92-1	
Lithium	**23.8**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 17:41	7439-93-2	
Molybdenum	**2.0J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 17:41	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	06/07/17 15:52	06/08/17 15:41	7440-36-0	
Arsenic	**30.9**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 15:41	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 15:41	7440-43-9	
Chromium	**0.31J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 15:41	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 15:41	7782-49-2	
Thallium	**0.075J**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 15:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.049J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:31	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**568**	mg/L	5.0	5.0	1		06/05/17 08:40		
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 13:24		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.5**	mg/L	1.0	0.50	1		06/05/17 16:13	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		06/05/17 16:13	16984-48-8	
Sulfate	**39.4**	mg/L	5.0	2.5	5		06/06/17 15:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-3D **Lab ID: 60245563002** Collected: 06/01/17 14:25 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	**139**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 17:43	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 17:43	7440-41-7	
Boron	**12400**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 17:43	7440-42-8	
Calcium	**160000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 17:43	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 17:43	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 17:43	7439-92-1	
Lithium	**20.4**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 17:43	7439-93-2	
Molybdenum	**171**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 17:43	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 15:44	7440-36-0	
Arsenic	**4.0**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 15:44	7440-38-2	M1
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 15:44	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 15:44	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 15:44	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 15:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.048J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:33	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**777**	mg/L	5.0	5.0	1		06/05/17 08:43		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.1**	Std. Units	0.10	0.10	1		06/07/17 13:31		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.1**	mg/L	1.0	0.50	1		06/05/17 16:29	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		06/05/17 16:29	16984-48-8	
Sulfate	**386**	mg/L	50.0	25.0	50		06/05/17 16:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-4D **Lab ID: 60245563003** Collected: 06/01/17 13:29 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	**78.6**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 17:46	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 17:46	7440-41-7	
Boron	**5240**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 17:46	7440-42-8	
Calcium	**55700**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 17:46	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 17:46	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 17:46	7439-92-1	
Lithium	**33.2**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 17:46	7439-93-2	
Molybdenum	**192**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 17:46	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 15:47	7440-36-0	
Arsenic	**0.10J**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 15:47	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 15:47	7440-43-9	
Chromium	**0.17J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 15:47	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 15:47	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 15:47	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.048J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:36	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**610**	mg/L	5.0	5.0	1		06/05/17 08:43		
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 12:00		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.9**	mg/L	2.0	1.0	2		06/05/17 17:15	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	0.10	1		06/05/17 17:00	16984-48-8	
Sulfate	**342**	mg/L	20.0	10.0	20		06/05/17 17:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-5D **Lab ID: 60245563004** Collected: 06/01/17 11:59 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	**69.2**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 17:48	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 17:48	7440-41-7	
Boron	**5690**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 17:48	7440-42-8	
Calcium	**74800**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 17:48	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 17:48	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 17:48	7439-92-1	
Lithium	**13.5**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 17:48	7439-93-2	
Molybdenum	**136**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 17:48	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Antimony	**0.10J**	ug/L	1.0	0.026	1	06/07/17 15:52	06/08/17 15:51	7440-36-0	
Arsenic	**21.0**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 15:51	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 15:51	7440-43-9	
Chromium	**0.18J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 15:51	7440-47-3	B
Selenium	**0.12J**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 15:51	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 15:51	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.048J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:38	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**493**	mg/L	5.0	5.0	1		06/05/17 08:43		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.3**	Std. Units	0.10	0.10	1		06/07/17 11:53		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.0**	mg/L	2.0	1.0	2		06/05/17 18:17	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		06/05/17 17:46	16984-48-8	
Sulfate	**246**	mg/L	20.0	10.0	20		06/05/17 19:18	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-BOTT
Pace Project No.: 60245563

Sample: L-UMW-6D **Lab ID: 60245563005** Collected: 06/01/17 09:56 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	**145**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 17:59	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 17:59	7440-41-7	
Boron	**17400**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 17:59	7440-42-8	
Calcium	**97100**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 17:59	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 17:59	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 17:59	7439-92-1	
Lithium	**5.8J**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 17:59	7439-93-2	
Molybdenum	**548**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 17:59	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 16:00	7440-36-0	
Arsenic	**12.8**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:00	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:00	7440-43-9	
Chromium	**0.18J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:00	7440-47-3	B
Selenium	**0.21J**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:00	7782-49-2	
Thallium	**0.092J**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.047J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:49	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**672**	mg/L	5.0	5.0	1		06/05/17 08:44		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	0.10	0.10	1		06/07/17 11:41		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**22.5**	mg/L	2.0	1.0	2		06/05/17 20:05	16887-00-6	
Fluoride	**0.11J**	mg/L	0.20	0.10	1		06/05/17 19:49	16984-48-8	
Sulfate	**366**	mg/L	50.0	25.0	50		06/05/17 20:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-7D **Lab ID: 60245563006** Collected: 06/01/17 09:14 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	**164**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:01	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:01	7440-41-7	
Boron	**5980**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:01	7440-42-8	
Calcium	**178000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:01	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:01	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:01	7439-92-1	
Lithium	**14.6**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:01	7439-93-2	
Molybdenum	**188**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:01	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 16:03	7440-36-0	
Arsenic	**16.5**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:03	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:03	7440-43-9	
Chromium	**0.22J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:03	7440-47-3	B
Selenium	**0.091J**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:03	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.047J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:51	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**809**	mg/L	5.0	5.0	1		06/06/17 09:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/07/17 11:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.7**	mg/L	1.0	0.50	1		06/05/17 20:35	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.10	1		06/05/17 20:35	16984-48-8	
Sulfate	**305**	mg/L	20.0	10.0	20		06/05/17 20:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-8D **Lab ID: 60245563007** Collected: 05/31/17 16:44 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	**465**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:04	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:04	7440-41-7	
Boron	**385**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:04	7440-42-8	
Calcium	**132000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:04	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:04	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:04	7439-92-1	
Lithium	**26.4**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:04	7439-93-2	
Molybdenum	**11.5J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:04	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 16:19	7440-36-0	
Arsenic	**27.6**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:19	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:19	7440-43-9	
Chromium	**0.15J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:19	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:19	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:53	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**496**	mg/L	5.0	5.0	1		06/05/17 08:41		
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 10:11		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.7**	mg/L	1.0	0.50	1		06/05/17 21:06	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		06/05/17 21:06	16984-48-8	
Sulfate	**1.2**	mg/L	1.0	0.50	1		06/05/17 21:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-9D **Lab ID: 60245563008** Collected: 05/31/17 14:51 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	**538**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:06	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:06	7440-41-7	
Boron	**95.1J**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:06	7440-42-8	
Calcium	**122000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:06	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:06	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:06	7439-92-1	
Lithium	**14.0**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:06	7439-93-2	
Molybdenum	**2.6J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:06	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 16:22	7440-36-0	
Arsenic	**34.2**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:22	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:22	7440-43-9	
Chromium	**0.18J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:22	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:22	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:22	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:55	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**468**	mg/L	5.0	5.0	1		06/05/17 08:41		
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 10:05		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**20.7**	mg/L	2.0	1.0	2		06/05/17 22:08	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.10	1		06/05/17 21:22	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		06/05/17 21:22	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-BOTT
Pace Project No.: 60245563

Sample: L-BMW-1D **Lab ID: 60245563009** Collected: 05/31/17 09:48 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	**1200**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:08	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:08	7440-41-7	
Boron	**70.4J**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:08	7440-42-8	
Calcium	**139000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:08	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:08	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:08	7439-92-1	
Lithium	**27.5**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:08	7439-93-2	
Molybdenum	**1.6J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:08	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 16:25	7440-36-0	
Arsenic	**0.85J**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:25	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:25	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:25	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:25	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.046**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 10:57	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**518**	mg/L	5.0	5.0	1		06/05/17 08:41		
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 09:57		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**10.2**	mg/L	1.0	0.50	1		06/05/17 22:23	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.10	1		06/05/17 22:23	16984-48-8	
Sulfate	**35.2**	mg/L	2.0	1.0	2		06/05/17 22:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-BMW-2D **Lab ID: 60245563010** Collected: 05/31/17 13:17 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	**354**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:13	7440-39-3	
Beryllium	**0.17J**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:13	7440-41-7	
Boron	**61.8J**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:13	7440-42-8	
Calcium	**136000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:13	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:13	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:13	7439-92-1	
Lithium	**39.2**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:13	7439-93-2	
Molybdenum	**3.5J**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:13	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 16:28	7440-36-0	
Arsenic	**34.7**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:28	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:28	7440-43-9	
Chromium	**0.40J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:28	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:28	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:28	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.048J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 11:00	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**482**	mg/L	5.0	5.0	1		06/05/17 08:41		
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 13:22		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**17.0**	mg/L	1.0	0.50	1		06/05/17 22:54	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		06/05/17 22:54	16984-48-8	
Sulfate	**43.0**	mg/L	5.0	2.5	5		06/06/17 16:16	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-BOTT
Pace Project No.: 60245563

Sample: L-UMW-DUP-1 **Lab ID: 60245563011** Collected: 06/01/17 08:00 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	**164**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:15	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:15	7440-41-7	
Boron	**6100**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:15	7440-42-8	
Calcium	**181000**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:15	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:15	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:15	7439-92-1	
Lithium	**15.9**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:15	7439-93-2	
Molybdenum	**192**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:15	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 16:34	7440-36-0	
Arsenic	**17.6**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:34	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:34	7440-43-9	
Chromium	**0.19J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:34	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:34	7782-49-2	
Thallium	**0.055J**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:34	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.049J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 11:02	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**835**	mg/L	5.0	5.0	1		06/06/17 09:39		
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 13:26		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.8**	mg/L	1.0	0.50	1		06/05/17 23:25	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.10	1		06/05/17 23:25	16984-48-8	
Sulfate	**317**	mg/L	20.0	10.0	20		06/05/17 23:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-FB-1 **Lab ID: 60245563012** Collected: 05/31/17 15:33 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	**<0.91**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:17	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:17	7440-41-7	
Boron	**<3.5**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:17	7440-42-8	
Calcium	**<36.0**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:17	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:17	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:17	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:17	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:17	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 16:13	7440-36-0	
Arsenic	**<0.052**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:13	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:13	7440-43-9	
Chromium	**0.14J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:13	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:13	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.047J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 11:04	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**6.5**	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	**7.1**	Std. Units	0.10	0.10	1		06/07/17 10:09		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		06/06/17 00:11	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		06/06/17 00:11	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		06/06/17 00:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-FB-2 **Lab ID: 60245563013** Collected: 06/01/17 09:19 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	**<0.91**	ug/L	5.0	0.91	1	06/07/17 15:52	06/09/17 18:19	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/07/17 15:52	06/09/17 18:19	7440-41-7	
Boron	**<3.5**	ug/L	100	3.5	1	06/07/17 15:52	06/09/17 18:19	7440-42-8	
Calcium	**<36.0**	ug/L	100	36.0	1	06/07/17 15:52	06/09/17 18:19	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/07/17 15:52	06/09/17 18:19	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/07/17 15:52	06/09/17 18:19	7439-92-1	
Lithium	**<2.9**	ug/L	10.0	2.9	1	06/07/17 15:52	06/09/17 18:19	7439-93-2	
Molybdenum	**<1.3**	ug/L	20.0	1.3	1	06/07/17 15:52	06/09/17 18:19	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 16:16	7440-36-0	
Arsenic	**<0.052**	ug/L	1.0	0.052	1	06/07/17 15:52	06/08/17 16:16	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/07/17 15:52	06/08/17 16:16	7440-43-9	
Chromium	**0.17J**	ug/L	1.0	0.054	1	06/07/17 15:52	06/08/17 16:16	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/07/17 15:52	06/08/17 16:16	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	06/07/17 15:52	06/08/17 16:16	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.047J**	ug/L	0.20	0.046	1	06/06/17 15:37	06/07/17 11:06	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		06/06/17 09:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.9**	Std. Units	0.10	0.10	1		06/07/17 11:39		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.53J**	mg/L	1.0	0.50	1		06/06/17 00:27	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		06/06/17 00:27	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		06/06/17 00:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-2D **Lab ID: 60245679001** Collected: 06/02/17 09:16 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	**107**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:19	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:19	7440-41-7	
Boron	**1180**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:19	7440-42-8	
Calcium	**96000**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:19	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:19	7440-48-4	
Lead	**<2.4**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:19	7439-92-1	
Lithium	**25.4**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:19	7439-93-2	
Molybdenum	**40.6**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:19	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 21:07	7440-36-0	
Arsenic	**1.7**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:07	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:07	7440-43-9	
Chromium	**0.25J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:07	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:07	7782-49-2	
Thallium	**0.12J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:07	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 12:35	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**543**	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	**7.6**	Std. Units	0.10	0.10	1		06/07/17 13:41		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.8**	mg/L	2.0	1.0	2		06/06/17 01:44	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.10	1		06/06/17 01:28	16984-48-8	
Sulfate	**138**	mg/L	20.0	10.0	20		06/06/17 01:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-DUP-2 **Lab ID: 60245679002** 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	**107**	ug/L	5.0	0.91	1	06/09/17 16:50	06/12/17 16:21	7440-39-3	
Beryllium	**<0.16**	ug/L	1.0	0.16	1	06/09/17 16:50	06/12/17 16:21	7440-41-7	
Boron	**1190**	ug/L	100	3.5	1	06/09/17 16:50	06/12/17 16:21	7440-42-8	
Calcium	**96200**	ug/L	100	36.0	1	06/09/17 16:50	06/12/17 16:21	7440-70-2	
Cobalt	**<0.73**	ug/L	5.0	0.73	1	06/09/17 16:50	06/12/17 16:21	7440-48-4	
Lead	**2.8J**	ug/L	5.0	2.4	1	06/09/17 16:50	06/12/17 16:21	7439-92-1	
Lithium	**24.7**	ug/L	10.0	2.9	1	06/09/17 16:50	06/12/17 16:21	7439-93-2	
Molybdenum	**40.2**	ug/L	20.0	1.3	1	06/09/17 16:50	06/12/17 16:21	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 21:14	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.052	1	06/09/17 16:50	06/16/17 21:14	7440-38-2	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	06/09/17 16:50	06/16/17 21:14	7440-43-9	
Chromium	**0.30J**	ug/L	1.0	0.054	1	06/09/17 16:50	06/16/17 21:14	7440-47-3	B
Selenium	**<0.086**	ug/L	1.0	0.086	1	06/09/17 16:50	06/16/17 21:14	7782-49-2	
Thallium	**0.11J**	ug/L	1.0	0.036	1	06/09/17 16:50	06/16/17 21:14	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 12:37	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**541**	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	**7.6**	Std. Units	0.10	0.10	1		06/07/17 13:35		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.6**	mg/L	2.0	1.0	2		06/06/17 02:30	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.10	1		06/06/17 02:14	16984-48-8	
Sulfate	**140**	mg/L	20.0	10.0	20		06/06/17 02:45	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-BOTT
Pace Project No.: 60245563

QC Batch: 479875 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

METHOD BLANK: 1965408 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.047J	0.20	0.046	06/07/17 10:22	

LABORATORY CONTROL SAMPLE: 1965409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1965410 1965411

Parameter	Units	60245563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.048J	5	5	4.6	4.9	91	96	75-125	5	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 480125 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60245679001, 60245679002

METHOD BLANK: 1966554 Matrix: Water
Associated Lab Samples: 60245679001, 60245679002

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	

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-BOTT
Pace Project No.: 60245563

QC Batch: 480088 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

METHOD BLANK: 1966351 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.91	5.0	0.91	06/09/17 17:39	
Beryllium	ug/L	<0.16	1.0	0.16	06/09/17 17:39	
Boron	ug/L	<3.5	100	3.5	06/09/17 17:39	
Calcium	ug/L	<36.0	100	36.0	06/09/17 17:39	
Cobalt	ug/L	<0.73	5.0	0.73	06/09/17 17:39	
Lead	ug/L	<2.4	5.0	2.4	06/09/17 17:39	
Lithium	ug/L	<2.9	10.0	2.9	06/09/17 17:39	
Molybdenum	ug/L	<1.3	20.0	1.3	06/09/17 17:39	

LABORATORY CONTROL SAMPLE: 1966352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10600	106	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966353 1966354

Parameter	Units	60245563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	69.2	1000	1000	1090	1110	102	104	70-130	2	20	
Beryllium	ug/L	<0.16	1000	1000	1040	1050	104	105	70-130	1	20	
Boron	ug/L	5690	1000	1000	6600	6720	90	103	70-130	2	20	
Calcium	ug/L	74800	10000	10000	83500	84400	86	96	70-130	1	20	
Cobalt	ug/L	<0.73	1000	1000	1040	1050	104	105	70-130	1	20	
Lead	ug/L	<2.4	1000	1000	997	1020	100	102	70-130	2	20	
Lithium	ug/L	13.5	1000	1000	1060	1080	105	106	70-130	2	20	
Molybdenum	ug/L	136	1000	1000	1200	1220	106	108	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

MATRIX SPIKE SAMPLE: 1966355

Parameter	Units	60245563009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1200	1000	2220	102	70-130	
Beryllium	ug/L	<0.16	1000	1050	105	70-130	
Boron	ug/L	70.4J	1000	1140	107	70-130	
Calcium	ug/L	139000	10000	148000	96	70-130	
Cobalt	ug/L	<0.73	1000	1030	103	70-130	
Lead	ug/L	<2.4	1000	1010	101	70-130	
Lithium	ug/L	27.5	1000	1090	106	70-130	
Molybdenum	ug/L	1.6J	1000	1070	107	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 480475 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60245679001, 60245679002

METHOD BLANK: 1968200 Matrix: Water
Associated Lab Samples: 60245679001, 60245679002

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 480091 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

METHOD BLANK: 1966364 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	06/08/17 15:35	
Arsenic	ug/L	<0.052	1.0	0.052	06/08/17 15:35	
Cadmium	ug/L	<0.018	0.50	0.018	06/08/17 15:35	
Chromium	ug/L	0.17J	1.0	0.054	06/08/17 15:35	
Selenium	ug/L	<0.086	1.0	0.086	06/08/17 15:35	
Thallium	ug/L	<0.036	1.0	0.036	06/08/17 15:35	

LABORATORY CONTROL SAMPLE: 1966365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.0	97	85-115	
Arsenic	ug/L	40	39.3	98	85-115	
Cadmium	ug/L	40	38.5	96	85-115	
Chromium	ug/L	40	40.0	100	85-115	
Selenium	ug/L	40	38.6	96	85-115	
Thallium	ug/L	40	37.3	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1966366 1966367

Parameter	Units	60245563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.10J	40	40	39.5	39.8	99	99	70-130	1	20	
Arsenic	ug/L	21.0	40	40	59.5	60.3	96	98	70-130	1	20	
Cadmium	ug/L	<0.018	40	40	37.8	38.4	95	96	70-130	2	20	
Chromium	ug/L	0.18J	40	40	39.9	40.2	99	100	70-130	1	20	
Selenium	ug/L	0.12J	40	40	29.5	30.7	73	77	70-130	4	20	
Thallium	ug/L	<0.036	40	40	38.9	38.9	97	97	70-130	0	20	

MATRIX SPIKE SAMPLE: 1966368

Parameter	Units	60245563002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.026	40	39.1	98	70-130	
Arsenic	ug/L	4.0	40	73.8	174	70-130	M1
Cadmium	ug/L	<0.018	40	37.8	95	70-130	
Chromium	ug/L	0.13J	40	40.3	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

MATRIX SPIKE SAMPLE: 1966368

Parameter	Units	60245563002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	ug/L	<0.086	40	36.8	92	70-130	
Thallium	ug/L	<0.036	40	39.6	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 480476 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60245679001, 60245679002

METHOD BLANK: 1968211 Matrix: Water
Associated Lab Samples: 60245679001, 60245679002

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 479556 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563007, 60245563008, 60245563009, 60245563010, 60245563012

METHOD BLANK: 1964508 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563007, 60245563008, 60245563009, 60245563010, 60245563012

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 479750 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60245563006, 60245563011, 60245563013

METHOD BLANK: 1964958 Matrix: Water
Associated Lab Samples: 60245563006, 60245563011, 60245563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/06/17 09:34	

LABORATORY CONTROL SAMPLE: 1964959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	964	96	80-120	

SAMPLE DUPLICATE: 1964960

Parameter	Units	60245696001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	645	635	2	10	

SAMPLE DUPLICATE: 1964961

Parameter	Units	60245569001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	685	707	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 479930 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60245679001, 60245679002

METHOD BLANK: 1965744 Matrix: Water
Associated Lab Samples: 60245679001, 60245679002

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-BOTT
Pace Project No.: 60245563

QC Batch: 480008 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60245563007, 60245563008, 60245563009, 60245563012

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-BOTT
Pace Project No.: 60245563

QC Batch: 480042 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60245563003, 60245563004, 60245563005, 60245563006, 60245563013

SAMPLE DUPLICATE: 1966011

Parameter	Units	60245569001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.1	1	5	H6

SAMPLE DUPLICATE: 1966012

Parameter	Units	60245563004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.3	9.2	0	5	H6

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 480061 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 60245563001, 60245563002, 60245563010, 60245563011, 60245679001, 60245679002

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-BOTT
Pace Project No.: 60245563

QC Batch: 479652 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245679001, 60245679002

METHOD BLANK: 1964700 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245679001, 60245679002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.50	1.0	0.50	06/05/17 08:44	
Fluoride	mg/L	<0.10	0.20	0.10	06/05/17 08:44	
Sulfate	mg/L	<0.50	1.0	0.50	06/05/17 08:44	

LABORATORY CONTROL SAMPLE: 1964701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1964702 1964703

Parameter	Units	60245660006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1980	1000	1000	3130	3110	115	114	80-120	0	15	
Fluoride	mg/L	ND	500	500	517	516	103	103	80-120	0	15	
Sulfate	mg/L	ND	1000	1000	949	951	95	95	80-120	0	15	

MATRIX SPIKE SAMPLE: 1964833

Parameter	Units	60245563004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	19.0	10	30.1	111	80-120	
Fluoride	mg/L	<0.10	2.5	2.6	102	80-120	
Sulfate	mg/L	246	100	343	96	80-120	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 479826 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60245563001, 60245563010

METHOD BLANK: 1965201 Matrix: Water
Associated Lab Samples: 60245563001, 60245563010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.50	1.0	0.50	06/06/17 09:04	

LABORATORY CONTROL SAMPLE: 1965202

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	101	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
Sulfate	mg/L	297	125	125	430	428	107	105	80-120	1	15	

MATRIX SPIKE SAMPLE: 1965205

Parameter	Units	60245569001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	154	100	258	104	80-120	

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-1D **Lab ID: 60245563001** Collected: 05/31/17 16:00 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	**0.423 ± 0.396 (0.562) C:NA T:95%**	pCi/L	06/15/17 23:06	13982-63-3	
Radium-228	EPA 904.0	**1.44 ± 0.522 (0.781) C:74% T:87%**	pCi/L	06/20/17 16:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-3D **Lab ID: 60245563002** Collected: 06/01/17 14:25 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	**0.632 ± 0.502 (0.653) C:NA T:84%**	pCi/L	06/15/17 23:06	13982-63-3	
Radium-228	EPA 904.0	**1.14 ± 0.469 (0.750) C:76% T:82%**	pCi/L	06/20/17 16:00	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-4D **Lab ID: 60245563003** Collected: 06/01/17 13:29 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	**0.754 ± 0.500 (0.583) C:NA T:86%**	pCi/L	06/15/17 23:06	13982-63-3	
Radium-228	EPA 904.0	**0.618 ± 0.417 (0.811) C:80% T:83%**	pCi/L	06/20/17 16:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-5D **Lab ID: 60245563004** Collected: 06/01/17 11:59 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	**0.383 ± 0.436 (0.687) C:NA T:85%**	pCi/L	06/15/17 23:06	13982-63-3	
Radium-228	EPA 904.0	**0.806 ± 0.439 (0.794) C:78% T:78%**	pCi/L	06/20/17 16:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-6D **Lab ID: 60245563005** Collected: 06/01/17 09:56 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	**0.637 ± 0.466 (0.521) C:NA T:86%**	pCi/L	06/15/17 23:06	13982-63-3	
Radium-228	EPA 904.0	**0.800 ± 0.400 (0.702) C:78% T:88%**	pCi/L	06/20/17 16:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-7D **Lab ID: 60245563006** Collected: 06/01/17 09:14 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	**0.000 ± 0.394 (0.883) C:NA T:72%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**1.05 ± 0.452 (0.742) C:77% T:84%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-8D **Lab ID: 60245563007** Collected: 05/31/17 16:44 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	**0.398 ± 0.371 (0.488) C:NA T:89%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**1.51 ± 0.517 (0.737) C:78% T:85%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-9D **Lab ID: 60245563008** Collected: 05/31/17 14:51 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	**0.164 ± 0.251 (0.403) C:NA T:97%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**0.747 ± 0.395 (0.712) C:76% T:92%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-BMW-1D **Lab ID: 60245563009** Collected: 05/31/17 09:48 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	**1.33 ± 0.608 (0.537) C:NA T:92%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**1.87 ± 0.565 (0.705) C:77% T:85%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-BMW-2D **Lab ID: 60245563010** Collected: 05/31/17 13:17 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	**0.645 ± 0.388 (0.159) C:NA T:96%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**0.896 ± 0.411 (0.689) C:78% T:85%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-DUP-1 **Lab ID: 60245563011** Collected: 06/01/17 08:00 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	**0.432 ± 0.324 (0.167) C:NA T:94%**	pCi/L	06/15/17 23:21	13982-63-3	
Radium-228	EPA 904.0	**0.572 ± 0.410 (0.808) C:81% T:84%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-FB-1 **Lab ID: 60245563012** Collected: 05/31/17 15:33 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	**0.603 ± 0.400 (0.181) C:NA T:93%**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**0.493 ± 0.377 (0.744) C:75% T:84%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-FB-2 **Lab ID: 60245563013** Collected: 06/01/17 09:19 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	**0.174 ± 0.342 (0.625) C:NA T:98%**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**0.183 ± 0.344 (0.754) C:76% T:85%**	pCi/L	06/20/17 16:01	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-2D **Lab ID: 60245679001** Collected: 06/02/17 09:16 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	**0.289 ± 0.402 (0.671) C:NA T:80%**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**1.41 ± 0.514 (0.763) C:76% T:82%**	pCi/L	06/20/17 16:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-DUP-2 **Lab ID: 60245679002** 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	**0.569 ± 0.392 (0.418) C:NA T:94%**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**1.14 ± 0.435 (0.651) C:77% T:88%**	pCi/L	06/20/17 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-5D MS **Lab ID: 60245563016** Collected: 06/01/17 11:59 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	**78.43 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**111 %REC +/- NA (NA) C:NA T:NA**	pCi/L	06/20/17 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

Sample: L-UMW-5D MSD **Lab ID: 60245563017** Collected: 06/01/17 11:59 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	**72.51 %REC 7.85 RPD ± NA (NA) C:NA T:NA**	pCi/L	06/15/17 23:36	13982-63-3	
Radium-228	EPA 904.0	**90.3 %REC 20.9 RPD +/- NA (NA) C:NA T:NA**	pCi/L	06/20/17 16:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 261083 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245563016, 60245563017, 60245679001, 60245679002

METHOD BLANK: 1285492 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245563016, 60245563017, 60245679001, 60245679002

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.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

QC Batch: 261072 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245563016, 60245563017, 60245679001, 60245679002

METHOD BLANK: 1285474 Matrix: Water
Associated Lab Samples: 60245563001, 60245563002, 60245563003, 60245563004, 60245563005, 60245563006, 60245563007, 60245563008, 60245563009, 60245563010, 60245563011, 60245563012, 60245563013, 60245563016, 60245563017, 60245679001, 60245679002

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	

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60245563

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

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-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245563001	L-UMW-1D	EPA 200.7	480088	EPA 200.7	480188
60245563002	L-UMW-3D	EPA 200.7	480088	EPA 200.7	480188
60245563003	L-UMW-4D	EPA 200.7	480088	EPA 200.7	480188
60245563004	L-UMW-5D	EPA 200.7	480088	EPA 200.7	480188
60245563005	L-UMW-6D	EPA 200.7	480088	EPA 200.7	480188
60245563006	L-UMW-7D	EPA 200.7	480088	EPA 200.7	480188
60245563007	L-UMW-8D	EPA 200.7	480088	EPA 200.7	480188
60245563008	L-UMW-9D	EPA 200.7	480088	EPA 200.7	480188
60245563009	L-BMW-1D	EPA 200.7	480088	EPA 200.7	480188
60245563010	L-BMW-2D	EPA 200.7	480088	EPA 200.7	480188
60245563011	L-UMW-DUP-1	EPA 200.7	480088	EPA 200.7	480188
60245563012	L-UMW-FB-1	EPA 200.7	480088	EPA 200.7	480188
60245563013	L-UMW-FB-2	EPA 200.7	480088	EPA 200.7	480188
60245679001	L-UMW-2D	EPA 200.7	480475	EPA 200.7	480588
60245679002	L-UMW-DUP-2	EPA 200.7	480475	EPA 200.7	480588
60245563001	L-UMW-1D	EPA 200.8	480091	EPA 200.8	480187
60245563002	L-UMW-3D	EPA 200.8	480091	EPA 200.8	480187
60245563003	L-UMW-4D	EPA 200.8	480091	EPA 200.8	480187
60245563004	L-UMW-5D	EPA 200.8	480091	EPA 200.8	480187
60245563005	L-UMW-6D	EPA 200.8	480091	EPA 200.8	480187
60245563006	L-UMW-7D	EPA 200.8	480091	EPA 200.8	480187
60245563007	L-UMW-8D	EPA 200.8	480091	EPA 200.8	480187
60245563008	L-UMW-9D	EPA 200.8	480091	EPA 200.8	480187
60245563009	L-BMW-1D	EPA 200.8	480091	EPA 200.8	480187
60245563010	L-BMW-2D	EPA 200.8	480091	EPA 200.8	480187
60245563011	L-UMW-DUP-1	EPA 200.8	480091	EPA 200.8	480187
60245563012	L-UMW-FB-1	EPA 200.8	480091	EPA 200.8	480187
60245563013	L-UMW-FB-2	EPA 200.8	480091	EPA 200.8	480187
60245679001	L-UMW-2D	EPA 200.8	480476	EPA 200.8	480587
60245679002	L-UMW-DUP-2	EPA 200.8	480476	EPA 200.8	480587
60245563001	L-UMW-1D	EPA 7470	479875	EPA 7470	479960
60245563002	L-UMW-3D	EPA 7470	479875	EPA 7470	479960
60245563003	L-UMW-4D	EPA 7470	479875	EPA 7470	479960
60245563004	L-UMW-5D	EPA 7470	479875	EPA 7470	479960
60245563005	L-UMW-6D	EPA 7470	479875	EPA 7470	479960
60245563006	L-UMW-7D	EPA 7470	479875	EPA 7470	479960
60245563007	L-UMW-8D	EPA 7470	479875	EPA 7470	479960
60245563008	L-UMW-9D	EPA 7470	479875	EPA 7470	479960
60245563009	L-BMW-1D	EPA 7470	479875	EPA 7470	479960
60245563010	L-BMW-2D	EPA 7470	479875	EPA 7470	479960
60245563011	L-UMW-DUP-1	EPA 7470	479875	EPA 7470	479960
60245563012	L-UMW-FB-1	EPA 7470	479875	EPA 7470	479960
60245563013	L-UMW-FB-2	EPA 7470	479875	EPA 7470	479960
60245679001	L-UMW-2D	EPA 7470	480125	EPA 7470	480203
60245679002	L-UMW-DUP-2	EPA 7470	480125	EPA 7470	480203
60245563001	L-UMW-1D	EPA 903.1	261072		

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-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245563002	L-UMW-3D	EPA 903.1	261072		
60245563003	L-UMW-4D	EPA 903.1	261072		
60245563004	L-UMW-5D	EPA 903.1	261072		
60245563005	L-UMW-6D	EPA 903.1	261072		
60245563006	L-UMW-7D	EPA 903.1	261072		
60245563007	L-UMW-8D	EPA 903.1	261072		
60245563008	L-UMW-9D	EPA 903.1	261072		
60245563009	L-BMW-1D	EPA 903.1	261072		
60245563010	L-BMW-2D	EPA 903.1	261072		
60245563011	L-UMW-DUP-1	EPA 903.1	261072		
60245563012	L-UMW-FB-1	EPA 903.1	261072		
60245563013	L-UMW-FB-2	EPA 903.1	261072		
60245679001	L-UMW-2D	EPA 903.1	261072		
60245679002	L-UMW-DUP-2	EPA 903.1	261072		
60245563016	L-UMW-5D MS	EPA 903.1	261072		
60245563017	L-UMW-5D MSD	EPA 903.1	261072		
60245563001	L-UMW-1D	EPA 904.0	261083		
60245563002	L-UMW-3D	EPA 904.0	261083		
60245563003	L-UMW-4D	EPA 904.0	261083		
60245563004	L-UMW-5D	EPA 904.0	261083		
60245563005	L-UMW-6D	EPA 904.0	261083		
60245563006	L-UMW-7D	EPA 904.0	261083		
60245563007	L-UMW-8D	EPA 904.0	261083		
60245563008	L-UMW-9D	EPA 904.0	261083		
60245563009	L-BMW-1D	EPA 904.0	261083		
60245563010	L-BMW-2D	EPA 904.0	261083		
60245563011	L-UMW-DUP-1	EPA 904.0	261083		
60245563012	L-UMW-FB-1	EPA 904.0	261083		
60245563013	L-UMW-FB-2	EPA 904.0	261083		
60245679001	L-UMW-2D	EPA 904.0	261083		
60245679002	L-UMW-DUP-2	EPA 904.0	261083		
60245563016	L-UMW-5D MS	EPA 904.0	261083		
60245563017	L-UMW-5D MSD	EPA 904.0	261083		
60245563001	L-UMW-1D	SM 2540C	479556		
60245563002	L-UMW-3D	SM 2540C	479556		
60245563003	L-UMW-4D	SM 2540C	479556		
60245563004	L-UMW-5D	SM 2540C	479556		
60245563005	L-UMW-6D	SM 2540C	479556		
60245563006	L-UMW-7D	SM 2540C	479750		
60245563007	L-UMW-8D	SM 2540C	479556		
60245563008	L-UMW-9D	SM 2540C	479556		
60245563009	L-BMW-1D	SM 2540C	479556		
60245563010	L-BMW-2D	SM 2540C	479556		
60245563011	L-UMW-DUP-1	SM 2540C	479750		
60245563012	L-UMW-FB-1	SM 2540C	479556		

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-BOTT
Pace Project No.: 60245563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245563013	L-UMW-FB-2	SM 2540C	479750		
60245679001	L-UMW-2D	SM 2540C	479930		
60245679002	L-UMW-DUP-2	SM 2540C	479930		
60245563001	L-UMW-1D	SM 4500-H+B	480061		
60245563002	L-UMW-3D	SM 4500-H+B	480061		
60245563003	L-UMW-4D	SM 4500-H+B	480042		
60245563004	L-UMW-5D	SM 4500-H+B	480042		
60245563005	L-UMW-6D	SM 4500-H+B	480042		
60245563006	L-UMW-7D	SM 4500-H+B	480042		
60245563007	L-UMW-8D	SM 4500-H+B	480008		
60245563008	L-UMW-9D	SM 4500-H+B	480008		
60245563009	L-BMW-1D	SM 4500-H+B	480008		
60245563010	L-BMW-2D	SM 4500-H+B	480061		
60245563011	L-UMW-DUP-1	SM 4500-H+B	480061		
60245563012	L-UMW-FB-1	SM 4500-H+B	480008		
60245563013	L-UMW-FB-2	SM 4500-H+B	480042		
60245679001	L-UMW-2D	SM 4500-H+B	480061		
60245679002	L-UMW-DUP-2	SM 4500-H+B	480061		
60245563001	L-UMW-1D	EPA 300.0	479652		
60245563001	L-UMW-1D	EPA 300.0	479826		
60245563002	L-UMW-3D	EPA 300.0	479652		
60245563003	L-UMW-4D	EPA 300.0	479652		
60245563004	L-UMW-5D	EPA 300.0	479652		
60245563005	L-UMW-6D	EPA 300.0	479652		
60245563006	L-UMW-7D	EPA 300.0	479652		
60245563007	L-UMW-8D	EPA 300.0	479652		
60245563008	L-UMW-9D	EPA 300.0	479652		
60245563009	L-BMW-1D	EPA 300.0	479652		
60245563010	L-BMW-2D	EPA 300.0	479652		
60245563010	L-BMW-2D	EPA 300.0	479826		
60245563011	L-UMW-DUP-1	EPA 300.0	479652		
60245563012	L-UMW-FB-1	EPA 300.0	479652		
60245563013	L-UMW-FB-2	EPA 300.0	479652		
60245679001	L-UMW-2D	EPA 300.0	479652		
60245679002	L-UMW-DUP-2	EPA 300.0	479652		

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Sample Condition Upon Receipt

WO# : 60245563

60245563

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** 16.0/16.8 **Corr. Factor** CF +2.9 CF +0.2 **Corrected** 16.2/17.0/1.8/13.8

Temperature should be above freezing to 6°C 1.6/13.6

Date and initials of person examining contents: PU 6/2/17

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: ~~SL~~ 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: _____

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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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001A

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		60245563
1	L-UMW-1D	WT	G			5/31/17	1600		4	1		3							1	1	1	1	2		1BP3N 1BP2U 2BP1N 001
2	L-UMW-2D	WT	G																						002
3	L-UMW-3D	WT	G			6/1/17	1425		4	1		3							1	1	1	1	2		003
4	L-UMW-4D	WT	G				1329		4	1		3							1	1	1	1	2		
5	L-UMW-5D	WT	G				1159		12	3		9							3	3	3	3	6		3BP3N 3BP2U 6BP1N
6	L-UMW-6D	WT	G				0956		4	1		3							1	1	1	1	2		004
7	L-UMW-7D	WT	G				0914		4	1		3							1	1	1	1	2		005
8	L-UMW-8D	WT	G			5/31/17	1644																		006
9	L-UMW-9D	WT	G				1451																		007
10	L-BMW-1D	WT	G				0948																		008
11	L-BMW-2D	WT	G				1317																		009
12	L-UMW-DUP-1	WT	G			6/3/17	—		2	1		1							1	1	1	1	2		010

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	Golder	6/1/17	18:15		6/1/17	18:15
		6/1/17	18:30		6/2/17	0405

SAMPLE CONDITIONS				
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
16.2	N	Y	Y
17.0	N		
1.8	Y		
17.8	N		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Smith

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 06/01/2017

*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.

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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 Ctr - Bottom Ash Po	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-1406.0001A	Pace Profile #:	9285

REGULATORY AGENCY: NPDES X GROUND WATER DRINKING WATER; UST RCRA OTHER _____

Site Location STATE: MO

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

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*	Chloride/Fluoride/Sulfate	TDS	pH	Radium 226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	L-UMW-DUP-2	WT	G															N	1	1	1	1	2		60245963
2	L-UMW-FB-1	WT	G			5/31/17	1533		4	1		3						N	1	1	1	1	2		1B3N 2S 1BPU 2BPIN 011
3	L-UMW-FB-2	WT	G			6/1/17	0919		4	1		3						N	1	1	1	1	1		012
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

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 Ingram/Golder	6/1/17	18:15		6/1/17	18:15				
		6/1/17	18:30		6/2/17	0405	16.2	N	Y	Y
							17.0	N		
							1.8	Y		
							13.8	N		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John Snozzi

SIGNATURE of SAMPLER: John Snozzi DATE Signed (MM/DD/YY): 06/01/17

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

November 28, 2017

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

RE: Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

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.

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-BOTT
Pace Project No.: 60257954

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-BOTT
Pace Project No.: 60257954

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60257954001	**L-UMW-1D**	Water	11/08/17 09:05	11/11/17 03:20
60257954002	**L-UMW-2D**	Water	11/08/17 10:00	11/11/17 03:20
60257954003	**L-UMW-3D**	Water	11/08/17 11:00	11/11/17 03:20
60257954004	**L-UMW-4D**	Water	11/07/17 16:05	11/11/17 03:20
60257954005	**L-UMW-5D**	Water	11/07/17 16:05	11/11/17 03:20
60257954006	**L-UMW-6D**	Water	11/07/17 13:55	11/11/17 03:20
60257954007	**L-UMW-7D**	Water	11/08/17 10:40	11/11/17 03:20
60257954008	**L-UMW-8D**	Water	11/08/17 09:45	11/11/17 03:20
60257954009	**L-UMW-9D**	Water	11/08/17 08:53	11/11/17 03:20
60257954010	**L-BMW-1D**	Water	11/07/17 09:43	11/11/17 03:20
60257954011	**L-BMW-2D**	Water	11/07/17 12:10	11/11/17 03:20
60257954012	**L-UMW-DUP-1**	Water	11/07/17 08:00	11/11/17 03:20
60257954013	**L-UMW-DUP-2**	Water	11/08/17 08:00	11/11/17 03:20
60257954014	**L-UMW-FB-1**	Water	11/07/17 15:50	11/11/17 03:20
60257954015	**L-UMW-FB-2**	Water	11/08/17 09:00	11/11/17 03:20

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60257954001	**L-UMW-1D**	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
60257954002	**L-UMW-2D**	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
60257954003	**L-UMW-3D**	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
60257954004	**L-UMW-4D**	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
60257954005	**L-UMW-5D**	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
60257954006	**L-UMW-6D**	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
60257954007	**L-UMW-7D**	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
60257954008	**L-UMW-8D**	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
60257954009	**L-UMW-9D**	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
60257954010	**L-BMW-1D**	EPA 200.7	TDS	7	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	JSS	1	PASI-K
		SM 2540C	HMM	1	PASI-K
		EPA 300.0	OL	3	PASI-K
60257954011	**L-BMW-2D**	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
60257954012	**L-UMW-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
60257954013	**L-UMW-DUP-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
60257954014	**L-UMW-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
60257954015	**L-UMW-FB-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

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-1D **Lab ID: 60257954001** Collected: 11/08/17 09:05 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	**567**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 14:57	7440-42-8	
Calcium	**135000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 14:57	7440-70-2	
Iron	**15200**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 14:57	7439-89-6	
Magnesium	**35100**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 14:57	7439-95-4	
Manganese	**388**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 14:57	7439-96-5	
Potassium	**6340**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 14:57	7440-09-7	
Sodium	**23600**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 14:57	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**447**	mg/L	20.0	4.9	1		11/15/17 17:36		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**456**	mg/L	5.0	5.0	1		11/15/17 17:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**10.9**	mg/L	1.0	0.50	1		11/25/17 18:56	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	0.10	1		11/25/17 18:56	16984-48-8	
Sulfate	**7.4**	mg/L	1.0	0.50	1		11/25/17 18:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-2D **Lab ID: 60257954002** Collected: 11/08/17 10:00 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	**1990**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 14:59	7440-42-8	
Calcium	**101000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 14:59	7440-70-2	
Iron	**3140**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 14:59	7439-89-6	
Magnesium	**20600**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 14:59	7439-95-4	
Manganese	**316**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 14:59	7439-96-5	
Potassium	**7450**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 14:59	7440-09-7	
Sodium	**67600**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 14:59	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**211**	mg/L	20.0	4.9	1		11/15/17 17:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**583**	mg/L	5.0	5.0	1		11/15/17 17:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**18.7**	mg/L	1.0	0.50	1		11/25/17 19:10	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	0.10	1		11/25/17 19:10	16984-48-8	
Sulfate	**241**	mg/L	20.0	10.0	20		11/26/17 17:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-3D **Lab ID: 60257954003** Collected: 11/08/17 11:00 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	**9850**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:01	7440-42-8	
Calcium	**127000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:01	7440-70-2	
Iron	**1000**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:01	7439-89-6	
Magnesium	**10300**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:01	7439-95-4	
Manganese	**412**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:01	7439-96-5	
Potassium	**10500**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:01	7440-09-7	
Sodium	**69400**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:01	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**100**	mg/L	20.0	4.9	1		11/15/17 17:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**596**	mg/L	5.0	5.0	1		11/15/17 17:48		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.1**	mg/L	1.0	0.50	1		11/25/17 19:25	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		11/25/17 19:25	16984-48-8	
Sulfate	**422**	mg/L	50.0	25.0	50		11/26/17 18:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-4D **Lab ID: 60257954004** Collected: 11/07/17 16:05 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	**4020**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:03	7440-42-8	
Calcium	**47400**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:03	7440-70-2	
Iron	**220**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:03	7439-89-6	
Magnesium	**7700**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:03	7439-95-4	
Manganese	**226**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:03	7439-96-5	
Potassium	**7610**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:03	7440-09-7	
Sodium	**107000**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:03	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**48.9**	mg/L	20.0	4.9	1		11/17/17 12:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**536**	mg/L	5.0	5.0	1		11/14/17 18:25		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.7**	mg/L	2.0	1.0	2		11/26/17 18:45	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.10	1		11/25/17 19:39	16984-48-8	
Sulfate	**312**	mg/L	20.0	10.0	20		11/26/17 18:59	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-5D **Lab ID: 60257954005** Collected: 11/07/17 16:05 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	**5920**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:06	7440-42-8	
Calcium	**68300**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:06	7440-70-2	
Iron	**<12.4**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:06	7439-89-6	
Magnesium	**84.2**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:06	7439-95-4	
Manganese	**8.1**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:06	7439-96-5	
Potassium	**12200**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:06	7440-09-7	
Sodium	**67200**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:06	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**71.1**	mg/L	20.0	4.9	1		11/15/17 12:52		D6
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**404**	mg/L	5.0	5.0	1		11/14/17 18:26		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**18.8**	mg/L	1.0	0.50	1		11/25/17 19:54	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		11/25/17 19:54	16984-48-8	
Sulfate	**236**	mg/L	20.0	10.0	20		11/26/17 19:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-6D **Lab ID: 60257954006** Collected: 11/07/17 13:55 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	**15700**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:12	7440-42-8	
Calcium	**95500**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:12	7440-70-2	
Iron	**860**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:12	7439-89-6	
Magnesium	**6260**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:12	7439-95-4	
Manganese	**517**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:12	7439-96-5	
Potassium	**13800**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:12	7440-09-7	
Sodium	**88100**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:12	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**54.1**	mg/L	20.0	4.9	1		11/15/17 12:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**645**	mg/L	5.0	5.0	1		11/14/17 18:27		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.8**	mg/L	2.0	1.0	2		11/26/17 19:57	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.10	1		11/25/17 20:51	16984-48-8	
Sulfate	**467**	mg/L	50.0	25.0	50		11/26/17 20:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-7D **Lab ID: 60257954007** Collected: 11/08/17 10:40 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	**6360**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:21	7440-42-8	
Calcium	**180000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:21	7440-70-2	
Iron	**10800**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:21	7439-89-6	
Magnesium	**28600**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:21	7439-95-4	
Manganese	**1980**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:21	7439-96-5	
Potassium	**6180**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:21	7440-09-7	
Sodium	**62700**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:21	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**333**	mg/L	20.0	4.9	1		11/15/17 17:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**825**	mg/L	5.0	5.0	1		11/15/17 17:48		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.0**	mg/L	1.0	0.50	1		11/25/17 21:06	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.10	1		11/25/17 21:06	16984-48-8	
Sulfate	**313**	mg/L	20.0	10.0	20		11/26/17 20:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-8D **Lab ID: 60257954008** Collected: 11/08/17 09:45 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	**375**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:24	7440-42-8	
Calcium	**132000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:24	7440-70-2	
Iron	**22500**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:24	7439-89-6	
Magnesium	**33100**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:24	7439-95-4	
Manganese	**856**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:24	7439-96-5	
Potassium	**4810**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:24	7440-09-7	
Sodium	**12200**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**470**	mg/L	20.0	4.9	1		11/15/17 18:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**444**	mg/L	5.0	5.0	1		11/15/17 17:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9.0**	mg/L	1.0	0.50	1		11/25/17 21:20	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.10	1		11/25/17 21:20	16984-48-8	
Sulfate	**3.5**	mg/L	1.0	0.50	1		11/25/17 21:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-9D **Lab ID: 60257954009** Collected: 11/08/17 08:53 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	**126**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:26	7440-42-8	
Calcium	**119000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:26	7440-70-2	
Iron	**24700**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:26	7439-89-6	
Magnesium	**32300**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:26	7439-95-4	
Manganese	**362**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:26	7439-96-5	
Potassium	**4040**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:26	7440-09-7	
Sodium	**13300**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:26	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**418**	mg/L	20.0	4.9	1		11/15/17 18:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**462**	mg/L	5.0	5.0	1		11/15/17 22:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.6**	mg/L	2.0	1.0	2		11/26/17 21:09	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.10	1		11/25/17 21:34	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		11/25/17 21:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-BMW-1D **Lab ID: 60257954010** Collected: 11/07/17 09:43 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	**106**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:28	7440-42-8	B
Calcium	**135000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:28	7440-70-2	
Iron	**12400**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:28	7439-89-6	
Magnesium	**30800**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:28	7439-95-4	
Manganese	**656**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:28	7439-96-5	
Potassium	**4570**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:28	7440-09-7	
Sodium	**10100**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:28	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**424**	mg/L	20.0	4.9	1		11/15/17 13:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**475**	mg/L	5.0	5.0	1		11/14/17 18:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.7**	mg/L	1.0	0.50	1		11/25/17 21:49	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.10	1		11/25/17 21:49	16984-48-8	
Sulfate	**35.0**	mg/L	2.0	1.0	2		11/26/17 21:23	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-BOTT
Pace Project No.: 60257954

Sample: L-BMW-2D **Lab ID: 60257954011** Collected: 11/07/17 12:10 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	**91.8J**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:30	7440-42-8	B
Calcium	**134000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:30	7440-70-2	
Iron	**7640**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:30	7439-89-6	
Magnesium	**26100**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:30	7439-95-4	
Manganese	**292**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:30	7439-96-5	
Potassium	**3790**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:30	7440-09-7	
Sodium	**6640**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:30	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**362**	mg/L	20.0	4.9	1		11/15/17 13:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**454**	mg/L	5.0	5.0	1		11/14/17 18:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**18.5**	mg/L	1.0	0.50	1		11/25/17 22:03	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.10	1		11/25/17 22:03	16984-48-8	
Sulfate	**35.8**	mg/L	2.0	1.0	2		11/26/17 21:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-DUP-1 **Lab ID: 60257954012** Collected: 11/07/17 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	**15500**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:33	7440-42-8	
Calcium	**93900**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:33	7440-70-2	
Iron	**852**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:33	7439-89-6	
Magnesium	**6220**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:33	7439-95-4	
Manganese	**508**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:33	7439-96-5	
Potassium	**13800**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:33	7440-09-7	
Sodium	**86800**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:33	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**57.6**	mg/L	20.0	4.9	1		11/15/17 13:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**651**	mg/L	5.0	5.0	1		11/14/17 18:30		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.8**	mg/L	2.0	1.0	2		11/26/17 21:52	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.10	1		11/25/17 22:18	16984-48-8	
Sulfate	**454**	mg/L	50.0	25.0	50		11/26/17 22:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-DUP-2 **Lab ID: 60257954013** 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	**6320**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:35	7440-42-8	
Calcium	**178000**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:35	7440-70-2	
Iron	**10700**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:35	7439-89-6	
Magnesium	**28300**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:35	7439-95-4	
Manganese	**1960**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:35	7439-96-5	
Potassium	**6090**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:35	7440-09-7	
Sodium	**62200**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:35	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**339**	mg/L	20.0	4.9	1		11/15/17 18:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**836**	mg/L	5.0	5.0	1		11/15/17 22:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**13.1**	mg/L	1.0	0.50	1		11/25/17 22:32	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	0.10	1		11/25/17 22:32	16984-48-8	
Sulfate	**324**	mg/L	20.0	10.0	20		11/26/17 22:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-FB-1 **Lab ID: 60257954014** Collected: 11/07/17 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	**44.2J**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:37	7440-42-8	B
Calcium	**<36.0**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:37	7440-70-2	
Iron	**<12.4**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:37	7439-89-6	
Magnesium	**<15.4**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:37	7439-95-4	
Manganese	**<1.8**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:37	7439-96-5	
Potassium	**<52.3**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:37	7440-09-7	
Sodium	**<28.4**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:37	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**<4.9**	mg/L	20.0	4.9	1		11/15/17 13:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		11/14/17 18:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		11/25/17 22:46	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		11/25/17 22:46	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		11/25/17 22:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Sample: L-UMW-FB-2 **Lab ID: 60257954015** Collected: 11/08/17 09:00 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	**28.6J**	ug/L	100	3.5	1	11/18/17 12:30	11/25/17 15:40	7440-42-8	B
Calcium	**<36.0**	ug/L	100	36.0	1	11/18/17 12:30	11/25/17 15:40	7440-70-2	
Iron	**<12.4**	ug/L	50.0	12.4	1	11/18/17 12:30	11/25/17 15:40	7439-89-6	
Magnesium	**<15.4**	ug/L	50.0	15.4	1	11/18/17 12:30	11/25/17 15:40	7439-95-4	
Manganese	**<1.8**	ug/L	5.0	1.8	1	11/18/17 12:30	11/25/17 15:40	7439-96-5	
Potassium	**<52.3**	ug/L	500	52.3	1	11/18/17 12:30	11/25/17 15:40	7440-09-7	
Sodium	**<28.4**	ug/L	500	28.4	1	11/18/17 12:30	11/25/17 15:40	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**<4.9**	mg/L	20.0	4.9	1		11/16/17 13:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		11/15/17 22:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**<0.50**	mg/L	1.0	0.50	1		11/25/17 23:59	16887-00-6	
Fluoride	**<0.10**	mg/L	0.20	0.10	1		11/25/17 23:59	16984-48-8	
Sulfate	**<0.50**	mg/L	1.0	0.50	1		11/25/17 23:59	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503850 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954004, 60257954005, 60257954006, 60257954007, 60257954008, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013, 60257954014, 60257954015

METHOD BLANK: 2063346 Matrix: Water
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954004, 60257954005, 60257954006, 60257954007, 60257954008, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013, 60257954014, 60257954015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	10.6J	100	3.5	11/25/17 14:52	
Calcium	ug/L	<36.0	100	36.0	11/25/17 14:52	
Iron	ug/L	<12.4	50.0	12.4	11/25/17 14:52	
Magnesium	ug/L	<15.4	50.0	15.4	11/25/17 14:52	
Manganese	ug/L	<1.8	5.0	1.8	11/25/17 14:52	
Potassium	ug/L	<52.3	500	52.3	11/25/17 14:52	
Sodium	ug/L	<28.4	500	28.4	11/25/17 14:52	

LABORATORY CONTROL SAMPLE: 2063347

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1050	105	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10500	105	85-115	
Magnesium	ug/L	10000	10400	104	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	9920	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2063348 2063349

Parameter	Units	60257954005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	5920	1000	1000	7070	6970	115	105	70-130	1	20	
Calcium	ug/L	68300	10000	10000	80200	79700	119	114	70-130	1	20	
Iron	ug/L	<12.4	10000	10000	10400	10400	104	104	70-130	1	20	
Magnesium	ug/L	84.2	10000	10000	10100	10100	100	100	70-130	0	20	
Manganese	ug/L	8.1	1000	1000	1040	1040	103	103	70-130	0	20	
Potassium	ug/L	12200	10000	10000	22600	22400	104	102	70-130	1	20	
Sodium	ug/L	67200	10000	10000	78800	78000	117	108	70-130	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

MATRIX SPIKE SAMPLE: 2063350

Parameter	Units	60257954006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	15700	1000	16900	119	70-130	
Calcium	ug/L	95500	10000	105000	97	70-130	
Iron	ug/L	860	10000	11200	104	70-130	
Magnesium	ug/L	6260	10000	16400	102	70-130	
Manganese	ug/L	517	1000	1560	105	70-130	
Potassium	ug/L	13800	10000	24100	103	70-130	
Sodium	ug/L	88100	10000	98300	102	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503330 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257954005, 60257954006, 60257954010, 60257954011, 60257954012, 60257954014

METHOD BLANK: 2060588 Matrix: Water
Associated Lab Samples: 60257954005, 60257954006, 60257954010, 60257954011, 60257954012, 60257954014

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503362 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954007, 60257954008, 60257954009, 60257954013

METHOD BLANK: 2060731 Matrix: Water
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954007, 60257954008, 60257954009, 60257954013

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503536 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257954015

METHOD BLANK: 2061447 Matrix: Water
Associated Lab Samples: 60257954015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.9	20.0	4.9	11/16/17 12:55	

LABORATORY CONTROL SAMPLE: 2061448

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

SAMPLE DUPLICATE: 2061449

Parameter	Units	60257954015 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.9	<4.9		10	

SAMPLE DUPLICATE: 2061451

Parameter	Units	60257950006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	275	271	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503728 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60257954004

METHOD BLANK: 2062350 Matrix: Water
Associated Lab Samples: 60257954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.9	20.0	4.9	11/17/17 11:36	

LABORATORY CONTROL SAMPLE: 2062351

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

SAMPLE DUPLICATE: 2062352

Parameter	Units	60257763002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	96.3	102	6	10	

SAMPLE DUPLICATE: 2062353

Parameter	Units	60257722007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	242	242	0	10	

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503088 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60257954004, 60257954005, 60257954006, 60257954010, 60257954011, 60257954012, 60257954014

METHOD BLANK: 2059699 Matrix: Water
Associated Lab Samples: 60257954004, 60257954005, 60257954006, 60257954010, 60257954011, 60257954012, 60257954014

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

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-BOTT
Pace Project No.: 60257954

QC Batch: 503358 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954007, 60257954008

METHOD BLANK: 2060708 Matrix: Water
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954007, 60257954008

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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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 503359 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60257954009, 60257954013, 60257954015

METHOD BLANK: 2060712 Matrix: Water
Associated Lab Samples: 60257954009, 60257954013, 60257954015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/15/17 22:11	

LABORATORY CONTROL SAMPLE: 2060713

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	987	99	80-120	

SAMPLE DUPLICATE: 2060714

Parameter	Units	60255793017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	1200	0	10	H1

SAMPLE DUPLICATE: 2060715

Parameter	Units	60257860001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1110	1130	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 504549 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954004, 60257954005, 60257954006, 60257954007, 60257954008, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013, 60257954014

METHOD BLANK: 2067027 Matrix: Water
Associated Lab Samples: 60257954001, 60257954002, 60257954003, 60257954004, 60257954005, 60257954006, 60257954007, 60257954008, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013, 60257954014

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 CTR-BOTT
Pace Project No.: 60257954

QC Batch: 504550 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257954015

METHOD BLANK: 2067032 Matrix: Water
Associated Lab Samples: 60257954015

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	
Sulfate	mg/L	<0.50	1.0	0.50	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	
Sulfate	mg/L	5	4.8	96	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	
Sulfate	mg/L	<0.50	5	5	5.2	5.2	104	104	80-120	0	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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 504564 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257954002, 60257954003

METHOD BLANK: 2067306 Matrix: Water
Associated Lab Samples: 60257954002, 60257954003

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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

QC Batch: 504565 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60257954004, 60257954005, 60257954006, 60257954007, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013

METHOD BLANK: 2067311 Matrix: Water
Associated Lab Samples: 60257954004, 60257954005, 60257954006, 60257954007, 60257954009, 60257954010, 60257954011, 60257954012, 60257954013

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	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

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.
H1	Analysis conducted outside the EPA method holding time.

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Lenexa, KS 66219
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN LABADIE ENERGY CTR-BOTT
Pace Project No.: 60257954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60257954001	L-UMW-1D	EPA 200.7	503850	EPA 200.7	503866
60257954002	L-UMW-2D	EPA 200.7	503850	EPA 200.7	503866
60257954003	L-UMW-3D	EPA 200.7	503850	EPA 200.7	503866
60257954004	L-UMW-4D	EPA 200.7	503850	EPA 200.7	503866
60257954005	L-UMW-5D	EPA 200.7	503850	EPA 200.7	503866
60257954006	L-UMW-6D	EPA 200.7	503850	EPA 200.7	503866
60257954007	L-UMW-7D	EPA 200.7	503850	EPA 200.7	503866
60257954008	L-UMW-8D	EPA 200.7	503850	EPA 200.7	503866
60257954009	L-UMW-9D	EPA 200.7	503850	EPA 200.7	503866
60257954010	L-BMW-1D	EPA 200.7	503850	EPA 200.7	503866
60257954011	L-BMW-2D	EPA 200.7	503850	EPA 200.7	503866
60257954012	L-UMW-DUP-1	EPA 200.7	503850	EPA 200.7	503866
60257954013	L-UMW-DUP-2	EPA 200.7	503850	EPA 200.7	503866
60257954014	L-UMW-FB-1	EPA 200.7	503850	EPA 200.7	503866
60257954015	L-UMW-FB-2	EPA 200.7	503850	EPA 200.7	503866
60257954001	L-UMW-1D	SM 2320B	503362		
60257954002	L-UMW-2D	SM 2320B	503362		
60257954003	L-UMW-3D	SM 2320B	503362		
60257954004	L-UMW-4D	SM 2320B	503728		
60257954005	L-UMW-5D	SM 2320B	503330		
60257954006	L-UMW-6D	SM 2320B	503330		
60257954007	L-UMW-7D	SM 2320B	503362		
60257954008	L-UMW-8D	SM 2320B	503362		
60257954009	L-UMW-9D	SM 2320B	503362		
60257954010	L-BMW-1D	SM 2320B	503330		
60257954011	L-BMW-2D	SM 2320B	503330		
60257954012	L-UMW-DUP-1	SM 2320B	503330		
60257954013	L-UMW-DUP-2	SM 2320B	503362		
60257954014	L-UMW-FB-1	SM 2320B	503330		
60257954015	L-UMW-FB-2	SM 2320B	503536		
60257954001	L-UMW-1D	SM 2540C	503358		
60257954002	L-UMW-2D	SM 2540C	503358		
60257954003	L-UMW-3D	SM 2540C	503358		
60257954004	L-UMW-4D	SM 2540C	503088		
60257954005	L-UMW-5D	SM 2540C	503088		
60257954006	L-UMW-6D	SM 2540C	503088		
60257954007	L-UMW-7D	SM 2540C	503358		
60257954008	L-UMW-8D	SM 2540C	503358		
60257954009	L-UMW-9D	SM 2540C	503359		
60257954010	L-BMW-1D	SM 2540C	503088		
60257954011	L-BMW-2D	SM 2540C	503088		
60257954012	L-UMW-DUP-1	SM 2540C	503088		

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-BOTT
Pace Project No.: 60257954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60257954013	**L-UMW-DUP-2**	SM 2540C	503359		
60257954014	**L-UMW-FB-1**	SM 2540C	503088		
60257954015	**L-UMW-FB-2**	SM 2540C	503359		
60257954001	**L-UMW-1D**	EPA 300.0	504549		
60257954002	**L-UMW-2D**	EPA 300.0	504549		
60257954002	**L-UMW-2D**	EPA 300.0	504564		
60257954003	**L-UMW-3D**	EPA 300.0	504549		
60257954003	**L-UMW-3D**	EPA 300.0	504564		
60257954004	**L-UMW-4D**	EPA 300.0	504549		
60257954004	**L-UMW-4D**	EPA 300.0	504565		
60257954005	**L-UMW-5D**	EPA 300.0	504549		
60257954005	**L-UMW-5D**	EPA 300.0	504565		
60257954006	**L-UMW-6D**	EPA 300.0	504549		
60257954006	**L-UMW-6D**	EPA 300.0	504565		
60257954007	**L-UMW-7D**	EPA 300.0	504549		
60257954007	**L-UMW-7D**	EPA 300.0	504565		
60257954008	**L-UMW-8D**	EPA 300.0	504549		
60257954009	**L-UMW-9D**	EPA 300.0	504549		
60257954009	**L-UMW-9D**	EPA 300.0	504565		
60257954010	**L-BMW-1D**	EPA 300.0	504549		
60257954010	**L-BMW-1D**	EPA 300.0	504565		
60257954011	**L-BMW-2D**	EPA 300.0	504549		
60257954011	**L-BMW-2D**	EPA 300.0	504565		
60257954012	**L-UMW-DUP-1**	EPA 300.0	504549		
60257954012	**L-UMW-DUP-1**	EPA 300.0	504565		
60257954013	**L-UMW-DUP-2**	EPA 300.0	504549		
60257954013	**L-UMW-DUP-2**	EPA 300.0	504565		
60257954014	**L-UMW-FB-1**	EPA 300.0	504549		
60257954015	**L-UMW-FB-2**	EPA 300.0	504550		

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Sample Condition Upon Receipt

WO# : 60257954

60257954

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 Check 11/14/17 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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001D

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*	Cl/F/SO4/Alkalinity	TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N	60257954
1	L-UMW-1D	WT	G			11/08/17	0905		2	1		1							1	1	1		BP1U, BP3U 001
2	L-UMW-2D	WT	G			"	1000																002
3	L-UMW-3D	WT	G			"	1100																003
4	L-UMW-4D	WT	G			11/07/17	1605																004
5	L-UMW-5D	WT	G			"	1605		6	3		3							3	3	3		3(BP1U), 3(BP3U) 005
6	L-UMW-6D	WT	G			"	1355		2	1		1							1	1	1		BP1U, BP3U 006
7	L-UMW-7D	WT	G			11/08/17	1040																007
8	L-UMW-8D	WT	G			"	0945																008
9	L-UMW-9D	WT	G			"	0853																009
10	L-BMW-1D	WT	G			11/07/17	0943																010
11	L-BMW-2D	WT	G			"	1210																011
12	L-UMW-DUP-1	WT	G			"	—																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: B,Ca,Mg,K,Na,Fe,Mn	Jeff Ingram/Golder	11-9/17	940	Richard Mannig	11/9/17	10:18				
	Richard Mannig	11/9/17	1700		11/10/17 11/11/17	0320	0.9 1.0	Y Y	Y Y	Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bri Works

SIGNATURE of SAMPLER: 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.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A — Required Client Information:

Company:	Golder Associates
Address:	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 Ctr - Bottom Ash Po
Project Number:	153-1406.0001D

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

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.
1	L-UMW-DUP-2	WT	G			11/08/17	—		2	1		1						N	1	1	1		60257954 BP1U, BP3N 013
2	L-UMW-FB-1	WT	G			11/07/17	1550		1	1		1						N	1	1	1		014
3	L-UMW-FB-2	WT	G			11/08/17	0900		1	1		1						N	1	1	1		015
4																		N					
5																		N					
6																		N					
7																		N					
8																		N					
9																		N					
10																		N					
11																		N					
12																		N					

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

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*EPA 200.7: B,Ca,Mg,K,Na,Fe,Mn	Jeffrey Ingram/Golder	11-9-17	940	Richard Manning	11/9/17	10:18	
	Richard Manning	11/9/17	1700		11/11/17	0320	0.9 Y Y Y
							1-2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bri Works

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/08/17

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

MEMORANDUM

Date:	May 31, 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 – UMW - E.1**		

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.
- Radium and Calcium recovery was outside the criteria for MS. Radium-228 exceeded the RPD for 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). 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).
- 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 ~~Fly~~ UMW- E1
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 5/31/17

Laboratory: Pace Analytical
SDG #: 60215628
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-7D MS, & L-UMW-7D 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?	☑	☐	☐	Chloride, Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Calcium, ~~Ra-226~~, Ra-228 (TA)

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ca (17.6), Pb(3.7), Cd(0.040),
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ca(43.7), Cd(0.042), Cr(0.38); FB-2: Ca(31.9) Cd(0.038)
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	TDS(99
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@UMW-9D, DUP-2@UMW-5D
	☒	☐	☐	FB-1@UMW-1D, FB-2@UMW-3D
b) Were field dup. precision criteria met (note RPD)?	☑	☐	☐	DUP-1: Pb(200), Mo(35.3), Sulfate(200); DUP-2: Cr(52), Ti
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS(4)

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(148), Ra^{-228}(142)
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?	☑	☑	☐	Ra^{-228}(45.2)

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-1D	Cadmium (Cd)	0.50	U	Detected in Method Blank (MB), PQL > Result > MDL
L-UMW-2D	Cd	0.50	U	" "
"	Sulfate	270	D	Result had a dilution factor (DF) of 20
L-UMW-1D	Chromium (Cr)	1.0	U	Detected in Field Blank^{-1} (FB), PQL > Result > MDL
L-UMW-3D	Cr	1.0	U	" FB-2 "
⊥	~~(TDS) Total Dissolved Solids~~	~~601~~	~~U~~ (T6)	~~⊥~~
⊥	Sulfate	364	D	Result had a DF of 50
L-UMW-4D	Chloride	22.1	D	⊥ 2
⊥	Sulfate	343	D	⊥ 50
⊥	Lead (Pb)	5.0	U	Detected in MB, PQL > Result > MDL
L-UMW-5D	Chloride	19.7	D	Result had a DF of 2
⊥	Sulfate	261	D	" 20
⊥	Total Dissolved Solids (TDS)	499	J	RPD not met; Result > ~~PQL~~ (T2) MDL
L-UMW-6D	Chloride	21.7	D	Result had a DF of 2
"	Sulfate	278	D	" 20
L-UMW-7D	Sulfate	245	D	20
L-UMW-8D	Cd	0.50	U	Detected in MB, PQL > Result > MDL
L-UMW-9D	Pb	5.0	U	⊥ ⊥
⊥	Cd	0.50	U	
⊥	Chloride	21.0	D	Result had a DF of 2
L-BMW-1D	Sulfate	41.7	D	" 5
"	Cd	0.50	U	Detected in MB, PQL > Result > MDL
L-BMW-2D	Cd	0.50	U	" "
"	Sulfate	64.6	D	Result had a DF of 5
L-UMW-DUP-1	Chloride	21.1	D	2
"	Cd ~~Pb~~ (T6)	0.50	U	Detected in MB, PQL > Result > MDL

Signature: Tommy J Hook Jr Date: 5/31/17

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-DUP-~~2~~ 1 (TG)	Pb	2.5	UJ	RPD not met, result < MDL
"	Sulfate	0.25	UJ	"
L-UMW-DUP-2	TDS	1790	J	"
"	Chloride	19.6	D	Result had a DF of 2
"	Sulfate	262	D	" 20
L-UMW-FB-1	Calcium (Ca)	100	U	Detected in MB, PQL > Result > MDL
"	Cd	0.50	U	"
L-UMW-FB-2	Ca	100	U	"
"	Pb	~~2.5~~ 5.0 (TG)	U	"
"	Cd	0.50	U	"

Signature: Tommy J. Goodwin Jr. (signature) Date: 5/31/17

MEMORANDUM

Date:	May 31, 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 – UMW - E.2**		

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 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).
- 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).
- When a compound was detected outside the calibration range, the sample results were recorded at the result values and qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Name: Ameren-Labadie ~~Fly~~ UMW-E2
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 5/31/17

Laboratory: Pace Analytical
SDG #: 60218640
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-~~1~~6D MS, ~~8~~2-UMW-9D 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, 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?	☑	☐	☐	Chloride, 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)?	☑	☐	☐	Ba(0.79),
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ba(0.59), Ca(12.8), Cr(0.60), TDS(8), FB-2: Cr(l
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@ UMW-8D DUP-2@ UMW-7D
	☒	☐	☐	FB-1@UMW-1D FB-2@ UMW-3D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Ca(200)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☐	☑	☐	TDS (13)

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?	☐	☑	☐	Hg (134)
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-UMW-1D	Chromium (Cr)	1.0	U	Detected in Field Blank (FB), PQL>Result>MDL
L-BMW-2D	Sulfate	52.2	D	Result had a dilution factor (DF) of 5
L-UMW-3D	Sulfate	473	D	" 50
"	Cr	1.0	U	Detected in FB, PQL>Result>MDL
L-UMW-4D	Chloride	23.1	D	Result had a DF of 2
"	Sulfate	330	D	50
L-UMW-5D	Sulfate	312	D	20
L-UMW-6D	Sulfate	400	DJ	Result had a DF of 2 + Exceeded calibration range
"	Chloride	23.3	D	Result had a DF of 2
L-UMW-7D	Sulfate	230	D	20
L-UMW-~~8D~~ 9D (TG)	Chloride	22.5	D	2
L-BMW-1D	Sulfate	61.1	~~DJ~~ J (TG)	Result ~~had a~~ exceeded calibration range (TG)
L-UMW-2D	Chloride	19.9	D	Result had a DF of 2
"	Sulfate	272	D	" 20
~~L-DUP~~ L-UMW-DUP-1 (TG)	Cobalt (Co)	0.72	UJ	RPD not met, Result < MDL
L-UMW-DUP-2	Sulfate	231	D	Result had a DF of 20
L-UMW-FB-1	Barium (Ba)	10.0	U	Detected in Method Blank (MB), PQL>Result>MDL

(TG)

Signature: [signature]

Date: 5/31/17

Revised May 2004

MEMORANDUM

Date:	May 31, 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 – UMW - 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 and MSD. Mercury recovery was outside the criteria for MSD. Mercury exceeded the RPD for 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 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 ~~Fly~~-UMW-E3
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 5/31/17

Laboratory: Pace Analytical
SDG #: 6022348O
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-1D MS, L-UMW-1DMSD

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?	☑	☐	☐	Chloride, 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)?	☑	☐	☐	FB-1: Ca(24.3); FB-2: Ca(10.1), TDS(8.0)
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@ UMW-7D DUP-2@ UMW-9D
	☒	☐	☐	FB-1@ UMW-6D FB-2@ UMW-3D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Cr(200); DUP-2: Sulfate(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(30)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Hg(63), Ca(58)
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-UMW-2D	Chloride	40.0	D	Result had a dilution factor (DF) of 5
"	Sulfate	208	D	20
L-UMW-3D	Sulfate	382	D	50
L-UMW-4D	Chloride	22.9	D	2
"	Sulfate	372	D	50
L-UMW-5D	Chloride	20.0	D	2
"	Sulfate	267	D	20
L-UMW-6D	Chloride	22.6	D	2
"	Sulfate	350	D	20
L-UMW-7D	Sulfate	216	D	20
L-UMW-9D	Chloride	21.7	D	2
L-BMW-1D	Sulfate	38.8	D	5
L-BMW-2D	Sulfate	44.1	D	5
L-UMW-DUP-1	Sulfate	216	D	20
"	Chromium (Cr)	0.34	UJ	RPD was not met, Result < MDL
L-UMW-DUP-2	Sulfate	0.15	UJ	" "
"	Chloride	21.6	D	Result had a DF of 2

Signature: Tommy J. Goodwin Jr Date: 5/31/17

MEMORANDUM

Date:	May 31, 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 – UMW - 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. Calcium recovery was outside the criteria for MSD. Mercury exceeded the RPD for 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 ~~Ely~~ UMW- 64
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 5/31/17

Laboratory: Pace Analytical
SDG #: 60227403
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-5DMS, ~~8~~ 6-UMW-5DMSD

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?	☑	☐	☐	chloride, 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)?	☑	☐	☐	Ca(10.2) Ca(16.1), Mo(0.66),
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ca(22.4), FB-2: Ba(1.2), Ca(80.4), Sb(0.05), Cr(TDS
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@UMW-6D DUP-2@UMW-9D
	☒	☐	☐	FB-1@UMW-1D FB-2@UMW-3D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Cr(200), Se(200); DUP-2: Pb(200), Mo(
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?	☐	☑	☐	Ca(55)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☐	☑	☐	Hg(22)

Comments/Notes:

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-1D	Molybdenum (Mo)	20.0	U	Detected in Method Blank (MB), PQL > Result > MDL
L-UMW-2D	Chloride	27.2	D	Result had a dilution factor (DF) of 2
"	Sulfate	237	D	20
L-UMW-5D	Chloride	19.6	D	2
"	Sulfate	275	D	20
L-UMW-6D	Chloride	22.5	D	2
"	Sulfate	316	D	20
L-UMW-9D	Chloride	21.5	D	2
"	Mo	20.0	U	Detected in MB, PQL > Result > MDL
L-BMW-2D	Mo	20.0	U	" "
"	Sulfate	51.0	D	Result had a DF of 5
L-UMW-DUP-1	Chloride	22.5	D	2
	Sulfate	316	D	20
	Chromium (Cr)	0.34	UJ	RPD not met, Result < MDL
	Selenium (Se)	0.18	UJ	
L-UMW-DUP-2	Lead (Pb)	2.5	UJ	
	Mo	20.0	U	Detected in MB, PQL > Result > MDL
	Chloride	21.5	D	Result had a DF of 2
L-UMW-FB-1	Calcium (Ca)	100	U	Detected in MB, PQL > Result > MDL
L-UMW-3D	Sulfate	454	D	Result had a DF of 50
"	Cr	1.0	U	Detected in FB, PQL > Result > MDL
L-UMW-4D	Chloride	22.6	D	Result had a DF of 2
	Sulfate	360	D	50
L-UMW-7D	Sulfate	213	D	20
L-BMW-1D	Sulfate	39.9	D	5

Signature: Tommy J. Goode Jr Date: 5/31/17

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 – UMW - 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.
- Sulfate recovery was outside the criteria for MS and MSD. Calcium, Chloride, and Boron 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 ~~Fly~~ UMW-65
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 05/01/17

Laboratory: Pace Analytical
SDG #: 60232173
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-7DMS, L-UMW-7DMSD

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?	☑	☐	☐	Chloride, Sulfate
g) Were any matrix problems noted?	☑	☐	☐	B, Ca, Chloride, Sulfate

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Ba(0.87), Be(0.56), Ca(12.6), Mo(1.0), Sb(0.17), As(0.12), Cd(
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ca(26.1), Sb(0.18), As(0.11), Cd(0.043), Cr(0.36) FB-2: Ca(14.7), Sb(0.18), As(0.18), Cd(0.042)
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@ UMW-8D DUP-2@ UMW-8D
	☒	☐	☐	FB-1@ UMW-3D FB-2@ UMW-5D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Pb(200), Mo(23.5), Cr(200); DUP-2: Pb(36.4)
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	TDS, pH
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	TDS(5)

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?	☐	☑	☐	B(65), Ca(34), Chloride(121), Sulfate(127)(21)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☐	☐	Sulfate(127)
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-UMW-2D	Chloride	55.3	D	Result had a Dilution Factor (DF) of 5
"	Sulfate	175	D	" 20
L-BMW-1D	Sulfate	33.3	D	" 5
"	Molybdenum (Mo)	20.0	U	Detected in Method Blank (MB), PQL > Result > MDL
L-BMW-2D	Mo	20.0	U	" "
"	Sulfate	39.6	D	Result had a DF of 5
L-UMW-DUP-2	Antimony (Sb)	1.0	U	Detected in MB, PQL > Result > MDL
"	Cadmium (Cd)	0.50	U	" "
L-UMW-FB-1	Sb	1.0		
"	Arsenic (As)	1.0		
"	Cd	0.50		
L-UMW-FB-2	Sb	1.0		
"	As	1.0		
"	Cd	0.50		
L-UMW-1D	Sb	1.0		
"	Cd	0.50		
L-UMW-8D	Sb	1.0		
"	Cd	0.50		
"	~~Chromium (Cr)~~	~~0.39~~	~~UJ~~	~~RPD not met, Result < MDL~~ (TA)
L-UMW-DUP-1	Lead (Pb)	2.5	UJ	RPD not met, Result < MDL
"	(Cr) Chromium	1.3	J	" (TA); Result > ~~PQL~~ (TA) MDL
"	Sb	1.0	U	Detected in MB, PQL > Result > MDL
"	Cd	0.50	U	" "
L-UMW-~~8D~~ (TA) DUP-1	Chloride	20.7	D	Result had a DF of 2
L-UMW-9D	Chloride	20.6	D	" 2
"	Sb	1.0	U	Detected in MB, PQL > Result > MDL

Signature: Tommy McGoodwin Date: 6/1/17

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-9D	Cd	0.50	U	Detected in MB, PQL > Result > MDL
~~L-UMW-9D~~ ~~L-UMW-3D~~	Cr	0.34	UJ	RPD not met, Result < MDL
L-UMW-3D	Sb	1.0	U	Detected in MB, PQL > Result > MDL
⊥	Cd	0.50	U	" "
⊥	Sulfate	774	D	Result had a DF of 50
L-UMW-7D	Sulfate	252	D	" 20
⊥	Sb	1.0	U	Detected in MB, PQL > Result > MDL
⊥	Cd	0.50	U	⊥ ⊥
L-UMW-6D	Sb	1.0	U	
⊥	Chloride	22.3	D	Result had a DF of 2
⊥	Sulfate	384	D	⊥ 50
L-UMW-5D	Sulfate	263	D	20
⊥	Sb	1.0	U	Detected in MB, PQL > Result > MDL
⊥	Cd	0.50	U	⊥ ⊥
L-UMW-4D	Sb	1.0	U	
⊥	Chloride	20.6	D	Result had a DF of 2
⊥	Sulfate	274	D	" 20

Signature: Tommy Woodward 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 – UMW - 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 and 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).
- 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 ~~Fly~~-UMW-EC
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60236162
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-7D MS, L-UMW-7D 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?	☑	☐	☐	Chloride, Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Calcium

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	Hg(0.1), Ca(14.3), Mn(0.089), Cr(0.11 0.27), Tl(0.085), Sulfate
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ca(9.8), Cr(0.5) ; FB-2: 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@UMW-2D DUP-2@UMW-3D
	☒	☐	☐	FB-1@UMW-1D FB-2@UMW-4D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Cr(28.6) ; DUP-2: 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(61)
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Ca(156)
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-UMW-1D	Chromium (Cr)	1.0	U	Detected in Field Blank (FB); PQL>Result>MDL
L-UMW-2D	Chloride	22.9	D	Result had a Dilution Factor (DF) of 2
"	Sulfate	184	D	" 20
"	Cr	1.0	U	Detected in Method Blank (MB); PQL>Result>MDL
L-UMW-3D	Cr	0.34	UJ	RPD not met, Result < MDL
"	Sulfate	597	D	Result had a DF of 50
L-UMW-4D	Sulfate	192	D	" 20
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-5D	Sulfate	250	D	Result had a DF of 20
L-UMW-6D	Chloride	20.5	D	" 2
"	Sulfate	504	D	" 50
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-DUP-2	Cr	1.0	U	" "
"	Sulfate	713	D	Result had a DF of 50
L-UMW-FB-1	Calcium (Ca)	100	U	Detected in MB; PQL>Result>MDL
"	Cr	~~1.0~~ (FB)	U	" "
L-UMW-FB-2	Cr	1.0	U	" "
L-BMW-1D	Cr	1.0	U	" "
"	Sulfate	36.0	D	Result had a DF of 5
L-BMW-2D	Sulfate	34.0	D	" 2
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-DUP-1	Cr	1.0	U	" "
"	Chloride	22.3	D	Result had a DF of 5
"	Sulfate	188	D	" 20
L-UMW-7D	Sulfate	318	D	" 50
"	Mercury (Hg)	0.20	U	Detected in MB; PQL>Result>MDL

Signature: Tommy J. Goodwin Jr. Date: 6/1/17

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-8D	Hg	0.20	U	Detected in MB; PQL > Result > MDL
"	Sulfate	38.9	D	Result had a DF of 5
L-UMW-9D	Chloride	19.9	D	" 2
"	Hg	0.20	U	Detected in MB; PQL > Result > MDL
"	Molybdenum (Mo)	20.0	U	" "

Signature: Tommy J Hoods 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 – UMW - 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 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).
- 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 ~~Fly~~-UMW- E7
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 6/1/17

Laboratory: Pace Analytical
SDG #: 60239002
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-7D MS, L-UMW-7D 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?	☑	☐	☐	Chloride, 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)?	☑	☐	☐	Cr(0.14)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Ba(1.6), As(0.076), Cr(0.17), TDS(5.5)
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	FB-2: Ba(1.4), As(0.072), Cr(0.45), TDS(17)
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@ UMW-9D DUP-2@ UMW-8D
	☒	☐	☐	FB-1@ UMW-2D FB-2@ UMW-1D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Pb(24.6); DUP-2: Pb(200), Cr(70.6)
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?	☑	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☑	☐	Ca(32)
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-UMW-1D	Chromium (Cr)	1.0	U	Detected in Method Blank (MB); PQL>Result>MDL
L-UMW-2D	Cr	1.0	U	" "
⊥	Chloride	19.7	D	Result had a Dilution Factor (DF) of 2
⊥	Sulfate	179	D	" 20
L-UMW-3D	Cr	1.0	U	Detected in MB; PQL>Result>MDL
"	Sulfate	634	D	Result had a DF of 50
L-UMW-4D	Sulfate	216	D	⊥ 20
L-UMW-5D	Sulfate	252	D	⊥ 20
L-UMW-~~5D~~ 5D (TB)	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-6D	Cr	1.0	U	" "
⊥	Chloride	20.5	D	Result had a DF of 2
⊥	Sulfate	446	D	⊥ 50
L-UMW-7D	Sulfate	295	D	⊥ 20
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-8D	Cr	1.1	U	" (FB1) Result<PQL
L-UMW-9D	Cr	1.0	U	⊥ PQL>Result>MDL
"	Chloride	19.5	D	Result had a DF of 2
L-BMW-1D	Sulfate	34.2	D	" 2
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-BMW-2D	Cr	1.0	U	" "
"	Sulfate	35.5	D	Result had a DF of 2
L-UMW-DUP-1	Chloride	19.6	D	" 2
"	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-DUP-2	Lead (Pb)	2.4	UJ	RPD not met; Result<MDL
	Cr	2.3	J	" Result>MDL
L-UMW-FB-1	Cr	1.0	U	Detected in MB; PQL>Result>MDL
L-UMW-FB-2	Cr	1.0	U	" "

Signature: Tommy J. Gordon Jr. Date: 6/1/17

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 – UMW - 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.
- Arsenic and Mercury recovery was outside the criteria for MS. Calcium and Mercury 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).
- 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 Fly-UMW-E8
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 7/6/2017

Laboratory: Pace Analytical
SDG #: 60245563
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-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2, L-UMW-5D MS, L-UMW-5D 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?	☑	☐	☐	Chloride, Sulfate
g) Were any matrix problems noted?	☑	☐	☐	Hg, Ca, As

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	9004/1002: Hg(0.014), Ca(126), Cr(0.14), Tl(0.042) All Else: Hg(0.047), Cr(0.17),
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1: Cr(0.14), Hg(0.047); FB-2: Cr(0.17), Hg(0.047), Chloride(0.53)
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@ UMW-7D Dup-2@ UMW-2D
	☒	☐	☐	FB-1@ UMW-1D FB-2@ UMW-6D
b) Were field dup. precision criteria met (note RPD)?	☐	☑	☐	DUP-1: Se(200), Tl(200)
c) Were lab duplicates analyzed (note original and duplicate samples)?				DUP-2: Pb(200)
	☒	☐	☐	
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?	☐	☑	☐	Hg(Low), As(High)
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-UMW-1D	Sulfate	37.4	D	Result had Dilution Factor (DF) of 5
All Samples	Chromium (Cr)	1.0	U	Detected in Method Blank (MB); Result < PQL
"	Mercury (Hg)	0.20	U	" "
L-UMW-2D	Chloride	27.8	D	DF of 2
	Sulfate	138	D	" 20
	Thallium (Tl)	1.0	U	Detected in MB; Result < PQL
	Lead (Pb)	2.4	UJ	RPD exceeded limit; Result < MDL
L-UMW-3D	Sulfate	386	D	DF of 50
L-UMW-4D	Chloride	21.9	D	2
"	Sulfate	342	D	20
L-UMW-5D	Chloride	19.0	D	2
"	Sulfate	246	D	20
L-UMW-6D	Chloride	22.5	D	2
"	Sulfate	366	D	50
L-UMW-7D	Sulfate	305	D	20
"	Tl	0.036	UJ	RPD exceeded limit; Result < MDL
L-UMW-8D	Chloride	20.7	D	DF of 2
L-BMW-1D	Sulfate	35.2	D	2
L-BMW-2D	Sulfate	43.0	D	5
L-UMW-DUP-1	Sulfate	317	D	20
"	Selenium (Se)	~~0.0~~ 0.086	UJ	RPD exceeded limit; Result < MDL
L-UMW-DUP-2	Tl	1.0	U	Detected in MB; Result < PQL
	Chloride	27.6	D	DF of 2
	Sulfate	140	D	20

Signature: Tommy J. Hooker Jr. Date: 7/6/2017

MEMORANDUM

Date:	December 22, 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 – UMW – 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).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates TR
Project Name: Ameren-Labadie ~~FA~~-UMW-D.M. Nov. 2017
Reviewer: T Goodwin

Project Manager: J Ingram
Project Number: 1531406.0001A
Validation Date: 12/22/17

Laboratory: Pace Analytical TR
SDG #: 60257954
Analytical Method (type and no.): Metals 200.7&~~200.8~~, ~~Hg 7470~~, TDS 2540C, ~~pH 150.1~~ TR, Anions 300.0, ~~Rads 903.1 & 904.0~~ TR, SM 2320B
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names L-UMW1D, L-UMW-2D, L-UMW-3D, L-UMW-4D, L-UMW-5D, L-UMW-6D, L-UMW-7D, L-UMW-8D, L-UMW-9D L-BMW-1D, L-BMW-2D
L-UMW-DUP-1, L-UMW-DUP-2, L-UMW-FB-1, L-UMW-FB-2

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?	☑	☒ TR	☐	~~pH~~ TR
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, Sulfate
g) Were any matrix problems noted?	☐	☑	☐	

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☑	☐	☐	B(10.6)
b) Were analytes detected in the field blank(s)?	☑	☐	☐	FB-1) B(44.2) FB-2) B(28.6)
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-UMW-6D Dup-2@ L-UMW-7D
	☒	☐	☐	FB-1@ L-UMW-4D FB-2@ L-UMW-1D
b) Were field dup. precision criteria met (note RPD)?	☑	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	AlK, TDS(10)
d) Were lab dup. precision criteria met (note RPD)?	☐	☑	☐	TDS(128)

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:

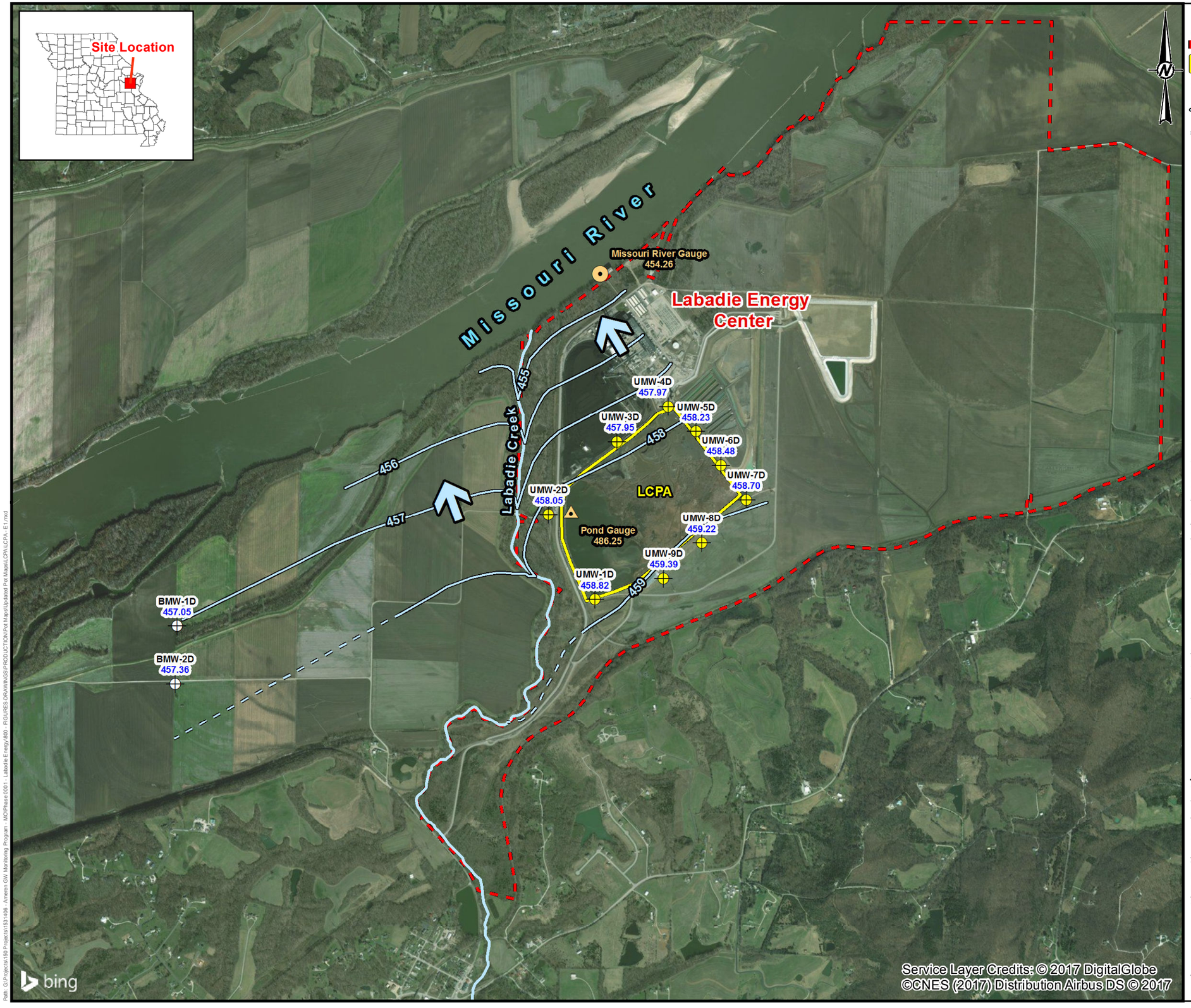
QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
L-UMW-2D	Sulfate	241	D	Result had a dilution factor (DF) of 20
L-UMW-3D	Fluoride	0.19	J	Result detected between MDL + PQL
⊥	Sulfate	422	D	DF of 50
L-UMW-4D	Chloride	19.7	⊥	2
⊥	Sulfate	312	⊥	20
L-UMW-5D	Sulfate	236	⊥	20
⊥	Fluoride	0.14	J	PQL > Result > MDL
L-UMW-6D	Fluoride	0.16	⊥	⊥
⊥	Chloride	21.8	D	DF of 2
⊥	Sulfate	467	⊥	50
L-UMW-7D	Sulfate	313	⊥	20
L-UMW-9D	Chloride	19.6	⊥	2
L-BMW-1D	Sulfate	35.0	⊥	2
L-BMW-2D	Sulfate	35.8	⊥	2
⊥	Boron (B)	91.8	J	PQL > Result > MDL
L-UMW-DUP-1	Fluoride	0.16	J	⊥
⊥	Chloride	21.8	D	DF of 2
⊥	Sulfate	454	⊥	50
L-UMW-DUP-2	Sulfate	324	⊥	20
L-UMW-FB-1	B	100	U	Detected in MB (Method Blank); PQL > Result
L-UMW-FB-2	B	100	U	⊥ ⊥
			TJG	

Signature: Tommy J Goodwin Date: 12/22/2017

APPENDIX C – POTENTIOMETRIC SURFACE MAPS



LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- = = = Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- Background Monitoring Well
- LCPA - Bottom Ash Surface Impoundment Monitoring Well
- Missouri River Gauge
- LCPA - Bottom Ash Surface Impoundment
- Groundwater Flow Direction

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED ONSITE BY GOLDER.
3. GROUNDWATER MONITORING WELLS SURVEYED BY ZAHNER AND ASSOCIATES, INC. ON JANUARY 13 AND FEBRUARY 11, 2016.
4. GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
5. MISSOURI RIVER LEVEL OBTAINED FROM USGS LABADIE GAUGE 06935550.
6. POND GAUGE LEVEL OBTAINED ONSITE BY GOLDER.

REFERENCES

1. ZAHNER AND ASSOCIATES, INC. 2016. LOT CONSOLIDATION PLAT OF "LABADIE ENERGY CENTER" - PREPARED FOR AMEREN MISSOURI. REVISED JUNE 15, 2016.
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2,401 FEET.
3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 500 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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 1 - MARCH 22, 2016

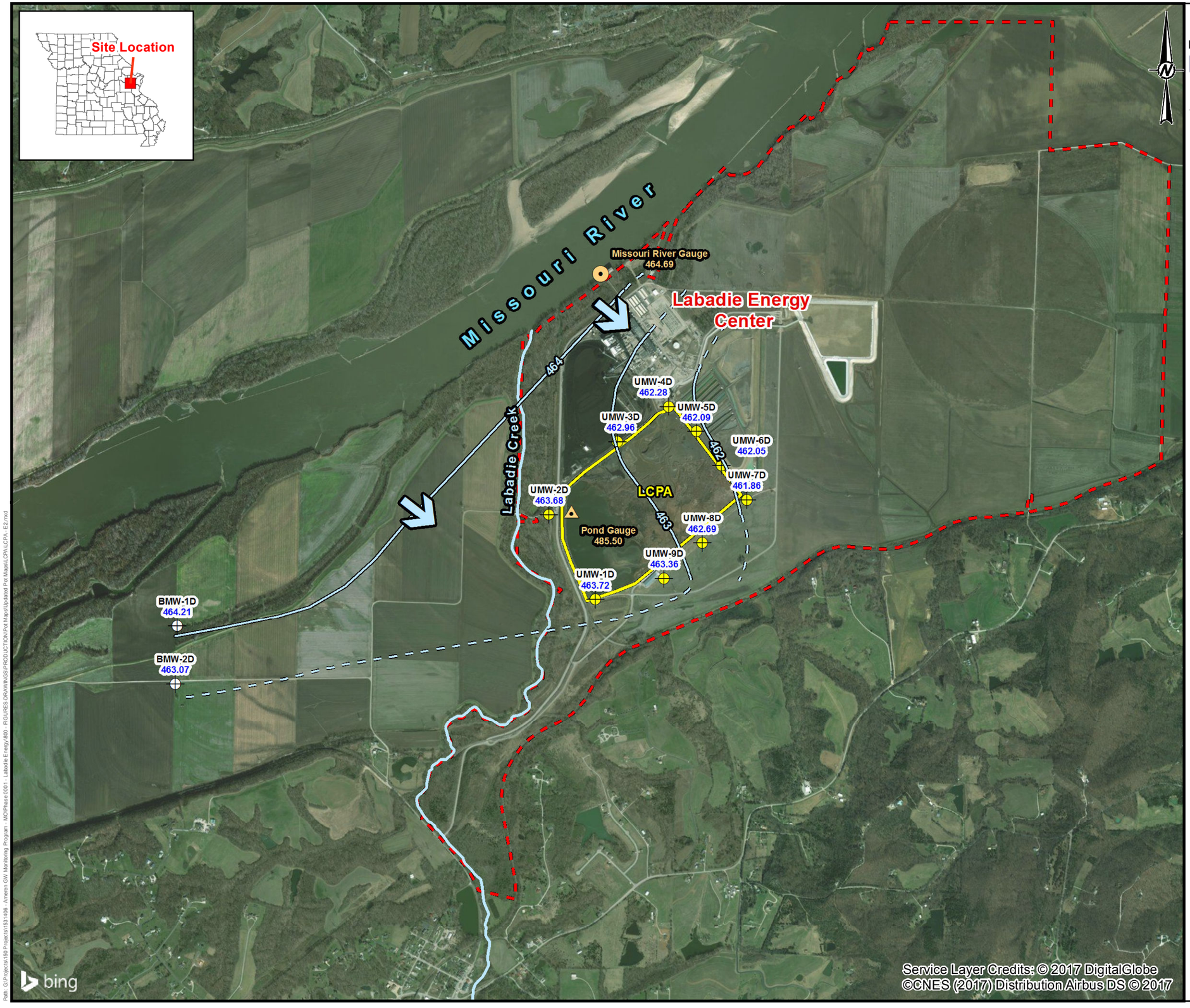
CONSULTANT
Golder Associates

YYYY-MM-DD	2016-03-31
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P1**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in x 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\LCPA\LCPA - E1.mxd



LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

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Ground/Surface Water Measurement Locations

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 2 - MAY 3, 2016

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-05-25
PREPARED	JS
DESIGN	JSI
REVIEW	JSI
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001A	0.0	**P2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in x 0

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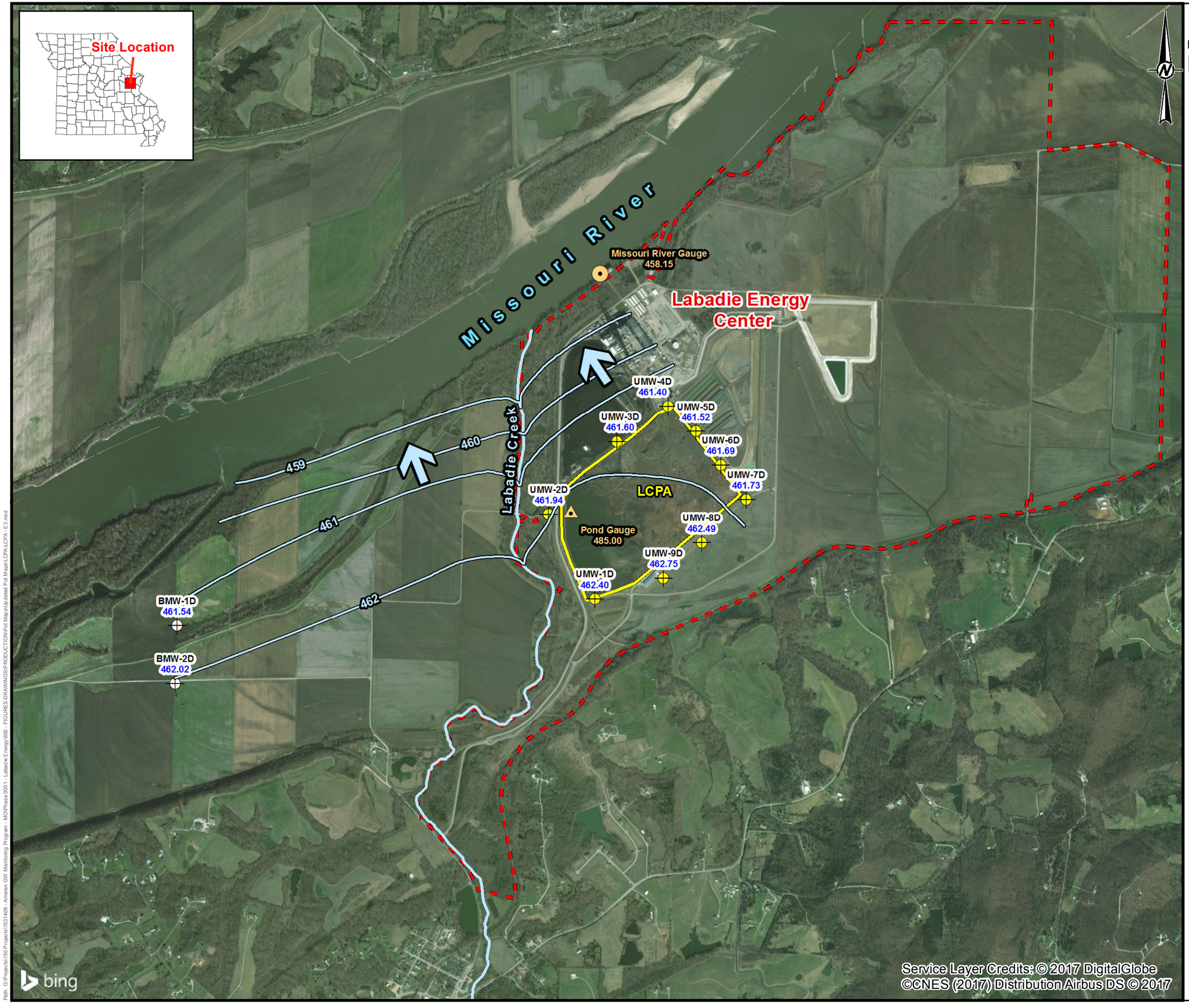

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

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- Groundwater Flow Direction

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 3 - JULY 11, 2016

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-07-21
PREPARED	JS
DESIGN	JSI
REVIEW	RJF/JSI
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P3**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

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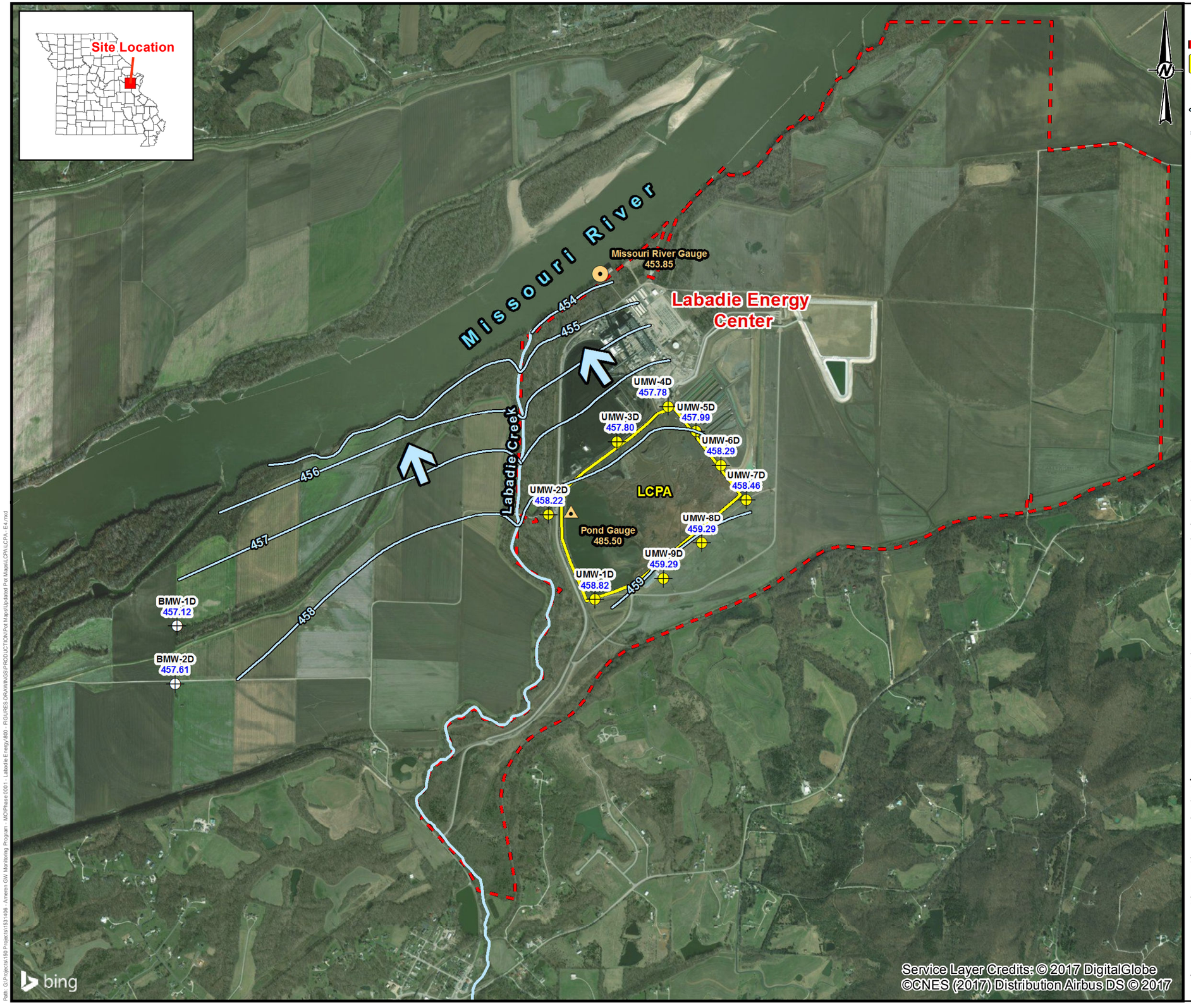

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- = = = Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- Background Monitoring Well
- LCPA - Bottom Ash Surface Impoundment Monitoring Well
- Missouri River Gauge
- LCPA - Bottom Ash Surface Impoundment
- Groundwater Flow Direction

NOTES

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 4 - SEPTEMBER 8, 2016

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-09-26
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P4**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

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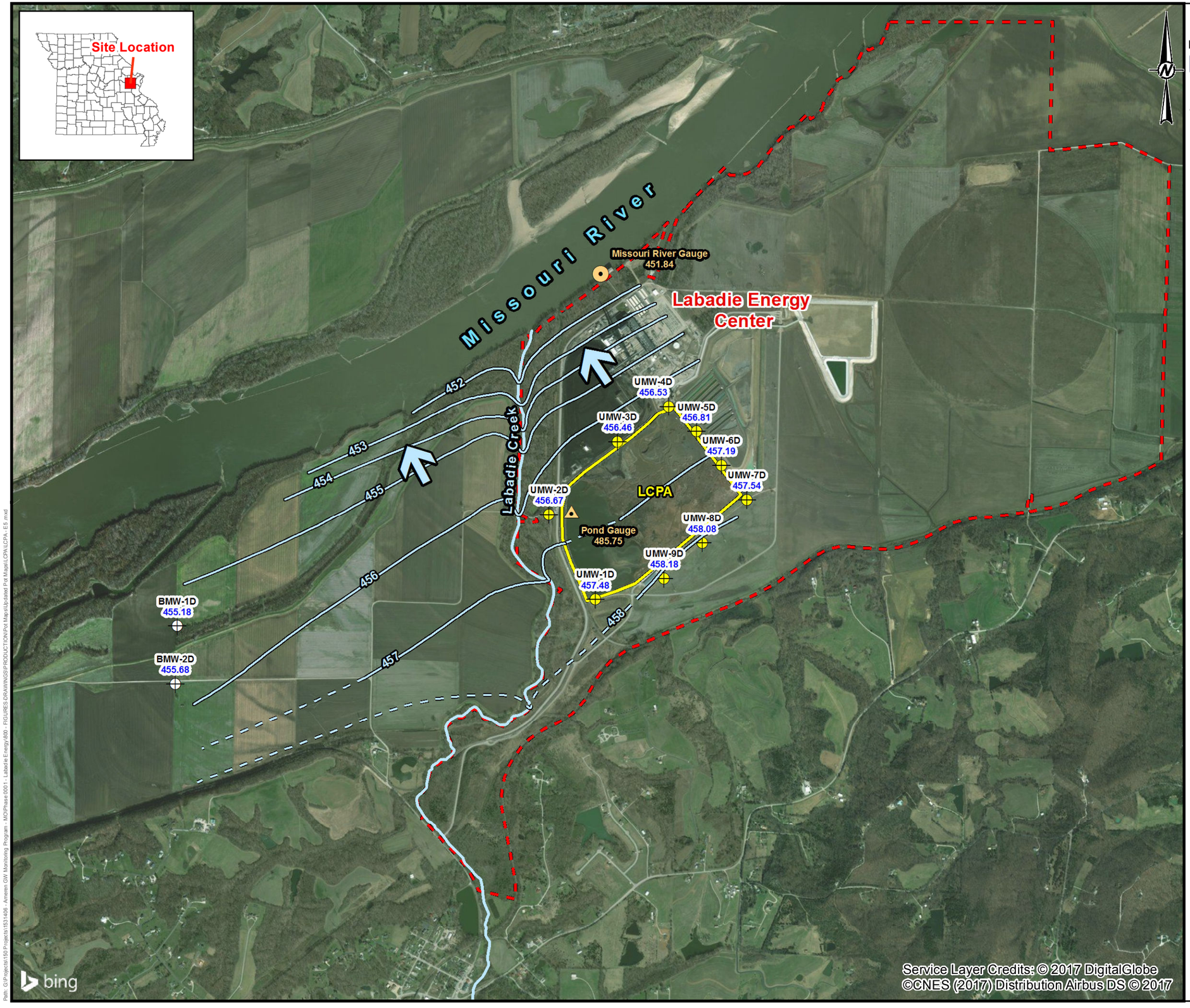

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- = = = Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- Background Monitoring Well
- LCPA - Bottom Ash Surface Impoundment Monitoring Well
- Missouri River Gauge
- LCPA - Bottom Ash Surface Impoundment
- Groundwater Flow Direction

NOTES

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 5 - NOVEMBER 11, 2016

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-12-07
PREPARED	JSI
DESIGN	JSI
REVIEW	MSG
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001A	0.0	**P5**

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

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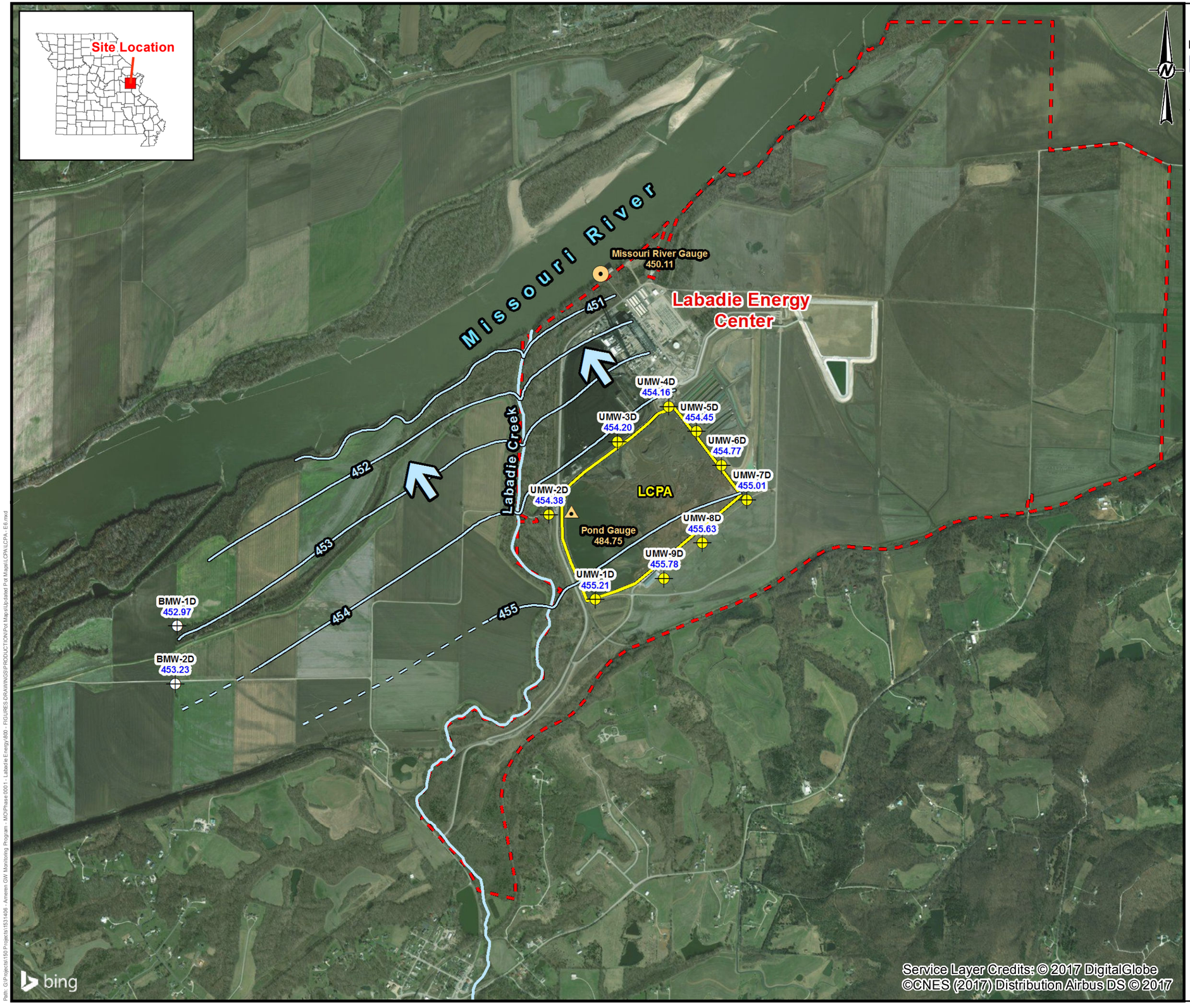

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
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Ground/Surface Water Measurement Locations

- Background Monitoring Well
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NOTES

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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
LCPA 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. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P6**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

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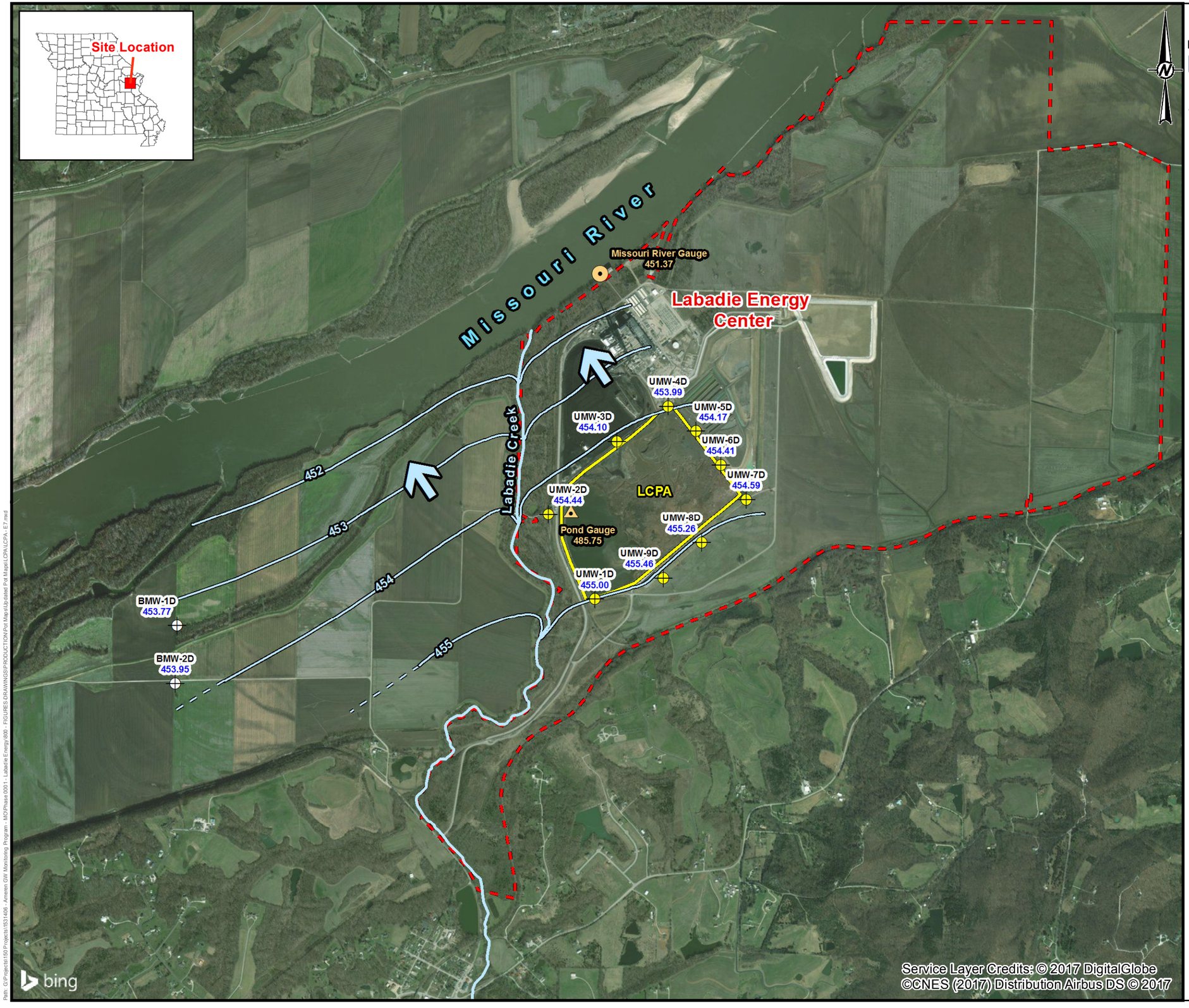

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
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Ground/Surface Water Measurement Locations

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 7 - MARCH 1, 2017

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-03-14
PREPARED	JSI
DESIGN	JSI
REVIEW	JS
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P7**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

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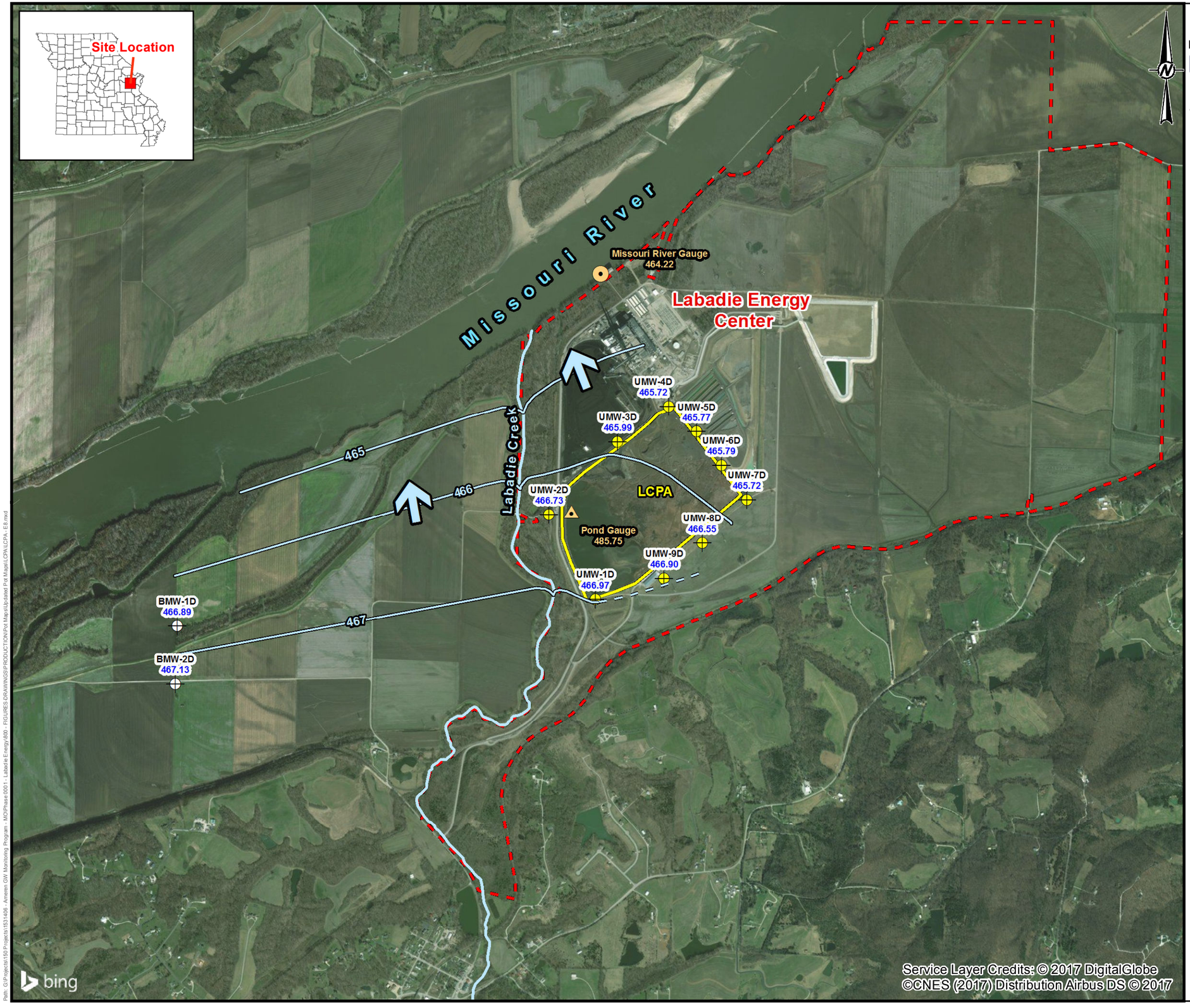

LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

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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
LCPA POTENTIOMETRIC SURFACE MAP
BACKGROUND EVENT 8 - MAY 31, 2017

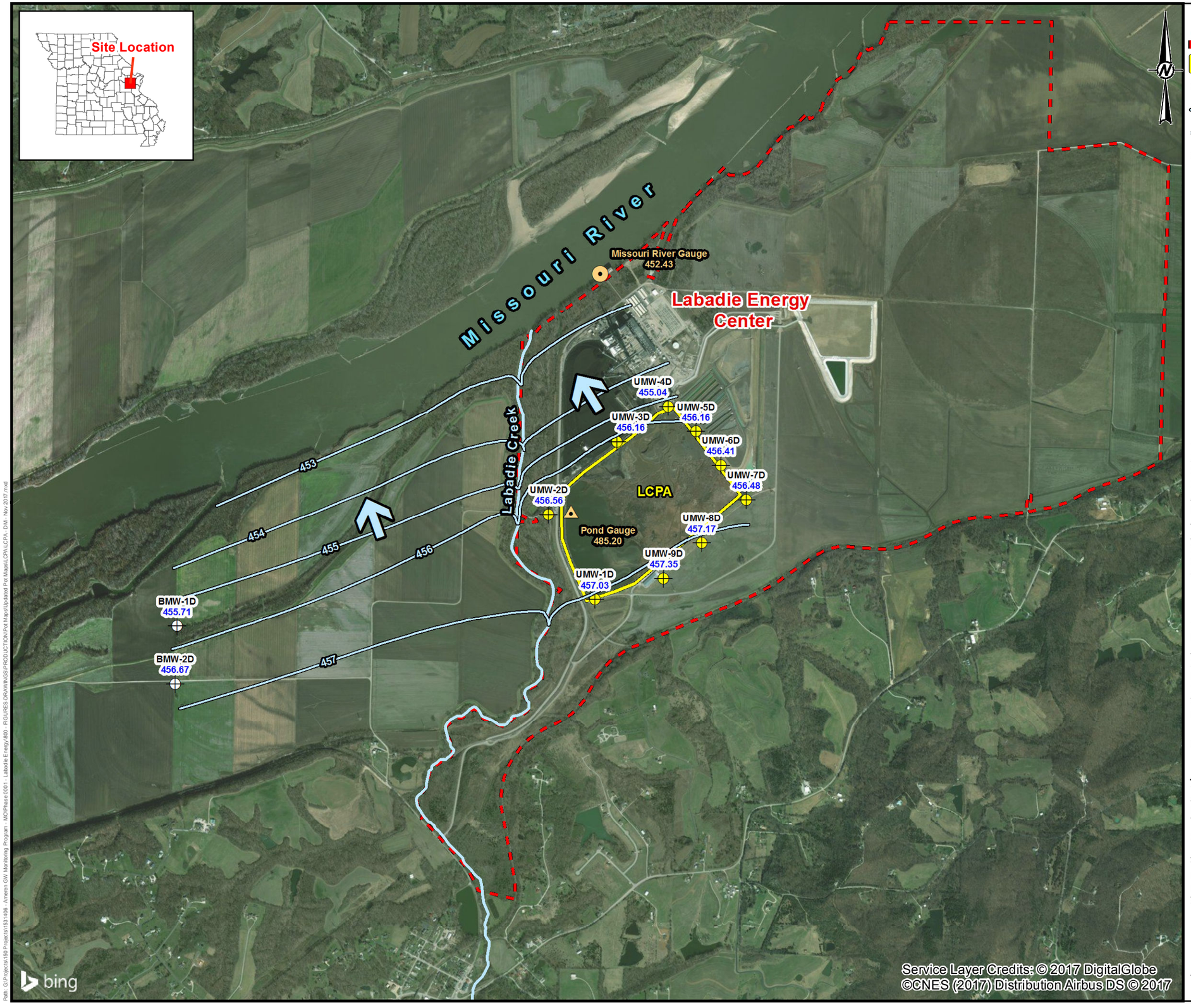
CONSULTANT
Golder Associates

YYYY-MM-DD	2017-06-14
PREPARED	JS
DESIGN	JSI
REVIEW	RJF
APPROVED	MNH

PROJECT No.	PHASE	Rev.	FIGURE
153-1406	0001A	0.0	**P8**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

Path: G:\Projects\153\Projects\153\1406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPA\LCPA - E8.mxd



LEGEND

- Labadie Energy Center Property Boundary
- LCPA - Bottom Ash Surface Impoundment

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
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Ground/Surface Water Measurement Locations

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3. USGS (UNITED STATES GEOLOGICAL SURVEY), NATIONAL WATER INFORMATION SYSTEM, USGS GAUGE 06935550 MISSOURI RIVER NEAR LABADIE, MO.

0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

CLIENT
AMEREN MISSOURI
LABADIE ENERGY CENTER

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
LCPA POTENTIOMETRIC SURFACE MAP
DETECTION MONITORING - NOVEMBER 7, 2017

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-11-17
PREPARED	RJF
DESIGN	JSI
REVIEW	JS/JSI
APPROVED	MNH

PROJECT No. 153-1406 | PHASE 0001A | Rev. 0.0 | FIGURE **P9**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

Path: G:\Projects\150 Projects\153-1406 - Ameren GW Monitoring Program - MO\Phase 0001 - Labadie Energy\800 - FIGURES DRAWINGS\PRODUCTION\Pot Maps\Updated Pot Maps\LCPA\LCPA - DM - Nov 2017.mxd

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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

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